

REGISTER OF P.H.D. DEGREES

CONFERRED BY THE UNIVERSITY OF MINNESOTA

1938 THROUGH JUNE 1956

Minneapolis
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1957

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1956

FOREWORD

From time to time the Graduate School has issued rosters of the men and women who have traversed the difficult road leading to the highest degree granted by the University of Minnesota. The present roster names no fewer than 2,542 scholars who, in the period from June 1938 to June 1956, attained the degree of Doctor of Philosophy. Earlier rosters have presented the record from 1888 — when Charles Burke Elliott earned Minnesota's first Ph.D. degree, with History as his major field and with a thesis dealing with the United States and the Northwestern Fisheries — to 1938.

The measure of the success of any graduate school does not, of course, hinge upon the numbers of its students or of its degrees. It rests fundamentally upon the quality of its faculty, students, and programs, and the contributions and achievements of its graduates through the years. It remains true, however, that the competence of the graduate faculty and the scope of its offerings, coupled with the needs of society and the growth and development of a great institution, have brought about a remarkable increase in the numbers of students who have completed the requirements for the degree of Doctor of Philosophy in this University. This increase, moreover, has been particularly notable in the past decade or two. During the sixty-eight years from 1888 to 1956, the University awarded 3,663 Ph.D. degrees, and of this total number, 2,542, or 69 per cent, were granted in the period included in the roster set forth in this volume -- from 1938 to 1956.

Here are the names of those who, in this eighteen-year period, have carried their studies to the top level of scholarly education in this University. No one, scanning the record, can fail to be impressed by the great spread of specialization that the studies and researches of these more than twenty-five hundred scholars represent. Nor can the reader fail to understand, from this record, the extent to which a flexible policy of graduate education has responded to the need for high-level training in a rapidly changing and increasingly specialized world. A single doctor of philosophy in 1888 — more than two hundred and thirty in 1956; one field of doctoral study in 1888 — more than a hundred in 1956! And, as we look to the future, we face the inescapable responsibility of the Graduate School to educate students in a wide variety of fields that will demand, even more insistently than in the past, high levels of specialized preparation for achievement and leadership in the critical years ahead.

Many doctor's theses find publication, though usually in condensed form, in learned journals, and some are brought out in full as books. The general problem of publication, however, has occasioned much

difficulty in the past. An attempt to solve it was made by the Graduate School in the 1930's and 1940's, when it accepted abstracts as fulfilling the publication requirement. These were brought out in a series of five volumes, but for many reasons the plan was not effective. Since the summer of 1951, all Minnesota doctoral dissertations have been microfilmed through University Microfilms at Ann Arbor, Michigan, as part of a plan in which more than seventy American universities are cooperating. University Microfilms in turn makes known the essential content of the filmed thesis through regular publication of a journal entitled Dissertation Abstracts, each abstract provided by the author of the thesis and approved by his or her adviser. From the original negative microfilm, libraries and other institutions throughout the country may then order positive microfilms at a modest cost. Thus a modern form of publication has been made certain for all the doctoral theses. This procedure does not, of course, preclude publication in the regular book form or through articles in periodicals.

The departments whose graduates are here named will find it interesting and useful to trace out the careers to which the doctoral status of their graduates proved a commencement. Meanwhile, the Graduate School, with such evidence as it has in hand, has good reason to believe that the record of achievement is one of constructive contributions and service not alone to the state which, from pioneer times, had given steadfast support to the University of Minnesota, but to nations and peoples throughout the world.

Theodore C. Blegen
Dean

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AGRICULTURE

AGRICULTURAL BIOCHEMISTRY

1938. BARNICOAT, CUTHBERT RICHMOND. B.Sc. '24, M.Sc. (Honours) '25, University of New Zealand.
Major: Agricultural Biochemistry. Minor: Dairy Husbandry.
Thesis: A Study of the Chemistry of Certain Incipient Flavour Defects in Butter.
Major Adviser: Prof. L. S. Palmer.
1938. EVANS, CYRIL DAVID. B.S. '31, M.S. '34, Montana State College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Peptization and Study of the Oat Proteins.
Major Adviser: Prof. C. H. Bailey.
1938. LOHN, CECIL OLAN. B.A. '31, M.S. '32, University of North Dakota.
Major: Agricultural Biochemistry. Minor: Physiological Chemistry.
Thesis: A Study of the Efficiency of Food Metabolism for the Maintenance of Inbred Animals Differing in Their Efficiency of Food Utilization During Growth.
Major Adviser: Prof. L. S. Palmer.
1938. REITZ, HENRY CHARLES. B.S. '27, University of Illinois; M.S. '31, University of Maryland.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Comparative Study of the Starches of the Triticum Species.
Major Adviser: Prof. R. A. Gortner.
1939. BARNES, ELEANOR OLDS. B.A. '17, M.S. '36, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Home Economics.
Thesis: Biochemical Studies of Varieties of Minnesota Fruits.
Major Adviser: Prof. R. A. Gortner.
1939. HANKINSON, CLOYCE LEROY. B.S. '34, Michigan State College; M.S. '35, Connecticut State College.
Major: Agricultural Biochemistry. Minor: Dairy Husbandry.
Thesis: The Relation of Waterbinding Properties of Casein to Physical and Chemical Properties of Milk and Dairy Products.
Major Adviser: Prof. L. S. Palmer.
1939. LUND, AXEL PALMER. B.A. '28, St. Olaf College; M.S. '30, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of the Protein Complex in Various Tree Seeds.
Major Adviser: Prof. W. M. Sandstrom.

1939. MIGICOVSKY, BERT BARUCH. B.S.A. '35, University of Manitoba; M.S. '37, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Zoology.
Thesis: The Use of the Larvae of Tribolium confusum Duval in a Method of Assay for Vitamin B and a Study of Their Vitamin Requirements.
Major Adviser: Prof. L. S. Palmer.
1939. PAINTER, EDGAR PAGE. B.S. "high honor", '32, South Dakota State College.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: Studies on Organic Selenium Compounds with Relation to Those of Natural Occurrence in Plants.
Major Adviser: Prof. R. A. Gortner.
1939. ROGERS, CHARLES FLETCHER. B.A. '23, Nebraska Wesleyan University; M.S. '25, Iowa State College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Biological Aspects of Cyanogenesis.
Major Adviser: Prof. C. H. Bailey.
1939. VAIL, GLADYS ELLEN. B.A. '24, Southwestern College (Kansas); M.A. '27, University of Chicago.
Majors: Agricultural Biochemistry and Home Economics (Foods).
Minor: Home Economics (Food Technology).
Thesis: The State of Water in Colloidal Gels.
Major Adviser: Prof. C. H. Bailey.
1940. ANDERSON, BROR ERNEST. B.A. magna cum laude '35, Gustavus Adolphus College.
Major: Agricultural Biochemistry. Minor: Chemical Engineering.
Thesis: Factors Affecting the Decreasing Rate of Flow of Liquids through Wood, with Special Reference to Electrokinetic Phenomena.
Major Advisers: Profs. Henry Schmitz and R. A. Gortner.
1940. EVANS, JAMES WILLIAM. B.S. '28, Central Missouri Teachers College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Interrelationship of the Lipides in the Starch from the Seed of the Zea Mays.
Major Adviser: Prof. D. R. Briggs.
1940. GREENWOOD, FRED LAUREL. B.S. '33, Dickinson College; M.S. '36, Pennsylvania State College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Part I. The Effect of Certain Ethers, Tertiary Amines and Acetals on Proteins. The Behavior of Proteins with the Grignard Reagent. Part II. The Reaction of Ethyl Glycinate Hydrochloride with Primary, Secondary, and Tertiary Grignard Reagents.
Major Adviser: Prof. R. A. Gortner.

1940. HOLLIHAN, JOHN PHILIP. B.A. magna cum laude '35, University of Southern California.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: A Viscosity Study of Particle Shape and Solvation Factors Involved in the Heat Bodying of Tung Oils.
Major Adviser: Prof. D. R. Briggs.
1940. LINDSTROM, HAROLD VERNON. B.Ch. '34, M.S. '36, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Qualitative Studies in the Alkaline Decomposition of Cystine.
Major Adviser: Prof. W. M. Sandstrom.
1940. ROBERTS, ERIC RICHARD. B.S. '36, Ph.D. '38, Imperial College of Science and Technology (London).
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: The Use of Polarograph in Some Biochemical Problems.
Major Adviser: Prof. R. A. Gortner.
1940. RUSOFF, LOUIS LEON. B.S. '31, Rutgers University; M.S. '32, Pennsylvania State College.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: The Distribution and Concentration of Copper and Other Trace Elements in the Bovine at Birth As Influenced by the Nutrition of the Dam.
Major Adviser: Prof. L. S. Palmer.
1940. STEARNS, THOMAS WESLEY. B.S. '34, M.S. '37, University of Florida.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Electrophoresis Studies on Brucella.
Major Adviser: Prof. M. H. Roepke.
1940. YEN, EN-CHU. B.S. '32, Fuh Tan University.
Major: Agricultural Biochemistry. Minor: Chemical Engineering.
Thesis: Natural Antioxidants in Vegetable Oils.
Major Adviser: Prof. D. R. Briggs.
1941. JENSEN, JAMES LEROY. B.S. '37, M.S. '38, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: A Study of the Thiamine, Riboflavine and Ascorbic Acid Content of the Organs of Vitamin E Deficient and Normal Rats.
Major Adviser: Prof. L. S. Palmer.

1941. LEW, BAAK WAI. B.A. '36, Lingnan University; M.S. '38, University of Michigan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Gums from the Carob Bean, Ceratonia siliqua L. and the Honey Locust Bean, Gleditschia triacanthos L.
Major Adviser: Prof. R. A. Gortner.
1941. MACDONALD, ROBERT MICHAEL THEIS. B.Ch. '33, M.S. '35, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: A Physico-Chemical Study of Zein.
Major Adviser: Prof. R. A. Gortner.
1941. NIVEN, THOMAS BLANEY. B.A. '34, University of British Columbia.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: The Alkaline Hydrolysis of Proteins.
Major Adviser: Prof. R. A. Gortner.
1941. ROY, WALLACE ROBERT. B.S. '26, Clemson Agricultural College; M.S. '34, University of Kentucky.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: The Effect of Potassium Deficiency on the Juice of Valencia Oranges.
Major Adviser: Prof. R. A. Gortner.
1941. SCOTT, EDWARD MARION. B.A. '38, Carleton College.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: Studies on Papain.
Major Adviser: Prof. W. M. Sandstrom.
1941. SISTER MARY URBAN STUART. B.S. '29, University of Minnesota; M.S. '37, University of Michigan.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Biochemical Studies on the Reactions of Sorbose in Alkaline Solutions.
Major Adviser: Prof. W. M. Sandstrom.
1941. WESWIG, PAUL HENRY. B.A. '35, St. Olaf College; M.S. '39, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: A Study of Growth, Metabolism and Efficiency of Inbred Animals as Affected by Physiological Stimulants and Inhibitors.
Major Adviser: Prof. L. S. Palmer.
1942. FISHMAN, MYER. B.S. '38, College of the City of New York; M.S. '40, University of Minnesota.
Major: Agricultural Biochemistry. Minors: Plant Physiology and Physiology.
Thesis: The Chlorophyll-protein Complex.
Major Advisers: Profs. R. A. Gortner and L. S. Moyer.

1942. HOSSFELD, RALPH LOWELL. B.S. '37, M.S. '39, University of Idaho.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Cooking Process: XII. The Action of Aqueous Solutions of Pure Sodium Hydrosulfide on Aspen Wood.
Major Adviser: Prof. R. A. Gortner.
1942. KELLEY, VINCENT CHARLES. B.A. '34, M.S. '35, University of North Dakota; B.S. '36, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Viscosity Studies in Relation to Gelatinized Starches. A Theory of Starch Viscosity.
Major Advisers: Profs. D. R. Briggs and R. A. Gortner.
1942. KNEEN, ERIC. B.S. in Agric. '31, University of Alberta; M.S. '33, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Soils.
Thesis: Studies on the Cereal Amylases.
Major Adviser: Prof. W. F. Geddes.
1942. MANN, FRANK DANIELS. B.S. '37, M.S. '38, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: The Hydration of Hemoglobin in Solution.
Major Adviser: Prof. W. H. Sandstrom.
1942. MATTERSON, LLOYD DANIEL. B.S. in Ag. '29, M.S. in Ag. '36, State College of Washington.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Studies on the Formation of Vitamin A from β -Carotene.
Major Adviser: Prof. L. S. Palmer.
1942. PEPPER, JAMES HURBERT. B.Sc. '31, University of Alberta; M.S. '32, Montana State College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Biochemical Studies on the Fat Body of the Sugar Beet Webworm, Loxostege sticticalis L.
Major Adviser: Prof. R. A. Gortner.
1942. PUTNAM, FRANK WILLIAM. B.A. with high distinction '39, M.A. '40, Wesleyan University.
Major: Agricultural Biochemistry; Minor: Physical Chemistry.
Thesis: A Study of Factors Affecting the Degree of Protein Dispersion.
Major Adviser: Prof. R. A. Gortner.
1942. RAMSTAD, PAUL ELLERTSON. B.S. '39, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: A Study of the Respiration and Storage Behavior of Soybeans.
Major Adviser: Prof. W. F. Geddes.

1942. WESTLAKE, WILLIAM ELLIS. B.S. '33, Montana State College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: A Comparative Study of Acid and Alkaline Hydrolysis on Cereal Proteins.
Major Adviser: Prof. R. A. Gortner.
1943. CROSTON, CLARENCE BRADFORD. B.S. with high distinction '39, University of Minnesota; M. A. '41, University of Missouri.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: The Actions of Acids and of Alkalies on Certain Amino Acids and Their Derivatives.
Major Adviser: Prof. W. M. Sandstrom.
1943. HILL DOUGLAS CALVERT. B.S.A. '37, Ontario Agricultural College; M.S.A. '39, University of Toronto.
Major: Agricultural Biochemistry. Minor: Soils.
Thesis: A Polarographic Study of D-Glucose and D-Fructose.
Major Advisers: Profs. W. F. Geddes and I. M. Kolthoff.
1943. JOHNSON, LEON H. B. A. '32, Concordia College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Sulfur in Plants. The Effect of a Sulfur Deficiency in Plants on Accumulation of Iron, Copper and Manganese.
Major Adviser: Prof. D. R. Briggs.
1943. LUECKE, RICHARD WILLIAM. B.A. '39, Macalester College; M.S. '41, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Zoology.
Thesis: A Study of Vitamin Deficient Diets in Relation to Body Storage in Rats Differing in Their Efficiency of Food Utilization.
Major Adviser: Prof. L. S. Palmer.
1943. LUH, CHING FAN. B.S. '36, University of Nanking.
Major: Agricultural Biochemistry. Minor: Chemical Engineering.
Thesis: Peptization of Gliadin by Various Organic Solvents.
Major Adviser: Prof. W. M. Sandstrom.
1943. REID, THOMAS STOUT. B.S. '36, M.S. '39, Rutgers University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of the Fodor-Kuk Technic of Protein Degradation.
Major Adviser: Prof. W. M. Sandstrom.
1943. SANDERS, ROBERT GORDON. B.A. '39, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Human Physiology.
Thesis: Quantitative Absorption Studies on Brucella abortus Antibody Antigen Systems.
Major Advisers: Profs. M. H. Roepke and W. M. Sandstrom.

1943. SCHWERT, GEORGE WILLIAM. B.A. summa cum laude '40, Carleton College.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: Electrokinetic Studies with the Tiselius Apparatus.
Major Adviser: Prof. D. R. Briggs.
1943. VIVINO, AURELIO EARL. B.S. '38, Pennsylvania State College; M.S. '42, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Chemical Composition and Nutritional Value of Pollen Collected by Bees.
Major Adviser: Prof. L. S. Palmer.
1943. WOLMAN, WALTER. B.S. '38, University of Wisconsin; M.S. '40, Michigan State College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: The Synthesis of *ms*-Tetraphenylisoporphine and Rearrangement Reactions of the Substituted Porphine Ring.
Major Adviser: Prof. W. M. Sandstrom.
1944. HOFFER, ABRAHAM. B.S. '38, M.S. '40, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Studies on the B Vitamins of Wheat.
Major Adviser: Prof. W. F. Geddes.
1944. HOLLAND, BRYANT RICHARD. B.S. '36, North Texas State Teachers College; M.S. '37, Texas Agricultural and Mechanical College.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: The Elimination of Humin Formation in the Acid Hydrolysis of Protein-Carbohydrate Mixtures, and the Quantitative Separation of the Amino Acids by Electrical Transport.
Major Adviser: Prof. W. M. Sandstrom.
1944. JENNESS, ROBERT. B.S. with high honor '38, University of New Hampshire; M.S. '40, University of Vermont.
Major: Agricultural Biochemistry. Minor: Dairy Husbandry.
Thesis: Factors Affecting the Natural Materials Adsorbed on the Surface of the Fat Globules of Milk.
Major Adviser: Prof. L. S. Palmer.
1944. MERRITT, PAUL PROWERS. B.S. in Ch.E. '21, University of Kansas.
Major: Agricultural Biochemistry. Minor: Agronomy and Plant Genetics.
Thesis: A Study of the Physical Properties of Doughs as Measured with the Extensograph.
Major Adviser: Dean C. H. Bailey.

1944. OFELT, CHESTER WINFIELD. B.S. '32, University of Minnesota; M.S. '39, Kansas State College of Agriculture and Applied Science.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Influence of Oxidizing and Reducing Agents on the Baking Characteristics of Wheat Flour.
Major Adviser: Prof. W. F. Geddes.
1944. STANSLY, PHILIP. B.S. '33, Cornell University; M.S. '36, New York University.
Major: Agricultural Biochemistry. Minor: Physiological Chemistry.
Thesis: In Vitro Studies of Sulfonamides on Bacteria on the Genus Salmonella.
Major Adviser: Prof. M. H. Roepke.
1944. YOSHIDA, RUTH KOJIMA. B.A. '35, M.A. '36, University of Hawaii.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: A Chemical and Physiological Study on the Nature and Properties of the Toxic Principle in Leucaena glauca (Koa Haole).
Major Adviser: Prof. L. S. Palmer.
1945. CHEN, KENG-TAO. B.S. '34, National Tsing Hua University.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Studies on the Wheat Pigments.
Major Adviser: Prof. W. F. Geddes.
1945. FAN, HSING-YUN. B.S. '35, National Tsing Hua University.
Major: Agricultural Biochemistry. Minor: Entomology.
Thesis: The Use of Organic Arsenicals as Insecticides.
Major Adviser: Prof. W. M. Sandstrom.
1945. MILNER, MAX. B.S. '38, University of Saskatchewan; M.S. '41, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: The Respiration and Storage Behavior of Soybeans.
Major Adviser: Prof. W. F. Geddes.
1945. SPERBER, NATHAN. B.S. '40, The College of the City of New York.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies in the Synthesis of d-Ribose.
Major Adviser: Prof. W. M. Sandstrom.
1945. WARSHOWSKY, BENJAMIN. B.S. '40, The College of the City of New York; M.S. '42, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Analytical Chemistry.
Thesis: The Action of Molecular Oxygen on Glucose and Glucosamine in the Presence of Potassium Hydroxide.
Major Adviser: Prof. W. M. Sandstrom.

1946. CHIPAULT, JACQUES ROBERT. B.A. '35, Carleton College;
M.S. '40, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Identification and Determination of the Natural
Antioxidant of Hog Fat.
Major Advisers: Profs. W. M. Sandstrom and G. O. Burr.
1946. HANIG, MARTIN. B.A. '37, New York University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Hog Cholera Virus: Immunochemical Studies.
Major Adviser: Prof. D. R. Briggs.
1946. KIELLEY, WILLIAM WAYNE. B.S. '40, M.S. '42, University of
Minnesota.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: Some Biochemical Properties of the Muscle Protein, Myosin.
Major Adviser: Prof. D. R. Briggs.
1946. LILLEVIK, HANS A. B.A. '38, St. Olaf College; M.S. '40,
University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Technic of Catalytic Hydrogenation and Hydrogenolysis
Applied to Proteins and Related Model Compounds.
Major Adviser: Prof. W. M. Sandstrom.
1946. NOZNICK, PETER PAUL. B.S. '38, Connecticut State College.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Rheological, Creaming and Cake Making Properties of Mixtures
of Simple Synthetic Triglycerides as Evaluated by Micro
Techniques.
Major Adviser: Prof. W. F. Geddes.
1947. BRAKKE, MYRON KENDAL. B.S. with high distinction '43,
University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies in the Hydrogenation of Proteins with Raney Nickel.
Major Adviser: Prof. W. M. Sandstrom.
1947. LARSEN, ROBERT ARTHUR. B.S. with distinction '43,
M.S. '45, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Botany.
Thesis: The Effect of Heat Treatment on the Value of Nonfat Milk
Solids as a Supplement in Bread Baking.
Major Advisers: Profs. W. F. Geddes and Robert Jenness.

1948. BEHR, ELDON AUGUST. B.S. with high distinction '40, University of Minnesota.
Majors: Agricultural Biochemistry and Forestry. Minor: Plant Pathology.
Thesis: Studies on Passage of Liquids and Dissolved Materials through Wood under Pressure and Diffusion Gradients.
Major Advisers: Profs. D. R. Briggs and Henry Schmitz.
1948. SIMINOVITCH, DAVID. B.S. with honors '36, M.S. '37, Ph.D. '39, McGill University.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Seasonal Chemical Changes in the Living Bark of the Common Locust Tree in Relation to the Problem of Frost Hardiness.
Major Adviser: Prof. D. R. Briggs.
1948. SMITH, DONALD EDGAR. B.Chem. '39, M.S. '42, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Chemical Engineering.
Thesis: The Effect of Drying Conditions upon the Biochemical Properties of Corn.
Major Advisers: Profs. W. F. Geddes and E. L. Piret.
1949. BACHRACH, HOWARD LLOYD. B.A. cum laude '42, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Physico- and Immuno-Chemical Studies of the Hog Cholera Virus.
Major Adviser: Prof. D. R. Briggs.
1949. BIERI, JOHN GEMTHER. B.A. '43, Antioch College; M.S. '44, Pennsylvania State College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Factors Affecting the Utilization of Beta-carotene by the Rat.
Major Adviser: Prof. M. O. Schultze.
1949. BOTTOMLEY, ROBERT ALWYN. B.Sc. '34, M.Sc. '41, Melbourne University.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Relationship between Mold Growth and Deterioration in Stored Yellow Corn at Various Temperatures, Humidities and Oxygen Concentrations.
Major Adviser: Prof. W. F. Geddes.
1949. DEVIK, OLE GABRIEL. Ch.E. '46, University of Norway.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Effects of Low Temperatures upon the Stability and the Activity of Enzymes.
Major Adviser: Prof. W. M. Sandstrom.

1949. MANN, ROBERT LESLIE. B.S. '45, Indiana University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of the Proteins of Soybeans.
Major Adviser: Prof. D. R. Briggs.
1949. SCHWERT, MARGARET HOULTON. B.A. '40, Carleton College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Some Chemical Studies on Insulin.
Major Adviser: Prof. W. M. Sandstrom.
1950. BICE, CLAUDE WESLEY. B.S. '40, M.S. '43, Kansas State College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: A Study of Certain Biochemical Changes Occurring in Bread during Storage.
Major Adviser: Prof. W. F. Geddes.
1950. CRAIG, BERTON MACKAY. B.Sc.A. with great distinction '44, M.Sc. '46, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Relation between Glyceride Composition and Some Physical Properties of Synthetic Fats.
Major Adviser: Prof. W. F. Geddes.
1950. CUENDET, LOUIS SAMUEL. M.S. '46, Federal Technical Institute (Switzerland).
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Researches on a Fructosan and a Hemicellulose of Rye and a Galactomannan of the Carob Bean.
Major Adviser: Professor Fred Smith.
1950. EHRENTHAL, IRVING. B.A. '39, Yeshiva College; M.S. '40, University of Michigan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies on the Chemical Constitution of Xylan.
Major Adviser: Prof. Fred Smith.
1950. HEINICKE, RALPH MARTIN. B.S. '36, Cornell University.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: Studies on Phospholipides.
Major Adviser: Prof. D. R. Briggs.
1950. KLEINSCHMIDT, WALTER JOHN. B.S. '40, Indiana University; M.S. '49, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Biochemical Studies of Antigens and Antibodies and Their Interaction.
Major Adviser: Prof. P.D. Boyer.

1950. MALM, MILDRED. B.S. with distinction '39, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Home Economics.
Thesis: The Reaction of Periodic Acid and Sodium Metaperiodate with Chitin and Related Amino Sugars.
Major Adviser: Prof. W. M. Sandstrom.
1950. PROBST, GERALD WILLIAM. B.S. cum laude '43, College of St. Thomas; M.S. '49, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Some Studies on the Biosynthesis of Ascorbic Acid in the Rat.
Major Adviser: Prof. M. O. Schultze.
1950. RABINOVITZ, MARCO. B.S. '44, University of Pennsylvania.
Major: Agricultural Biochemistry. Minor: Physiological Chemistry.
Thesis: Studies on the Biological Function of Vitamin E.
Major Adviser: Prof. P. D. Boyer.
1950. RAFIQUE, CHOWDHRY MOHAMMAD. B.Sc. '33, M.Sc. '34, Punjab University.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Studies on the Constitution of the Polysaccharides of Guar Gum.
Major Adviser: Prof. Fred Smith.
1950. STENBERG, RUSSELL JULIUS. B.S. with distinction '43, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Analytical Chemistry.
Thesis: A Study of the Browning of Bread on Storage.
Major Adviser: Prof. W. F. Geddes.
1950. TOLLEFSON, CHARLES IVAR. B.S.A. '40, M.S. '47, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Studies with Lactose as a Dietary Component for the Rat.
Major Adviser: Prof. M. O. Schultze.
1950. TURNER, EARL WILBERT. B.S. '46, M.S. '47, Montana State College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Protein Interaction Studies. I. The Combination of Modified Serum Gamma Globulin with Other Proteins. II. Factors Effecting the Solubilization and Dissociation of Specific Diphtheria Toxoid-Antitoxin Precipitates.
Major Adviser: Prof. P. D. Boyer.
1951. BOGGS, LAWRENCE ALLEN. B.S. '38, M.S. '39, University of Hawaii.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of the Fructosan of the Tuber of Cordyline terminalis (Hawaiian "Ti" Plant).
Major Adviser: Prof. Fred Smith.

1951. COLVIN, JOHN ROSS. B.S.A. '46, University of Saskatchewan;
M.Sc. '48, University of Alberta.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: An Explanation of Some Electrophoretic Boundary Anomalies
and Its Relation to the General Problem of Protein-Anion Interaction.
Major Adviser: Prof. D. R. Briggs.
1951. EWART, MERVYN HENRY. B.S.A. '44, Ontario Agricultural College;
M.Sc. '46, McGill University.
Major: Agricultural Biochemistry. Minor: Botany.
Thesis: Studies on Development of Frost Resistance in Plant Tissues.
Investigation of Some Enzyme Systems in Living Bark Cells of the
Black Locust Tree.
Major Adviser: Prof. D. R. Briggs.
1951. LARSON, BRUCE LINDER. B.S. '48, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Studies on the Sulfhydryl Groups of Proteins with Particular
Reference to Their Effect on the Baking Action of Nonfat Dry Milk
Solids.
Major Advisers: Profs. W. F. Geddes and Robert Jenness.
1951. SMITH, ROBERT FRANKLIN. B.A. '39, Yale University.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Studies on Protein Interaction—A Method for Determining
the Constants of Interaction from Electrophoresis Data.
Major Adviser: Prof. D. R. Briggs.
1951. TAPPEL, ALOYS LOUIS. B.S. '48, Iowa State College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Kinetics and Mechanisms of the Lipoxidase Catalyzed
Oxidation of Linoleate.
Major Advisers: Profs. P. D. Boyer and W. O. Lundberg.
1951. VAN CLEVE, JOHN WOODBRIDGE. B.S. with distinction '37,
Antioch College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Correlation of the Structure of the Glycosides.
Major Adviser: Prof. Fred Smith.
1951. WARD, WILFRED HANLIN. B.A. '37, Oberlin College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Electrokinetics of Cellulose-Alcohol Systems:
The Effect of Salts.
Major Adviser: Prof. D. R. Briggs.
1952. ABDEL-AKHER, MAHMOUD A. O. B.S. '41, Fouad I University;
M.S. '47, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of Glycogen.
Major Adviser: Prof. Fred Smith.

1952. BLEIDNER, WILLIAM EGIDIUS. B.S. '43, M.S. '45, University of Rochester.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: The Construction and Calibration of a Light Scattering Photometer.
Major Adviser: Prof. D. R. Briggs.
1952. FATHY, ABDEL AZIZ. B.S. '40, Fouad I University; M.S. '48,
University of California.
Major: Agricultural Biochemistry. Minor: Entomology.
Thesis: The Chemistry and Toxicity of Fluoroketones.
Major Advisers: Profs. Fred Smith and L. K. Cutkomp.
1952. GILLES, KENNETH ALBERT. B.S. '44, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Studies on the Gums Derived from Barley Flour, Wheat Flour
and Fresh and Stale Bread.
Major Advisers: Profs. Fred Smith and W. F. Geddes.
1952. GORDON, ARTHUR LEONARD. B.S. with high distinction '48,
University of Minnesota.
Major: Agricultural Biochemistry. Minor: Botany.
Thesis: The Biochemical Behavior of Wheat Flour Doughs Supplemented
with Milk Solids.
Major Advisers: Profs. W. F. Geddes and Robert Jenness.
1952. HAMILTON, JOHN KELVIN. B.A. '45, M.A. '47, University of British
Columbia.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of Starch.
Major Adviser: Prof. Fred Smith.
1952. KACHMAR, JOHN FREDERICK. B.S. '36, University of Akron;
M.S. '47, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: A Study of the Mechanism of Potassium Activation of Pyruvic
Phosphoferase.
Major Adviser: Prof. P. D. Boyer.
1952. KOCH, ROBERT B. B.S. with distinction '48, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Botany.
Thesis: The Fate of the Sugars in Bread Doughs and Synthetic Nutrient
Solutions Undergoing Fermentation with Bakers' Yeast.
Major Advisers: Profs. W. F. Geddes and Fred Smith.
1952. LOEWUS, FRANK A. B.S. '42, M.S. '50, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies on the Physical and Chemical Properties of Starch.
The Retrogradation of Amylose in the Presence and Absence of
Gelatinizing Agents and Similar Compounds.
Major Adviser: Prof. D. R. Briggs.

1952. SEGAL, HAROLD L. B.S. '47, Carnegie Institute of Technology; M.S. '51, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: Kinetic Studies of Enzyme Reactions—I. Extension of Kinetic Analysis; II. Mechanism of Action of 3-Phosphoglyceraldehyde Dehydrogenase.
Major Adviser: Prof. P. D. Boyer.
1953. CHRISTIANSON, GEORGE. B.S. '39, South Dakota State College; M.S. '40, University of Tennessee; M.S. '52, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Dairy Husbandry.
Thesis: Studies of Some Physical and Chemical Changes in Milk in Frozen Storage.
Major Advisers: Profs. Robert Jenness and S. T. Coulter.
1953. CIFONELLI, JOSEPH ANTHONY. B.A. '43, M.A. '52, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of Invertase.
Major Adviser: Prof. Fred Smith.
1953. DIRKS, BRINTON MARIO. B.S. with high honors '48, M.S. '48, Kansas State College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Properties of Some Fungal Lipases and Their Role in Grain Deterioration.
Major Advisers: Profs. P. D. Boyer and W. F. Geddes.
1953. GEERDES, JAMES DEVINE. B.S. '49, M.S. '50, North Dakota Agricultural College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of Flax Straw Hemicellulose.
Major Adviser: Prof. Fred Smith.
1953. HAMMOND, EARL GULLETTE. B.S. with honors '48, M.A. '50, University of Texas.
Major: Agricultural Biochemistry. Minor: Physiology.
Thesis: The Chemistry and Metabolism of Highly Unsaturated Fatty Acids.
Major Adviser: Prof. W. O. Lundberg.
1953. LOEWUS, MARY WALZ. B.A. magna cum laude '45, M.S. '50, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: Interactions Between Enzymes and Competitive Inhibitors.
Major Adviser: Prof. D. R. Briggs.

1953. MISRA, KRISHNA PRASAD. B.Sc. '44, M.Sc. '47, Lucknow University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies on the Existence and Nature of Combined Ascorbic
Acid in Plant and Animal Materials.
Major Adviser: Prof. M. O. Schultze.
1953. PALLANSCH, MICHAEL JOSEPH. B.A. '48, St. John's University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies on the Interaction of Synthetic Detergents
with Proteins in Solution.
Major Adviser: Prof. D. R. Briggs.
1953. POLLOCK, JAMES MARSHALL. B.A. '44, Carleton College;
M.S. '49, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Biochemical Functions of Soy Flour in White Bread
Production.
Major Adviser: Prof. W. F. Geddes.
1953. REBERS, PAUL ARMAND. B.Ch.E. with distinction '44,
M.S. in Ch.E. '46, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of Iles Mannan: Part I—The Structure
of Iles Mannan; Part II—The Colorimetric Determination of Sugars.
Major Adviser: Prof. Fred Smith.
1953. ROBERTSON, HUGH ELBURN. B.A. '38, M.A. '43, University of
Saskatchewan.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Mechanisms of Enzymic Reactions of Phosphate as
Studied with Sodium Azide, 2,4-Dinitrophenol and Compounds
of Tervalent Phosphorus.
Major Adviser: Prof. P. D. Boyer.
1954. BLAKLEY, EDWIN RAYMOND. B.S.A. with distinction '49,
M.Sc. '50, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Synthesis of 6-Deoxy-6-Fluoro-D-Glucose and a Study
of Its Metabolic Effects.
Major Adviser: Prof. P. D. Boyer.
1954. BRINK, DAVID LIDDELL. B.S. with high distinction '39,
University of Minnesota.
Majors: Agricultural Biochemistry and Forestry. Minor: Organic
Chemistry.
Thesis: The Cooking Process XIII. The Effect of Aqueous Solutions
of Pure Sodium Hydrosulfide on the Constituents of Wood.
Major Advisers: Profs. R. L. Hossfeld and W. M. Sandstrom.

1954. CUNNINGHAM, DAVID KENNETH. B.A. '41, University of British Columbia.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Comparative Studies of the Chemical and Physical Properties of Some Cereal Proteins.
Major Adviser: Prof. W. F. Geddes.
1954. FALCONE, ALFONSO BENJAMIN. B.A. '44, M.D. '47, Temple University.
Major: Agricultural Biochemistry. Minor: Medicine.
Thesis: Study of the Mechanism of Enzyme Action by Use of Isotopes of Oxygen and Phosphorus.
Major Adviser: Prof. P. D. Boyer.
1954. HARRISON, WILLIAM HENRY, JR. B.A. cum laude '48, M.S. '52, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Physical Chemistry.
Thesis: Studies on the Mechanism of Enzymic Phosphate Transfer with O^{18} .
Major Adviser: Prof. P. D. Boyer.
1954. JOHNSON, JOHN ALEXANDER, JR. B.S. '40, North Dakota Agricultural College; M.S. '42, Kansas State College of Agriculture and Applied Science.
Major: Agricultural Biochemistry. Minor: Plant Physiology.
Thesis: Properties of Certain Protease Systems Used in Bread-making.
Major Advisers: Profs. W. F. Geddes and P. D. Boyer.
1954. SPRIESTERSBACH, DAVID RICHARD. B.S. '43, M.S. '52, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Constitution of Plant Gums.
Major Adviser: Prof. Fred Smith.
1954. WALDEN, CECIL CRAIG. B.A. '40, M.A. '41, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Purification of Wheat Alpha and Beta Amylases.
Major Adviser: Prof. W. F. Geddes.
1955. ANDERSON, CHARLES ALBERT, JR. B.S. with distinction '50, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Heat Denaturation of Beta-Lactoglobulin and Alpha-Lactalbumin.
Major Adviser: Prof. Robert Jenness.

1955. DUTTON, GUY GORDON STUEBY. B.A. '43, M.A. '47, University of Cambridge; M.Sc. '52, University of London.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of the Hemicelluloses of Western Hemlock (Tsuga heterophylla).
Major Adviser: Prof. Fred Smith.
1955. FULLER, ROBERT ARTHUR. B.A. with distinction '47, B.A. with high honours '49, M.A. '50, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Interspecies Complex Formation in Denatured Protein Mixtures.
Major Adviser: Prof. D. R. Briggs.
1955. GUY, EUGENE JAMES. B.S. with distinction '47, M.S. '53, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: The Amylases of Milk.
Major Adviser: Prof. Robert Jenness.
1955. HILL, ROBERT MATHEW. B.S. cum laude '44, St. Mary's College; M.S. '54, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Analytical Chemistry.
Thesis: Some Physical Properties of Beta-Lactoglobulin.
Major Adviser: Prof. D. R. Briggs.
1955. HOLME, JOHN. B.A. Hons. '50, M.A. '51, University of Saskatchewan.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Studies on the Physical Nature of Gliadin.
Major Adviser: Prof. D. R. Briggs.
1955. HUMMEL, BRIAN CHRISTOPHER WARREN. B.A. '48, M.A. '50, University of British Columbia.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: The Isolation and Partial Characterization of Flavocidin Acid, a Phytotoxic Metabolite of Aspergillus flavus.
Major Advisers: Profs. W. F. Geddes and L. S. Cuendet.
1955. KLOSTERMAN, HAROLD JOSEPH. B.S. '46, M.S. '49, North Dakota Agricultural College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Flaxseed Glucosides.
Major Adviser: Prof. Fred Smith.
1955. ROSE, JOSEPH EDWARD. B.S. cum laude '50, Boston College.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: A Study of Non-Specific Brucella Agglutinins in Bovine Serum.
Major Advisers: Profs. D. R. Briggs and M. H. Roepke.

1956. GARNER, EUGENE FRANCIS. B.S. in Ch.E. '50, University of Illinois.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Part I. An Investigation into the Oxidation of Glycosides with Periodic Acid. Part II. Paper Electrophoresis of Carbohydrates.
Major Adviser: Prof. Fred Smith.
1956. GOLDSTEIN, IRWIN JOSEPH. B.A. '51, Syracuse University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Methylation Studies on the Reduced Products of Periodate Oxidized Carbohydrates.
Major Adviser: Prof. Fred Smith.
1956. HUFFMAN, GEORGE WALLEN. B.S. '48, M.S. '50, North Dakota Agricultural College.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A New Procedure for Determining the Structure of Polysaccharides.
Major Adviser: Prof. Fred. Smith.
1956. LUCHSINGER, WAYNE WESLEY. B.S. with distinction '51, M.S. '55, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: A Study of Oxidative Phosphorylation Using Isotopes of Oxygen and Phosphorous.
Major Adviser: Prof. P. D. Boyer.
1956. PRENTICE, NEVILLE. B.Sc. (Hons.) '50, University of Manitoba; M.S. '55, University of Minnesota.
Major: Agricultural Biochemistry. Minor: Bacteriology.
Thesis: Studies on the Chemical Composition of Wheat Stem Rust Urediospores.
Major Advisers: Profs. Fred Smith and W. F. Geddes.
1956. SRIVASTAVE, HARISH CHANDRA. B.Sc. '45, M.Sc. '47, Lucknow University.
Major: Agricultural Biochemistry. Minor: Organic Chemistry.
Thesis: Structural Studies on Glucomannans.
Major Adviser: Prof. Fred Smith.

AGRONOMY

1940. CHEN, HONG-YU. B.S. '34, University of Nanking; M.S. '38, University of Minnesota.
Joint Major and Minor: Agronomy and Plant Genetics, and Agricultural Economics.
Thesis: Crop Rotation Studies and the Use of Crop Rotations in Soil Conservation Programs in Southeastern Minnesota.
Major Advisers: Profs. A. C. Army and G. A. Pond.

1941. CHANG, SIH-CHANG. B.S. '32, University of Nanking.
Major: Agronomy. Minor: Plant Physiology.
Thesis: Morphological and Physiological Causes for Varietal Differences in Shattering and After-Harvest Sprouting in Cereal Crops.
Major Adviser: Prof. H. K. Wilson.
1941. STAHLER, LEONARD M. B.S. '35, University of Minnesota.
Majors: Agronomy and Plant Physiology. Minor: Botany.
Thesis: Some Ecological Aspects of Competition Between Crop Plants and Field Bindweed (Convolvulus arvensis).
Major Advisers: Profs. R. B. Harvey and H. K. Wilson.
1941. STITT, RHEA EMERSON. B.S. '27, South Dakota State College; M.S. '30, Massachusetts State College.
Major: Agronomy and Plant Genetics. Minor: Botany.
Thesis: Inheritance Studies of the Tannin Content of Perennial Lespedeza.
Major Advisers: Profs. H. K. Hayes and H. K. Wilson.
1942. NELSON, RUSSELL THEODORE. B.S. '39, University of Minnesota.
Major: Agronomy and Applied Plant Physiology. Minor: Soil Bacteriology.
Thesis: Studies of Micro-organisms and Chlorate Persistence in Soils Treated With Sodium Chlorate.
Major Advisers: Profs. Harold K. Wilson and Raymond H. Landon.
1943. SCHMID, ALOIS RUDOLPH. B.S. '38, M.S. '40, University of Minnesota.
Major: Agronomy. Minor: Plant Genetics.
Thesis: Chlorophyll and Carotinoid Concentrations in Alfalfa at Different Stages of Development, and Pasture Grasses and Alfalfa Grown on Five Soil Types.
Major Adviser: Prof. A. C. Army.
1945. BROWN, WILLIAM JOSEPH NICHOLAS. B.S. '35, M.S. '42, University of Minnesota.
Majors: Agronomy and Plant Physiology. Minor: Botany.
Thesis: Leaching and Decomposition of Sodium Chlorate in Some Minnesota Soil Types.
Major Advisers: Profs. R. B. Harvey and H. K. Wilson.
1945. HENDERSON, MERLIN THEODORE. B.S. with highest distinction '39, Southwestern Louisiana Institute; M.S. '41, Louisiana State University.
Major: Agronomy and Plant Genetics. Minor: Plant Pathology.
Thesis: Studies of Sources of Resistance and Inheritance of Reaction to Leaf Rust, Puccinia anomala Rostr., in Barley.
Major Adviser: Prof. F. R. Immer.

1948. CARLSON, ARNE EMANUEL. B.S. '38, M.S. '40, University of Minnesota.
Majors: Agronomy and Plant Physiology. Minor: Botany.
Thesis: A Study of the Root Reserves of Field Bindweed (Convolvulus arvensis) at Various Soil Levels on Fallowed and Undisturbed Land.
Major Advisers: Profs. R. S. Dunham and R. H. Landon.
1948. RIEDL, WILLIAM ALFRED. B.S. '29, M.S. '36, University of Wyoming.
Major: Agronomy and Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Tuber-set in Solanum tuberosum L.
Major Advisers: Profs. F. A. Krantz and H. K. Hayes.
1948. ROBINSON, ROBERT GEORGE. B.S. '41, Iowa State College; M.S. '46, University of Minnesota.
Majors: Agronomy and Soils. Minor: Botany.
Thesis: Annual Weeds, Their Seed Population in the Soil, Their Effects on Small Grain and Flax, and Some Ecological Methods of Control.
Major Advisers: Profs. C. O. Rost and R. S. Dunham.
1948. TANDON, ROOP KISHORE. B.Sc. '31, Cawnpore Government Agricultural College; M.Sc. '33, Benares Hindu University; Associate I.A.R.I. '36, Imperial Agricultural Research Institute.
Major: Agronomy. Minor: Soils.
Thesis: Relative Susceptibility of Flax Varieties to Rates and Formulations of 2,4-Dichlorophenoxyacetic Acid.
Major Adviser: Prof. R. S. Dunham.
1949. ARAKERI, HANUMAPPA RAMAPPA. B.S. '40, University of Bombay; M.S. '48, University of Minnesota.
Major: Agronomy. Minor: Soils.
Thesis: The Relation of Some Environmental Factors to the Pre-emergence Treatment of Corn with 2,4-Dichlorophenoxyacetic Acid and Soybeans with Ammonium Trichloroacetate.
Major Adviser: Prof. R. S. Dunham.
1950. EVERSON, LEROY EVERETT. B.S. with distinction '39, M.S. '48, University of Minnesota.
Major: Agronomy. Minor: Botany.
Thesis: The Effect of 2,4-Dichlorophenoxyacetic Acid on Certain Weed and Crop Seeds.
Major Adviser: Prof. R. S. Dunham.
1950. SHARMA, JAGDISH NARAIN. B.Sc. (Ag.) '37, Kanpur Agricultural College; M.Sc. '39, Agra College.
Major: Agronomy. Minor: Soils.
Thesis: The Response of Flax to Applications of 2,4-Dichlorophenoxyacetic Acid Made at Various Stages of Development.
Major Adviser: Prof. R. S. Dunham.

1952. PATHAK, CHANDRAVADAN HIRALAL. B.Sc. '46, B.Sc. '47, M.Sc. '49, University of Bombay.
 Majors: Agronomy and Soils. Minor: Plant Genetics.
 Thesis: Effect of Pre-emergence Treatment with 2,4-D on Weeds in Corn and on Various Soil Properties.
 Major Advisers: Profs. R. S. Dunham and C. O. Rost.
1953. WIESE, ALLEN FRANKLIN. B.S. with high distinction '49, M.S. '51, University of Minnesota.
 Major: Agronomy. Minor: Soils.
 Thesis: The Phytotoxicity of Isopropyl N-Phenyl Carbamate and Related Compounds on Wild Oats (*Avena fatua*) and Their Selective Action on Several Crop Plants.
 Major Adviser: Prof. R. S. Dunham.
1953. YAWALKAR, KESHAO SHRAWAN. B.Sc. '47, Nagpur University.
 Major: Agronomy. Minor: Soils.
 Thesis: Performance of Birdsfoot Trefoil Alone and in Competition with Other Species in Pastures.
 Major Adviser: Prof. A. R. Schmid.
1954. RACHIE, KENNETH OWEN. B.S. '49, M.S. '52, University of Minnesota.
 Major: Agronomy. Minor: Soils.
 Thesis: Winter Hardiness of Birdsfoot Trefoil Strains and Varieties.
 Major Adviser: Prof. A. R. Schmid.
1956. ANDERSON, LAUREL ETHAN. B.S. with distinction '47, M.S. '53, University of Minnesota.
 Major: Agronomy. Minor: Botany.
 Thesis: The Effects of Aqueous Solutions of MCP Applied to the Shoot Apex of Redwood Flax.
 Major Adviser: Prof. R. S. Dunham.

ANIMAL HUSBANDRY

1938. COMSTOCK, RALPH ERNEST. B.S. '34, M.S. '36, University of Minnesota.
 Major: Animal Husbandry. Minor: Agricultural Biochemistry.
 Thesis: A Study of the Sperm Cell.
 Major Adviser: Prof. L. M. Winters.
1939. GREEN, WILLARD WYNN. B.S. with distinction '33, M.S. '34, University of Minnesota.
 Major: Animal Husbandry. Minor: Agricultural Biochemistry.
 Thesis: A Study of the Sperm Cell.
 Major Adviser: Prof. L. M. Winters.

1941. ENSMINGER, MARION EUGENE. B.S. '31, M.A. '32, University of Missouri.
Major: Animal Husbandry. Minor: Agricultural Biochemistry.
Thesis: Wool Character Studies of Different Body Areas.
Major Adviser: Prof. E. F. Ferrin.
1943. NORDSKOG, ARNE WILLIAM. B.S. with distinction '37, M.S. '40, University of Minnesota.
Major: Animal Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of Factors Affecting Selection for Rate of Growth in Swine.
Major Adviser: Prof. L. M. Winters.
1944. STEWART, HAMILTON ARLO. B.S. '26, M.S. '38, Kansas State Agricultural College.
Major: Animal Husbandry. Minor: Agricultural Education.
Thesis: A Study of Factors Affecting Selection for Fertility in Swine.
Major Adviser: Prof. L. M. Winters.
1946. SHOFFNER, ROBERT NURMAN. B.S. '40, Kansas State College; M.S. '42, University of Minnesota.
Major: Animal Husbandry. Minor: Biostatistics.
Thesis: A Study of Inbreeding in the Fowl.
Major Advisers: Profs. H. J. Sloan and L. M. Winters.
1948. BRUGMAN, HARRY HERMAN. B.S. '44, University of Manitoba; M.S. '47, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Analysis of the Breeding Methods Employed in the Development of the Minnesota Number 1 Inbred Line of Swine at the Minnesota-North Carolina Experiment Station.
Major Adviser: Prof. L. M. Winters.
1948. CUMMINGS, JOHN NELSON. B.S. '38, M.S. '39, Montana State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Factors Related to Carcass Yields in Swine.
Major Adviser: Prof. L. M. Winters.
1948. SIERK, CARL FREDERICK. B.S. '39, University of Idaho; M.S. '41, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Heterosis in Swine.
Major Adviser: Prof. L. M. Winters.

1948. STRINGAM, ELWOOD WILLIAMS. B.Sc. '40, M.Sc. '42, University of Alberta.
Major: Animal Husbandry. Minor: Agricultural Economics.
Thesis: An Analysis of the Breeding Methods Employed in the Development of the Poland China Herd of Swine at the Minnesota West Central Experiment Station.
Major Advisers: Profs. L. M. Winters and W. H. Peters.
1949. MATSUSHIMA, JOHNNY K. B.S. '43, M.S. '45, Colorado State College.
Major: Animal Husbandry. Minor: Agricultural Biochemistry.
Thesis: Variations in Fattening Performance of Typical Beef, Dairy, and Dual-purpose Steers.
Major Advisers: Profs. L. M. Winters and W. H. Peters.
1949. ROUBICEK, CARL BEN. B.S. Ag. '41, University of Nebraska; M.S. '48, Kansas State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Analysis of the Breeding Methods Employed in the Development of the Minnesota No. 2 Herd of Swine at the Minnesota Northwest Experiment Station.
Major Adviser: Prof. L. M. Winters.
1950. ANDERSON, RAYMOND MILFORD. B.S. '41, M.S. '42, University of Minnesota.
Major: Animal Husbandry. Minor: Agricultural Biochemistry.
Thesis: Mild Hyperthyroidism and Mild Hypothyroidism in Growing Swine.
Major Adviser: Prof. E. F. Ferrin.
1950. DESAI, RAMACHANDRA NARAYAN. G.B.V.C. '36, Bombay Veterinary College; A.I.D.R.I. '42, Indian Dairy Research Institute; M.S. '48, Michigan State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Estimation of Heritability of Fertility in Sheep.
Major Adviser: Prof. L. M. Winters.
1950. EL-ISSAWI, HUSSEIN FAHMY. B.S. '44, University of Cairo; M.S. '48, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Genealogy Study of Three Inbred Lines of Shropshire Sheep.
Major Adviser: Prof. L. M. Winters.
1951. AUNAN, WOODROW JOHN. B.S. '42, M.S. '47, University of Minnesota.
Major: Animal Husbandry. Minors: Zoology and Statistics.
Thesis: A Method for Measuring the Proportion of Fat and Lean Tissue in Swine Carcasses.
Major Adviser: Prof. L. M. Winters.

1951. DAMON, RICHARD ALAN, JR. B.S. '47, Massachusetts State College; M.S. '49, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Selection for Factors of Performance in the Swine Herds of the Hormel Foundation.
Major Adviser: Prof. L. M. Winters.
1951. FINE, NEIL CASEY. B.S. '35, Texas Technological College; M.S. '39, Iowa State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Selection for Factors of Performance in the Minnesota No. 1 and No. 2 Inbred Lines of Swine.
Major Adviser: Prof. L. M. Winters.
1951. LU, KUO-HWA. B.S. '45, National Central University; M.S. '48, University of Minnesota.
Major: Animal Husbandry. Minor: Agricultural Economics.
Thesis: A Study of Size of Sample in Litter Testing Swine.
Major Adviser: Prof. L. M. Winters.
1952. ALI, KHALID TAHMIN. B.S. '46, Fouad I University. M.S. '48, University of California.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: The Heritability of, and the Effects of Some Environmental Factors on the Birth Weight, the Weaning Weight, and the Grease Fleece Weight of Sheep.
Major Adviser: Prof. L. M. Winters.
1952. COWAN, WILLIAM ALLEN. B.S. '42, Massachusetts State College; M.S. '48, University of Minnesota.
Major: Animal Husbandry. Minor: Dairy Husbandry.
Thesis: Studies of the Effects of Pregnant Mare Serum on the Breeding Phenomena of the Ewe.
Major Adviser: Prof. L. M. Winters.
1952. ENGLAND, DAVID CHARLES. B.S. with distinction '49, State College of Washington; M.S. '50, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: Crossbreeding in Swine.
Major Adviser: Prof. L.M. Winters.
1952. HOWELL, WILLIAM EDWIN. B.S.A. '49, Ontario Agricultural College; M.S. '50, University of Minnesota.
Major: Animal Husbandry. Minors: Zoology and Plant Genetics.
Thesis: A Study of the Effect of Swine Influenza Virus Infection of the Dam on Prenatal and Early Postnatal Survival of the Offspring.
Major Advisers: Profs. L. M. Winters and G. A. Young.

1952. REMPEL, WILLIAM EWERT. B.S. '44, M.Sc. '46, University of Manitoba.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Selection for Factors of Performance in Inbred Lines of Poland China Swine.
Major Adviser: Prof. L. M. Winters.
1952. STRATTON, PAUL OSWALD. B.S. '47, M.S. '50, University of Wyoming.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: The Comparative Effectiveness of Selection in Swine Before and After Testing Their Progeny.
Major Adviser: Prof. L. M. Winters.
1952. TEAGUE, HOWARD STANLEY. B.S. '48, M.S. '49, University of Nebraska.
Major: Animal Husbandry. Minor: Veterinary Medicine.
Thesis: The Effect of Vitamin A and Other Nutritional Factors upon the Breeding Performance of Gilts and the Prenatal Development of Their Litters.
Major Advisers: Profs. L. M. Winters and L. E. Carpenter.
1953. CURTIS, STANLEY LAWRENCE. B.S.A. '45, University of Toronto; M.S. '51, University of Massachusetts.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: The Comparative Value of Selecting Swine Before and After Progeny Testing.
Major Adviser: Prof. J. N. Cummings.
1953. FAUSCH, HOMER DAVID. B.S. with high distinction '47, M.S. '50, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of the Relationship Between Inbreeding and Variability in the Minnesota No. 1 and No. 2 Swine.
Major Adviser: Prof. L. M. Winters.
1953. HOLT, LEROY HENRY. B.S. '42, Iowa State College; M.S. '48, South Dakota State College of Agriculture and Mechanic Arts.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Appraisal of Cross-breeding in Farm Animals.
Major Adviser: Prof. L. M. Winters.
1953. KRISTJANSSON, FREDERICK KARL. B.S.A. '47, University of Manitoba; M.S. '48, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of Corrections for Factors Influencing Feed Requirements of Swine in the Minnesota Swine Breeding Project.
Major Adviser: Prof. L. M. Winters.

1953. SINGH, SAHAJA NAND. G.B.V.C. '46, Behar Veterinary College; M.S. '50, Michigan State College.
Major: Animal Husbandry. Minors: Zoology and Statistics.
Thesis: The Estimates of Repeatability and Heritability of Milk, Total Butterfat and Percentage of Butterfat and Their Inter-relationships in Indian Dairy Cattle.
Major Adviser: Prof. L. M. Winters.
1953. WOODWARD, RAY ROBERTS. B.S. '39, M.S. '47, Montana State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Analysis of the Relationships Between Pre-Slaughter and Post-Slaughter Evaluations of Beef Cattle.
Major Adviser: Prof. L. M. Winters.
1954. CRANE, FRANK MELVIN. B.S. '48, M.S. '49, University of Minnesota.
Major: Animal Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Effects of Different Planes of Nutrition Upon the Rate and Efficiency of Gains and the Yield and Quality of the Carcasses of Swine.
Major Adviser: Prof. E. F. Ferrin.
1954. RUSSO, JOSEPH MATHEW. B.S. '47, University of Minnesota.
Major: Animal Husbandry. Minor: Veterinary Science.
Thesis: Effects of Aureomycin and Arsanilic Acid on Nitrogen Balance in Pigs.
Major Adviser: Prof. L. E. Hanson.
1955. BERG, ROY TORGNY. B.Sc. '50, University of Alberta; M.S. '54, University of Minnesota.
Major: Animal Husbandry. Minor: Dairy Husbandry.
Thesis: Sire Selection With and Without Progeny Performance Records.
Major Adviser: Prof. L. M. Winters.
1955. *CATHCART, RALPH BOYD. B.S. '33, Kansas State College of Agriculture and Applied Science. M.S. '34, University of Nebraska.
Major: Animal Husbandry. Minor: Agricultural Economics.
Thesis: Digestibility and Nutritive Value of Alfalfa Silage for Young Beef Cattle.
Major Adviser: Prof. E. F. Ferrin.

*Degree awarded post obitum.

1955. HUGH, WILLIAMS INGLIS. B.S.A. '49, University of British Columbia; M.S. '51, University of Minnesota.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: A Study of the Relationship Between Intensity of Inbreeding and Amount of Variation in Economic Traits in Inbred Lines of Poland China Swine.
Major Adviser: Prof. L. M. Winters.
1955. WINGERT, FRANCIS CHARLES. B.S. '47, University of Minnesota.
Major: Animal Husbandry. Minor: Veterinary Science.
Thesis: The Effects of Chlortetracycline (Aureomycin) Feeding on Swine Carcass Quality; and a Method of Determining the Composition of Swine Carcasses.
Major Adviser: Prof. E. F. Ferrin.

DAIRY HUSBANDRY

1939. ELY, FORDYCE. B.S. '19, University of Minnesota; M.S. '21, Iowa State College.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Factors Involved in the Ejection of Milk.
Major Adviser: Prof. W. E. Petersen.
1939. GILMORE, LESTER ODELL. B.S. '32, University of Minnesota; M.S. '33, Kansas State College.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Some Morphological and Functional Relationships of the Bovine Hypophysis.
Major Adviser: Prof. W. E. Petersen.
1940. GIBSON, DOUGLAS LORNE. B.S. '35, University of Manitoba; M.S. '37, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Further Studies on Oospora lactis.
Major Adviser: Prof. Harold Macy.
1940. THIBODEAU, RICHARD. B.S.A. '34, University of Montreal; M.S. '39, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of the Enzymes of Penicillium roqueforti.
Major Adviser: Prof. Harold Macy.
1941. KNOTT, JOSEPH CARLTON. B.S.A. '20, M.S.A. '30, State College of Washington.
Major: Dairy Husbandry. Minor: Agricultural Economics.
Thesis: Growth, Reproduction, Production and the Economy of Growth and Production by Dairy Cattle Fed Rations of Roughage Alone and Roughage with Added Concentrates.
Major Adviser: Prof. J. B. Fitch.

1942. LUDWICK, THOMAS MURRELL. B.S. '36, Eastern Kentucky State Teachers College; M.S. in Ag. '39, University of Kentucky.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: Inheritance of Persistency in Lactation in Dairy Cattle.
Major Adviser: Prof. William Petersen.
1942. SPIELMAN, ARLESS ASMAN. B.S. '37, University of Minnesota; M.S. '39, Oregon State College.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: A Study of the Effects of Thyroidectomy on the Bovine.
Major Adviser: Prof. William Petersen.
1944. KNOTT, CLOY BERNARD. B.S. '40, University of Minnesota; M.S. '42, University of Connecticut.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Mammary Gland Carbohydrate Metabolism in Vitro.
Major Adviser: Prof. W. A. Petersen.
1944. ROBERTS, WILLIAM MILNER. B.S. '37, University of Tennessee; M.S. '38, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Some Factors Influencing the Spontaneous Development of Oxidized Flavor in Milk.
Major Advisers: Profs. W. B. Combs and L. S. Palmer.
1944. SMITH, VEARL ROBERT. B.S. '39, University of Idaho; M.S. '41, Oregon State College.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Physical and Physiological Factors Affecting the Rate of Milking.
Major Adviser: Prof. W. E. Petersen.
1945. FOUNTAINE, FORREST CHARLES. B.S. '36, University of Wisconsin; M.S. '39, University of Minnesota.
Major: Dairy Husbandry. Minors: Biochemistry and Physiology.
Thesis: A Study of the Effects of Feeding Various Fats and Oils to Dairy Calves.
Major Adviser: Prof. T. W. Gullickson.
1945. MARSHALL, SIDNEY PAUL. B.S. with honors '38, University of Florida; M.S. '39, Oklahoma Agricultural and Mechanical College.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Investigation of the Chemical Composition, Biological Value, and Feeding Value of Shark Meal.
Major Adviser: Prof. T. W. Gullickson.

1946. SLATTER, WALTER LECLARE. B.S. '35, Ohio State University; M.S. '36, Iowa State College.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Heat Resistance of Lactobacilli Found in American Cheddar Cheese.
Major Advisers: Prof. W. B. Combs and H. O. Halvorson.
1947. CROWE, LAWRENCE KENNETH. B.S. '22, State Agricultural College of Colorado; M.S. '25, University of Nebraska.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Some Changes Occurring in Dry Whole Milk during Storage.
Major Adviser: Prof. S. T. Coulter.
1948. KUNKEL, REINOLD, WALTER. B.S. '41, North Dakota Agricultural College. M.S. '43, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of Various Manufacturing Processes as They Affect the Quality of Dry Ice-Cream Mix.
Major Advisers: Profs. S. T. Coulter and W. B. Combs.
1949. DRACY, ARTHUR EVERETT. B.S. '43, M.S. '46, University of Minnesota.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Isolation of Ova from the Living Bovine.
Major Adviser: Prof. W. E. Petersen.
1949. FOURNELLE, HAROLD JOHN. B.A. '38, M.S. '41, University of Minnesota.
Major: Dairy Husbandry. Minor: Public Health.
Thesis: A Comparative Study of Presumptive Media for the Coliform Group.
Major Adviser: Prof. Harold Macy.
1949. ROUGEOU, CLYDE LEE. B.S. '36, Southwestern Louisiana Institute; M.S. '37, Texas Agricultural and Mechanical College.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Milk Fat Formation in the Bovine Mammary Gland.
Major Adviser: Prof. W. E. Petersen.
1950. GONI, SHIVARAJ KUBERAPPA. B.S. '40, University of Bombay; M.S. '49, University of Minnesota.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: A Genealogical Study of the Holstein-Friesian Herd of Cattle at the Minnesota Central Agricultural Experiment Station.
Major Advisers: Profs. T. W. Gullickson and M. C. Hervey.

1950. HARLAND, HERBERT ARTHUR. B.S. '38, M.S. '41, The State College of Washington.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Inter-relationships of Processing Treatments and Oxidation-Reduction Systems as Factors Affecting the Keeping Quality of Dry Whole Milk.
Major Adviser: Prof. S. T. Coulter.
1950. NICKERSON, THOMAS ANDREW. B.S. '43, University of California; M.S. '48, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Spray-Dried Versus Freeze-Dried Milk.
Major Adviser: Prof. S. T. Coulter.
1950. THOMAS, ELMER LAWRENCE. B.S. '41, Ohio State University; M.S. '43, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Relation of Certain Factors to the Volume Shrinkage of Ice Cream during Storage.
Major Adviser: Prof. W. B. Combs.
1951. GRAF, GOTTFRIED CHRISTIAN. B.S. '34, Michigan State College; M.S. '40, University of Minnesota.
Major: Dairy Husbandry. Minors: Physiology and Physiological Chemistry.
Thesis: The Effect of Stress Conditions on the Cardio-Respiratory Processes and the Blood Composition of Dairy Cattle.
Major Adviser: Prof. W. E. Petersen.
1951. PORTER, ROBERT MILO. B.S. '43, Oregon State College; M.S. '48, University of Minnesota.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: The Role of Plasma Cells in the Production of Globulins within the Mammary Gland and Time Studies on Antibody Response from Experimentally Induced Inflammation of the Udder.
Major Adviser: Prof. W. E. Petersen.
1951. WAGENAAR, RAPHAEL OMER. B.S. with highest honors '42, M.S. '47, Washington State College.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Studies on Certain Factors Influencing the Growth and Survival of Pseudomonas Putrefaciens.
Major Adviser: Prof. J. J. Jezeski.
1952. DONKER, JOHN DICK. B.S. '48, University of California.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Problems Associated with Superovulation and Transplantation of Fertilized Ova in the Bovine.
Major Adviser: Prof. W. E. Petersen.

1952. HILL, DONALD LOUIS. B.S. '43, State College of Washington.
Major: Dairy Husbandry. Minor: Physiological Chemistry.
Thesis: A Study of the Progesterone Hormone in the Bovine.
I. The Effect on the Mammary Gland and Lactation. II.
The Presence and Estimation of a Progesterone Substance
Circulating in the Blood.
Major Adviser: Prof. W. E. Petersen.
1952. MIX, LEWELLYN STANLEY. B.S. '46, Cornell University.
Major: Dairy Husbandry. Minors: Physiology and Physiological
Chemistry.
Thesis: A Survey of the Utilization of C¹⁴ Carboxyl Labeled
Acetate by the Perfused Bovine Mammary Gland.
Major Adviser: Prof. W. E. Petersen.
1952. MORRIS, HOWARD ARTHUR. B.S. '41, Utah State Agricultural
College; M.S. '49, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Some Characteristics of the Lipase System of Penicillium
roqueforti.
Major Adviser: Prof. J. J. Jezeski.
1952. NELSON, HARVARD GLEN. B.S. '41, Utah State Agricultural
College; M.S. '43, Ohio State University.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of the Lipolytic Enzymes of Raw Skim Milk and
Separator Slime.
Major Adviser: Prof. J. J. Jezeski.
1952. OLSON, HOWARD HALFDAN. B.S. '48, University of Wisconsin;
M.S. '50, University of Minnesota.
Major: Dairy Husbandry. Minor: Physiology.
Thesis: Uniformity Trials and Effects of Varying Planes of
Nutrition on Performance of Monozygotic Bulls.
Major Adviser: Prof. W. E. Petersen.
1952. SIMMONS, WOODROW WILSON. B.S. '39, M.S. '48, Louisiana
State University.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: A Genealogical Analysis of the Holstein-Friesian Dairy
Herd at Louisiana State University.
Major Adviser: Prof. M. C. Hervey.
1952. ULLAH, SANA. B.Sc. '42, M.Sc. '49, University of Punjab;
M.S. '51, University of Minnesota.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: Factors Affecting Persistency of Milk Production in
Dairy Cattle.
Major Adviser: Prof. M. C. Hervey.

1953. RIVERA-BRENES, LUIS. B.S. '40, University of Puerto Rico;
M.S. '46, University of Minnesota.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: Economic Aspects of Roughage Production and Conservation in Puerto Rico.
Major Adviser: Prof. T. W. Gullickson.
1953. TOWNLEY, VERNE HOWARD. B.S. '48, Iowa State College;
M.S. '50, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Use of a Venturi Atomizer in Spray Drier Design.
Major Adviser: Prof. S. T. Coulter.
1954. LIVINGSTON, HUGH GIBSON. B.Sc. '50, University of Aberdeen;
M.S. '52, University of Minnesota.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: Pasture Investigations with Special Reference to the Feeding Behavior of the Dairy Cow.
Major Adviser: Prof. W. E. Petersen.
1954. RUDNICK, ARTHUR WILLIAM, JR. B.S. '39, M.S. '40, Iowa State College.
Major: Dairy Husbandry. Minor: Agricultural Economics.
Thesis: Effect of Heat During Processing of Nonfat Dry Milk Solids Used for Cottage Cheese Manufacture.
Major Adviser: Prof. S. T. Coulter.
1954. THOELE, HOWARD WILLIAM. B.S. with distinction '48,
M.S. '49, University of Minnesota.
Major: Dairy Husbandry. Minor: Veterinary Medicine.
Thesis: Factors Influencing the Characteristics of the Milking Curve of the Bovine.
Major Adviser: Prof. W. E. Petersen.
1954. THOMAS, ALAN. B.S. '49, Pennsylvania State College;
M.S. '50, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of the Mechanism of Sulfhydryl Action in Milk.
Major Advisers: Profs. S. T. Coulter and Robert Jenness.
1955. ADAMS, RICHARD SANFORD. B.S. with highest distinction '50, University of Maine.
Major: Dairy Husbandry. Minor: Veterinary Science.
Thesis: Some Physiological Effects of Feeding Various Filled Milks to Dairy Calves.
Major Adviser: Prof. T. W. Gullickson.

1955. BALDWIN, VERNON LEROY. B.S. '38, M.S. '49, University of Minnesota.
Major: Dairy Husbandry. Minor: Animal Husbandry.
Thesis: Mammary Gland Measurements in Calves and Their Prediction Value.
Major Advisers: Profs. W. E. Petersen and N. B. Bayley.
1955. BRUNDAGE, ARTHUR LAIN. B.S. with distinction '50, Cornell University; M.S. '52, University of Minnesota.
Major: Dairy Husbandry. Minor: Veterinary Science.
Thesis: The Utilization of Smooth Bromegrass (*Bromus inermis*) Under Rotational and Strip Grazing Systems of Pasture Management.
Major Adviser: Prof. W. E. Petersen.
1955. DZIUK, PHILIP JOHN. B.S. with distinction '50, M.S. '52, University of Minnesota.
Major: Dairy Husbandry. Minor: Veterinary Science.
Thesis: Morphological Changes in the Bovine Endometrium During Normal Cycles and Following Attempts at Synchronization of the Estrous Cycles with Progesterone.
Major Adviser: Prof. W. E. Petersen.
1955. GRAHAM, EDMUND FAY. B.S. '51, Utah State Agricultural College; M.S. '52, South Dakota State College of Agriculture and Mechanic Arts.
Major: Dairy Husbandry. Minor: Veterinary Science.
Thesis: The Effect of Different Planes of Nutrition and Frequencies of Collection on Bovine Semen Production.
Major Adviser: Prof. W. E. Petersen.
1955. HARTLEY, CLELL BERNARD. B.S. '49, M.S. '51, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of the Cultural and Physiological Characteristics of an Organism Isolated from the Intestinal Tract of a Calf.
Major Adviser: Prof. J. J. Jezeski.
1955. KOSHI, JAMES H. B.S. with high distinction '48, Colorado A. & M. College.
Major: Dairy Husbandry. Minor: Veterinary Science.
Thesis: Complementary Milk and Its Relationship to Lactation.
Major Adviser: Prof. W. E. Petersen.
1955. KURAMOTO, SIMPEY. B.A. '50, M.S. '52, University of Minnesota.
Major: Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: The Application of the Tiselius-Claesson Interferometric Adsorption Analysis Apparatus to *P. Roqueforti* Lipase Studies on Butterfat.
Major Adviser: Prof. J. J. Jezeski.

1941. DETERS, MERRILL EDGAR. B.S. '28, M.S. '31, University of Minnesota.
Major: Forestry (Silviculture) and Botany (Ecology).
Minor: Plant Physiology.
Thesis: Silvicultural Aspects of Woodland Management in South-eastern Minnesota.
Major Adviser: Prof. E. G. Cheyney.
1942. BENSEND, DWIGHT WINFRED. B.S. with distinction '37, University of Minnesota.
Major: Forestry. Minor: Statistics.
Thesis: The Effect of Nitrogen on the Growth and Drought Resistance of Jack Pine Seedlings Grown in Seed Cultures and in Nursery Soil.
Major Adviser: Prof. E. G. Cheyney.
1942. KUKACHKA, BOHUMIL FRANCIS. B.S. '37, University of Minnesota.
Major: Forestry. Minor: Botany.
Thesis: The Systematic Anatomy of the Woods of the Tiliaceae.
Major Adviser: Prof. L. W. Rees.
1943. KAUFMAN, CLEMENS M. B.A. '36, Bethel College. M.S. '38, University of Minnesota.
Major: Forestry. Minor: Botany.
Thesis: Root Growth of Jack Pine (*Pinus banksiana* Lamb.) on Several Sites in the Cloquet Forest.
Major Adviser: Prof. E. G. Cheyney.
1946. CHEO, KWOH-HWA. B.S.F. '27, University of Nanking. M.S. '37, University of Minnesota.
Major: Forestry. Minor: Soils.
Thesis: Ecological Changes due to Thinning Red Pine.
Major Adviser: Prof. E. G. Cheyney.
1946. HANSEN, HENRY LEO. B.S. '35, University of Minnesota.
Major: Forestry. Minor: Botany.
Thesis: An Analysis of Jack Pine Sites in Minnesota with Special Reference to Site Index, Plant Indicators, and Certain Soil Features.
Major Adviser: Prof. E. G. Cheyney.
1948. NAYER, AMAR NATH. B.S. with honors '36, M.S. '37, University of Punjab.
Major: Forestry (Wood Tech.) Minor: Agricultural Biochemistry.
Thesis: Swelling of Wood in Various Organic Liquids.
Major Adviser: Prof. F. H. Kaufert.
1951. DUNCAN, DONALD PENDLETON. B.S.F. '37, M.S. '39, University of Michigan.
Major: Forestry. Minor: Botany.
Thesis: A Study of Some of the Factors Affecting the Natural Regeneration of Tamarack [*Larix laricina* (Du Roi) K. Koch] in Minnesota.
Major Adviser: Prof. H. L. Hansen.

1951. HSIUNG, WILLIAM WEN-YUE. B.A. '40, National Szechwan University; M.F. '47, Yale University.
Major: Forestry. Minor: Botany.
Thesis: An Ecological Study of Beaked Hazel (Corylus cornuta Marsh.) in the Cloquet Experimental Forest, Minnesota.
Major Advisers: Profs. H. L. Hansen and T. Schantz-Hansen.
1954. HALL, OTIS FREDERICK. B.A. '43, Oberlin College; M.F. '48, Yale University.
Major: Forestry. Minor: Economics.
Thesis: The Growth Patterns of Thinned and Unthinned Forest Stands and Their Value in the Management of the Forest.
Major Adviser: Prof. A. E. Schneider.
1956. MEYER, MERLE PETER. B.S. with distinction '49, University of Minnesota; M.F. '50, University of California.
Major: Forestry. Minors: Soils and Geology.
Thesis: Some Observed Effects of Variations in Photographic Papers Upon Image Perception in Stereo Vertical Aerial Photographs.
Major Adviser: Prof. H. L. Hansen.

HOME ECONOMICS

1938. DIETRICH, KATHLEEN SARAH. B.S. '23, University of Wisconsin; M.S. '27, University of Minnesota.
Major: Home Economics. Minor: Biochemistry.
Thesis: The Effect of Irradiation and of Sampling upon Blood Lipid and Blood Volume in the Dog.
Major Adviser: Prof. J. M. Leichsenring.
1938. SUTHERLAND, ELISABETH. B.S. '19, M.S. '27, University of Wisconsin.
Major: Home Economics. Minor: Biochemistry.
Thesis: The Absorption and Retention of Iron by Normal Adult Women in Relation to the Chemically Available Iron Content of Some Common Foods.
Major Adviser: Prof. J. M. Leichsenring.
1939. SISTER MARY BERNADETTE LIES. B.A. '20, College of St. Teresa; M.S. '23, University of Minnesota.
Major: Home Economics. Minor: Biochemistry.
Thesis: A Study of the Calcium Availability of a Diet.
Major Adviser: Prof. L. S. Palmer.
1947. BURRILL, LIDA MARILLA. B.S. '26, University of Minnesota; M.A. '33, University of Toronto.
Major: Home Economics. Minor: Agricultural Biochemistry.
Thesis: The Effect of Calcium and of Lactose on Iron Absorption in Normal Adults with a Consideration of the Possible Fate of Unabsorbed Iron as Evidenced by Variations in the Excretion of Calcium, Phosphorus, and Sulfur.
Major Adviser: Prof. J. M. Leichsenring.

1952. FREEMAN, ELLEN BEK. B.A. with honors '38, University of North Dakota; M.A. '40, Columbia University.
Major: Home Economics. Minor: Agricultural Biochemistry.
Thesis: Effect of Cooking Temperatures on the Quality and in Vitro Digestibility of Beef Stews and Pot Roasts.
Major Adviser: Prof. Isabel Noble.
1953. GORDON, JOAN. B.S. with high distinction '45, M.S. '47, University of Minnesota.
Major: Home Economics. Minor: Agricultural Biochemistry.
Thesis: Suitability of the 2,4-Dinitrophenylhydrazine Method for Determining the Effect of Cooking on the Ascorbic Acid Content of Cabbage and Asparagus.
Major Adviser: Prof. Isabel Noble.
1954. MORRIS, MARY ANN. B.S. with honors '48, M.S. '49, University of California at Los Angeles.
Major: Home Economics. Minor: Agricultural Economics.
Thesis: The Thermal Insulation and Associated Properties of Single and Multiple Layers of Fabrics.
Major Adviser: Prof. E. L. Phelps.
1954. OTTOSON, NORMA O. THOR. B.S. '39, M.S. '48, University of Minnesota.
Major: Home Economics. Minor: Agricultural Biochemistry.
Thesis: The Effect on Sulfur Metabolism in Women of Varying the Sulfur Intake by Providing Different Levels of Protein Intake and by Giving a Methionine Supplement at Each Level of Protein Intake.
Major Adviser: Prof. J. M. Leichsenring.
1954. PETZEL, FLORENCE ELOISE. Ph.B. '31, M.A. '34, University of Chicago.
Major: Home Economics. Minor: Agricultural Economics.
Thesis: The Behavior of Certain Cotton and Linen Fabrics with Respect to the Absorption of Water and Drying.
Major Adviser: Prof. E. L. Phelps.

HORTICULTURE

1939. BABB, MYRON FRANCIS. B.S. '26, M.S. '29, University of Maine.
Major: Horticulture. Minor: Plant Physiology.
Thesis: Residual Effects of the Forcing and Hardening of the Morphology and Physiology of Vegetable Plants.
Major Adviser: Prof. W. H. Alderman.
1939. IVERSON, VINCENT EMANUEL. B.S. '33, M.S. '36, University of Minnesota.
Major: Horticulture. Minor: Plant Physiology.
Thesis: Quantitative and Qualitative Changes in the Growth of the Tomato Plant as Affected by Modified Transplant Nutrition.
Major Advisers: Profs. W. G. Brierley and L. E. Longley.

1940. BARTHOLDI, WENDELL LOUIS. B.S. '34, University of Minnesota; M.S. '36, Ohio State University.
Major: Horticulture. Minor: Plant Physiology.
Thesis: Influence of Flowering and Fruiting upon Vegetative Growth and Tuber Yield in the Potato.
Major Adviser: Prof. F. A. Krantz.
1942. LARSON, RUSSELL EDWARD. B.S. '39, M.S. '40, University of Minnesota.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Extent of Hybrid Vigor in F_1 and F_2 Tomato Hybrids with Particular Reference to Early Yield, Total Yield, and Fruit Size.
Major Adviser: Prof. T. M. Currence.
1942. ODLAND, MARTIN L. B.S. '34, University of Minnesota.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Inheritance Studies in the Pepper, Capsicum frutescens.
Major Adviser: Prof. F. A. Krantz.
1943. FINEMAN, ZOLA MICHAEL. B.S. '33, Cornell University; M.S. '37, Louisiana State University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Inheritance Studies of Meiotic and Gametic Pollen Sterility in the Potato.
Major Adviser: Prof. F. A. Krantz.
1945. NYLUND, ROBERT EINAR. B.S. with distinction '38, M.S. '42, University of Minnesota.
Major: Horticulture. Minor: Botany.
Thesis: The Relation of Leaf Area and Nutrient Supply to Yields and Quality in the Muskmelon.
Major Adviser: Prof. F. A. Krantz.
1946. JENKINS, JOHN MITCHELL, JR. B.S. '29, Clemson Agricultural College; M.S. '31, Louisiana State University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Studies on the Inheritance of Downy Mildew Resistance and of Other Characters in Cucumbers.
Major Adviser: Prof. F. A. Krantz.
1947. ALDERMAN, DEFOREST CHARLES. B.S. '37, University of Minnesota; M.S. '38, Iowa State College.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Inheritance of Flowering Date, Growth Habit and Mosaic Reaction in Phaseolus vulgaris L.
Major Adviser: Prof. T. M. Currence.

1948. LANA, EDWARD PETER. B.S. '42, M.S. '43, University of Minnesota.
Major: Horticulture. Minor: Botany.
Thesis: A Study of Reciprocal Crosses in Cucurbita maxima.
Major Advisers: Profs. F. A. Krantz and A. E. Hutchins.
1949. ANSTEY, THOMAS HERBERT. B.S.A. '41, M.S.A. '43, University of British Columbia.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Breeding Value of Selected Inbred Clones of Strawberries with Respect to Vitamin C Content, Weight per Fruit, and Plant Vigor.
Major Adviser: Prof. A. N. Wilcox.
1949. FOGLE, HAROLD WARMAN. B.S. '40, M.S. '41, West Virginia University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Inheritance of Fruit Weight and Earliness Components in a Cross between the Tomato Varieties Tiny Tim and Stemless Pennorange.
Major Adviser: Prof. T. M. Currence.
1949. KHAN, OBED-UR RAHMAN. B.S. '42, Lahore Government College; M.S. '44, University of Punjab.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Vegetative Vigor in the Strawberry in Relation to Methods of Breeding: A Comparison of the Self and Cross Progenies from Several Selected Inbred Clones from which They Were Derived.
Major Adviser: Prof. A. N. Wilcox.
1949. MOORE, JOHN FRANCIS. B.Sc. '37, M.Sc. '41, University of Alberta.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Combining Ability in Tomatoes.
Major Adviser: Prof. T. M. Currence.
1949. SINGH, DHARAMPAL. B.S. '41, Agra University; M.S. '45, Benares Hindu University; M.S.A. '47, Ontario Agricultural College.
Major: Horticulture. Minor: Botany.
Thesis: Inheritance of Certain Economic Characters in Cucurbita maxima Duch.
Major Adviser: Prof. A. E. Hutchins.
1950. FRENCH, ARTHUR PERKINS. B.S. '21, Ohio State University; M.S. '23, Massachusetts State College.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Inheritance of Time of Ripening and Other Economic Characters of the Peach.
Major Adviser: Professor W. H. Alderman.

1950. MEHTA, YASHWANT RAM. B.S. '34, M.S. '38, University of Allahabad.
Major: Horticulture. Minor: Plant Genetics.
Thesis: A Study of Certain Economic Characters of F₁ Potato Seedlings and Their Parents.
Major Adviser: Professor F. A. Krantz.
1950. PREM-SINGH, JOSHUA NURSINGH. B.S. with honors '36, University of Mysore.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Studies on a Male Sterile Character in the Squash Cucurbita maxima, Duch.
Major Adviser: Prof. A. E. Hutchins.
1951. CRAM, WILLIAM HUGH. B.S.A. '39, M.Sc. '48, University of Manitoba.
Major: Horticulture. Minor: Plant Genetics.
Thesis: A Study of Parent Tree Characteristics and Their Relationship to Vigor of Seedling Progenies for Sixteen Selections from Caragana arborescens.
Major Adviser: Prof. T. M. Currence.
1951. TURNQUIST, ORRIN CLINTON. B.S. with high distinction '37, M.S. '40, University of Minnesota.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Specific Gravity of Varieties and Seedling Families of Potatoes.
Major Adviser: Prof. F. A. Krantz.
1952. CHAO, TUNG FANG. B.S. '42, Shengsi National Northwestern College of Agriculture; M.S. '48, University of Minnesota.
Majors: Horticulture and Agricultural Botany. Minor: Botany.
Thesis: A Study of the Phytotoxic Action of 2,4-Dichlorophenoxyacetic Acid on Certain Aquatic Plants.
Major Advisers: Profs. W. H. Alderman and E. C. Stakman.
1952. DHAWAN, NARENDRA LAL. B.S. '42, M.S. '44, Nagpur University.
Major: Horticulture. Minor: Agronomy.
Thesis: Studies on the Effects of Growth-regulating Substances on Fruitfulness in Field-grown Tomatoes and the Relation between Seed Formation and the Production of Growth-regulating Substances in the Fruit.
Major Advisers: Profs. R. E. Nylund and A. N. Wilcox.
1952. HANSON, KENNETH WARREN. B.S. '48, M.S. '51, University of Minnesota.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Inbreeding and Outbreeding Behavior of Certain Strawberry Clones with Respect to Ascorbic Acid Content of the Fruit and Fruit Size.
Major Adviser: Prof. A. N. Wilcox.

1952. RICHARDSON, RALPH WILLIAM, JR. B.S. '48, University of Minnesota.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Genetic Effects of Reduced Fertilization in Tomato Flowers.
Major Adviser: Prof. T. M. Currence.
1952. WILNER, JACOB. B.S.A. '36, University of Saskatchewan; M.S. '47, University of Minnesota.
Major: Horticulture. Minor: Plant Physiology.
Thesis: A Study of the Effects of Desiccation and Low Temperatures on the Extent of Winter Injury to Certain Woody Plants.
Major Adviser: Prof. W. G. Brierley.
1952. YOUNGNER, VICTOR BERNARR. B.S. '48, University of Minnesota.
Major: Horticulture. Minor: Botany.
Thesis: A Study of the Inheritance of Several Characters in the Cucumber, Cucumis sativus, L.
Major Adviser: Prof. A. E. Hutchins.
1953. HAMILTON, RICHARD AIRTH. B.S. '37, North Dakota Agricultural College; M.S. '40, Ohio State University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Progeny Studies with Two Solo Papaya Strains.
Major Adviser: Prof. T. M. Currence.
1953. HONMA, SHIGEMI. B.A. '49, Cornell University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Comparison of Recurrent Parent with Different Back-cross Generations in Tomato.
Major Adviser: Prof. T. M. Currence.
1953. PETERSON, RONALD MERRILL. B.S. '47, Colorado State College of Agriculture and Mechanic Arts; M.S. '49, University of California.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Breeding Behavior of the Strawberry with Respect to Time of Blooming, Time of Ripening, and Rate of Fruit Development.
Major Adviser: Prof. A. N. Wilcox.
1954. BLAKE, ROLAND CHARLES. B.S. with highest distinction '49, University of Maine.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Strawberry Progeny Testing and Evaluation of Parents for Breeding.
Major Adviser: Prof. A. N. Wilcox.

1954. LAMB, ROBERT CONSAY. B.S.A. '41, University of Saskatchewan;
M.S. '47, University of Minnesota.
Major: Horticulture. Minor: Botany.
Thesis: A Study of Rest Period in the Latham Raspberry: Environmental Conditions Which Affect the Rest Period and the Relationship of Rest to Winter Hardiness.
Major Adviser: Prof. R. E. Nylund.
1954. SANDSTED, ROGER FRANCE. B.S. '48, University of Nebraska.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Yield of Potatoes as Influenced by Applications of Peat and Manure to a Sandy Loam Soil.
Major Adviser: Prof. R. E. Nylund.
1954. WALKOF, CHARLES. B.S.A. '33, University of Manitoba;
M.Sc. '42, University of Alberta.
Major: Horticulture. Minor: Plant Genetics.
Thesis: Double Backcrossing as a Possible Method of Developing an Early, Large-Fruited Tomato.
Major Adviser: Prof. T. M. Currence.
1955. WIDMER, RICHARD ERNEST. B.S. '43, M.S. '49, Rutgers University.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Determination of Cold Resistance in the Garden Chrysanthemum and Its Relation to Winter Survival.
Major Adviser: Prof. R. E. Nylund.
1956. YAGYU, PAUL KIYOSHI. B.S. '37, University of California.
Major: Horticulture. Minor: Plant Genetics.
Thesis: The Effects of X-Rays and Thermal Neutrons on Dormant Seeds of Tomato.
Major Advisers: Profs. F. A. Krantz and T. M. Currence.

PLANT GENETICS

1939. WU, SHAO-KWEI. B.S. '29, University of Nanking; M.S. '36, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Relationship Between the Origin and Characters of Selfed Lines of Corn and Their Value in Hybrid Combination.
Major Adviser: Prof. H. K. Hayes.
1940. BROOKINS, WILLIAM WALLACE. B.S. '24, University of Toronto;
M.S. '28, University of Nebraska.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: Linkage Relationship of the Genes Differentiating Stem Rust Reaction in Barley.
Major Advisers: Profs. F. R. Immer and H. K. Hayes.

1940. CULBERTSON, JOSEPH OLIVER. B.S. '25, M.S. '30, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Sucrose Percentage in Beta vulgaris L.
Major Adviser: Prof. F. R. Immer.
1940. HILPERT, MARION MOTH. B.A. '33, Carleton College.
Major: Plant Genetics. Minor: Botany.
Thesis: Genetic Studies in Phaseolus vulgaris.
Major Advisers: Profs. F. R. Immer and T. M. Currence.
1940. LEONARD, WARREN H. B.S. '26, Colorado State College;
M.S. '30, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Fertility in the Lateral Spikelets of Barley.
Major Adviser: Prof. F. R. Immer.
1940. SCHULTZ, HERMAN KARL. B.S. '34, M.S. '36, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of Methods of Breeding Orchard Grass, Dactylis glomerata L.
Major Adviser: Prof. H. K. Hayes.
1940. WANG, KWEI-WU, B.S. '33, National Central University (China);
M.S. '38, Agricultural and Mechanical College of Texas.
Major: Plant Genetics. Minor: Botany.
Thesis: Some Phases of Heterosis of Corn.
Major Advisers: Profs. H. K. Hayes and E. C. Abbe.
1940. WHITE, WILLIAM JAMES. B.S.A. with distinction '32,
M.S. '34, University of Saskatchewan.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Intergeneric Crosses between Triticum and Agropyron.
Major Adviser: Prof. H. K. Hayes.
1941. MACINDOE, STEPHEN LIVINGSTONE. B.Sc.A. '28, University of Sydney.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Nature and Inheritance of Resistance to Stem Rust of Wheat, Puccinia graminis tritici, Possessed by Several Resistant Parents.
Major Adviser: Prof. H. K. Hayes.
1941. MURPHY, ROYSE PEAK. B.S. '36, Kansas State College;
M.S. '38, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Part A. Methods of Breeding Crested Wheatgrass, Agropyron cristatum (L.) Beauv. Part B. Convergent Improvement with Four Inbred Lines of Corn.
Major Adviser: Prof. H. K. Hayes.

1942. SABOE, LEWIS CLIFFORD. B.S. '31, South Dakota State College;
M.S. '40, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Utilization of Chromosomal Interchanges in Maize To
Determine the Inheritance and Linkage Relations of Factors
for Reaction to Ustilago zeae.
Major Adviser: Prof. C. R. Burnham.
1942. SEMENIUK, WILLIAM ANTON. B.S. '36, M.S. '38, University of
Alberta.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of Chromosome Behavior and Rust Reaction in
Advanced Generations of Triticum vulgare (Steinwedel) x T.
Timopheevi and in Crosses of Certain of These Lines with
Hard Red Spring Wheats.
Major Adviser: Prof. C. R. Burnham.
1942. TSIANG, YIEN SI. B.S. '36, University of Nanking.
M.S. '40, University of Minnesota.
Major: Plant Genetics. Minor: Botany.
Thesis: Methods of Breeding Bromegrass, Bromis inermis, Leyss.
Major Advisers: Profs. H. K. Hayes and R. H. Landon.
1943. RINKE, ERNEST HENRY. B.S. '36, M.S. '39, University of
Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Coumarin in Sweet Clover, Melilotus
alba Desr.
Major Adviser: Prof. H. K. Hayes.
1944. MOSEMAN, ALBERT HENRY. B.S. with distinction '38, M.S. '40,
University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Correlated Inheritance of Height, Seed Size, Seed Yields,
and Other Characters in Flax.
Major Adviser: Prof. H. K. Hayes.
1944. WEIR, JOHN ROBERT. B.S.A. '36, Ontario Agricultural College;
M.S. '38, University of Alberta.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: A Study of the Inheritance of Protein Content, Date of
Heading, and Height in a Cross of Prelude X Dicklow Spring Wheat.
Major Adviser: Prof. C. R. Burnham.
1945. ABBASI, FEEROSE HUSAIN. B.S. '37, University of Bombay.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Studies of Mature Plant and Physiologic Resistance to
Stem Rust in Crosses of Premier with Kenya.
Major Adviser: Prof. H. K. Hayes.

1945. ATKINS, IRVIN MILBURN. B.S. '28, M.S. '36, Kansas State College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Characters Associated with Resistance to Lodging in a Cross of Kanred x Coppei Winter Wheats.
Major Adviser: Prof. H. K. Hayes.
1945. CHENG, CHUNG-FU. B.A. '34, Fukien Christian University; M.S. '40, University of Southern California.
Major: Plant Genetics. Minor: Botany.
Thesis: Self-fertility Studies in Several Species of Commercial Grasses.
Major Advisers: Profs. H. K. Hayes and C. R. Burnham.
1946. KRAMER, HERBERT HARVEY. B.S. '39, Colorado State College; M.S. '41, University of Minnesota.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: Morphologic and Agronomic Variation in Poa pratensis L. in Relation to Chromosome Numbers.
Major Adviser: Prof. C. R. Burnham.
1946. PETO, HOWARD BROADHURST. B.S.A. '34, University of Manitoba; M.Sc. '37, University of Alberta.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: The Nature of Drought Resistance in Spring Wheat.
Major Advisers: Profs. F. R. Immer and R. B. Harvey.
1946. WOODWARD, ROLLO WILLIAM. B.S. '25, M.S. '30, Utah State Agricultural College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Fertility in the Lateral Florets of the Four Barley Groups.
Major Adviser: Prof. C. R. Burnham.
1947. BOLTON, JAMES LINDEN. B.S. '33, M.Sc. '36, University of Alberta.
Major: Plant Genetics. Minor: Botany.
Thesis: A Study of Combining Ability in Alfalfa in Relation to Certain Methods of Selection.
Major Advisers: Profs. F. R. Immer and C. R. Burnham.
1947. SMITH, GLENN SANBORN. B.S. '29, North Dakota Agricultural College; M.S. '31, Kansas State Agricultural College.
Major: Plant Genetics. Minors: Plant Pathology and Agricultural Biochemistry.
Thesis: Inheritance of Stem Rust Reaction, Glume Tenacity and Head Type in Mindua Durum X Vernal Emmer.
Major Adviser: Prof. H. K. Hayes.

1947. VACHHANI, MOTI VERHOMAL. B.Ag. '32, University of Bombay; Imperial Agricultural Research Associate '42, Imperial Agricultural Research Institute.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of Certain Variations in Chromosome Morphology of Corn Inbreds in Relation to Agronomic and Morphologic Characters.
Major Adviser: Prof. C. R. Burnham.
1948. AYAD, MOHAMED ABDEL-GHANI. B.Sc. '40, Fouad I University.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Correlated Inheritance of Reaction to Stem Rust and Other Characters in Crosses between Egyptian Varieties of Wheat.
Major Advisers: Profs. H. K. Hayes and E. C. Stakman.
1948. FOOTE, WILSON HOOVER. B.S. '42, Utah State Agricultural College; M.S. '46, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of the Inheritance of the Stem Rust Reaction in Oats.
Major Adviser: Prof. H. K. Hayes.
1948. FROLIK, ELVIN FRANK. B.S. '30, M.S. '32, University of Nebraska.
Major: Plant Genetics. Minor: Botany.
Thesis: Chromosome Segregation in Maize Translocations from X-rayed Material and in Crosses Producing Rings of Six Chromosomes.
Major Adviser: Prof. C. R. Burnham.
1948. HASANAIN, SYED ZULFIQARUL. B.S. '29, M.S. '32, Aligarh Muslim University.
Majors: Plant Genetics and Plant Pathology.
Thesis: Study of Stem Rust Reaction and Other Characters in Indian Wheat Varieties and Their Crosses.
Major Advisers: Profs. H. K. Hayes and H. H. Hart.
1948. KHAN, SHAMS-UL-ISLAM. B.S. '40, B.S. with honors '42, M.S. '43, University of Punjab.
Major: Plant Genetics. Minor: Botany.
Thesis: A Cytological Study of the Effect of Temperature on Crossing-Over in Corn.
Major Adviser: Prof. A. O. Dahl.
1948. MEHTA, TRIBHUVAN RAM. B.S. '28, Benares University; Assoc. I.A.R.I. '31, Imperial Agricultural Research Institute.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Correlation of Yield and Certain Quantitative Characters in Soybeans.
Major Adviser: Prof. H. K. Hayes.

1948. MURTY, GOLLAKOTA SURYANARAYANA. B.S. '34, Andhra University; M.S. '36, Lucknow University.
Major: Plant Genetics. Minor: Biostatistics.
Thesis: Combining Ability in Corn of Parental Inbreds with Inbreds Recovered from Backcrosses.
Major Adviser: Prof. H. K. Hayes.
1948. PAYNE, KENYON THOMAS. B.S. '39, Kansas State Agricultural College; M.S. '41, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Comparison of Combining Ability in F_2 and F_3 Lines of Corn.
Major Adviser: Prof. H. K. Hayes.
1948. PINNELL, EMMETT LOUIS. B.S. '40, University of Missouri; M.S. '42, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Genetic and Environmental Factors Affecting Corn Seed Viability at Low Temperatures.
Major Adviser: Prof. H. K. Hayes.
1948. RICHMOND, THOMAS ROLLIN. B.S. '31, M.S. '38, Agricultural and Mechanical College of Texas.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Genetics of Certain Factors Responsible for Lint Quantity in American Upland Cotton.
Major Adviser: Prof. H. K. Hayes.
1949. CARNAHAN, HOWARD LEON. B.S. '42, Kansas State College; M.S. '47, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Oil Content and Other Characters in Flax, and the Associations between Characters in the Cross of Dakota X Minerva.
Major Adviser: Prof. J. O. Culbertson.
1949. KEHR, WILLIAM RALPH. B.S. with distinction '43, University of Minnesota; M.S. '47, Kansas State College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Studies of Inheritance in Crosses between Landhafer, Avena byzantina L. and Two Selections of A. sativa L.
Major Adviser: Prof. H. K. Hayes.
1949. REECE, OSCAR EARL. B.S.Ag. '31, Kansas State College; M.S. '45, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Reaction to Root and Stalk Rot in Maize.
Major Adviser: Prof. H. K. Hayes.

1949. WARREN, FRANCIS SHIRLEY. B.S.A. '46, Ontario Agricultural College; M.S. '48, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Correlation Studies of Yield and Other Characters in Rye Polycrosses.
Major Adviser: Prof. H. K. Hayes.
1950. CHU, KWANG HWAN. B.S. '43, University of Nanking; M.S. '49, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Studies of Inheritance of Seed Size and Other Characters from F₂ Data in a Cross between an Indian Variety and a North American Variety of Flax.
Major Adviser: Prof. J. O. Culbertson.
1950. DEN HARTOG, GERALD TUNIS. B.S. '47, Iowa State College; M.S. '50, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Agronomic and Malting Quality Characters of Barley as Studied in 10 Crosses Having Mars as a Common Parent.
Major Advisers: Profs. J. W. Lambert and H. K. Hayes.
1950. ELLING, LADDIE JOE. B.S. '41, Oklahoma Agricultural and Mechanical College; M.S. '48, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Evaluation of Selected Alfalfa Clones.
Major Adviser: Prof. H. L. Thomas.
1950. GOPINATH, DOBBALLAPUR MAHABALARAO. B.Sc. (Hons.) '40, M.S. '41, University of Mysore.
Major: Plant Genetics. Minor: Botany.
Thesis: A Cytogenetic Study of Deficiency Duplication in Certain Translocation Crosses in Maize.
Major Adviser: Prof. C. R. Burnham.
1950. HENDERSON, ROBERT WESLEY. B.S. '38, Oregon State College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Rubber Percentage in Taraxacum Kok-Saghyz.
Major Adviser: Prof. H. K. Hayes.
1950. HSU, KUAN JEN. B.S. '34, National Central University.
Major: Plant Genetics. Minor: Botany.
Thesis: Comparative Studies in Corn of the Development of Normal and Dwarf Plants.
Major Adviser: Prof. H. K. Hayes.
1950. JOHNSON, RUSSELL TINGEY. B.S. '44, Utah State Agricultural College; M.S. '48, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Combining Ability in Zea Maize as Related to Generations of Testing, Selection of Testers, and Characters of the Inbred Line.
Major Adviser: Prof. E. H. Rinke.

1950. KOO, KEH-SHING. B.S. '38, Nantung University.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: Inheritance of Reaction to Stem Rust and Other Characters
in Crosses of Timstein with Thatcher, Newthatch and Mida.
Major Adviser: Prof. H. K. Hayes.
1950. PUTT, ERIC DOUGLAS. B.S.A. with distinction '38,
M.Sc. '40, University of Saskatchewan.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Cytogenetic Studies of Sterility in Rye.
Major Adviser: Prof. C. R. Burnham.
1950. ROGERS, THOMAS HAYDEN. B.S. '31, M.S. '41, Alabama
Polytechnic Institute.
Major: Plant Genetics. Minor: Plant Physiology.
Thesis: Methods of Breeding Crimson Clover (Trifolium incarnatum).
Major Adviser: Prof. H. K. Hayes.
1950. WARNER, JOHN NORTHRUP. B.S. '41, University of Hawaii.
Major: Plant Genetics. Minor: Statistics.
Thesis: The Application of Some Statistical Methods to the
Study of Quantitative Inheritance in Zea Mays.
Major Adviser: Prof. E. H. Rinke.
1950. WEBSTER, ORRIN JOHN. B.S. '34, M.S. '40, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Genetics and Morphology of Rachis Internode Length in Barley.
Major Adviser: Prof. C. R. Burnham.
1950. WORTMAN, LEO STERLING, JR. B.S. with high distinction '43,
Oklahoma Agricultural and Mechanical College; M.S. '48,
University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Cold-Test Reaction in Zea mays.
Major Adviser: Prof. E. H. Rinke.
1950. WU, CHAO-SU. B.A. '42, National Central University. (China).
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Leaf Rust Reaction and Other Characters
in a Spring Wheat Cross.
Major Adviser: Prof. E. R. Ausemus.
1950. ZOEBISCH, OSCAR. B.S. '46, M.S. '50, University of Minnesota.
Major: Plant Genetics. Minor: Botany.
Thesis: Some Quantitative Characters in Zea mays.
Major Adviser: Prof. E. H. Rinke.

1951. DAS, KUMUDABHIRAM. B.Sc. '31, M.Sc. '33, Calcutta University.
Major: Plant Genetics. Minor: Botany.
Thesis: Cytogenetic Studies of Partial Sterility in Barley.
Major Adviser: Prof. C. R. Burnham.
1951. FERGUSON, ALBERT CLARENCE. B.S.A. '39, University of Manitoba; M.S. '48, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of the Relationship between Characters in Inbred Lines of Onions and Their Crosses.
Major Adviser: Prof. H. K. Hayes.
1951. FLEMING, ATTIE ANDERSON. B.S. '43, M.S. '49, Alabama Polytechnic Institute.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Characters in Corn with Special Reference to the European Corn Borer.
Major Adviser: Prof. H. K. Hayes.
1951. HASHIM, MOHAMMED. B.Sc. '43, M.Sc. '45, Osmania University.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Studies of the Mode of Inheritance of Leaf Rust Reaction and Other Characteristics in Crosses of Frontana with Thatcher and Newthatch Wheats.
Major Adviser: Prof. C. R. Burnham.
1951. HIGHKIN, HARRY ROBERT. B.S. '44, University of Connecticut; M.S. '47, University of Minnesota.
Major: Plant Genetics. Minor: Physiological Chemistry.
Thesis: Physiological Studies of a Barley Mutant Lacking Chlorophyll B.
Major Adviser: Prof. C.R. Burnham.
1951. HSI, CHING HENG. B.S.A. '48, St. John's University; M.S.A. '49, University of Georgia.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Relationship of Various Agronomic and Malting Characters of Barley as Studied in Ten Crosses Having Mars as a Common Parent and in Two Generations.
Major Adviser: Prof. J. W. Lambert.
1951. KNEEBONE, WILLIAM ROBERT. B.S. with distinction '47, M.S. '50, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Factors Related to Forage Quality and to Seed Production among Eight Clones of *Bromus inermis* Leys. and Their Polycross Progenies.
Major Advisers: Profs. H. L. Thomas and M. F. Kernkamp.

1951. OSLER, ROBERT DONALD. B.S. with distinction '47, University of Nebraska; M.S. '49, Colorado State College of Agriculture and Mechanic Arts.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance Studies in Oats with Particular Reference to the Santa Fe Type of Crown Rust Resistance.
 Major Adviser: Prof. H. K. Hayes.
1951. SINGH, RAMESHWAR. B.Sc. '43, Agricultural College (Cawnpore, India); M.Sc. '45, Benares Hindu University.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance in Maize of Reaction to the European Corn Borer (Pyrausta nubilalis).
 Major Adviser: Prof. H. K. Hayes.
1952. COWAN, J. RITCHIE. B.S.A. '39, Ontario Agricultural College; M.S. '42, University of Minnesota.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Some Plant Breeding Studies with Tall Fescue (Festuca arundinacea Schreb.).
 Major Adviser: Prof. H. L. Thomas.
1952. HANNAH, ALVIN EDMUND. B.S.A. '49, University of Manitoba; M.S. '50, University of Minnesota.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance of Reaction to Bunt in Crosses Involving Redman Wheat and Some of Its Ancestors.
 Major Adviser: Prof. E. R. Ansems.
1952. HEINRICHS, DAVID HENRY. B.S.A. '38, M.Sc. '41, University of Saskatchewan.
 Major: Plant Genetics. Minor: Botany.
 Thesis: Methods of Breeding Intermediate Wheatgrass, Agropyron intermedium (Host.) Beauv.
 Major Adviser: Prof. H. K. Hayes.
1952. HEYNE, ELMER GEORGE. B.S. with high distinction '35, University of Nebraska; M.S. '38, Kansas State College of Agriculture and Applied Science.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance of Leaf Rust, Puccinia rubigo-vera tritici (Erikss. and Henn.) Carl., Reaction and Other Characters in Crosses Among Three Wheat Varieties.
 Major Adviser: Prof. E. R. Ansems.
1952. IBRAHIM, MAHMOUD ADL-ELDIN. B.Sc. '42, Fouad I University; M.S. '50, University of Minnesota.
 Major: Plant Genetics. Minor: Botany.
 Thesis: Association Tests Between Chromosomal Interchanges in Maize and Resistance to the European Corn Borer.
 Major Adviser: Prof. C. R. Burnham.

1952. JONES, GUY LANGSTON. B.S. '47, M.S. '50, North Carolina State College.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance of the Mode of Reaction to Stem Rust, Particularly Race 15B, and Leaf Rust in Two Crosses of Vulgare Wheats.
 Major Adviser: Prof. E. R. Ausemus.
1952. MARTINEZ M., LORENZO. Ing. Agr. '36, Escuela Superior de Agricultura "Antonio Narro." M.S. '41, Iowa State College.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Inheritance of Reaction to Leaf Rust, Puccinia rubigo-vera tritici (Eriks.) Carleton, and of Certain Other Characters in a Wheat Cross.
 Major Adviser: Prof. E. R. Ausemus.
1952. PEDERSEN, MARION WALTER. B.S. '41, M.S. '42, University of Nebraska.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Nectar Production in Alfalfa Clones as Related to Bee Visitation and Seed Production Including a Study of Techniques for Measuring Nectar.
 Major Adviser: Prof. H. L. Thomas.
1952. RUSSELL, WILBERT AMBRICK. B.S. '42, University of Manitoba; M.S. '47, University of Minnesota.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: A Study of the Inter-relationships of Seed Yield, Oil Content and Other Agronomic Characters with Sunflower Inbred Lines and Their Top Crosses.
 Major Adviser: Prof. H. L. Thomas.
1953. HELGASON, SIGURDUR BJORN. B.S.A. '39, University of Manitoba; M.S. '42, University of Minnesota.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: A Study of Genetic Factors and Techniques Affecting Cold-Test Performance in Corn.
 Major Advisers: Profs. C. R. Burnham and E. L. Pinnell.
1953. LOEFFEL, FRANK ALBERT. B.S. '49, University of Nebraska.
 Major: Plant Genetics. Minor: Plant Pathology.
 Thesis: Effectiveness of Individual Plant Selection in Zea mays L for Resistance to the European Corn Borer (Pyrausta nubilalis Hbn.)
 Major Adviser: Prof. E. H. Rinke.
1953. MCNEAL, FRANCIS HARRISON. B.S. '43, M.S. '48, Oregon State College.
 Major: Plant Genetics. Minors: Botany and Agronomy.
 Thesis: Inheritance of Stem Solidness in a Thatcher by Rescue Wheat Cross.
 Major Adviser: Prof. E. R. Ausemus.

1953. MILLER, JOHN DAVID. B.S. with high honors '48, M.S. '50, North Carolina State College of Agriculture and Engineering.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Variability and Inheritance of Reaction of Barley to Certain Races of Stem Rust.
Major Advisers: Profs. J. W. Lambert and J. J. Christensen.
1953. NEGI, LAKSHMI SINGH. B.Sc. '36, M.Sc. '38, Punjab University.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Ear Development and Other Characteristics of Selected Strains of Maize as Affected by European Corn Borer.
Major Adviser: Prof. E. H. Rinke.
1953. ROHDE, CHARLES RAYMOND. B.S. with honors '47, Montana State College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of the Inheritance of the Reaction to Leaf Rust and Other Characters in Triangular Wheat Crosses.
Major Adviser: Prof. E. R. Ausemus.
1954. ANDREWS, JOHN EDWIN. B.S.A. '49, University of Manitoba; M.S. '50, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Reaction to Loose Smut and to Stem Rust in Barley.
Major Adviser: Prof. J. W. Lambert.
1954. BOTHUN, ROBERT ELROY. B.S. '48, M.S. '53, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Study of the Inheritance of Certain Characters in a Cross of Two Flax Varieties, as Expressed in Populations Sprayed with 2,4-D.
Major Adviser: Prof. J. O. Culbertson.
1954. CAMPBELL, ALLAN BARRIE. B.S.A. '44, M.Sc. '48, University of Manitoba.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: A Monosomic Analysis of Redman Wheat for Stem Rust Resistance.
Major Adviser: Prof. C. R. Burnham.
1954. DA SILVA, ADY RAUL. Agr. Eng. '37, Escola Superior de Agricultura V. Minas Gerais; M.S. '46, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Breeding for Stem and Leaf Rust Resistance in Wheat in Brazil Including Basic Genetical Studies and a Survey of the Physiological Races of Rust.
Major Advisers: Profs. C. R. Burnham and Helen Hart.

1954. HEERMANN, RUBEN MARTIN. B.S. '43, M.S. '48, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Stem Rust Reaction in Durum and Emmer Crosses with Particular Reference to Race 15B.
Major Adviser: Prof. E. R. Ausems.
1954. MOHAMED, ALY HAMED. B.Sc. '46, Farouk I University; M.S. '53, University of Minnesota.
Major: Plant Genetics. Minor: Botany.
Thesis: Association Tests Between Chromosomal Interchanges in Maize and Tender Pericarp in Sweet Corn.
Major Adviser: Prof. C. R. Burnham.
1954. OMAR, ABDEL-AZIZ MOSTAFA. B.Sc. '34, Fouad I University; Dipl. Agric. '39, Cambridge University.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Inheritance of Reaction to Race 15B and Some Other Races of Stem Rust of Wheat.
Major Adviser: Prof. E. R. Ausems.
1954. PLESSERS, ARTHUR GERARD. B.Sc. '50, McGill University; M.S. '53, University of Minnesota.
Major: Plant Genetics. Minor: Agricultural Botany.
Thesis: The Genetics of Stem and Leaf Rust Reactions and Other Characters in Crosses of Lee Wheat with Chinese Monosomic Testers.
Major Adviser: Prof. C. R. Burnham.
1954. QUINONES, FERDINAND ANTONIO. B.S.A. '46, University of Puerto Rico; M.S. '48, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Heterosis in Tomatoes as Affected by Diverse Origin of Parents.
Major Advisers: Profs. E. H. Rinke and T. M. Currence.
1955. AGBLE, WILLIAM KWESI. B.S. '50, Mission House College; M.S. '53, University of Minnesota.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Inheritance of Maturity as Measured by Time of Silking; and Other Character Associations in Zea mays.
Major Adviser: Prof. E. H. Rinke.
1955. BUCKNER, ROBERT CECIL. B.S. with high distinction '47, M.S. '48, University of Kentucky.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Breeding in Tall Fescue for Palatability.
Major Adviser: Prof. W. M. Myers.

1955. JOACHIM, GERTRUD S. Graduate, H&H Gartenbauschule (Vienna); M.S. '45, University of Minnesota.
Major: Plant Genetics. Minor: Agricultural Botany.
Thesis: An Inheritance Study of the Reversed Germ Character in Corn.
Major Adviser: Prof. C. R. Burnham.
1955. NEMLIN, OWEN JAY. B.S. '51, M.S. '53, Iowa State College.
Major: Plant Genetics. Minor: Botany.
Thesis: Inheritance of Fertility Restoration in Cytoplasmic Male-Sterile Zea mays.
Major Adviser: Prof. E. H. Rinke.
1955. RAMAGE, ROBERT THOMAS, JR. B.S. '51, Texas Technological College.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: The Trisomics of Barley.
Major Adviser: Prof. C. R. Burnham.
1955. REITZ, LOUIS POWERS. B.S. '30, Kansas State College of Agriculture and Applied Science; M.S. '37, University of Nebraska.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Responses of Hard Winter Wheat Varieties in Regional Tests.
Major Adviser: Prof. E. R. Ausemas.
1956. LINDEN, DUANE BERNERD. B.A. '52, Hiram College.
Major: Plant Genetics. Minor: Statistics.
Thesis: The Inheritance of Certain Sources of Fertility Restoration in the Texas Type of Cytoplasmic Male Sterility in Zea mays.
Major Adviser: Prof. E. L. Pinnell.
1956. TIMOTHY, DAVID HARRY. B.S. '52, M.S. '55, Pennsylvania State University.
Major: Plant Genetics. Minor: Plant Pathology.
Thesis: Evaluations of Combining Ability in Bromus inermis Lays.
Major Adviser: Prof. H. L. Thomas.

PLANT PATHOLOGY

1938. CHILTON, ST. JOHN POINDEXTER. B.S. '35, M.S. '36, Louisiana State University.
Major: Plant Pathology. Minor: Botany.
Thesis: Further Studies on the Cytology and Genetics of Ustilago zeae (Beckm.) Ung.
Major Adviser: Prof. E. C. Stakman.

1939. GIBBS, JAMES GORDON. B.Ag.Sc. '31, M.Ag.Sc. '32, University of New Zealand.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Factors Influencing the Control of Club-Root Caused by Plasmodiophora brassicae Wor.
Major Adviser: Prof. E. C. Stakman.
1939. HWANG, LIANG. B.S. '29, University of Nanking; M.S. '37, University of California.
Major: Plant Pathology. Minor: Botany.
Thesis: The Effect of Light on the Viability of Urediospores of Certain Cereal Rusts.
Major Adviser: Prof. E. C. Stakman.
1939. SIGGERS, PAUL VICTOR. B.S. '12, M.S. '15, University of Michigan.
Major: Plant Pathology. Minor: Forestry.
Thesis: The Brown-spot Needle Blight of Pine Seedlings.
Major Adviser: Prof. E. C. Stakman.
1939. TYNER, LAWRENCE EDMUND. B.Sc. '31, M.Sc. '33, University of Alberta.
Major: Plant Pathology. Minor: Agricultural Biochemistry.
Thesis: The Effect of Crop Debris upon the Pathogenicity of Cereal Foot- and Root-Rotting Fungi.
Major Adviser: Prof. E. C. Stakman.
1940. ALLISON, JOSEPH LEWIS. B.S. '34, Montana State College; M.S. '36, State College of Washington.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies of a Leaf Spot Disease on Bromus inermis.
Major Adviser: Prof. E. C. Stakman.
1940. PETTY, MILTON ANDREW, JR. B.S. '35, Southwestern Louisiana Institute; M.S. '37, Louisiana State University.
Major: Plant Pathology. Minor: Botany.
Thesis: The Effect of Certain Environmental Factors on the Phenotypic Variability and Genetic Variation in Ustilago zeae (Beck.) Unger.
Major Adviser: Prof. E. C. Stakman.
1940. TERVET, IAN WHITE. B.S. '31, University of Glasgow.
Major: Plant Pathology. Minor: Plant Physiology.
Thesis: Variability in Ustilago levis (Kell. and Sw.) Magn., Ustilago avenae (Pers.) Jens., and Ustilago hordei (Pers.) Kell. and Sw.
Major Adviser: Prof. E. C. Stakman.

1941. KERNKAMP, MILTON FREDRICK. B.S. '34, M.S. '38, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: The Relative Effect of Genetic and Environmental Factors on Growth Types of Ustilago zeae (Beck) Unger.
Major Adviser: Prof. E. C. Stakman.
1941. LASKARIS, THOMAS. B.S. '37, University of Delaware; M.S. '38, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Delphinium Crown Rot.
Major Adviser: Prof. E. C. Stakman.
1941. SCHAAL, LAWRENCE ARTHUR. B.S. '24, Kansas State Agricultural College; M.S. '25, University of Minnesota.
Major: Plant Pathology. Minor: Entomology.
Thesis: Variation and Physiologic Specialization in Actinomyces scabies.
Major Adviser: Prof. E. C. Stakman.
1941. VOORHEES, RICHARD KENNETH. B.S. in Ag. '30, M.S. '31, University of Florida.
Major: Plant Pathology. Minor: Botany.
Thesis: The Life History and Taxonomy of Physalospora rhodina (Berk. and Curt.) Cke.
Major Adviser: Prof. E. C. Stakman.
1941. WATSON, IRVINE ARMSTRONG. B.S. '38, University of Sydney.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on Pathological and Genetical Factors in Relation to Breeding Rust Resistant Wheats.
Major Adviser: Prof. E. C. Stakman.
1942. BORLAUG, NORMAN E. B.S. '37, M.S. '41, University of Minnesota.
Major: Plant Pathology. Minor: Forestry.
Thesis: Variation and Variability in Fusarium lini.
Major Adviser: Prof. J. J. Christensen.
1942. DOWNIE, ANDREW RAE. B.S. '36, M.S. '41, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Damping Off and Root Rot of Sugar Beets Caused by Aphanomyces and Cochlioides Drechs.
Major Adviser: Prof. E. C. Stakman.
1942. GOTTLIEB, DAVID. B.S. '37, College of the City of New York; M.S. '40, Iowa State College.
Major: Plant Pathology. Minor: Agricultural Biochemistry.
Thesis: Studies on the Nature of Wilting Due to Vascular Parasites.
Major Adviser: Prof. E. C. Stakman.

1942. GRAHAM, THOMAS WILLIAM. B.S. '31, Louisiana State University; M.S. '33, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Variation and Variability in Helminthosporium gramineum.
Major Adviser: Prof. J. J. Christensen.
1942. HANSON, EARLE WILLIAM. B.S. '33, M.S. '39, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Seedling Blights and Foot Rots of Wheat in the Spring Wheat Region of Northern United States.
Major Adviser: Prof. E. C. Stakman.
1942. MARTIN, WESTON JOSEPH. B.S. '37, Southwestern Louisiana Institute; M.S. '39, Louisiana State University.
Major: Plant Pathology. Minor: Botany.
Thesis: A Study of the Genetics of Sorosporium Syntherismae and Sobacellotheca Panici-Milliacel.
Major Adviser: Prof. E. C. Stakman.
1942. VAUGHAN, EDWARD KEMP. B.S. '29, New Mexico College of Agriculture and Mechanic Arts; M.S. '32, Oregon State Agricultural College.
Major: Plant Pathology. Minor: Plant Physiology.
Thesis: Bacterial Wilt of Tomato Caused by Phytonomas Solanacearum (EFS) Bergey et al.
Major Adviser: Prof. E. C. Stakman.
1943. CHEN, SHAN-MING. B.S. '31, National Tsing Hua University; M.S. '40, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Rhizoctonia solani Kühn.
Major Adviser: Prof. E. C. Stakman.
1943. CHEREWICK, WILLIAM JOHN. B.S. '33, University of Manitoba; M.S. '40, University of Minnesota.
Major: Plant Pathology. Minor: Soils.
Thesis: Studies on the Biology of Erysiphe graminis D.C.
Major Adviser: Prof. E. C. Stakman.
1943. DARLING, HENRY MELVIN. Ph.B. '31, Ripon College; M.S. '35, University of Minnesota.
Major: Plant Pathology. Minor: Horticulture.
Thesis: The Yield of Triumph Potatoes in Alabama as Affected by Tuber-borne Diseases, and Certain Other Factors Related to the Production of Seed in the South.
Major Adviser: Prof. E. C. Stakman.

1945. DARLEY, ELLIS FLECK. B.S. '38, Colorado State College.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Panel Diseases of *Hevea Brasiliensis*.
Major Adviser: Prof. E. C. Stakman.
1946. GATTANI, MOHAN LAL. B.Sc. '41, M.Sc. '43, Agra University.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on the Behavior of Diploid Lines of *Ustilago Zeae* (Beckm.) Ung.
Major Adviser: Prof. E. C. Stakman.
1946. KING, THOMAS HENRY. B.S. '34, North Dakota Agricultural College; M.S. '39, University of Minnesota.
Major: Plant Pathology. Minor: Plant Breeding.
Thesis: Studies on the Relationship of *Fomes Lignosus* Klotzsch and *Polyporus Zonalis* Berkeley and on the Factors Affecting the Pathogenicity of *Fomes Lignosus*.
Major Adviser: Prof. E. C. Stakman.
1946. WILSON, COYT TAYLOR. B.S. '38, M.S. '41, Alabama Polytechnic Institute.
Major: Plant Pathology. Minor: Plant Physiology.
Thesis: Concealed Damage of Peanuts.
Major Adviser: Prof. E. C. Stakman.
1947. BORDERS, HUEY INGLES. B.S. '33, University of Florida; M.S. '38, University of Minnesota.
Major: Plant Pathology. Minor: Horticulture.
Thesis: Studies on the Development and Control of *Sclerotinia sclerotiorum* (Lib.) DeBary.
Major Adviser: Prof. C. J. Eide.
1947. DAVIDSON, RICHARD SHOOTS. B.S. '40, M.S. '42, Ohio State University.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Development of Bacterial Soft Rot of Potato Tuber Initials.
Major Advisers: Profs. E. C. Stakman and C. J. Eide.
1947. FELDMAN, ALBERT WILLIAM. B.A. '42, University of Illinois; M.S. '44, North Carolina State College of Agriculture and Engineering.
Major: Plant Pathology. Minor: Biochemistry.
Thesis: Studies on the Physiological Aspects of *Ustilago zeae* (Beckm.) Ung.
Major Adviser: Prof. E. C. Stakman.

1947. HINGORANI, MANOHAR KARAMCHAND. B.S. '39, University of Bombay; Diploma of Associateship '43, Imperial Agricultural Research Institute.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Survival Ability of Certain Physiologic Races of Puccinia graminis avenae Erikss. and Henn.
Major Adviser: Prof. E. C. Stakman.
1947. MISRA, AYODHYA PRASAD. B.S. '37, M.S. '41, Agra College.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting Variability in the Development of Melampsora lini.
Major Advisers: Profs. E. C. Stakman and J. J. Christensen.
1947. PRESLEY, JOHN THOMAS. B.S. '35, University of Maryland.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Verticillium Wilt of Cotton with Particular Emphasis on Variation of the Causal Organism.
Major Adviser: Prof. J. J. Christensen.
1947. PRESTON, DUDLEY ARDEN. B.S. '33, State College of Washington; M.S. '40, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Bacterial Canker of Cowpeas in Oklahoma.
Major Adviser: Prof. E. C. Stakman.
1947. THOMAS, WALTER DILL, JR. B.S. '39, Colorado State College; M.S. '43, University of Minnesota.
Major: Plant Pathology. Minor: Horticulture.
Thesis: Factors Influencing the Epidemiology of Late Blight on Potatoes.
Major Adviser: Prof. C. J. Eide.
1947. TSIANG, CHEN TONG. B.S. '35, University of Nanking.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Root Rot of Flax caused by Rhizoctonia solani Kühn.
Major Adviser: Prof. E. C. Stakman.
1947. VAUGHN, JOHN RAYMOND. B.S. '38, Colorado State College of Agriculture and Mechanic Arts; M.S. '40, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: The Nature of Resistance of Potatoes to Scab and Some Factors Affecting the Type of Pustule.
Major Advisers: Profs. E. C. Stakman and C. J. Eide.

1948. ABDEL-HAK, TEMFIK MOHAMED IBRAHIM. B.S. '40, University of Cairo.
Major: Plant Pathology. Minor: Botany.
Thesis: Morphology and Behavior of Certain Races of Puccinia graminis tritici Erikss. and Henn.
Major Adviser: Prof. E. C. Stakman.
1948. HENDRIX, JOHN WALTER. B.S. '37, North Carolina State College of Agriculture and Engineering; M.F. '40, Yale University.
Major: Plant Pathology. Minor: Forestry.
Thesis: Studies on Inheritance of Stemphylium Resistance in Tomatoes.
Major Adviser: Prof. E. C. Stakman.
1948. MURAKISHI, HARRY HARUO. B.S. '40, University of California; M.S. '45, North Carolina State College of Agriculture and Engineering.
Major: Plant Pathology. Minor: Botany.
Thesis: Variation in Fusarium Bulbigenum Cke. and Mass. Var. Niveum Wr.
Major Adviser: Prof. C. J. Eide.
1948. ORELLANA, RODRIGO GONZALO. Ingeniero Agronomo '38, Central University; M.S. '44, University of Minnesota.
Major: Plant Pathology. Minor: Soils.
Thesis: Studies of the Development of Actinomyces scabies on Potatoes in Certain Minnesota Soils.
Major Advisers: Profs. E. C. Stakman and C. J. Eide.
1948. SILVERBERG, SAVEL BENHARD. B.S. '36, University of Idaho.
Major: Plant Pathology. Minor: Forestry.
Thesis: Factors Affecting the Growth and Survival of Phytophthora palmivora.
Major Adviser: Prof. C. M. Christensen.
1948. TELLER, MORRIS N. B.S. '40, Brooklyn College; M.S. '46, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Trace Elements in Relation to Fungus and Host Metabolism.
Major Advisers: Profs. E. C. Stakman and Helen Hart.
1949. ANWAR, MIR AHMAD ALI KHAN. B.Sc. '41, Osmania University.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Factors Affecting the Survival of Helminthosporium sativum and Fusarium lini in Soil.
Major Advisers: Profs. E. C. Stakman and J. J. Christensen.
1949. DEZEEUW, DONALD JOHN. B.S. '33, Michigan State College; M.S. '40, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Minor Element Nutrition in Relation to Plant Disease.
Major Advisers: Profs. E. C. Stakman and Helen Hart.

1949. DUCHARME, ERNEST PETER. B.S. '38, St. Mary's College;
M.S. '43, DePaul University.
Major: Plant Pathology. Minor: Botany.
Thesis: The Nature and Control of the Tristeza Disease of Citrus.
Major Adviser: Prof. E. C. Stakman.
1949. HASAN, SYED FAKHRUL. B.Sc. '45, Osmania University.
Major: Plant Pathology. Minor: Botany.
Thesis: Root Rot of Oats in Relation to Varietal Improvement.
Major Adviser: Prof. E. C. Stakman.
1949. LOEGERING, WILLIAM QUERIN. B.S. with distinction '38,
University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Prevalence and Distribution of Physiologic Races of
Puccinia graminis tritici in the United States from 1938
to 1947 as Affected by the Distribution of Wheat Varieties.
Major Adviser: Prof. E. C. Stakman.
1949. MEHTA, PASHUPATI RAM. B.S. '28, Benares Hindu University;
M.S. '33, Allahabad University.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Development of Corn Rust,
Puccinia sorghi Schw.
Major Adviser: Prof. E. C. Stakman.
1949. ROWELL, JOHN BARTLETT. B.S. '41, Rhode Island State College.
Major: Plant Pathology. Minor: Agricultural Biochemistry.
Thesis: The Pathogenicity of Alternaria dauci f. solani.
Major Advisers: Profs. E. C. Stakman and C. J. Eide.
1949. ROUBICEK, CARL BEN. B.S. Ag. '41 University of Nebraska;
M.S. '48, Kansas State College.
Major: Animal Husbandry. Minor: Plant Genetics.
Thesis: An Analysis of the Breeding Methods Employed in the
Development of the Minnesota No. 2 Herd of Swine at the
Minnesota Northwest Experiment Station.
Major Adviser: Prof. L. M. Winters.
1949. SACKSTON, WALDEMAR ESTI. B.S.A. '38, University of Manitoba;
M.Sc. '40, McGill University.
Major: Plant Pathology. Minor: Plant Physiology.
Thesis: Studies on the Pasm Disease of Flax.
Major Advisers: Profs. E. C. Stakman and J. J. Christensen.
1949. YOUNG, HARRY CURTIS, JR. B.S. '40, Ohio State University;
M.S. '43, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Resistance in Corn to Several Pathogens Causing Seedling
Blights and Stalk Rots.
Major Adviser: Prof. J. J. Christensen.

1950. BASKIN, AARON DAVID. B.A. '37, New York University;
M.S. '47, Rutgers University.
Major: Plant Pathology. Minor: Botany.
Thesis: The Fungicidal and Herbicidal Action of Cyanamides.
Major Adviser: Prof. E. C. Stakman.
1950. KHAN, ABRAR M. B.Sc. '40, M.Sc. '42, Muslim University.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Pathogenicity of *Rhizoctonia Solani* on Legumes.
Major Adviser: Prof. E. C. Stakman.
1950. MULLIN, ROBERT SPENCER. B.S. '34, Hampden-Sydney College;
M.S. '37, Virginia Polytechnic Institute.
Major: Plant Pathology. Minor: Botany.
Thesis: Stem Rust in Virginia.
Major Adviser: Prof. E. C. Stakman.
1950. MUNNECKE, DONALD EDWIN. B.S. '42, M.S. '49, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: A Study of Diagnostic Characters of Physiologic Races of *Puccinia graminis tritici*.
Major Adviser: Prof. E. C. Stakman.
1950. WISMER, CHESTER A. B.S. '31, M.S. '33, Kansas State College.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on the Control of the Pineapple Disease of Sugar Cane Caused by *Ceratostemella paradoxa* (DeSeynes) Dade.
Major Adviser: Prof. E. C. Stakman.
1951. BEDI, KISHAN SINGH. B.S. '29, M.S. '33, University of the Punjab.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Formation of Sclerotia, Apothecia and Survival of *Sclerotinia sclerotiorum* (Lib.) deBary.
Major Adviser: Prof. E. C. Stakman.
1951. BOOSALIS, MICHAEL G. B.S. '41, M.S. '48, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: The Epidemiology of *Xanthomonas translucens* (J. J. and R.) Dowson on Cereals and Grasses.
Major Adviser: Prof. E. C. Stakman.
1951. COHEN, MORTIMER. B.A. '36, Brooklyn College; M.S. '42, College of the City of New York.
Major: Plant Pathology. Minor: Plant Physiology.
Thesis: Studies on Pathogenicity and Sexuality of Certain Isolates of *Phytophthora palmivora* Butler.
Major Adviser: Prof. C. M. Christensen.

1951. GIBLER, JOHN WESLEY. B.S. '47, Montana State College;
M.S. '50, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on the Control of Rhizoctonia solani on Soybeans.
Major Adviser: Prof. M. F. Kernkamp.
1951. GOODMAN, JACOB JOSEPH. B.S.A. with great distinction '44,
University of Saskatchewan; M.Sc. '47, University of Alberta.
Major: Plant Pathology. Minor: Botany.
Thesis: Physiological Studies on Fungi Associated with the
Deterioration of Stored Grains.
Major Adviser: Prof. C. M. Christensen.
1951. KAUSAR, ABDUL GHAFOR. B.Sc. '43, Punjab University.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on the Biology of Dendrophoma obscurans
(Ellis and Everhart) Anderson.
Major Advisers: Profs. T. H. King and E. C. Stakman.
1951. KOMMEDAHL, THOR. B.S. '45, M.S. '47, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting the Pathogenicity of Fusarium lini Bolley.
Major Adviser: Prof. J. J. Christensen.
1952. ANDERSON, RALPH LEO. B.S. '47, M.S. '49, University of Minnesota.
Major: Plant Pathology. Minor: Forestry.
Thesis: Factors Influencing the Incidence of Hypoxylon Canker
of Aspen.
Major Adviser: Prof. C. M. Christensen.
1952. ATKINSON, ROBERT EMMETT. B.S. '34, University of Minnesota;
M.S. '38, Louisiana State University.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Viruses of Cereal Grains.
Major Adviser: Prof. E. C. Stakman.
1952. FRENCH, DAVID W. B.S. with distinction '43, M.S. '49,
University of Minnesota.
Majors: Plant Pathology and Forestry.
Thesis: The Phenomena of Plugging in Paper Machine Wet Felts.
Major Advisers: Profs. C. M. Christensen and F. H. Kaufert.
1952. HOTSON, HUGH HOWISON. B.S. '38, M.S. '40, University of
Washington.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on the Physiology of the Rust Fungi.
Major Adviser: Prof. E. C. Stakman.

1952. IBRAHIM, ISMAIL ALI. B.Sc. '43, University of Cairo;
M.S. '49, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on the Effect of Some Environmental Conditions
and Chemicals on the Development of Puccinia graminis
avenae Erikss. and Henn.
Major Adviser: Prof. E. C. Stakman.
1952. LU, SHIH-I. B.S. '43, National University of Yunnan;
M.S. '50, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: A Study of Variation in Black Pigment Production in
Ustilago zeae (Beckm.) Unger.
Major Adviser: Prof. E. C. Stakman.
1952. PETURSON, BJORN. B.S. '28, University of Manitoba;
M.S. '29, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: Studies on Specialization and Pathogenicity in Puccinia
coronata Corda.
Major Adviser: Prof. C. J. Eide.
1952. SHUKLA, TAPA NATH. B.S. '47, Agra University; M.S. '49,
Kanpur State College of Agriculture.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Variability in Resistance of Certain Wheat Varieties
to Puccinia graminis tritici Race 15.
Major Advisers: Profs. E. C. Stakman and Helen Hart.
1952. SKILES, ROBERT LAWRENCE. B.S. '47, M.S. '50, Colorado
State College.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: The Strawberry Viruses in Minnesota.
Major Advisers: Profs. T. H. King and E. C. Stakman.
1953. ANDREWS, EDWARD ARNOLD. B.A. '32, University of Wisconsin;
M.S. '43, University of Minnesota.
Major: Plant Pathology. Minor: Forestry.
Thesis: Root Rots and Seedling Blight of Forage Grasses in
Minnesota.
Major Adviser: Prof. J. J. Christensen.
1953. ANDREWS, STUART ROBINSON. B.S. '33, M.F. '35, Yale University.
Major: Plant Pathology. Minor: Forestry.
Thesis: Western Red Rot of Ponderosa Pine.
Major Adviser: Prof. C. M. Christensen.

1953. DEVAY, JAMES EDSON. B.S. with high distinction '49, University of Minnesota.
Major: Plant Pathology. Minor: Agricultural Biochemistry.
Thesis: Biochemical Studies of Sex and Pathogenicity in Ustilago zeae (Beckm.) Ung.
Major Adviser: Prof. E. C. Stakman.
1953. GOTO, SHOSUKE. B.Sc. '41, M.Sc. '43, University of Alberta.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Leaf Diseases of Oats.
Major Adviser: Prof. E. C. Stakman.
1953. JOHNSON, HERBERT GORDON. B.S. '39, University of Minnesota.
Major: Plant Pathology. Minor: Soils.
Thesis: Investigations on the Control of Root Rot of Canning Peas.
Major Advisers: Profs. E. C. Stakman and T. H. King.
1953. LYLE, JAMES ALBERT. B.S. '40, University of Kentucky;
M.S. '44, North Carolina State College.
Major: Plant Pathology. Minor: Botany.
Thesis: A Study of the Efficacy of Fungicides in Controlling Diseases of Certain Vegetables.
Major Adviser: Prof. E. C. Stakman.
1953. MICHAELSON, MERLE E. B.S. '43, River Falls State Teachers College; M.S. '48, Colorado State College of Agriculture and Mechanic Arts.
Major: Plant Pathology. Minor: Botany.
Thesis: Factors Affecting Development of Stalk Rot of Corn Caused by Diplodia zeae and Gibberella zeae.
Major Adviser: Prof. J. J. Christensen.
1953. MILLER, LAWRENCE INGRAM. B.A. '36, Oberlin College;
M.S. '38, Virginia Polytechnic Institute.
Major: Plant Pathology. Minor: Entomology.
Thesis: Studies of the Parasitism of Cercospora arachidicola Hori and Cercospora personata (B. and C.) Ell. and Ev.
Major Adviser: Prof. E. C. Stakman.
1953. ROANE, CURTIS WOODARD. B.S. '43, M.S. '44, Virginia Polytechnic Institute.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Genetic Variation and Cytology of Helminthosporium carbonum Ullstrup and the Importance of the Pathogen in the Development of Disease-Resistant Maize.
Major Advisers: Profs. C. J. Eide and J. J. Christensen.
1953. SHURTLEFF, MALCOLM C., JR. B.S. '43, Rhode Island State College; M.S. '50, University of Minnesota.
Major: Plant Pathology. Minor: Agricultural Biochemistry.
Thesis: Brown Patch of Turf Caused by Rhizoctonia solani.
Major Adviser: Prof. Helen Hart.

1953. STEWART, DONALD MARTIN. B.S. '31, University of Minnesota.
Major: Plant Pathology. Minor: Forestry.
Thesis: Factors Affecting Local Control of White Pine Blister Rust.
Major Adviser: Prof. E. C. Stakman.
1954. BUTLER, EDWARD EUGENE. B.S. '43, University of Delaware;
M.S. '48, Michigan State College.
Major: Plant Pathology. Minor: Botany.
Thesis: Mycoparasitism of Rhizoctonia solani.
Major Advisers: Profs. J. J. Christensen and C. J. Eide.
1954. FRIDLUND, PAUL RUSSELL. B.A. '42, Augsburg College;
M.S. '52, University of Minnesota.
Major: Plant Pathology. Minor: Entomology.
Thesis: Studies on Virus Diseases Infecting Hardy Prunus Grown
in Minnesota Nurseries.
Major Adviser: Prof. C. J. Eide.
1954. LOGSDON, CHARLES ELDON. B.A. '42, University of Kansas City.
Major: Plant Pathology. Minor: Horticulture.
Thesis: Studies on Ring Rot of Potatoes.
Major Adviser: Prof. C. J. Eide.
1954. NELSON, RICHARD ROBERT. B.A. '50, Augsburg College;
M.S. '52, University of Minnesota.
Major: Plant Pathology. Minor: Agronomy.
Thesis: Studies on Stemphylium Leafspot of Alfalfa.
Major Adviser: Prof. M. F. Kernkamp.
1954. SCHWINGHAMER, ERWIN. B.S. '49, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Physiologic Specialization and the Nature of Parasitism
in Colletotrichum linicolum Pethyb. and Laff.
Major Adviser: Prof. J. J. Christensen.
1955. FROSHEISER, FREDRICK IMMANUEL. B.S. with honor '41,
M.S. '49, University of Wyoming.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on the Etiology and Epidemiology of Diaporthe
phaseolorum var. caulivora, the Cause of Stem Canker of Soybeans.
Major Adviser: Prof. M. F. Kernkamp.
1955. SCHROEDER, HARRY WILLIAM. B.S. with distinction '51,
M.S. '55, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Factors Affecting Resistance of Wheat to Scab Caused
by Gibberella zeae (Schw.) Petch.
Major Adviser: Prof. J. J. Christensen.

1955. SWAEBLY, MARY ANN. Ph.B. '47, Marquette University.
Major: Plant Pathology. Minor: Botany.
Thesis: Variability in the Infection of Wheat by Puccinia graminis tritici and Studies on Extracts from Rust Urediospores.
Major Adviser: Prof. Helen Hart.
1956. BROYLES, JAMES WALKER. B.S. with honors '49, M.S. '50, Mississippi State College.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Comparative Studies of Races and Biotypes of Puccinia graminis, with Special Reference to Morphology of Urediospore Germination, Chemical Composition, and Factors Affecting Survival.
Major Advisers: Profs. J. J. Christensen and Helen Hart.
1956. MOHAMED, HOSNI ABDEL RAHMAN. B.Sc. '49, Diploma Statistics '52, Cairo University; M.S. '55, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Comparative Studies of Races 49 and 139 of Puccinia graminis var. tritici Erikss. and Henn.
Major Adviser: Prof. Helen Hart.
1956. PAHARIA, KISHUN DASS. B.Sc. (Ag.) '49, M.Sc. (Ag.) '51, Kanpur Government Agricultural College.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: The Effect of Cropping Sequence on Soil Microflora in Relation to Development of Root-Rots of Cereals.
Major Advisers: Profs. J. J. Christensen and Thor Kommedahl.
1956. SANTIAGO, JOAQUIM CARVALHO. Eng. Agron. '49, Technical University of Lisbon.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Epidemiology of Wheat Stem Rust in Portugal and the Effect of Environmental Factors and Certain Mutagenic Agents on the Prevalent Physiologic Races of Puccinia graminis tritici.
Major Advisers: Profs. J. J. Christensen and Helen Hart.
1956. SCHNEIDER, CHARLES LOUIS. B.S. '41, M.S. '53, University of Minnesota.
Major: Plant Pathology. Minor: Plant Genetics.
Thesis: Studies on the Pathogenicity and Host Range of the Sugar Beet Black Root Fungus, Aphanomyces cochlioides Drechs.
Major Adviser: Prof. J. J. Christensen.
1956. TUIITE, JOHN FRANCIS. B.A. '51, Hunter College; M.S. '53, University of Minnesota.
Major: Plant Pathology. Minor: Botany.
Thesis: The Relationship of Aspergillus glaucus to the Deterioration of Stored Wheat.
Major Adviser: Prof. C. M. Christensen.

1956. TURK, FATEH MOHOMED. B.Sc. '47, University of Bombay;
M.Sc. '51, University of Sind.
Major: Plant Pathology. Minors: Botany and Agricultural Botany.
Thesis: The Biological Relationship Between the Oak Wilt Pathogen
Endoconidiophora fagacearum Bretz, and the Fungi Found in
Wilted Oak Trees.
Major Advisers: Profs. J. J. Christensen and D. W. French.

PLANT PHYSIOLOGY

1938. LORENZ, RALPH WILLIAM. B.S. '30, University of Minnesota.
Major: Plant Physiology. Minor: Forestry.
Thesis: Maximum Temperature Relationship of Forest Trees.
Major Advisers: Profs. R. B. Harvey and Henry Schmitz.
1938. NELSON, RICHARD CARL. B.A. summa cum laude '35, University
of Minnesota.
Major: Plant Physiology. Minor: Biochemistry.
Thesis: The Production and Function of Ethylene in the Ripening
Process in Fruits.
Major Adviser: Prof. R. B. Harvey.
1939. LOU, CHERNGHOW. B.S. '32, Tsing Hua University; M.S. '34,
Lingnan University.
Major: Plant Physiology. Minors: Biochemistry and Physics.
Thesis: Studies on Turgor Movements and Action Currents of
Mimosa pudica.
Major Adviser: Prof. G. O. Burr.
1939. WICK, ARNE NORMAN. B.Ch. '34, M.S. '36, University of Minnesota.
Major: Plant Physiology. Minor: Agricultural Biochemistry.
Thesis: Growth and Composition of Phaseolus vulgaris in Relation
to Light Intensity and Quality.
Major Adviser: Prof. G. O. Burr.
1941. BELKENGREN, RICHARD OLIVER. B.S. '39, University of Minnesota.
Major: Plant Physiology. Minor: Agricultural Biochemistry.
Thesis: The Use of the Heavy Carbon Isotope as a "Tracer" in
Plant Metabolism.
Major Adviser: Prof. G. O. Burr.
1941. RYGG, GEORGE LEONARD. B.S. '29, North Dakota Agricultural
College; M.S. '31, Oregon State College.
Major: Plant Physiology. Minor: Horticulture.
Thesis: Compositional Changes in the Date Fruit during Growth
and Ripening.
Major Adviser: Prof. G. O. Burr.

1944. JOHNSTON, FREDERICK BLANEY. B.A. '27, M.A. '28, University of British Columbia.
Major: Plant Physiology. Minor: Horticulture.
Thesis: Studies on Dehydration of Vegetables and Fruits.
Major Adviser: Prof. R. B. Harvey.
1950. HAMM, PHILLIP CURTIS. B.S. '38, University of Minnesota.
Major: Plant Physiology. Minor: Horticulture.
Thesis: Physiological Studies of the Seed of Taraxacum kok-saghyz.
Major Adviser: Prof. R. H. Landon.
1952. KROG, NORMAN EILER. B.S. '47, University of Minnesota.
Major: Plant Physiology. Minor: Agricultural Biochemistry.
Thesis: The Effects of Uranium Salts on Higher Plants.
Major Adviser: Prof. E. C. Stakman.
1954. LE TOURNEAU, DUANE JOHN. B.S. with distinction '48, M.S. '51, University of Minnesota.
Major: Plant Physiology. Minor: Agricultural Biochemistry.
Thesis: Catalase Activity and Chlorophyll Content of Several Species of Triticum in Relation to Their Resistance to Puccinia graminis tritici.
Major Advisers: Profs. Helen Hart and R. H. Landon.

POULTRY HUSBANDRY

1952. JOHNSON, WILLIAM ALEXANDER. B.S. '43, M.S. '48, Louisiana State University.
Major: Poultry Husbandry. Minor: Animal Husbandry.
Thesis: A Study of the Performance of Inbred Line Crosses in the Domestic Fowl.
Major Adviser: Prof. R. N. Snoffner.
1952. SHERWOOD, DONALD H. B.S. '33, Oregon State College; M.S. '50, State College of Washington.
Major: Poultry Husbandry. Minor: Animal Husbandry.
Thesis: Studies with Corn-Soy Type Rations for Starting Turkey Poults.
Major Adviser: Prof. H. J. Sloan.
1952. SWANSON, MILO HARLAND. B.S. with distinction '39, M.S. '47, University of Minnesota.
Major: Poultry Husbandry. Minor: Agricultural Biochemistry.
Thesis: A Study of Some Physical and Chemical Changes Associated with the Storage of Poultry Meat.
Major Adviser: Prof. H. J. Sloan.
1953. BERG, ROBERT WILLIAM. B.S. with distinction '41, M.S. '50, University of Minnesota.
Major: Poultry Husbandry. Minor: Animal Husbandry.
Thesis: Some Relationships of Several Body Measurements to Meat Yield and Reproductive Performance in Turkeys.
Major Adviser: Prof. R. N. Snoffner.

1953. HILL, ELDON GLEN. B.S. '40, Colorado State College of Agriculture and Mechanic Arts; M.S. '50, University of Minnesota. Major: Poultry Husbandry. Minor: Agricultural Biochemistry. Thesis: Purified Diet and Unidentified Growth Factor Studies in the Nutrition of the Chick. Major Adviser: Prof. H. J. Sloan.
1953. KONDRA, PETER ALEXANDER. B.S.A. '34, M.Sc. '43, University of Manitoba. Major: Poultry Husbandry. Minor: Animal Husbandry. Thesis: Inheritance Studies in Turkeys. Major Adviser: Prof. R. N. Shoffner.

SOILS

1940. CHEPIL, WILLIAM STEPHEN. B.S. with distinction '30, M.S. '32, University of Saskatchewan. Major: Soils. Minor: Agricultural Biochemistry. Thesis: The Relation of Wind Erosion to Some Physical Soil Characteristics. Major Adviser: Prof. F. J. Alway.
1940. ROWLES, CHARLES ARTHUR. B.S. with distinction '36, M.S. '38, University of Saskatchewan. Major: Soils. Minor: Plant Physiology. Thesis: A Study of Factors Affecting the Stability of Soil Aggregates. Major Adviser: Prof. C. O. Rost.
1941. CALDWELL, ALFRED CRAIG. B.S.A. '36, M.S. '38, University of Alberta. Major: Soils. Minor: Agricultural Biochemistry. Thesis: The Chemical Composition of the Fine Clay Fractions from Minnesota Black Prairie Soils. Major Adviser: Prof. C. O. Rost.
1942. MACGREGOR, JOHN MALCOLM. B.Sc. in Ag. '36, M.Sc. '38, University of Alberta. Major: Soils. Minor: Agricultural Biochemistry. Thesis: The Influence of Soil Conditions and Fertilizer Treatment on the Composition of the Potato Plant. Major Adviser: Prof. C. O. Rost.
1943. EVANS, CHARLES ALBERT. B.S. '31, Southeast Missouri State Teachers College; M.S. '35, Washington University. Major: Soils. Minor: Zoology. Thesis: Humus Sulphur and Phosphorus in Minnesota Soils. Major Adviser: Prof. C. O. Rost.

1943. PALMER, GEORGE. B.S. '38, College of the City of New York;
M.S. '39, University of Minnesota.
Major: Soils. Minor: Geology.
Thesis: Characteristics of the Zonal Soils of the Red River Valley.
Major Adviser: Prof. C. O. Rost.
1945. BENTLEY, CHARLES FRED. B.Sc. '39, M.Sc. '42, University of Alberta.
Major: Soils. Minor: Plant Physiology.
Thesis: A Study of Some Solonetz Soil Complexes in Saskatchewan.
Major Adviser: Prof. C. O. Rost.
1945. SOINE, OLAF CONRAD. B.A. '32, St. Olaf College; M.S. '37,
University of Minnesota.
Major: Soils. Minor: Agricultural Economics.
Thesis: The Relationship of Slope and Erosion to the Physical
and Chemical Characteristics of the Tama and Fayette Soils
of Southeastern Minnesota.
Major Adviser: Prof. P. R. McMiller.
1946. BROWN, ARTHUR LLOYD. B.Sc. '39, M.Sc. '41, University of Alberta.
Major: Soils. Minor: Geology.
Thesis: The Chemical Composition of the Colloidal Clay Fraction
of Some Solodi Soils of Minnesota.
Major Advisers: Profs. A. C. Caldwell and C. O. Rost.
1946. WILLIAMS, DAVID EMERTON. B.S. '39, M.S. '41, University of Utah.
Major: Soils. Minor: Plant Physiology.
Thesis: A Study of the Black and Brown Pigments of Soil Humus
and Their Distribution Throughout the Soil Profile.
Major Adviser: Prof. C. O. Rost.
1948. TOOGOOD, JOHN ALFRED. B.S. '41, University of Alberta.
Major: Soils. Minor: Agronomy.
Thesis: The Adequacy of Major Plant Nutrients in Certain
Minnesota Soils under a Soil Management Program.
Major Adviser: Prof. C. O. Rost.
1949. HALVORSON, ALFRED RUBIN. B.S. with distinction '44,
University of Minnesota.
Major: Soils. Minor: Geology.
Thesis: Factors Affecting the Nitrate Producing Power of Some
Minnesota Soils.
Major Adviser: Prof. A. C. Caldwell.
1949. KHAN, AZIZ DULAH. Diploma of Licentiate in Agriculture '29,
Gov't Agricultural College (India); M.S. '47, University of Minnesota.
Major: Soils. Minor: Agronomy.
Thesis: The Chemical Properties of Related Prairie Soils as
Influenced by Differences in Surface Relief.
Major Advisers: Profs. C. O. Rost and P.R. McMiller.

1949. KRIEGER, ROBERT ALBERT. B.S. '41, College of St. Thomas;
M.S. '42, University of Minnesota.
Major: Soils. Minor: Agricultural Biochemistry.
Thesis: A Study of Several Minor Elements in Some Podzol Soils.
Major Adviser: Prof. C. O. Rost.
1950. ARNEMAN, HAROLD FREDERICK. B.S. '39, M.S. '46, University
of Minnesota.
Major: Soils. Minor: Geology.
Thesis: The Physical and Mineralogical Properties of Related
Minnesota Prairie Soils.
Major Adviser: Prof. P. R. McMiller.
1950. BRAGE, BURTON LEROY. B.S. '46, University of Minnesota.
Major: Soils. Minor: Geology.
Thesis: The Effect of Long-time Treatments on the Yield and
Chemical Constituents of the Soil.
Major Adviser: Prof. A. C. Caldwell.
1951. HOLT, ROBERT FARNSWORTH, SR. B.A. '43, Macalester College;
M.S. '49, University of Minnesota.
Major: Soils. Minor: Chemistry.
Thesis: Properties and Interrelationships of Wooded Soils in
Northern Minnesota.
Major Adviser: Prof. P. R. McMiller.
1951. MAKI, TENHO EWALD. B.S. with high distinction '30,
M.S. '31, University of Minnesota.
Major: Soils. Minor: Forestry.
Thesis: Some Factors Affecting the Composition and Development
of Forest Floor.
Major Adviser: Prof. C. O. Rost.
1951. SHUBECK, FRED ELOF. B.S. '40, South Dakota State College
of Agriculture and Mechanic Arts.
Major: Soils. Minor: Agronomy.
Thesis: The Effect of Fertilizer Rates, Ratios and Plant
Populations on Corn Yields.
Major Adviser: Prof. A. C. Caldwell.
1954. EHRLICH, WALTER ARNOLD. B.S.A. '39, M.Sc. '46, University
of Manitoba.
Major: Soils. Minor: Geology.
Thesis: Pedological Processes of Some Manitoba Soils.
Major Adviser: Prof. P. R. McMiller.
1954. KEOGH, JOSEPH LLOYD. B.S. '48, College of St. Thomas;
M.S. '51, University of Minnesota.
Major: Soils. Minor: Geology.
Thesis: A Study of Soil Testing Methods for Minnesota Soils.
Major Advisers: Profs. C. O. Rost and P. M. Burson.

1954. OGATA, GEN. B.S. '49, University of Minnesota.
Major: Soils. Minor: Bacteriology.
Thesis: Nitrate Content and Hydrogen-Ion Concentration of Soils and Nitrogen Content of Oat Plants as Affected by Rates of Liming.
Major Adviser: Prof. A. C. Caldwell.
1955. HUTCHEON, WILLIAM LESLIE. B.S.A. with distinction '39, M.Sc. '41, University of Saskatchewan.
Major: Soils. Minor: Agricultural Engineering.
Thesis: Moisture Flow Induced by Thermal Gradients Within Unsaturated Soils.
Major Adviser: Prof. A. C. Caldwell.
1956. NELSON, WALLACE WARREN. B.S. with distinction '50, University of Minnesota.
Major: Soils. Minor: Agronomy.
Thesis: The Effect of Rate, Ratio, and Time of Fertilizer Application on the Yield, Composition, and Longevity of Alfalfa.
Major Adviser: Prof. J. M. MacGregor.
1956. RAY, HOWARD EUGENE. B.S. '49, M.S. '50, Kansas State College of Agriculture and Applied Science.
Major: Soils. Minor: Agronomy.
Thesis: Studies on the Uptake of Nitrogen by Corn as Influenced by Nitrogen Fertilization, and the Movement of Labelled Nitrogen in the Soil.
Major Advisers: Profs. J. M. MacGregor and E. L. Schmidt.
1956. STOECKELER, JOSEPH HENRY. B.S. '30, M.S. '31, Iowa State College.
Major: Soils. Minor: Plant Pathology.
Thesis: Soil Factors Affecting the Growth of Quaking Aspen Forests in the Lake States.
Major Adviser: Prof. W. P. Martin.

VETERINARY ANATOMY

1956. BELL, JOHN THOMAS, JR. D.V.M. '52, University of Georgia.
Major: Veterinary Anatomy. Minor: Pharmacology.
Thesis: A Comparative Study of Lipid Accumulation in the Adrenal Glands of Mature Non-Pregnant Dairy Heifers, Non-Pregnant Lactating Dairy Cows, and Pregnant Lactating Dairy Cows.
Major Adviser: Prof. A. F. Weber.

VETERINARY MEDICINE

1944. POMEROY, BENJAMIN SHERWOOD. D.V.M. '33, Iowa State College; M.S. '34, Cornell University.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Salmonellosis of Turkeys.
Major Adviser: Prof. W. L. Boyd.

1947. JASPER, DONALD EDWARD. B.S. '40, D.V.M. '42, State College of Washington; M.S. '44, Iowa State College.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Hepatic Changes in the Bovine during Pregnancy and Ketosis.
Major Adviser: Prof. M. H. Roepke.
1948. SAUTTER, JAY HOWARD. D.V.M. '44, Ohio State University.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Experimental Histomoniasis (Infectious Enterohepatitis) of Turkeys with Special Reference to Chemotherapy.
Major Advisers: Profs. M. H. Roepke and B. S. Pomeroy.
1949. SELLERS, ALVIN FERNER. V.M.D. '39, University of Pennsylvania; M.Sc. '40, Ohio State University.
Major: Veterinary Medicine. Minor: Agricultural Biochemistry.
Thesis: Electrolyte Studies in the Pregnant and Post-parturient Cow.
Major Adviser: Prof. M. H. Roepke.
1950. HOYT, HARVEY HARRISON. D.V.M. '42, Iowa State College.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: The Propagation and Concentrations of the Causative Agent of Infectious Sinusitis of the Turkey in the Chick Embryo.
Major Adviser: Prof. B. S. Pomeroy.
1951. MATHER, GEORGE WELLS. D.V.M. '35, Iowa State College.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: The Development of Methods of Angiostomy Cannulation of and Temperature Measurement in the Pulmonary Artery and Left Atrium together with a Measure of Rectal Temperatures of Normal Dogs.
Major Advisers: Profs. M. H. Roepke and R. L. Kitchell.
1951. WILLIAMS, JAMES EDWARD. D.V.M. '46, Alabama Polytechnic Institute; M.S. '49, University of Minnesota.
Major: Veterinary Medicine. Minor: Bacteriology.
Thesis: The Antigenic Nature of Salmonella pullorum and Serologically Related Organisms.
Major Adviser: Prof. B. S. Pomeroy.
1952. BARTLETT, DAVID E. D.V.M. '40, Colorado State College of Agriculture and Mechanic Arts.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Bovine Venereal Trichomoniasis: Diagnosis, Incidence, and Treatment of the Infected Bull.
Major Adviser: Prof. M. H. Roepke.
1953. AMARASINGHE, ARYADASA. Graduate '39, Bengal Veterinary College; M.P.H. '52, M.S. '53, University of Minnesota.
Major: Veterinary Medicine. Minor: Public Health.
Thesis: New Procedures for Differentiating Specific from Non-Specific Agglutination in Brucellosis Serum and Milk Tests.
Major Adviser: Prof. M. H. Roepke.

1953. JENSEN, RUE L. B.S. '37, M.S. '39, Utah State Agricultural College; D.V.M. '42, Colorado State College of Agriculture and Mechanic Arts.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: The Pathogenesis of Hepatic Necrobacillosis in Beef Cattle.
Major Adviser: Prof. M. H. Roepke.
1953. PRITCHARD, WILLIAM ROY. D.V.M. '46, Kansas State College of Agriculture and Applied Science.
Major: Veterinary Medicine. Minor: Pharmacology.
Thesis: Trichloroethylene-Extracted Soybean Oil Meal (Tcesom) Poisoning in Animals.
Major Adviser: Prof. M. H. Roepke.
1955. ARMISTEAD, WILLIS WILLIAM. D.V.M. '38, Texas Agricultural and Mechanical College; M.S. '50, Ohio State University.
Major: Veterinary Medicine. Minor: Pharmacology.
Thesis: The Intraperitoneal Use of Skin Autografts in Veterinary Surgery.
Major Adviser: Prof. M. H. Roepke.
1955. FLINT, JEAN CARROLL. D.V.M. '32, M.S. '50, Colorado State College of Agriculture and Mechanic Arts.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Feline Infectious Anemia.
Major Adviser: Prof. M. H. Roepke.
1955. SPURRELL, FRANCIS A. B.S. '41, University of Wisconsin; D.V.M. '46, Iowa State College.
Major: Veterinary Medicine. Minors: Physiological Chemistry and Radiology.
Thesis: Measurement of Response to Pituitary Gonadotrophin in the Mammal Utilizing Radioisotope Techniques.
Major Adviser: Prof. M. H. Roepke.
1956. ARNOLD, JOHN PHILLIP. D.V.M. '41, M.S. in Vet. Surg. '48, Iowa State College.
Major: Veterinary Medicine. Minor: Pathology.
Thesis: Neuroanatomical Studies Related to the Production of Paravertebral Anesthesia of the Lateral Abdominal Wall in the Bovine.
Major Advisers: Profs. R. L. Kitchell and M. H. Roepke.
1956. BROWN, RICHARD WALLACE, JR. B.S. '43, Pennsylvania State College; V.M.D. '45, University of Pennsylvania.
Major: Veterinary Medicine. Minor: Bacteriology.
Thesis: Bovine Staphylococcal Mastitis.
Major Adviser: Prof. M. H. Roepke.

1956. GOOD, ARCHIE LEROY. V.M.S. '43, University of Pennsylvania;
M.S. '51, Kansas State College of Agriculture and Applied Science.
Major: Veterinary Medicine. Minor: Pharmacology.
Thesis: A Study of Some of the Physiologic Adjustments of the
Unanesthetized Dog When Exposed to Extreme Cold.
Major Adviser: Prof. A. F. Sellers.

BIOLOGICAL SCIENCES

BOTANY

1939. BIFOSS, CALLISTUS GIBES. M.A. '27, Western State College of Colorado.
Major: Botany. Minor: Geology.
Thesis: A Comparative Study of the Water Conducting Capacity and Growth Habits of Juniperus horizontalis Moench and Juniperus virginiana L.
Major Advisers: Profs. W. S. Cooper and D. B. Lawrence.
1939. EGGLEER, WILLIS ALEXANDER. B.A. '27, Northland College; M.S. '36, University of Minnesota.
Major: Botany (Ecology). Minor: Geology.
Thesis: Primary Succession on Recent Lava Deposits in Southern Idaho.
Major Adviser: Prof. W. S. Cooper.
1939. MOYLE, JOHN BRIGGS. B.A. summa cum laude '33, University of Minnesota.
Major: Botany (Taxonomy). Minors: Bacteriology and Geology.
Thesis: The Larger Aquatic Plants of Minnesota and the Factors Determining Their Distribution.
Major Adviser: Prof. C. O. Rosendahl.
1939. MYERS, JACK EDGAR. B.S. '34, Juniata College; M.S. '35, Montana State College.
Major: Botany. Minor: Bacteriology.
Thesis: Studies on Photosynthesis: Some Effects of High Light Intensities on Chlorella.
Major Adviser: Prof. G. O. Burr.
1940. JONES, LAWRENCE MARTIN. B.A. '30, M.A. '32, University of Colorado.
Major: Botany. Minor: Zoology.
Thesis: Marine Algae as a Supplement to a Typical Inland Diet.
Major Adviser: Prof. G. O. Burr.
1941. BURNS, GEORGE W. B.A. '37, University of Cincinnati.
Major: Botany. Minor: Geology.
Thesis: The Taxonomy and Cytology of Saxifraga pensylvanica L. and Related Forms.
Major Adviser: Prof. C. O. Rosendahl.
1941. GORDON, WILLIAM EDWIN. B.A. '37, University of Minnesota.
Major: Botany. Minor: Biostatistics.
Thesis: Ontogenetic Xeromorphy in the Wild Grape (Vitis vulpina L.).
Major Advisers: Profs. W. S. Cooper and D. B. Lawrence.
1942. MARR, JOHN WINTON. B.S. '36, Texas Technological College.
Major: Botany. Minor: Geology.
Thesis: The Forest-Tundra Ecotone on the East Coast of Hudson Bay.
Major Adviser: Prof. W. S. Cooper.

1943. JOHNSON, BERTIL LENNART. B.S. with distinction, '38, University of Minnesota.
Major: Botany. Minor: Plant Genetics.
Thesis: Cyto-taxonomic Studies in the Genus Oryzopsis.
Major Adviser: Prof. C. O. Rosendahl.
1943. LEEDY, JOHN LANG. B.S. '29, Des Moines University; M.A. '31, Vanderbilt University.
Major: Botany. Minor: Forestry.
Thesis: Genetical and Cytological Studies in the Genus Heuchera and Their Relation to the Taxonomy of the Genus.
Major Adviser: Prof. C. O. Rosendahl.
1943. LEMON, PAUL CLIFFELL. B.A. '35, University of Nebraska; M.S. '36, University of Illinois.
Major: Botany. Minor: Economic Zoology.
Thesis: Effects of Fire on the Herbaceous and Shrubby Vegetation of the Southeastern Coastal Plain.
Major Adviser: Prof. W. S. Cooper.
1943. RABIDEAU, GLENN SYLVESTER. B.A. '38, M.A. '39, University of Wisconsin.
Major: Botany. Minor: Biochemistry.
Thesis: The Use of the Heavy Carbon Isotope in Plant Metabolism Studies.
Major Adviser: Prof. G. O. Burr.
1944. CRONQUIST, ARTHUR JOHN. B.S. '38, M.S. '40, Utah State Agricultural College.
Major: Botany. Minor: Geology.
Thesis: Revision of the North American Species of Erigeron.
Major Adviser: Prof. C. O. Rosendahl.
1946. PHINNEY, BERNARD ORIN, JR. B.A. cum laude '40, University of Minnesota.
Major: Botany. Minor: Plant Genetics.
Thesis: Gene Action in the Development of the Leaf in Zea mays L.
Major Adviser: Prof. E. C. Abbe.
1947. HOLT, ALFRED STANLEY. B.S. '39, Rhode Island State College.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: The Photochemical Evolution of Oxygen and Reduction of Oxidants by Suspensions of Intact and Fragmented Chloroplasts.
Major Adviser: Prof. C. S. French.
1947. JACOBS, DON LEROY. B.A. '41, M.S. '43, University of Minnesota.
Major: Botany. Minor: Zoology.
Thesis: An Ecological Life-History of Spirodela polyrhiza (Greater Duckweed) with Emphasis on the Turion Phase.
Major Adviser: Prof. D. B. Lawrence.

1948. ELLISON, LINCOLN. B.A. '31, University of California (Los Angeles); M.S. '38, University of Minnesota.
Major: Botany. Minors: Biostatistics and Geology.
Thesis: Subalpine Vegetation of the Wasatch Plateau.
Major Adviser: Prof. W. S. Cooper.
1948. HENDRICKSON, MERRILL JESSE. B.S. '37, Nebraska State Teachers College.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: Studies in the Lipid Metabolism of the Higher Green Plant: The Chlorophyll Sensitized Photo-Oxidation of Unsaturated Fatty Acid Esters.
Major Advisers: Profs. A. H. Brown and W. O. Lundberg.
1948. POTTER, LOREN DAVID. B.S. '40, North Dakota Agricultural College; M.A. '46, Oberlin College.
Major: Botany. Minor: Zoology.
Thesis: Comparative Seedling Characteristics of Standard Crested Wheatgrass (Agropyron cristatum (L.) Gaertn.) and Russian Wild-Rye (Elymus junceus Fisch.).
Major Adviser: Prof. D. B. Lawrence.
1948. TISDALE, EDWIN WILLIAM. B.Sc. '29, University of Manitoba; M.S. '45, University of Minnesota.
Major: Botany. Minor: Agronomy.
Thesis: An Ecological Study of Montane Forest Vegetation in Southern Interior British Columbia.
Major Adviser: Prof. W. S. Cooper.
1950. KOSKI, VIOLET MIMI. B.S. '42, University of Minnesota.
Major: Botany. Minor: Plant Genetics.
Thesis: Gene Action in Relation to the Development of Chloroplast Pigments in Zea Mays L.
Major Adviser: Prof. E. C. Abbe.
1950. VAN NORMAN, RICHARD WAYNE. B.A. with honors '46, Iowa State Teachers College.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: The Rates of Photosynthetic Utilization of the Isotopic Forms of Carbon Dioxide.
Major Adviser: Prof. A. H. Brown.
1951. PELTON, JOHN FORRESTER. B.S. '45, University of California; M.S. '48, University of Minnesota.
Major: Botany. Minor: Forestry.
Thesis: The Ecology of Wolfberry, Symphoricarpos occidentalis Hook, in Minnesota.
Major Adviser: Prof. D. B. Lawrence.

1951. RUSSELL, NORMAN H., JR. B.S. '46, Slippery Rock State Teachers College.
Major: Botany. Minor: Zoology.
Thesis: Geographical Variation in the Acaulescent White Violets of North America.
Major Adviser: Prof. G. B. Ownbey.
1952. BIERHORST, DAVID WILLIAM. B.S. '47, M.S. '49, Tulane University.
Major: Botany. Minor: Plant Genetics.
Thesis: On the Morphology, Anatomy, and Phylogeny of the Psilotaceae.
Major Adviser: Prof. E. C. Abbe.
1952. DALY, JOSEPH MICHAEL. B.S. '44, Rhode Island State College; M.S. '47, University of Minnesota.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: Respiratory Studies on Leaves of Higher Plants.
Major Adviser: Prof. A. H. Brown.
1952. WEBSTER, GEORGE CALVIN. B.S. '48, Western State Teachers College (Michigan); M.S. '49, University of Minnesota.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: Studies on the Distribution and Properties of a Cytochrome Oxidase in the Tissues of Higher Plants.
Major Adviser: Prof. A. W. Frenkel.
1953. GERMANN, PAUL JULIAN. B.S. '37, St. Mary's College; M.S. '42, De Paul University.
Major: Botany. Minor: Zoology.
Thesis: Circuit and Longitudinal Uniformity of Growth Layers in a Ponderosa Pine.
Major Advisers: Profs. D. B. Lawrence and W. S. Glock.
1953. HORWITZ, LEONARD. B.S. cum laude '48, College of the City of New York.
Major: Botany. Minor: Physical Chemistry.
Thesis: Investigations on Hill Reactions of Isolated Chloroplasts and Whole Cells and Their Relation to Photosynthesis.
Major Adviser: Prof. A. H. Brown.
1953. JOHNSTON, JAMES ALEXANDER. B.A. '48, University of Texas; M.S. '51, University of Minnesota.
Major: Botany. Minor: Agricultural Biochemistry.
Thesis: Studies on Some Light Activated Processes in Rhodospirillum rubrum.
Major Adviser: Prof. A. W. Frenkel.
1953. LANGENHEIM, JEAN HARMON. B.S. '46, University of Tulsa; M.S. '49, University of Minnesota.
Major: Botany. Minor: Geology.
Thesis: Description of the Plant Communities and Environments of the Crested Butte Area, Gunnison County, Colorado.
Major Advisers: Profs. W. S. Cooper and D. B. Lawrence.

1954. STEIN, OTTO LUDWIG. B.S. with distinction '49, M.S. '52, University of Minnesota.
Major: Botany. Minor: Plant Genetics.
Thesis: The Rates of Leaf Initiation in Two Dwarfing Genes, Dwarf-1 and Brachytic-2 in Zea mays L.
Major Adviser: Prof. E. C. Abbe.
1955. LEISMAN, GILBERT ARTHUR. B.S. '49, University of Wisconsin; M.S. '52, University of Minnesota.
Major: Botany. Minor: Soils.
Thesis: A Vegetation and Soil Chronosequence on the Mesabi Iron Range Spoil Banks, Minnesota.
Major Adviser: Prof. D. B. Lawrence.

ENTOMOLOGY

1938. DONOHUE, HEBER CLARK. B.S. '27, Montana State College; M.S. '28, State College of Washington.
Major: Entomology. Minor: Plant Pathology.
Thesis: The Bionomics of the Raisin Moth, Ephestia figulilella Gregson.
Major Adviser: Prof. A. G. Ruggles.
1939. HANDFORD, RICHARD HENRY. B.S.A. '30, University of Manitoba; M.Sc. '32, University of Saskatchewan.
Major: Entomology. Minor: Zoology.
Thesis: The Identification of Nymphal Melanopli in Manitoba and Adjacent Areas.
Major Adviser: Prof. A. G. Ruggles.
1939. TINKHAM, ERNEST ROBERT. B.S. '27, University of Alberta; M.S. '28, Montana State College.
Major: Entomology. Minor: Botany.
Thesis: Taxonomic and Biological Studies on the Cyrtacanthacrinae of South China.
Major Adviser: Prof. C. E. Mickel.
1940. GLEN, ROBERT. B.S. '29, M.S. '31, University of Saskatchewan.
Major: Entomology. Minor: Zoology.
Thesis: Larval Morphology and Taxonomy of the Tribe Lepturoidini with Special Reference to the Genus Ludius Esch. (Coleoptera, Elateridae).
Major Adviser: Prof. C. E. Mickel.
1940. JELLISON, WILLIAM LIVINGSTON. B.S. '29, Montana State College; M.S. '33, University of Minnesota.
Major: Entomology. Minor: Bacteriology.
Thesis: Biologic Studies on the Faunae of Nests of Birds and Rodents.
Major Adviser: Prof. W. A. Riley.

1940. KING, KENNETH MARION. B.S. '20, University of Montana;
M.S. '26, University of Saskatchewan.
Major: Entomology. Minor: Zoology.
Thesis: The Light Trap As an Indicator of Population Trends in Noctuidae.
Major Adviser: Prof. W. A. Riley.
1940. MEDLER, JOHN THOMAS. B.S. in Ag. with honors '36, M.S. in Ag. '37,
New Mexico State College.
Major: Entomology. Minor: Plant Pathology.
Thesis: A Study of the Nature of Plant Injury Caused by Empoasca fabae (Harris).
Major Adviser: Prof. A. A. Granovsky.
1940. MURRAY, WILLIAM DONALD. B.A. with distinction '34, M.S. '35,
Ohio State University.
Major: Entomology. Minor: Zoology.
Thesis: Podalonia (Hymenoptera: Sphecidae) of North and Central America.
Major Adviser: Prof. C. E. Mickel.
1941. DAGGY, RICHARD HENRY. B.S. with distinction '34, M.S. '38,
University of Minnesota.
Major: Entomology. Minor: Botany.
Thesis: Taxonomic and Biological Investigations on Minnesota
Mayflies (Ephemeroptera).
Major Adviser: Prof. C. E. Mickel.
1941. KNUTSON, HERBERT CLAUS. B.A. '36, Iowa Wesleyan College;
M.S. '37, Southern Methodist University.
Major: Entomology. Minor: Zoology.
Thesis: Seasonal History Studies of Some Minnesota Phalaenidae
(= Noctuidae).
Major Adviser: Prof. A. A. Granovsky.
1941. PRATT, HARRY DAVIS. B.S. magna cum laude '36, M.S. '38,
Massachusetts State College.
Major: Entomology. Minor: Botany.
Thesis: Biological and Taxonomic Studies of Some Ichneumon Flies
in the Tribe Cryptini (Ichneumonidae, Hymenoptera).
Major Adviser: Prof. C. E. Mickel.
1941. TELFORD, HORACE SPOONER. B.S. '33, University of Utah;
M.S. '36, University of Minnesota.
Major: Entomology. Minor: Zoology.
Thesis: A Monograph of the Genus Eristalis Latreille (Syrphidae;
Diptera) from North America, North of Mexico.
Major Adviser: Prof. C. E. Mickel.
1942. DENNING, DONALD GORDON. B.A. '31, Macalester College;
M.S. '36, University of Minnesota.
Major: Entomology. Minor: Zoology.
Thesis: The Hydroprosyichidae of Minnesota (Trichoptera).
Major Adviser: Prof. C. E. Mickel.

1942. ELISHEWITZ, HAROLD. B.S. '38, Cornell University; M.A. '41, Harvard University.
Majors: Entomology and Zoology. Minor: Bacteriology.
Thesis: Studies on the Embryology and Post-Embryonic Development of Dermacentor variabilis Say; Metamorphosis of Larva to Nymph; Anatomy of the Mature Unfed Larva.
Major Adviser: Prof. W. A. Riley.
1942. ERICKSON, ARNOLD BURTON. B.S. '35, M.A. '37, University of Minnesota.
Major: Entomology and Economic Zoology. Minor: Botany.
Thesis: Helminth Infections in Snowshoe Hares and Their Relation to Fluctuations of Hare Populations.
Major Adviser: Prof. W. A. Riley.
1942. MILLIRON, HERBERT EDWARD. B.S. in Ag. '36, West Virginia University; M.S. '38, Michigan State College.
Major: Entomology. Minor: Plant Pathology.
Thesis: Taxonomic and Biological Investigations in the Genus Megastigmus, with Particular Reference to the Taxonomy of the Nearctic Species (Hymenoptera: Chalcidoidea; Callimomidae).
Major Adviser: Prof. C. E. Mickel.
1942. PETERS, HAROLD TRUMAN. B.A. '31, M.A. '32, University of Kansas.
Major: Entomology. Minor: Bacteriology.
Thesis: Studies on the Biology of Anopheles walkeri Theobald (Diptera, Culicidae).
Major Adviser: Prof. W. A. Riley.
1942. PLETSCHE, DONALD JAMES. B.S. '32, Hamline University; M.S. '36, University of Minnesota.
Major: Entomology. Minor: Plant Pathology.
Thesis: The Bionomics of the Potato Psyllid, Paratrioza cockerelli (Sulc).
Major Adviser: Prof. A. A. Granovsky.
1942. PRITCHARD, ARTHUR EARL. B.S. '37, M.A. '40, University of Minnesota.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: The North American Gall Midges of the Tribe Micromyini (Diptera, Itonididae (Cecidomyiidae)).
Major Adviser: Prof. C. E. Mickel.
1943. HUGHES, JOHN HERSHEL. B.A. '33, M.A. '39, Ohio University.
Major: Entomology. Minor: Botany.
Thesis: The Alfalfa Plant Bug, Adelphocoris lineolatus (Goeze), and Other Miridae (Hemiptera) in Relation to Alfalfa Seed Production in Minnesota.
Major Adviser: Prof. C. E. Mickel.

1943. SUN, YUN-PEI. B.S. '32, National University of Chekiang;
M.S. '41, University of Minnesota.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: An Analysis of Some Important Factors Affecting the
Results of Fumigation Tests.
Major Adviser: Prof. W. A. Riley.
1944. RODECK, HUGO GEORGE. B.A. '28, M.A. '29, University of Colorado.
Major: Entomology. Minor: Botany.
Thesis: Studies in the Inquilline Bee Genus Nomada.
Major Adviser: Prof. C. E. Mickel.
1945. ANDERSON, ROGER FABIAN. B.S. with high distinction '38,
M.S. '41, University of Minnesota.
Major: Entomology. Minor: Plant Pathology.
Thesis: Conditions Associated with the Selection of Host Trees
by Subcortical Feeding Insects and the Factors Associated
with Successful Attack.
Major Adviser: Prof. A. C. Hodson.
1946. GRAY, HAROLD ELLACOTT. B.A. '23, University of Alberta;
B.S. '25, University of Montana; M.S. '39, University of Minnesota.
Major: Entomology. Minor: Biochemistry.
Thesis: A Comparison of Certain Phases of the Biology of the
Flour Beetles, Tribolium castaneum Herbst., confusum Duv.,
and the destructor Uytt.
Major Adviser: Prof. C. E. Mickel.
1948. CHIANG, HUAL-CHANG. B.S. '38, National Tsing Hua University;
M.S. '46, University of Minnesota.
Major: Entomology. Minor: Zoology.
Thesis: An Analytical Study of Population Growth in *Drosophila*.
Major Adviser: Prof. A. C. Hodson.
1948. ROCKSTEIN, MORRIS. B.A. magna cum laude '38, Brooklyn
College; M.A. '41, Columbia University.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: The Relation of Cholinesterase Activity to Change in
Cell Number with Age in the Brain of the Worker Honeybee.
Major Adviser: Prof. A. G. Richards.
1948. SCHUSTER, RUDOLF MATHIAS. B.S. '45, M.S. '46, Cornell University.
Major: Entomology. Minor: Botany.
Thesis: A Preliminary Revision of the Genus *Ephuta* (Mutillidae)
in America North of Mexico.
Major Adviser: Prof. C. E. Mickel.
1949. FISK, FRANK WILBUR. B.S. '36, University of Illinois;
M.S. '39, University of Minnesota.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: Studies on the Digestive Enzymes in Certain Mosquitoes.
Major Adviser: Prof. A. G. Richards.

1949. NICHOLSON, HARRY PAGE. B.E. '37, St. Cloud State Teachers College; M.S. '41, University of Minnesota.
Major: Entomology. Minor: Plant Pathology.
Thesis: Simuliidae of Minnesota with Reference to Their Taxonomy and Biology.
Major Adviser: Prof. C. E. Mickel.
1949. PETERSON, ALLAN GEORGE. B.S. with honor '37, M.S. '39, South Dakota State College.
Major: Entomology. Minor: Plant Genetics.
Thesis: A Study of the Resistance of Some Varieties of Potato to the Potato Leafhopper Empoasca fabae (Harris).
Major Adviser: Prof. A. A. Granovsky.
1949. PU, CHIH-LUNG. B.S. '35, National Sun Yat-sen University; M.S. '38, Yenching University.
Major: Entomology. Minor: Zoology.
Thesis: A Taxonomic Study of Chinese Limnebiidae (Coleoptera: Staphilinoidea).
Major Adviser: Prof. C. E. Mickel.
1949. TSAO, CHI. B.S. '39, National Tsinghua University; M.S. '41, National Central University.
Major: Entomology. Minor: Plant Pathology.
Thesis: The Relative Efficiency of Newer Organic Compounds as Aphicides with an Evaluation of the Methods of Application.
Major Adviser: Prof. A. A. Granovsky.
1950. BENJAMIN, DANIEL MARSHALL. B.S. '39, M.S. '46, University of Minnesota.
Major: Entomology. Minor: Plant Pathology.
Thesis: Biology and Ecology of the Redheaded Pine Sawfly, Neodiprion lecontei (Fitch), and Notes on Its Control.
Major Adviser: Prof. A. C. Hodson.
1950. SOLIMAN, ABDEL-AZIZ ABDEL-HAFEZ. B.Sc. '42, M.Sc. '46, Fouad I University.
Major: Entomology. Minor: Botany.
Thesis: The Aphid, Myzus persicae Sulzer, in Relation to Leafroll and Net-Necrosis of Potatoes.
Major Adviser: Prof. A. A. Granovsky.
1951. BUTCHER, JAMES WALTER. B.S. '43, University of Pittsburgh; M.S. '49, University of Minnesota.
Major: Entomology. Minor: Plant Pathology.
Thesis: Studies on Larch Sawfly Populations, Factors Contributing to Their Fluctuations and Early Recognition of Host Decadence.
Major Adviser: Prof. A. C. Hodson.

1951. LIN, CHANG-SHAN. B.S. '35, M.S. '38, Yenching University.
Major: Entomology. Minor: Plant Pathology.
Thesis: Some Ecological Studies of Natural Populations of
Drosophila in Minnesota.
Major Adviser: Prof. A. C. Hodson.
1951. TSAO, CHING-HSI. B.S. '40, National University of Chekiang;
M.S. '48, University of Minnesota.
Major: Entomology. Minor: Botany.
Thesis: Quantitative Effects of Diet, Age, Temperature and Humidity
on the Cuticles of Five Representative Species of Insects.
Major Adviser: Prof. A. C. Hodson.
1952. ALLEN, WILLARD ROSS. B.S.A. '36, M.Sc. '39, University of Manitoba.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: The Oxygen Uptake of Muscle Homogenates from Several Insects
in the Presence of Added Succinate, Cytochrome C and Phosphate.
Major Adviser: Prof. A. G. Richards.
1952. BARNES, DOUGLAS. B.Sc. with distinction '46, University of
Alberta; M.S. '50, University of Minnesota.
Major: Entomology. Minor: Botany.
Thesis: Biology, Ecology, and Distribution of the Leafhoppers
Dalbulus elimatus (Ball) and Dalbulus maidis (Del. & W.) Two
Known Vectors of the Virus Causing Corn Stunt in Mexico.
Major Adviser: Prof. A. C. Hodson.
1952. LIN, SPING. B.S. '40, National Sun Yat-Sen University;
M.S. '50, University of Minnesota.
Major: Entomology. Minor: Agricultural Biochemistry.
Thesis: Temperature Threshold of Development of Certain Insect
Eggs under Constant and Variable Conditions.
Major Adviser: Prof. A. G. Richards.
1952. WATTAL, BANSI LAL. B.Sc. '44, Panjab University (India);
M.Sc. '46, University of Lucknow (India).
Major: Entomology. Minor: Plant Pathology.
Thesis: The Influence of Different Numbers of Insects on Mortality
Produced by Insecticides, as Shown with Tribolium Spp., and
Aedes aegypti L.
Major Adviser: Prof. L. K. Cutkomp.
1953. NAMBA, RYOJI. B.S. '48, M.S. '50, Michigan State College.
Major: Entomology. Minor: Plant Pathology.
Thesis: A Revision of the Genus Rivellia (Otitidae, Diptera) of
North America North of Mexico and the External Anatomy of
Rivellia winifredae Namba.
Major Adviser: Prof. C. E. Mickel.

1954. MCGUFFIN, WILLIAM CLAYTON. B.A. '36, M.A. '37, University of Western Ontario.
Major: Entomology. Minor: Botany.
Thesis: Larvae of the Larentiinae (Lepidoptera: Geometridae).
Major Adviser: Prof. C. E. Mickel.
1955. BURDITT, ARTHUR KENDALL, JR. B.S. '50, Rutgers University; M.S. '53, University of Minnesota.
Major: Entomology. Minor: Botany.
Thesis: A Laboratory Technique for the Study of Survival of European Corn Borer Larvae in Measuring Resistance and Susceptibility of Corn Leaf Tissue to Borer Attack.
Major Adviser: Prof. F. G. Holdaway.
1955. DANIELS, LESLIE BERNARD. B.S. '27, M.S. '29, Colorado State College.
Major: Entomology. Minor: Plant Pathology.
Thesis: The Nature of the Toxicogenic Condition Resulting from the Feeding of the Tomato Psyllid Paratrioza cockerelli (Sulc).
Major Adviser: Prof. A. A. Granovsky.

PHARMACOGNOSY

1942. YOUNGKEN, HEBER WILKINSON, JR. B.A. '35, Bucknell University; M.S. '40, University of Minnesota.
Major: Pharmacognosy. Minor: Botany.
Thesis: The Comparative Pharmacognosy and Physiological Activity of Potentilla anserina L. and Potentilla argentea L.
Major Adviser: Prof. E. B. Fischer.
1947. NEVA, ARNOLD CARL. B.S. '41, M.S. '43, University of Minnesota.
Major: Pharmacognosy. Minors: Pharmaceutical Chemistry and Pharmacology.
Thesis: The Comparative Pharmacognosy of Plantago Purshii R. & S. and Plantago aristata Michx.
Major Adviser: Prof. E. B. Fischer.
1953. LEONARD, ROBERT MEYER. B.S. '44, University of Idaho.
Major: Pharmacognosy. Minor: Pharmacology.
Thesis: A Pharmacognostical Investigation of Chenopodium Botrys L. and Related Species.
Major Adviser: Prof. E. B. Fischer.

ZOOLOGY

1938. HENSCHEL, AUSTIN F. B.S. '29, M.A. '32, University of Minnesota.
Major: Zoology. Minors: Pathology and Hematology.
Thesis: The in vitro Reactions of Mammalian Lymph Node and Chick-heart Fibroblasts to Some Variations in Media.
Major Adviser: Prof. A. R. Ringoen.

1939. HATFIELD, DONALD MARSHALL. B.A. '32, M.A. '34, University of California.
Major: Economic Zoology. Minor: Botany.
Thesis: A Comparative Study of the Reactions of Two Species of Rodents to Controlled Temperature Conditions.
Major Adviser: Prof. W. A. Riley.
1940. FRINGS, HUBERT WILLIAM. B.S. '36, Pennsylvania State College; M.S. '37, University of Oklahoma.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: The Olfactory Sense of the Blowfly, Cynomyia cadaverina.
Major Adviser: Prof. D. E. Minnich.
1940. KAROLYI, ELMER JOSEPH. B.A. '33, M.A. '35, Western Reserve University.
Major: Zoology. Minor: Anatomy.
Thesis: Observations on the Testicular Response of the Guinea Pig Following the Injection of Tubercle Bacilli, with Particular Reference to the Histogenesis of Connective Tissue Fibers.
Major Adviser: Prof. A. R. Ringoen.
1940. MOORE, WALTER GUY. B.A. with distinction '34, Wayne University; M.A. '38, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: Studies on the Oxygen Requirements of Certain Fresh-water Fishes, with Special Reference to Winter Conditions.
Major Adviser: Prof. Samuel Eddy.
1940. PENNER, LAWRENCE RAYMOND. B.A. '34, M.A. '36, University of Kansas.
Major: Zoology. Minor: Entomology.
Thesis: Morphological and Biological Studies on Certain Helminths of the Muskrat.
Major Adviser: Prof. W. A. Riley.
1941. BRECKENRIDGE, WALTER JOHN. B.A. '26, State University of Iowa; M.A. '34, University of Minnesota.
Major: Zoology. Minors: Botany and Geology.
Thesis: The Amphibians and Reptiles of Minnesota with Special Reference to the Black-banded Skink, Eumeces septentrionalis (Baird).
Major Adviser: Prof. Samuel Eddy.
1941. CUCKLER, ASHTON CLINTON. B.A. '35, M.A. '36, University of Nebraska.
Major: Zoology. Minor: Bacteriology.
Thesis: Morphological and Biological Studies on Certain Strigeid Trematodes of Mammals.
Major Adviser: Prof. W. A. Riley.

1941. LINDEMAN, RAYMOND LAUREL. B.A. '36, Park College.
Major: Zoology. Minor: Botany.
Thesis: Ecological Dynamics in a Senescent Lake.
Major Adviser: Prof. Samuel Eddy.
1941. LOFTHUS, ORIN MERWIN. B.A. '28, St. Olaf College;
M.A. '33, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: An Experimental Study of the Ciliated Epithelium of
the Fresh-Water Mussel.
Major Adviser: Prof. D. E. Minnich.
1941. REIF, CHARLES BRADDOCK. B.A. '35, M.A. '38, University
of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: A Study of Minnesota Stream Communities.
Major Adviser: Prof. Samuel Eddy.
1942. FELDMAN, SEYMOUR IRVING. B.A. '38, M.A. '40, University
of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: Studies on the Nature and Mechanism of Immunity to
Certain Trematodes.
Major Adviser: Prof. W. A. Riley.
1942. GREEN, MELVIN MARTIN. B.A. '38, M.A. '40, University of Minnesota.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: Phenogenetic Studies in Drosophila melanogaster.
Major Adviser: Prof. C. P. Oliver.
1942. HIGHBY, PAUL RICHARD. B.A. '29, Luther College; M.A. '30,
University of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: Studies on Filarioid Nematodes of the Porcupine and
Snowshoe Hare in Minnesota.
Major Adviser: Prof. W. A. Riley.
1943. ANDERSON, RAY CARL. B.A. summa cum laude '39, Gustavus
Adolphus College; M.A. '41, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: A Genetic Study of an Allelic Series in Drosophila
melanogaster.
Major Adviser: Prof. C. P. Oliver.
1943. CARLANDER, KENNETH DIXON. B.A. '36, M.S. '38, University
of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: The Walleyes, Stizostedion vitreum vitreum (Mitchill),
of Lake of the Woods, with Especial Reference to the Commercial
Fisheries.
Major Adviser: Prof. Samuel Eddy.

1943. FERGUSON, FREDERICK PALMER. B.A. '38, M.A. '39, Wesleyan University.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: Reactions of Caudal-band Melanophores in Fundulus heteroclitus,
with Special Reference to the Effect of Temperature on the Rate of
Pigment Concentration.
Major Adviser: Prof. D. E. Minnich.
1943. WOLTERINK, LESTER FLOYD. B.A. '36, Hope College; M.A. '40,
University of Minnesota.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: The Effect of Dietary Factors on Longevity and on the
Sucrose Threshold in the Blow-fly, Cynomyia cadaverina Desvoidy.
Major Adviser: Prof. D. E. Minnich.
1944. DAWLEY, CHARLOTTE WEBSTER. B.A. '24, Carleton College;
M.S. '27, Washington University.
Major: Zoology. Minor: Botany.
Thesis: Distribution and Growth Studies of the Unionidae and
Aquatic Gastropoda Found in Minnesota.
Major Adviser: Prof. Samuel Eddy.
1944. MALDONADO, JOSE FERNANDO. B.S. '36, University of Puerto Rico;
M.S. '38, Michigan State College.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: The Life History and Biology of Platynosomum fastosum
Kossak, 1910.
Major Adviser: Prof. W. A. Riley.
1948. HOOPER, FRANK FINCHER. B.A. '39, University of California
(Berkeley).
Major: Zoology. Minor: Botany.
Thesis: The Summer Standing Crop of a Small Minnesota Lake.
Major Adviser: Prof. Samuel Eddy.
1948. PFADT, ROBERT EDWARD. B.A. with honor '38, M.A. '40,
University of Wyoming.
Major: Zoology. Minor: Entomology.
Thesis: Food Plants as Factors in the Ecology of Melanoplus
mexicanus (Sauss.) and Aulocara elliotti (Thos.).
Major Adviser: Prof. D. E. Minnich.
1949. COLE, GERALD AINSWORTH. B.A. '39, Middlebury College;
M.S. '41, St. Lawrence University.
Major: Zoology. Minor: Botany.
Thesis: An Ecological Study of the Microbenthic Fauna of Two
Minnesota Lakes.
Major Adviser: Prof. Samuel Eddy.

1949. HARDEN, PHILIP HOWARD. B.A. '35, Greenville College;
M.S. '41, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: The Stoneflies (Plecoptera) of Minnesota.
Major Adviser: Prof. C. E. Mickel.
1949. QUIMBY, DON CLARENCE. B.S. '37, M.S. '38, North Texas
State Teachers College.
Major: Economic Zoology. Minor: Botany.
Thesis: The Life History and Ecology of the Jumping Mouse,
Zapus hudsonius.
Major Adviser: Prof. W. H. Marshall.
1950. DINEEN, CLARENCE FRANCIS. B.Ed. '39, St. Cloud State Teachers
College; M.S. '48, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: An Ecological Study of a Minnesota Pond.
Major Adviser: Prof. Samuel Eddy.
1950. FREEMAN, REINO SAMUEL. B.S. '42, Duluth State Teachers College;
M.A. '48, University of Minnesota.
Major: Zoology. Minor: Entomology.
Thesis: The Biology and Life History of Monococcestus Beddard,
1914 (Cestoda: Anoplocephalidae) from the Porcupine, with Notes
on Minnesota Oribatoidea (Acarina).
Major Adviser: Prof. F. G. Wallace.
1950. TAYLOR, BABETTE. B.A. '44, Washington University; M.S. '45,
Yale University.
Major: Zoology. Minor: Botany.
Thesis: Adaptation to Lactose Fermentation in Yeast.
Major Adviser: Prof. H. B. Steinbach.
1951. HARRISON, JOHN R. B.A. magna cum laude '48, American
University; M.A. '49, Johns Hopkins University.
Major: Zoology. Minor: Botany.
Thesis: In vitro Analysis of Differentiation of Retinal Pigment
in the Developing Chick Embryo.
Major Adviser: Prof. N. T. Spratt.
1951. KROGSTAD, BLANCHARD ORLANDO. B.A. '46, Bemidji State
Teachers College; M.A. '48, University of Minnesota.
Major: Zoology. Minor: Entomology.
Thesis: A Study of the Population Dynamics of Eurosta solidaginis
(Fitch).
Major Adviser: Prof. A. C. Hodson.

1951. MAXWELL, EDWARD LIVINGSTON. B.A. '27, Morehouse College; M.A. '36, University of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: (1) Effects of Grafted Testes upon the Seminal Vesicles of Castrated Fetal Rats and (2) Medullary Bone Formation in Adult White Rats.
Major Advisers: Profs. L. J. Wells, N. T. Spratt, Jr., and D. E. Minnich.
1952. JENSEN, THORKIL. B.A. magna cum laude '41, Gustavus Adolphus College; M.S. '49, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: The Life Cycle of the Fish Acanthocephalan, Pomphorhynchus bulbocolli (Linkins) Van Cleave 1919, with Some Observations on Larval Development in vitro.
Major Adviser: Prof. F. G. Wallace.
1952. THOMPSON, JOHN HAROLD, JR. B.A. '43, Heidelberg College; M.S. '48, Ohio State University.
Major: Zoology (Parasitology). Minor: Bacteriology.
Thesis: An Investigation of the Host-Parasite Relationship of Schistosoma mansoni.
Major Advisers: Dr. T. B. Magath and Prof. F. G. Wallace.
1953. ANDERSON, VICTOR ELVING. B.A. magna cum laude '45, M.S. '49, University of Minnesota.
Major: Zoology. Minor: Physiology.
Thesis: A Genetical Study of Human Breast Cancer.
Major Adviser: Prof. S. C. Reed.
1953. DARNELL, REZNEAT MILTON, JR. B.S. with distinction '46, Southwestern at Memphis; M.A. '48, Rice Institute.
Major: Zoology. Minor: Botany.
Thesis: An Ecological Study of the Rio Sabinas and Related Waters in Southern Tamaulipas, Mexico, with Special Reference to the Fishes.
Major Adviser: Prof. Samuel Eddy.
1953. FRASER, RONALD CHESTER. B.S. with high distinction '50, M.S. '52, University of Minnesota.
Major: Zoology. Minor: Agricultural Biochemistry.
Thesis: Studies on Morphogenesis in the Early Chick Embryo Cultured in vitro.
Major Adviser: Prof. N. T. Spratt, Jr.
1953. GOODMAN, HAROLD ORBECK. B.A. '48, M.A. '50, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: Incidence of Breast Cancer in the Daughters of Patients Who Had Breast Cancer a Generation Ago.
Major Adviser: Prof. S. C. Reed.

1953. NELSON, LEONARD. B.A. '42, University of Pennsylvania;
M.A. '50, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: Distribution of Enzymes in Head, Tail and Midpiece Fragments of Bull Spermatozoa.
Major Adviser: Prof. H. B. Steinbach.
1954. BROOKS, MARION ALICE. B.A. '47, M.S. '50, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: Certain Aspects of the Histochemistry and Metabolic Significance of the Intracellular Bodies (Bacteroids) of Cockroaches (Blattariae).
Major Adviser: Prof. A. G. Richards.
1954. GLASS, ARTHUR WARREN. B.A. '43, Gustavus Adolphus College;
M.A. '48, University of Minnesota.
Major: Zoology. Minor: Economic Zoology.
Thesis: An Analysis of the Heterosis Encountered in Laboratory Crosses.
Major Adviser: Prof. S. C. Reed.
1954. INGERSOLL, EDWIN MARVIN. B.S. '42, Bemidji State Teachers College; M.S. '49, University of Minnesota.
Major: Zoology. Minor: Entomology.
Thesis: Taxonomy and Life History of Cyclocoelum microstromum (Creplin, 1829) Kossack, 1911 with Notes on the in vitro Cultivation of C. microstromum Rediae.
Major Adviser: Prof. F. G. Wallace.
1954. PALM, JOHN DANIEL. B.A. '48, Gustavus Adolphus College;
M.A. '50, University of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: Detection of the Gene for Huntington's Chorea.
Major Adviser: Prof. S. C. Reed.
1955. DAVISON, JOHN AMERPOHL. B.S. '50, University of Wisconsin.
Major: Zoology. Minor: Botany.
Thesis: Body Weight, Cell Surface, and Metabolic Rate in Anuran Amphibia.
Major Adviser: Prof. H. B. Steinbach.
1955. STEPHENSON, WILLIAM KAY. B.A. '50, Knox College.
Major: Zoology. Minor: Botany.
Thesis: A Study of the Correlation Between Membrane Potential Changes and Ion Movements in Fibers of the Frog Sartorius Muscle.
Major Adviser: Prof. H. B. Steinbach.
1955. UNDERHILL, JAMES CAMPBELL. B.A. '49, M.A. '52, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: The Distribution of Small Stream Fishes in Minnesota. Intra-Specific Variability in the Common Shiner (Notropis cornutus), the Sand Shiner (Notropis deliciosus), and the Big-mouth Shiner (Notropis dorsalis).
Major Adviser: Prof. Samuel Eddy.

1955. WARREN, BRUCE HUNTINGTON. B.A. '49, M.S. '51, University of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: Studies on the Protozoan Parasite, Babesia citelli, with Special Reference to Its Biology in the Arthropod Host, Ixodes sculptus.
Major Adviser: Prof. F. G. Wallace.
1956. BATTIN, WILLIAM THOMAS. B.A. '50, Swarthmore College.
Major: Zoology. Minor: Physiological Chemistry.
Thesis: Studies on Isolated Nuclei from the Oocytes of Triturus viridescens.
Major Adviser: Prof. J. G. Gall.
1956. BUE, INGALF GILBERT. B.S. '38, North Dakota Agricultural College; B.S. '47, M.S. '52, University of Minnesota.
Major: Economic Zoology. Minor: Botany.
Thesis: The Ecology of Waterfowl Populations on Stock Ponds in Western South Dakota.
Major Adviser: Prof. W. H. Marshall.
1956. CANDELAS, GUSTAVO ANTONIO. B.S. with honors '44, University of Puerto Rico; M.S. '51, University of Minnesota.
Major: Zoology. Minor: Botany.
Thesis: Studies on the Freshwater Plankton of Puerto Rico.
Major Adviser: Prof. Samuel Eddy.
1956. LEE, SHERIDAN HSIO-TAO. B.S. '41, University of Shanghai; M.A. '43, George Peabody College for Teachers; M.S. '47, University of Minnesota.
Major: Zoology. Minor: Bacteriology.
Thesis: A Study of the Biology and Life Cycle of Skriabinoptera phrynosoma (Ortlepp) Schulz, 1927 (Nematoda: Spiruroidea), a Nematode Parasite of the Texas Horned Toad, Phrynosoma cornutum.
Major Adviser: Prof. F. G. Wallace.

LANGUAGES AND LITERATURE

ANCIENT LANGUAGES

1942. WILHELMS, JOHN WILLIAM. B.A. '23, Capital University (Columbus, Ohio);
M.A. '29, University of Nebraska.
Major: Latin. Minor: Greek.
Thesis: The Language of Cicero's De legibus.
Major Adviser: Prof. M. B. Ogle.
1951. PREUS, JACOB A. O. B.A. magna cum laude '41, Luther College;
M.A. '46, University of Minnesota.
Major: Greek. Minor: Latin.
Thesis: Saint Jerome's Translation Terminology.
Major Adviser: Prof. D. C. Swanson.
1955. FROGEN, GEORGE H. B.A. summa cum laude '31, M.A. '44,
University of Minnesota.
Major: Latin. Minor: Greek.
Thesis: The Change from the Attic to the Ionic Alphabet in
Athenian Decrees, (circa 570 to 317 B.C.).
Major Adviser: Prof. W. A. McDonald.

COMPARATIVE LITERATURE

1955. CORRIGAN, ROBERT WILLOUGHBY. B.A. '50, Cornell University;
M.A. '52, Johns Hopkins University.
Major: Comparative Literature. Minor: Classics.
Thesis: The "Electra" Theme in the History of Drama.
Major Adviser: Prof. N. J. DeWitt.

ENGLISH

1938. HONG, HOWARD VINCENT. B.A. '34, St. Olaf College.
Major: English. Minor: Philosophy.
Thesis: Thomas Amory: Eccentric Literary Philosopher.
Major Adviser: Prof. C. A. Moore.
1938. KIRCHNER, WILLIAM HARRY, JR. B.A. '22, M.A. '28, University
of Minnesota.
Major: English. Minor: History.
Thesis: Henry David Thoreau as a Social Critic.
Major Adviser: Prof. Tremaine McDowell.
1938. MONTGOMERY, FRANZ JACKSON. B.A. '27, M.A. '28, Indiana University.
Major: English. Minor: German.
Thesis: William Combe.
Major Adviser: Prof. C. A. Moore.

1938. WULLING, EMERSON GISSEL. B.A. '23, University of Minnesota;
M.A. '27, Harvard University.
Major: English. Minor: Comparative Literature.
Thesis: William Hazlitt as a Literary Critic.
Major Adviser: Prof. J. W. Beach.
1939. BUCKLEY, FRANK. B.A. '24, Walla Walla College; M.A. '27,
University of Washington.
Major: English. Minor: History.
Thesis: Trends in American Primitivism.
Major Adviser: Prof. Tremaine McDowell.
1939. HARDMAN, MARION PAYZANT. B.A. '29, University of Washington;
M.A. '31, University of Montana.
Major: English. Minor: Romance Languages (French).
Thesis: Terror in American Prose Fiction to 1835.
Major Adviser: Prof. Tremaine McDowell.
1939. HARMON, ALICE IRENE. Ph.B. '13, M.A. '21, University of Chicago.
Major: English. Minor: Philology.
Thesis: Loca Communes on Death and Suicide in the Literature of
the English Renaissance.
Major Adviser: Prof. Huntington Brown.
1939. MALLAM, EDWARD DUNCAN. B.S. '26, M.A. '27, University of Buffalo.
Major: English. Minor: History.
Thesis: William Shenstone: A Critical Study.
Major Adviser: Prof. M. B. Ruud.
1939. PANAGE, JOHN HADJI. M.A. '23, Boston University; M.A. '31,
Emory University.
Major: English. Minor: Romance Languages (French).
Thesis: Representative Late Nineteenth English Utopias.
Major Adviser: Prof. C. A. Moore.
1939. SARCHET, HELEN COOKE. B.S. '24, M.A. '27, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Women in English Fiction of the Mid-Eighteenth Century
from 1740 to 1771.
Major Advisers: Profs. C. A. Moore and J. T. Hillhouse.
1940. GRAHAME, ROBERTA MARGARET. B.A. '30, M.A. '31, University
of Minnesota.
Major: English. Minor: History.
Thesis: A Study of the Cross-Section Novel Written in English
Since 1915.
Major Adviser: Prof. J. W. Beach.

1940. HAMILTON, EDWARD WILSON. B.E. '31, St. Cloud Teachers College;
M.A. '36, University of Colorado.
Major: English. Minor: Philosophy.
Thesis: The Life of John Gay.
Major Adviser: Prof. M. B. Ruud.
1940. THURSTON, MARJORIE HAGMAN. B.A. '22, Dakota Wesleyan
University; M.A. '29, University of Chicago.
Major: English. Minor: History.
Thesis: The Literary Form of Sir Walter Raleigh's History of the World.
Major Adviser: Prof. Huntington Brown.
1941. CAVANNA, JOHN G. B.A. '31, M.A. '32, University of Minnesota.
Major: English. Minor: German.
Thesis: Dr. Burney's Principles of Music Criticism: Their Background
in Western Culture and Their Relationship to Neoclassicism and
Romanticism: A Study in Eighteenth-Century Aesthetics.
Major Adviser: Prof. C. A. Moore.
1941. CLARK, JOHN WILLIAMS. B.A. '28, University of Minnesota;
M.A. '29, Harvard University.
Major: English. Minor: Latin.
Thesis: The Authorship of *Sir Gawain and the Green Knight*, *Pearl*, *Clean-
ness*, *Patience*, and *Erkenwald* in the Light of the Vocabulary.
Major Adviser: Prof. M. B. Ruud.
1941. KERR, ELIZABETH MARGARET. B.A. '26, M.A. '27, University
of Minnesota.
Major: English. Minor: French.
Thesis: The Twentieth Century Sequence Novel.
Major Adviser: Prof. J. W. Beach.
1942. BRIGGS, HAROLD EDGAR. B.A. '22, University of Minnesota;
M.A. '25, University of Iowa.
Major: English. Minor: Latin.
Thesis: The First Life of Keats: An Edition of Lord Houghton's
Life and Letters of John Keats.
Major Adviser: Prof. J. W. Beach.
1942. HURSLEY, FRANK MCCALL. B.A. '24, University of Michigan;
M.A. '26, University of Chicago.
Major: English. Minor: History.
Thesis: The Social Attitudes and Convictions of James Russell
Lowell During His First Creative Period, 1838-1851.
Major Adviser: Prof. Tremaine McDowell.
1942. PETERSON, DORIS EYLINE. B.A. summa cum laude '30,
University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Landor's Treatment of His Source Materials in the
Imaginary Conversations Greek and Roman.
Major Adviser: Prof. Joseph W. Beach.

1942. WINTERS, WARRINGTON WOODRUFF. B.A. '35, M.A. '36,
University of Minnesota.
Major: English. Minor: German.
Thesis: Unusual Mental Phenomena in the Life and Works of Charles Dickens.
Major Adviser: Prof. J. T. Hillhouse.
1943. BOUVIER, ARTHUR PAUL. B.A. '21, University of Minnesota.
Major: English. Minor: Romance Languages.
Thesis: Studies in the Development of Dramatic Conventions in
16th Century England.
Major Adviser: Prof. Huntington Brown.
1943. LEFEVRE, CARL ANTHONY. B.A. '34, Western State Teachers
College; M.A. '37, University of Michigan.
Major: English. Minor: Speech.
Thesis: Gogol's First Century in England and America: (1841-1941).
Major Adviser: Prof. J. W. Beach.
1943. TURPIE, MARY CHRISTINE. B.S. '30, M.A. '41, University
of Minnesota.
Major: English. Minor: History.
Thesis: The Growth of Emerson's Thought.
Major Adviser: Prof. Tremaine McDowell.
1944. LOKENSGARD, HJALMAR ORLANDO. B.A. '28, St. Olaf College;
M.A. '32, State University of Iowa.
Major: English. Minor: English Philology.
Thesis: A Study of the Essays of Oliver Wendell Holmes.
Major Adviser: Prof. Tremaine McDowell.
1944. WILLER, WILLIAM HERMAN. B.A. '31, DePaul University;
M.A. '37, University of Minnesota.
Major: English. Minor: History.
Thesis: Native Themes in American Short Prose Fiction, 1770-1835.
Major Adviser: Prof. Tremaine McDowell.
1945. BJORNSTAD, WILLIAM BERNARD. B.A. '29, M.A. '30, University
of Minnesota.
Major: English. Minor: Romance Languages.
Thesis: A Swift Handbook: The Biography (1667-1745) and the
Poetry through 1714.
Major Adviser: Prof. C. A. Moore.
1945. CULHANE, MARY JOSEPHINE. B.A. '32, M.A. '33, University
of Minnesota.
Major: English. Minor: French.
Thesis: Thoreau, Melville, Poe, and the Romantic Quest.
Major Adviser: Prof. Tremaine McDowell.

1946. ELVEBACK, HELEN BELL. B.A. '33, M.A. '35, University of Minnesota.
Major: English. Minor: French.
Thesis: The Novels of Theodore Dreiser with an Analysis of His Other Writings.
Major Adviser: Prof. J. W. Beach.
1947. ALEXIS, GERHARD THEODORE. B.A. summa cum laude '37, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Calvinism and Mysticism in Jonathan Edwards.
Major Adviser: Prof. Tremaine McDowell.
1947. HULME, FRANCIS PLEDGER. B.A. '36, University of North Carolina; M.A. '37, Emory University.
Major: English. Minor: French.
Thesis: A History of Music-Imagery in European Literature with Special Emphasis on Nineteenth and Twentieth Century English, American, and French Literature.
Major Adviser: Prof. Elizabeth Atkins.
1947. KLINE, JUDD. B.A. '37, M.A. '39, University of Minnesota.
Major: English. Minor: Philology.
Thesis: John Shebbeare (1710-1788) Physician, Novelist and Pamphleteer.
Major Adviser: Prof. C. A. Moore.
1947. SEELEY, KENNETH TRUMAN. B.A. magna cum laude '26, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Five Keys to Gulliver.
Major Adviser: Prof. C. A. Moore.
1948. GIMMESTAD, BERNARD OSCAR. B.A. magna cum laude '34, St. Olaf College; M.A. '39, University of Wisconsin.
Major: English. Minor: History.
Thesis: Three Churchill Studies.
Major Adviser: Prof. C. A. Moore.
1948. MACLACHLIN, MARY VICTORIA. B.A. '40, Skidmore College; M.A. '42, Columbia University.
Major: English. Minor: History.
Thesis: Edwin Lawrence Godkin: Utilitarian Editor.
Major Adviser: Prof. Tremaine McDowell.
1949. STOCKS, BETTY T. B.A. magna cum laude '34, University of Minnesota.
Major: English. Minor: French.
Thesis: Hobbes and the Restoration Wits.
Major Adviser: Prof. C. A. Moore.

1950. BLEIFUSS, WILLIAM WALTER. B.S. with honors '43, Winona State Teachers College; M.A. '47, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Charles Dickens and the Law.
Major Adviser: Prof. J. T. Hillhouse.
1950. HILTON, EARL RAYMOND. B.A. with honor '38, University of Wyoming; Ph.M. '39, University of Wisconsin.
Major: English. Minor: History.
Thesis: The Purpose and Method of Sherwood Anderson.
Major Adviser: Prof. Theodore Hornberger.
1950. JONES, ALEXANDER ELVIN. B.A. summa cum laude '42, DePauw University; M.A. '49, University of Minnesota.
Major: English. Minor: Linguistics.
Thesis: Mark Twain and Religion.
Major Adviser: Prof. H. N. Smith.
1950. KNOLL, ROBERT EDWIN. B.A. '43, University of Nebraska; M.A. '47, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Fortinbras and His Character Type in Elizabethan Drama.
Major Adviser: Prof. Huntington Brown.
1950. MILD, WARREN PAUL. B.A. cum laude '47, M.A. '47, University of Minnesota.
Major: English. Minor: Linguistics.
Thesis: Macaulay as a Critic of Eighteenth Century English Literature.
Major Adviser: Prof. J. T. Hillhouse.
1950. MILLER, VINCENT EARL. B.A. '42, New York State College for Teachers.
Major: English. Minor: Philosophy.
Thesis: Some Characteristics of George Meredith's Prose Style.
Major Adviser: Prof. J. T. Hillhouse.
1951. CRONIN, EDWARD JOSEPH. B.A. cum laude '38, University of Notre Dame; M.A. '40, University of Chicago.
Major: English. Minor: Philosophy.
Thesis: Joseph Conrad: A Moral Analysis.
Major Adviser: Prof. W. V. O'Connor.
1951. ENGELHART, CARL WILLIAM. B.A. '39, University of Chicago; M.A. '43, University of Minnesota.
Major: English. Minor: History.
Thesis: The Reaction against Industrialism in American Literature, 1800-1860.
Major Adviser: Prof. Tremaine McDowell.
1951. FEDER, LILLIAN. B.A. '45, Brooklyn College; M.A. '47, Columbia University.
Major: English. Minor: Latin.
Thesis: John Dryden's Interpretation and Use of Latin Poetry and Rhetoric.
Major Adviser: Prof. S. H. Monk.

1951. FRIEDRICH, GERHARD GUNTER. M.L.S. '38, Berlin Library School;
B.A. '42, Guilford College; M.A. '47, Haverford College.
Major: English. Minor: History.
Thesis: The Idea of Internationalism in Emerson.
Major Adviser: Prof. Theodore Hornberger.
1951. RODABAUGH, DELMER JOSEPH. B.A. '32, Park College;
M.A. '38, State University of Iowa.
Major: English. Minor: Philosophy.
Thesis: Hawthorne's Use of the English and the Italian Past.
Major Adviser: Prof. Tremaine McDowell.
1951. SCHMIDT, PAUL STEWARD. B.A. '36, State University of Iowa;
M.A. '38, University of Chicago.
Major: English. Minor: Philosophy.
Thesis: Samuel Clemens's Technique as a Humorist, 1857-1872.
Major Adviser: Prof. H. N. Smith.
1951. SYLVESTER, WILLIAM ARTHUR. B.A. '40, Columbia University;
M.A. '47, University of Chicago.
Major: English. Minor: French.
Thesis: War and Lechery: Four Themes in the Non-Shakespearean
Elizabethan Theatre—1587-1603.
Major Adviser: Prof. Huntington Brown.
1951. WHEELER, OTIS BULLARD. B.A. '42, University of Oklahoma;
M.A. '47, University of Texas.
Major: English. Minor: Philosophy.
Thesis: Maurice Thompson: A Biographical and Critical Study.
Major Adviser: Prof. Theodore Hornberger.
1952. AMES, ROBERT JAMES. B.A. '37, Park College; M.S. '41, Kansas
State Teachers College.
Major: English. Minor: Philosophy.
Thesis: Walter Bagehot: A Study in Religious Compromise.
Major Adviser: Prof. W. V. O'Connor.
1952. CAMPBELL, CHARLES ALEXANDER, JR. B.A. '47, University of
Massachusetts; M.A. '48, University of Chicago.
Major: English. Minor: History.
Thesis: "The Great American Novel"—A Study in Literary Nationalism,
1870-1900.
Major Adviser: Prof. Theodore Hornberger.
1952. HELTON, TINSLEY. B.A. '35, Berea College; M.A. '37, State
University of Iowa.
Major: English. Minor: Speech.
Thesis: The Concept of Woman's Honour in Jacobean Drama.
Major Adviser: Prof. Huntington Brown.

1952. SCHOFF, FRANCIS GORDON. B.A. '27, M.A. '32, University of Minnesota.
Major: English. Minor: French.
Thesis: Aspects of Shakespearean Criticism, 1914-1950—A Commentary Centered on British and American Criticism of Hamlet.
Major Adviser: Prof. Huntington Brown.
1952. SWEETSER, MARGARET SUSAN. B.A. magna cum laude '40, B.S. '42, M.A. '42, University of Minnesota.
Major: English. Minor: History.
Thesis: Herman Melville's Conception of the Great Writer and His Experiments in Literary Manners.
Major Adviser: Prof. Tremaine McDowell.
1953. BRYAN, DANIEL VANCE. B.A. '40, M.A. '42, State University of Iowa.
Major: English. Minor: Philosophy.
Thesis: Samuel Butler: Creative Evolution in Literature.
Major Adviser: Prof. W. V. O'Connor.
1953. HIGGINSON, FRED HALL. B.A. cum laude '42, M.A. '48, University of Wichita.
Major: English. Minor: Linguistics.
Thesis: James Joyce's Revisions of Finnegans Wake: A Study of the Published Versions.
Major Adviser: Prof. L. H. Unger.
1953. KARR, HAROLD SOLOMON. B.A. '39, University of Manitoba; M.A. '46, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Samuel Butler: His Influence on Shaw, Forster and Lawrence.
Major Adviser: Prof. W. V. O'Connor.
1953. REED, ARTHUR LACHLAN. B.A. '39, M.A. '42, Yale University.
Major: English. Minor: Philosophy.
Thesis: Asa Greene, New England Publisher, New York Editor and Humorist, 1789-1838.
Major Adviser: Prof. Theodore Hornberger.
1953. RICE, MARY LUND. B.A. magna cum laude '38, M.A. '41, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: The Moral Conservatism of Edith Wharton.
Major Adviser: Prof. W. V. O'Connor.
1954. BLISS, FRANK WALKER, JR. B.A. '47, Emory University; M.A. '48, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Studies in the Background of the Idea of Pride in Eighteenth-Century Thought.
Major Adviser: Prof. S. H. Monk.

1954. HEMPHILL, GEORGE TROXELL. B.A. cum laude '47, Kenyon College;
M.A. '48, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Decorum in English Verse ca. 1569-1700.
Major Adviser: Prof. Huntington Brown.
1954. KAUFMAN, MARJORIE RUTH. B.S. '44, Milwaukee State College;
M.A. '47, University of Washington.
Major: English. Minor: History.
Thesis: Henry James's Comic Discipline—The Use of the Comic
in the Structure of His Early Fiction.
Major Adviser: Prof. Bernard Bowron.
1954. LILL, JAMES VERNON. B.A. with honors '47, M.A. '48,
University of Oregon.
Major: English. Minor: Philosophy.
Thesis: Dryden's Adaptation from Milton, Shakespeare, and Chaucer.
Major Adviser: Prof. S. H. Monk.
1954. NURMI, MARTIN KARL. M.A. '48, University of Chicago.
Major: English. Minor: Philosophy.
Thesis: Blake's Doctrine of Contraries: A Study in Visionary
Metaphysics.
Major Adviser: Prof. D. V. Erdman.
1954. SPIVEY, TED RAY. B.A. '49, Emory University; M.A. '51,
University of Minnesota.
Major: English. Minor: History.
Thesis: Two Visions of Character and Fate. A Study of Themes
and Major Characters in the Novels of Thomas Hardy and George Eliot.
Major Adviser: Prof. J. T. Hillhouse.
1954. STEINMANN, MARTIN, JR. B.A. cum laude '37, M.A. '46,
University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: T. F. Powys: A Thematic Study.
Major Adviser: Prof. J. T. Hillhouse.
1955. MINER, EARL ROY. B.A. summa cum laude '49, M.A. '51,
University of Minnesota.
Major: English. Minor: American Literature.
Thesis: The Japanese Influence on English and American Literature,
1850-1950.
Major Adviser: Prof. W. V. O'Connor.
1955. OWENS, ROBERT REILEY. B.A. '41, Dickinson College;
M.A. '48, University of Minnesota.
Major: English. Minor: Philosophy.
Thesis: Jonathan Swift's Hostility to Science.
Major Adviser: Prof. J. T. Hillhouse.

1955. WILLEN, GERALD. B.A. '38, Johns Hopkins University;
M.A. '48, University of Minnesota.
Major: English. Minor: Art.
Thesis: Dreiser's Moral Seriousness: A Study of the Novels.
Major Adviser: Prof. W. V. O'Connor.
1956. ENROTH, CLYDE ADOLPH. B.A. '47, M.A. '49, University of Minnesota.
Major: English. Minor: Art.
Thesis: The Movement Toward Mysticism in the Novels of Aldous Huxley.
Major Adviser: Prof. W. V. O'Connor.
1956. SEIDEN, MELVIN. M.A. '48, University of Chicago.
Major: English. Minor: Art.
Thesis: The Revenge Motive in Websterian Tragedy.
Major Adviser: Prof. Allen Tate.

FINE ARTS

1951. TORBERT, DONALD ROTHROCK. B.S. '33, M.A. '35, Ohio State
University.
Major: Fine Arts. Minor: Educational Psychology.
Thesis: Minneapolis — Architecture and Architects, 1848-1908.
A Study of Style Trends in Architecture in a Midwestern City
Together with a Catalogue of Representative Buildings.
Major Adviser: Prof. H. H. Arnason.

GERMAN

1939. VOX, HERMAN HAROLD. B.A. '32, Hamline University; M.A. '33,
University of Minnesota.
Major: German (Literature). Minor: German (Philology).
Thesis: The Historical Element in the Dramas of Heinrich von Kleist.
Major Adviser: Prof. O. C. Burkhard.
1940. PUKNAT, SIEGFRIED BERTHOLD. B.A. with honors '35, University
of California at Los Angeles; M.A. '36, University of California
at Berkeley.
Major: German. Minor: French.
Thesis: Cultural Aspects of Fifteenth and Sixteenth Century Germany
as Reflected in the Volksbücher.
Major Adviser: Prof. O. C. Burkhard.
1940. WEIHING, ELLA REGINA. B.A. with honor '29, North Central
College; M.A. '30, Washington University (St. Louis).
Major: German. Minor: Comparative Philology.
Thesis: Ethical Aspects of the Modern Frauen-Entwicklungsroman
in German.
Major Adviser: Prof. F. L. Pfeiffer.

1947. GERSTUNG, FRED BRUNO. B.A. '27, North-Western College;
M.A. '30, University of Minnesota.
Major: German. Minor: Philology.
Thesis: The Language of Walther Von der Vogelweide.
Major Adviser: Prof. Konstantin Reichardt.
1948. MENZE, EDWIN FREDRIC. B.S. '37, M.A. '39, University of Kansas.
Major: German Literature. Minor: Germanic Philology.
Thesis: History and the Cultural Idea in Theodor Fontane's
Social Philosophy.
Major Adviser: Prof. O. C. Burkhard.
1949. BERNARD, RUDOLF KARL. B.S. '40, M.A. '41, Columbia University.
Major: German. Minor: Spanish.
Thesis: Der Vater-Sohn-Konflikt in Modernen Deutschen Drama (1900-1920).
Major Adviser: Prof. O. C. Burkhard.
1949. ROTHFUSS, HERMANN ERNST. B.S. with distinction '39,
M.A. '40, University of Minnesota.
Major: German (Literature). Minor: German (Philology).
Thesis: The German Theater in Minnesota.
Major Adviser: Prof. O. C. Burkhard.
1951. O'CONNELL, RICHARD BERNARD. B.A. magna cum laude '46,
M.A. '49, University of Minnesota.
Major: German. Minors: Spanish and Comparative Philology.
Thesis: Concepts and Symbols in the Poetry of R. M. Rilke--
A Study of Their Development.
Major Adviser: Prof. F. H. Wood.
1951. PETERS, WALTER HERMAN. S.T.L. '38, Angelicum (Rome); S.S.B. '39,
Biblicum Institute (Rome); M.A. '46, University of Minnesota.
Major: German. Minor: Latin.
Thesis: The Hecastus of Macropedius.
Major Advisers: Profs. L. G. Downs and F. L. Pfeiffer.
1951. UHLE, ALFONS THEOPHIL. B.A. '37, University of Western
Ontario; M.A. '42, University of Toronto.
Major: German. Minor: French.
Thesis: Wilhelm Busch in neuer Beleuchtung.
Major Adviser: Prof. F. H. Wood.
1952. LANDA, BJARNE EMIL. B.A. '28, M.A. '30, University of
Southern California.
Major: German. Minor: Scandinavian.
Thesis: The American Scene in Friedrich Gerstächer's Works of Fiction.
Major Adviser: Prof. F. H. Wood.

1953. IVASK, IVAR VIDRIK. Graduate '49, Philipps University;
M.A. '50, University of Minnesota.
Major: German. Minors: Linguistics and Art.
Thesis: Hofmannsthal als Kritiker der Deutschen Literatur.
Major Adviser: Prof. F. H. Wood.

LINGUISTICS

1953. MERZBACH, HERBERT. Graduate '33, University of Rostock.
Major: Linguistics. Minor: Classics.
Thesis: The Phonological Theory of the School of Prague: An
Exposition and Revision.
Major Adviser: Prof. R. F. Spencer.
1953. SMITH, HARLIE LAWRENCE, JR. B.A. '48, Westminster College;
M.A. '51, University of Minnesota.
Major: Linguistics and Comparative Philology. Minor: Semitics.
Thesis: The Phonology of Arabic Loan-words in Old Spanish.
Major Adviser: Prof. T. B. Irving.

ROMANCE LANGUAGES

1940. NELSON, AUGUSTA CHARLOTTE. B.A. '29, M.A. '30,
University of Minnesota.
Major: French. Minor: English.
Thesis: Victor Hugo's Dramatic Theory and Practice.
Major Adviser: Prof. Herbert Clefton.
1941. NIEMI, PEARL CORINNE. B.S. '30, M.A. '36, University of
Minnesota.
Major: French. Minor: Spanish.
Thesis: An Old French Commentary on the Proverbs of Solomon,
Published for the First Time with Introduction, Notes and
Vocabulary.
Major Adviser: Prof. I. C. Lecompte.
1941. WILSON, LAWRENCE ALLEN. B.A. '34, M.A. '35, University of
Minnesota.
Major: French. Minor: English.
Thesis: The Cyrus and the Clelie of Mlle. de Scudery as Reflections
of Seventeenth Century Life, Ideas, and Manners.
Major Adviser: Prof. F. B. Barton.
1942. HANNAH, BEATRICE JOHNSON. B.A. '21, M.A. '31, University of
Minnesota.
Major: French. Minor: English.
Thesis: The Philosophy of Descartes and the Psychology of Corneille.
Major Adviser: Prof. Colbert Searles.

1943. EMBRY, JOE OTIS. B.A. magna cum laude '32, Drury College;
M.A. '37, University of Iowa.
Major: French. Minor: Spanish.
Thesis: The Literary Doctrine and Criticism of Stendhal.
Major Adviser: Prof. F. B. Barton.
1943. FERMAUD, JACQUES ALBERT. B.A. '24, University of Rennes;
M.S. '29, Ecole Libre Sciences Politiques; M.A. '38, University
of Minnesota.
Major: Romance Languages (French). Minor: Philosophy.
Thesis: Les Sources du Confident de la Tragedie Classique Francaise.
Major Adviser: Prof. Colbert Searles.
1946. SMITH, HARRIET LOUISA. B.A. '31, Agnes Scott College;
M.A. '33, University of Alabama.
Major: Spanish. Minor: French.
Thesis: A Critical Study of the Life and Works of the Brothers
Serafin and Joaquin Alvarez Quintero.
Major Adviser: Prof. W. T. Pattison.
1947. SHULER, ESTHER ELISE. B.A. cum laude '43, M.A. '45,
University of Minnesota.
Major: Spanish. Minor: English.
Thesis: Poesia y Teorias Poeticas de José Martí (con especial
referencia a su critica de autores norteamericanos).
Major Adviser: Prof. E. C. LeFort.
1948. KRAGNESS, SHEILA IONE. B.S. with high distinction '38,
M.A. '39, University of Minnesota.
Major: French. Minor: English.
Thesis: Doctors and Medical Science in the Contemporary French
Drama, 1887 to 1939.
Major Adviser: Prof. F. B. Barton.
1949. DESGRANGES, GUY FRANCOIS. Graduate '44, University of the
Sorbonne.
Major: French. Minor: Classics.
Thesis: Montaigne et la Politique.
Major Adviser: Prof. J. A. Fermaud.
1950. CORBETT, EVELYN DORIS. B.A. '28, M.A. in Ed. '29, University
of Akron.
Major: Spanish. Minor: Area Studies: Latin America.
Thesis: La Influencia de la Tierra en la Novela Contemporanea
Rioplatense.
Major Adviser: Prof. W. T. Pattison.

1950. SCHUSTER, EDWARD JAMES. B.A. '31, University of Michigan.
Major: Spanish. Minor: German.
Thesis: "Yo, el Rey"—A Study of the Development of Monarchical Absolutism in the Spanish Golden Age, and Its Influence on the Literature of the Period.
Major Adviser: Prof. R. L. Grismer.
1951. DIBOS, WILLIAM GEORGE. B.A. '37, University of Chicago;
M.A. '40, Oberlin College.
Major: French. Minor: Spanish.
Thesis: Chaulieu and La Fare—A Study in Literary History.
Major Adviser: Prof. E. H. Sirich.
1953. OBAID, ANTONIO HADAD. B.A. '41, Carleton College; M.A. '42, University of Nebraska.
Major: Spanish. Minor: French.
Thesis: El Quijote en los Episodios Nacionales de Perez Galdos.
Major Adviser: Prof. W. T. Pattison.
1953. SPIEGEL, IRVING. B.A. '32, M.A. '33, University of Minnesota.
Major: Spanish. Minor: Italian.
Thesis: Old Judaeo-Spanish Evidence of Old Spanish Pronunciation.
Major Adviser: Prof. R. L. Grismer.
1953. WATLAND, CHARLES DUNTON. B.A. '34, Swarthmore College;
M.A. '37, University of Minnesota.
Major: Spanish. Minor: French.
Thesis: The Literary Education of Rubén Darío.
Major Adviser: Prof. R. L. Grismer.
1954. NAHAS, HELENE. Graduate '45, University of Toulouse.
Major: French. Minor: English.
Thesis: Etude de la Femme dans la Litterature Existentielle Francaise: Jean-Paul Sartre et Simone de Beauvoir.
Major Adviser: Prof. F. B. Barton.
1955. FINNBERG, FLORENCE FAITH. B.A. '35, B.S. '36, M.A. '37, University of Minnesota.
Major: French. Minor: English.
Thesis: The Social and Political Thought of Victor Hugo as Revealed in l'Evenement, a Newspaper Published under His Aegis from July 30-31, 1848, to December 1, 1851.
Major Adviser: Prof. H. E. Clefton.
1956. BUTLER, HARRY LEE. B.A. magna cum laude, '42, Hamline University; M.A. '49, University of Minnesota.
Major: French. Minor: Spanish.
Thesis: The Balzacian Hero.
Major Adviser: Prof. Guy Desgranges.

1940. RAMSLAND, CLEMENT. B.A. cum laude '24, Hamline University;
M.A. '29, University of Washington.
Major: Speech. Minor: English.
Thesis: Whig Propaganda in the Theatre, 1700-1742.
Major Advisers: Profs. C. L. Lees and C. A. Moore.
1941. WHITING, FRANK M. B.A. '30, Brigham Young University;
M.A. '32, University of Utah.
Major: Speech. Minor: English.
Thesis: A History of the Theatre in St. Paul, Minnesota, from
Its Beginning to 1890.
Major Adviser: Prof. C. L. Lees.
1942. BATCHELLER, JOSEPH DONALD. B.A. '36, Carnegie Institute
of Technology; M.A. '38, University of Minnesota.
Major: Speech. Minor: English.
Thesis: David Belasco.
Major Adviser: Prof. C. L. Lees.
1942. CARMICHAEL, HERBERT KENN. B.A. '28, Muskingum College;
M.A. '31, University of Wisconsin.
Major: Speech. Minor: English.
Thesis: The Best Representative Short Plays in the United States:
1900-1940.
Major Adviser: Prof. C. L. Lees.
1942. HURD, MELBA FRANCES. B.A. '27, M.A. '31, University of Minnesota.
Major: Speech. Minor: Psychology.
Thesis: A Study of the Relationships between Voice and Personality
among Students of Speech.
Major Adviser: Prof. Howard Gilkinson.
1947. DUSENBURY, DELWIN BENNETT. B.A. '36, University of Wisconsin;
M.A. '37, University of Minnesota.
Major: Speech. Minor: English.
Thesis: A Study of Comedy in the American Theatre Represented
in the Productions of Native Comedy in New York City from
1900 to 1920.
Major Advisers: Profs. F. M. Rarig and F. M. Whiting.
1947. IRWIN, RAMON LAWRENCE. B.A. '36, University of Minnesota;
M.A. '37, Cornell University.
Major: Speech. Minor: English.
Thesis: Congressional Debates of James K. Polk's Administration:
A Study in Factionalism.
Major Adviser: Prof. F. M. Rarig.

1948. ZIEBARTH, ELMER WILLIAM. B.S. '33, Ph.M. '34, University of Wisconsin.
Major: Speech. Minor: Education.
Thesis: An Investigation of the Listening Habits and the Attitudes toward Radio of Rural Residents of a Composite Service Area.
Major Adviser: Prof. Howard Gilkinson.
1949. BRIELAND, DONALD. B.A. '43, Carleton College; M.A. '45, Northwestern University.
Major: Speech. Minor: Child Welfare.
Thesis: A Comparative Study of the Speech of Blind and Sighted Children.
Major Adviser: Prof. Howard Gilkinson.
1949. DRAKE, FRANCIS EDWARD. B.S. '32, M.A. '39, University of Minnesota.
Major: Speech. Minor: Educational Psychology.
Thesis: A Study of the Personality Traits of Students Interested in Acting.
Major Advisers: Profs. F. M. Whiting and Howard Gilkinson.
1950. BRINK, LAUREN LOUIS. B.S. '41, M.A. '45, University of Minnesota.
Major: Speech. Minor: Education.
Thesis: An Analysis of the Discussion Techniques of Junior and Senior High School Pupils.
Major Adviser: Prof. Howard Gilkinson.
1950. WOODS, DONALD Z. B.A. '37, State University of Iowa; M.A. '42, University of Minnesota.
Major: Speech. Minor: English.
Thesis: A History of the Theater in Minneapolis, Minnesota, from the Beginning to 1883.
Major Adviser: Prof. F. M. Whiting.
1951. DUGAN, JOHN THOMAS. B.A. '41, Fordham University; M.F.A. '48, Catholic University of America.
Major: Speech. Minor: English.
Thesis: The First Principles of Dramatic Composition: A Comparative Study of Selected Theories of Dramaturgy.
Major Adviser: Prof. D. W. Thompson.
1951. ENGAR, KEITH MAURICE. B.A. '47, M.A. '48, University of Utah.
Major: Speech. Minor: English.
Thesis: Political Satire in Selected American Plays of the Twentieth Century.
Major Adviser: Prof. D. W. Thompson.
1952. GOODMAN, HENRY. B.A. cum laude '41, M.A. '47, University of Minnesota.
Major: Speech. Minor: English.
Thesis: The Plays of William Butler Yeats as Myth and Ritual.
Major Adviser: Prof. D. W. Thompson.

1952. PAULSON, STANLEY F. B.A. '44, M.A. '49, University of Minnesota.
Major: Speech. Minor: Psychology.
Thesis: Experimental Study of Spoken Communications: The Effects of Prestige of the Speaker and Acknowledgment of Opposing Arguments on Audience Retention and Shift of Opinion.
Major Adviser: Prof. Howard Gilkinson.
1953. BALLETT, ARTHUR HAROLD. B.S. with high distinction '47, M.A. '49, University of Minnesota.
Major: Speech. Minor: Education.
Thesis: An Analysis of Value Judgments in Selected Secondary School Plays.
Major Adviser: Prof. D. W. Thompson.
1953. HANSEN, BURRELL FENTON. B.S. '40, Utah State Agricultural College; M.S. '42, Purdue University.
Major: Speech. Minor: Education.
Thesis: A Critical Evaluation of a Documentary Series of Radio Programs on Racial and Religious Prejudice.
Major Adviser: Prof. Howard Gilkinson.
1953. SHEPARD, DAVID WAKEFIELD. B.S. '47, M.A. '49, University of Minnesota.
Major: Speech. Minor: English.
Thesis: An Experiment in Content Analysis: The Radio Addresses of Henry J. Taylor: 1945-1950.
Major Advisers: Profs. D. W. Thompson and W. S. Howell.
1954. NELSON, ROY CONRAD. B.E. '31, Superior State Teachers College; M.A. '37, University of Minnesota.
Major: Speech. Minor: Education.
Thesis: An Experimental Study of Four Methods of Teaching Beginning Speech in College.
Major Adviser: Prof. Howard Gilkinson.
1954. SIKKINK, DONALD ELWYN. B.A. cum laude '49, M.A. '51, University of Minnesota.
Major: Speech. Minor: Psychology.
Thesis: An Experimental Study of the Effects on the Listener of Anti-Climax Order and Authority in an Argumentative Speech.
Major Adviser: Prof. Howard Gilkinson.
1954. SMITH, MIRIAM BLINN. B.S. '42, Northern State Teachers College; M.A. '46, University of Minnesota.
Major: Speech. Minor: Psychology.
Thesis: A Rhetorical Analysis of the Speeches of Robert G. Cousins.
Major Adviser: Prof. Howard Gilkinson.

1955. BERGER, KENNETH LUTHER. B.A. '39, St. Olaf College;
M.A. '46, University of Minnesota.
Major: Speech. Minor: Psychology.
Thesis: A Rhetorical Analysis of the Public Speaking of Floyd B. Olson.
Major Adviser: Prof. Howard Gilkinson.
1955. CHRISTENSEN, ALPHUS ROLLAND. B.S. '38, South Dakota State
College; M.A. '41, Northwestern University.
Major: Speech. Minor: Sociology.
Thesis: A Rhetorical Analysis of the Public Speaking of
Richard F. Pettigrew.
Major Adviser: Prof. W. S. Howell.
1955. SAVAGE, DONALD JAMES. B.A. '48, Hamline University;
M.A. '50, University of Minnesota.
Major: Speech. Minor: English.
Thesis: An Analysis of the Comic Element in the Chester, York,
Coventry and Towneley Mystery Cycles.
Major Adviser: Prof. D. W. Thompson.
1956. DEER, IRVING. B.S. '47, University of Michigan; M.A. '51,
University of Minnesota.
Major: Speech. Minor: Scandinavian.
Thesis: Ibsen's Search for Dramatic Form.
Major Advisers: D. W. Thompson and E. W. Ziebarth.

MEDICAL SCIENCES

ANATOMY

1939. MINCKLER, JEFF. B.A. '37, Montana State University;
M.A. '39, University of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: The Nerve Terminals of the Human Spinal Cord (Normal
and Pathological).
Major Adviser: Prof. A. T. Rasmussen.
1939. MOSELEY, RUSSELL LEROY. B.A. '34, Wabash College; M.S. '36,
St. Louis University.
Major: Anatomy. Minor: Pathology.
Thesis: Innervation of the Pancreas.
Major Adviser: Prof. A. T. Rasmussen.
1939. SCHOFIELD, NORMAN D. B.S. '30, M.A. '33, University of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: Transplantation of the Pancreatic Anlage in the Urodele Embryo.
Major Adviser: Prof. R. F. Blount.
1939. TRUEX, RAYMOND CARL. B.A. with distinction '34, Nebraska
Wesleyan University; M.S. '36, St. Louis University.
Major: Anatomy. Minor: Pathology.
Thesis: The Structure of Sensory Ganglia with Special Reference
to the Incidence of Multipolar Neurons.
Major Adviser: Prof. A. T. Rasmussen.
1940. WANG, YU-CHI. B.S. '30, National Central University of
Nanking; M.S. '38, University of Minnesota.
Major: Anatomy. Minor: Anthropology.
Thesis: A Comparison of the Surface Area and Parts of the
Cerebrum in Different Races.
Major Adviser: Prof. R. E. Scammon.
1941. RASMUSSEN, GRANT LITSTER. B.A. '28, University of Utah;
M.A. '35, University of Minnesota.
Major: Anatomy. Minor: Zoology.
Thesis: I. The Origin, Course and Destination of the Olivary Complex.
II. Fiber Projections of the Olivary Complex.
Major Adviser: Prof. A. T. Rasmussen.
1942. DOUGHERTY, THOMAS FRANCIS. B.S. '36, M.A. '37, University
of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: Studies on the Cytogenesis of the Microglia; Their Relation
to Haematogenous Cells and to the Cells of the Reticulo-endothelial
System.
Major Adviser: Prof. Hal Downey.

1942. HEGRE, ERLING STANFORD. B.A. '31, Luther College; M.S. '41, University of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: The Relation of Age to the Influence of the Diencephalic Floor Upon Hypophyseal Development.
Major Adviser: Prof. R. F. Blount.
1942. MERRICK, ROBERT LYNN. B.A. '37, Drake University; M.S. '39, St. Louis University.
Major: Anatomy. Minor: Pathology.
Thesis: A Quantitative Study of the Supraoptic Nucleus of Rats, Dogs, and Humans.
Major Adviser: Prof. A. T. Rasmussen.
1942. NOBACK, CHARLES ROBERT. B.S. '36, Cornell University; M.S. '38, New York University.
Major: Anatomy. Minor: Zoology.
Thesis: The Development of the Human Osseous Skeleton During the Embryonic, Fetal and Circumnatal Periods.
Major Adviser: Prof. R. E. Scammon.
1942. SCHADEWALD, MELVIN A. B.S. '38, M.S. '40, University of Minnesota.
Major: Anatomy. Minor: Neuropathology.
Thesis: The Structure of the Blood Vessels of Human Stellate Ganglia and Its Changes with Age.
Major Adviser: Prof. A. T. Rasmussen.
1943. DRAGER, GLENN A. B.S. '40, University of Wyoming; M.S. '42, University of Minnesota.
Major: Anatomy. Minor: Physiology.
Thesis: The Innervation of the Anterior Lobe of the Hypophysis Cerebri.
Major Adviser: Prof. A. T. Rasmussen.
1943. GRENELL, ROBERT GORDON. B.A. '35, College of the City of New York; M.S. '36, New York University.
Major: Anatomy (Neuroanatomy). Minor: History of Science.
Thesis: The Effects of Temporary Arrest of the Circulation on the Brain.
Major Adviser: Prof. A. T. Rasmussen.
1943. REIFF, DOROTHY SUNDBERG. B.S. '37, M.A. '39, University of Minnesota.
Major: Anatomy (Hematology). Minor: Pathology.
Thesis: Lymphocytogenesis in Human Lymph Nodes.
Major Adviser: Prof. Hal Downey.
1943. VAN BUSKIRK, CHARLES. B.A. '39, Westminster College; M.S. '41, St. Louis University.
Major: Anatomy. Minor: Pathology.
Thesis: A Quantitative Study of the Seventh Cranial Nerve Complex in Cat, Dog, and Man.
Major Adviser: Prof. A. T. Rasmussen.

1944. REIFF, ROBERT HARRISON. B.A. '39, Whitman College.
Major: Anatomy. Minor: Pathology.
Thesis: Splenomegaly of the Banti Type.
Major Adviser: Prof. Hal Downey.
1947. GOOD, ROBERT ALAN. B.A. cum laude '44, University of Minnesota.
Major: Anatomy. Minor: Bacteriology.
Thesis: The Morphologic Mechanisms of Hyperergic Inflammation in the Brain; with Special Reference to the Significance of Local Plasma Cell Formation.
Major Adviser: Prof. Berry Campbell.
1947. REBUCK, JOHN WALTER. B.A. magna cum laude '35, Creighton University; M.A. '40, University of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: Cytology of Acute Inflammation in Man as Demonstrated by Two Original Technical Procedures with Particular Reference to the Role of Lymphocytes.
Major Adviser: Prof. Hal Downey.
1948. SISTER TERESITA JUDD. B.A. summa cum laude '37, M.A. '40, University of Minnesota.
Major: Anatomy. Minor: Pathology.
Thesis: A Comparative Study of the Effects of Certain Chemical and Physical Agents on Mouse Leukemia.
Major Adviser: Prof. Arthur Kirschbaum.
1949. FRANTZ, MARTELLA JANE. B.S. '45, University of Toledo.
Major: Anatomy. Minor: Pathology.
Thesis: Adrenal Cortical Adenomas of Inbred Mice.
Major Adviser: Prof. Arthur Kirschbaum.
1949. MATZKE, HOWARD ARTHUR. B.S. '41, St. Mary's College (Winona, Minn.); M.S. '43, St. Louis University.
Major: Anatomy. Minor: Physiology.
Thesis: The Course of the Fibers Arising from the Nucleus Gracilis and Cuneatus of the Cat.
Major Adviser: Prof. A. T. Rasmussen.
1951. KITCHELL, RALPH LLOYD. D.V.M. '43, Iowa State College.
Major: Anatomy. Minors: Pathology and Veterinary Medicine.
Thesis: Effects of Hormones upon the Adrenals and Reproductive Organs of the Fetus.
Major Adviser: Prof. L. J. Wells.
1952. ALPERT, MORTON. B.S. '47, Louisiana State University; M.S. '48, Ohio State University.
Major: Anatomy. Minor: Physiological Chemistry.
Thesis: Observations on Some Factors in the Deposition of Ceroid Pigment in the Mouse.
Major Adviser: Prof. W. L. Williams.

1953. BRODY, HAROLD. B.S. '47, Western Reserve University.
Major: Anatomy. Minor: Pathology.
Thesis: Age Changes in the Cerebral Cortex.
Major Adviser: Prof. Berry Campbell.
1953. BUCHWALD, NATHANIEL AVROM. B.S. '46, University of Miami.
Major: Anatomy. Minor: Physiology.
Thesis: Studies on the Electroarchitectonics of the Cerebral Cortex.
Major Adviser: Prof. Berry Campbell.
1953. CORNWELL, SAMUEL OWEN. B.S. '44, M.S. '48, University of North Carolina.
Major: Anatomy. Minor: Pathology.
Thesis: Studies on Reticuloendothelial Function with Colloidal Gold.
Major Adviser: Prof. W. L. Williams.
1953. HYDE, JOHN BASKERVILLE. B.S. '44, University of South Dakota.
Major: Anatomy. Minor: Bacteriology.
Thesis: The Fifth Nerve of the Shrew.
Major Adviser: Prof. Berry Campbell.
1953. KANE, DENNIS JAMES. B.A. '40, St. Bonaventure College.
Major: Anatomy. Minor: Pathology.
Thesis: Histopathology of the Renal Lesion in the Generalized Schwartzman Phenomenon.
Major Adviser: Prof. W. L. Williams.
1953. RYZEN, MARIA. B.S. '50, Memphis State College; M.S. '51, University of Tennessee.
Major: Anatomy. Minor: Pathology.
Thesis: Analysis of the Cerebral Cortex in Sorex pacificus pacificus.
Major Adviser: Prof. Berry Campbell.
1953. SWIGART, RICHARD HANAWALT. B.A. '47, University of North Carolina.
Major: Anatomy. Minor: Pathology.
Thesis: Normal and Denervated Skeletal Muscle, and Connective Tissue of Mice Studied by Histochemical and Vital Staining Methods.
Major Adviser: Prof. W. L. Williams.
1954. PITEL, MARTHA. B.S. '46, M.S. '47, Western Reserve University.
Major: Anatomy. Minor: Pathology.
Thesis: Variations in the Bronchovascular Patterns of the Left Lower Lobe of Fifty Lungs.
Major Adviser: Prof. E. A. Boyden.
1955. HIBBS, RICHARD G. B.A. '50, University of South Dakota.
Major: Anatomy. Minor: Pathology.
Thesis: Development of the Ultra-Structure of Cardiac Muscle.
Major Adviser: Prof. J. F. Hartmann.

1955. SUTIN, JEROME. B.S. '51, Siena College; M.S. '53, University of Minnesota.
Major: Anatomy. Minor: Physiology.
Thesis: Electrophysiological Studies of Cerebral Cortical Function: The Regulatory Role of the Supragranular Layers in the Control of Infragranular Pyramidal Cell Excitability.
Major Adviser: Prof. Berry Campbell.
1955. YAKAITIS, ALBINA ANN. B.S. '45, M.S. '49, University of Chicago.
Major: Anatomy. Minor: Pathology.
Thesis: An Experimental Study of Growth of the Adrenals in Fetal Rats.
Major Adviser: Prof. L. J. Wells.
1956. COETZEE, MONA LUYTEN. B.A. '52, Oberlin College.
Major: Anatomy. Minor: Physiological Chemistry.
Thesis: Hypophysis-Adrenal System in the Fetal Rat: An Experimental Study of the Hypophysis.
Major Adviser: Prof. L. J. Wells.
1956. KESWANI, NANDKUMAR HEMRAJ. B.S. '47, University of Bombay; F.C.P.S. '52, College of Physicians and Surgeons at Bombay.
Major: Anatomy. Minor: Pathologic Anatomy.
Thesis: The Phrenic Nucleus in the Cat and Man.
Major Adviser: Dr. R. A. Groat.
1956. MEADER, ROLAND DARRELL. B.S. '41, Nebraska State Teachers College; M.A. '48, University of Colorado.
Major: Anatomy. Minor: Pathology.
Thesis: A Histologic Study of Choline Deficiency in the Mouse.
Major Adviser: Prof. W. L. Williams.

BACTERIOLOGY

1939. HOYT, ROBERT ELLIS. B.S. '33, University of Washington; M.S. '34, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: Studies on the Action of Sulfapyridine on the Pneumococcus in vitro.
Major Adviser: Dr. W. P. Larson.
1939. LEVINE, MILTON. B.S. '34, New York University; M.S. '36, University of Minnesota.
Major: Bacteriology. Minor: Biochemistry.
Thesis: The Chemotherapy of Pneumococcus Infections in Mice.
Major Adviser: Dr. W. P. Larson.
1939. OWEN, CORA RUST. B.A. '33, Vassar College; M.S. '36, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: The Bacteriology of Perforation Peritonitis.
Major Adviser: Dr. A. T. Henrici.

1940. HEILMAN, FORDYCE RUSSELL. B.S. '29, M.D. '31, Northwestern University; M.S. in Bacteriology '38, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: A Study of *Streptobacillus Muris* (*Streptobacillus moniliformis*).
Major Adviser: Dr. T. B. Magath.
1940. ORDAL, ZAKARIAS JOHN. B.A. cum laude '35, Luther College.
Major: Bacteriology. Minor: Chemical Engineering.
Thesis: Respiratory Enzymes of *Staphylococcus Aureus*.
Major Adviser: Prof. H. O. Halvorson.
1940. SLACK, JOHN MADISON. B.A. '36, M.S. '37, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: The Source of Infection in Actinomycosis.
Major Adviser: Prof. A. T. Henrici.
1941. GOODLOW, ROBERT JACOBS. B.A. cum laude '37, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: Canine Oral Papillomatosis.
Major Adviser: Prof. R. G. Green.
1941. JOHNSON, DALE WALDO. B.Ch.E. '37, University of Minnesota.
Major: Bacteriology. Minor: Physical Chemistry.
Thesis: A Chemical Method for the Determination of Waste Strengths.
Major Adviser: Prof. H. O. Halvorson.
1942. BATSON, HERBERT CLIFFORD. B.S. '32, M.S. '34, South Dakota State College.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: Studies on the Epidemiology of Botulism in Wild Ducks.
Major Adviser: Dr. Winford P. Larson.
1942. BELL, JOHN FREDERICK. B.A. '36, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: Some Factors Concerned in the Infection of Ticks with *Pasteurella tularensis*.
Major Adviser: Prof. R. G. Green.
1942. DRAKE, CHARLES HADLEY. B.A. '37, M.S. '39, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: The Pathogenicity and Allergic Properties of *Proactinomyces asteroides*.
Major Adviser: Prof. A. T. Henrici.

1942. TSUCHIYA, HENRY MITSUMASA. B.S. cum laude '36, M.S. '38, University of Washington.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Certain Metabolic Studies on the Yeast Saccharomyces cerevisiae.
Major Adviser: Prof. H. O. Halvorson.
1943. EVANS, CHARLES ALBERT. B.S. '35, M.D. '37, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: A Study of Herpetic Infections of the Nervous System.
Major Adviser: Dr. R. G. Green.
1943. FOSTER, RUTH ANNA CHRISTIE. B.Sc. with honours '32, University of New Brunswick.
Major: Bacteriology. Minor: Biochemistry.
Thesis: Histamine Release in Various Shock States.
Major Adviser: Dr. W. P. Larson.
1943. STAVITSKY, ABRAM BENJAMIN. B.A. '39, M.S.P.H. '40, University of Michigan.
Major: Bacteriology. Minor: Pathology.
Thesis: Studies on Leptospira icterohemorrhagiae and Leptospirosis.
Major Adviser: Prof. R. G. Green.
1944. TENENBERG, DANIEL JACOB. B.S. '40, University of Michigan.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: In Vitro Studies of Sulfonamide Antibacterial Activity.
Major Adviser: Prof. H. O. Halvorson.
1946. GUTHRIE, ROBERT. B.A. '41, B.S. '43, M.D. '45, University of Minnesota; M.S. '42, University of Maine.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: Studies of the Growth Requirements of Trichomonas Fetus Riedmuller.
Major Adviser: Prof. H. O. Halvorson.
1946. MUEDEKING, MARY RAE. B.A. magna cum laude '41, University of Minnesota.
Major: Bacteriology. Minors: Organic Chemistry and Physical Chemistry.
Thesis: A Study of the Effect of Environment on the Lactic Acid Fermentation.
Major Adviser: Prof. H. O. Halvorson.
1947. ALLEN, ROBERT MALVEN. B.A. '32, Iowa State Teachers College; M.S. '41, University of Michigan.
Major: Bacteriology. Minor: Zoology.
Thesis: Experimental Histoplasmosis.
Major Adviser: Prof. C. E. Skinner.

1947. JEZESKI, JAMES JOHN. B.S. with distinction '40, M.S. '42, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Study of the Fat-oxidizing Enzymes of Bacteria.
Major Advisers: Profs. H. O. Halvorson and Harold Macy.
1947. LARSON, NORA LEONA. B.A. '23, St. Olaf College; M.S. '33, University of Minnesota.
Major: Bacteriology. Minor: Biochemistry and Physiological Chemistry.
Thesis: A Study of Inhibitory Substance Occurring in Cultures of Yeast as a Result of Growth.
Major Adviser: Prof. H. O. Halvorson.
1947. MARWIN, RICHARD MARTIN. B.A. cum laude '41, M.S. '43, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: A Survey of Candida Albicans on Normal and Pathological Skin Surfaces.
Major Adviser: Prof. C. E. Skinner.
1947. MCLIMANS, WILLIAM FLETCHER. B.A. '39, University of Minnesota.
Major: Bacteriology. Minor: Pharmacology.
Thesis: A Study of Some Factors Affecting the Host Cell/Virus Interaction with a Contribution to the Therapy of Tsutsugamushi Disease.
Major Adviser: Dr. W. P. Larson.
1947. NEEDHAM, GERALD MORTON. B.S. '40, College of Idaho.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: Some Studies on the Action of a Few Anti-Bacterial Substances on "Resting" Cells.
Major Adviser: Prof. H. O. Halvorson.
1947. SIEDENTOPF, HEINZ ADOLF. B.A. '38, M.S. '41, University of Minnesota.
Major: Bacteriology. Minor: Pathology.
Thesis: Immunological Characteristics of the Fox Encephalitis Virus.
Major Advisers: Dr. R. G. Green and Prof. H. O. Halvorson.
1947. STULBERG, CYRIL SIDNEY. B.A. '43, M.S. '45, University of Minnesota.
Major: Bacteriology. Minor: Biochemistry.
Thesis: Studies on the Growth of Poliomyelitis Viruses in Transplanted Embryonic Tissues.
Major Advisers: Dr. R. G. Green and Prof. H. O. Halvorson.
1947. ULRICH, JOHN AUGUST. B.S. '38, College of St. Thomas.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: A Study of an Unknown Accessory Growth Factor(s) for Lactobacillus casei as Found in Yeast Extract.
Major Adviser: Prof. H. O. Halvorson.

1948. BOUTHILET, ROBERT JACOB. B.A. '45, M.S. '46, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Taxonomic Investigation of Yeasts from Minnesota Soils.
Major Adviser: Prof. C. E. Skinner.
1948. BRUMFIELD, HELENE PAINE. B.A. '20, Colorado College.
Major: Bacteriology. Minor: Zoology.
Thesis: A Study of Serological Tests for Poliomyelitis.
Major Adviser: Prof. H. O. Halvorson.
1948. FISCHER, ROBERT GEORGE. B.A. '42, M.S. '47, University of Minnesota.
Major: Bacteriology. Minor: Zoology.
Thesis: Studies on Infectious Rabbit Papillomatosis.
Major Advisers: Dr. R. G. Green and Prof. H. O. Halvorson.
1948. HOYER, BILL HENRIKSEN. B.S. cum laude '43, M.S. '45, University of Washington.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Studies on a Bacterial Amino Acid Decarboxylase.
Major Adviser: Prof. H. O. Halvorson.
1948. OLSON, JOSEPH CARL, JR. B.S. '35, M.S. '44, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Study of Certain Factors Pertaining to the Heat Resistance of Coliform Bacteria in Milk.
Major Advisers: Profs. Harold Macy and H. O. Halvorson.
1949. BAUER, HENRY. B.S. '37, M.S. '38, University of Nebraska.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Study of Brucella and Proteus Urease.
Major Adviser: Prof. H. O. Halvorson.
1949. EDWARDS, ROBERT BRYCE. B.S. '38, Michigan State College.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A New Test for the Standardization of Diphtheria Toxin and Antitoxin.
Major Adviser: Prof. H. O. Halvorson.
1949. FJELDE, AUDREY. B.S. '35, M.S. '45, University of Minnesota.
Major: Bacteriology. Minor: Anatomy (Hematology).
Thesis: Studies on the Metabolism of Tissue Cultures and Virus Infected Membranes.
Major Adviser: Prof. W. F. McLimans.
1949. LONES, GEORGE WAYNE. B.Ch. '35, M.S. '36, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Investigation of the Isoantagonism of Saccharomyces cerevisiae.
Major Adviser: Prof. H. O. Halvorson.

1949. LUND, ARNOLD JEROME. B.A. '38, St. Olaf College.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Influence of Raw and Heated Meat on the Resistance of Bacterial Spores to Heat.
Major Adviser: Prof. H. O. Halvorson.
1949. OMATA, ROBERT ROKURO. B.A. '44, University of California;
M.S. '46, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Studies on the Metabolism of B Vitamins by Lactic Acid Bacteria.
Major Adviser: Prof. H. O. Halvorson.
1949. SNEED, THELMA. B.A. cum laude '34, B.S. '39, M.A. '36,
University of Minnesota.
Major: Bacteriology. Minor: Geology.
Thesis: The Effect of the Variation of Media on the Synthesis of Fat by Some Bacteria.
Major Adviser: Prof. H. O. Halvorson.
1949. SUSSMAN, MAURICE. B.S. '42, The College of the City of New York.
Major: Bacteriology. Minors: Zoology and Botany.
Thesis: The Dissociation of Biosynthesis from Glycolysis in the Intact Yeast Cell.
Major Adviser: Prof. Sol Spiegelman.
1949. WERDER, ALVAR ARVID. B.A. '45, M.S. '47, University of Minnesota.
Major: Bacteriology. Minor: Cancer Biology.
Thesis: Immunological Studies on Transplanted Mouse Leukemias.
Major Adviser: Prof. H. O. Halvorson.
1950. IMAGAWA, DAVID TADASHI. B.A. '44, Macalester College;
M.S. '46, University of Minnesota.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: Immunological Investigations of Mouse Mammary Cancer.
Major Adviser: Dr. J. T. Syverton.
1952. HESS, WILLIAM ROBERT. B.A. '40, M.S. '49, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Study of Bovine Brucella Agglutinins.
Major Advisers: Profs. J. C. Olson and M. H. Roepke.
1952. MORGAN, PERRY. B.Ch. '44, M.S. '49, University of Minnesota.
Major: Bacteriology. Minor: Organic Chemistry.
Thesis: The Antigenicity in Rabbits and Mice of Soluble Specific Substances Derived from Pneumococci Grown in Vivo or in Vitro.
Major Adviser: Prof. D. W. Watson.

1953. GARABEDIAN, GARABED A. B.A. '46, M.S. '49, American University of Beirut.
Major: Bacteriology. Minor: Pathology.
Thesis: The Immunological Basis of Recurrent Herpetic Infections.
Major Adviser: Dr. J. T. Syverton.
1953. MOAT, ALBERT GROOMBRIDGE. B.S. '49, M.S. '50, Cornell University.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Role of Biotin in Carbohydrate Metabolism.
Major Adviser: Prof. H. C. Lichstein.
1953. PATNODE, ROBERT ARTHUR. B.A. '44, M.S. '46, University of Minnesota.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: A Study of Host Tissue Factors and Their Relationship to Resistance in Tuberculosis.
Major Adviser: Prof. D. W. Watson.
1953. SCHWAB, JOHN HARRIS. B.A. '49, M.S. '50, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Parasite and Host Factors in Experimental Group A Streptococcal Infections.
Major Adviser: Prof. D. W. Watson.
1953. SHEAR, HOWARD HENRY. B.A. '49, M.S. '52, University of Minnesota.
Major: Bacteriology. Minor: Cancer Biology.
Thesis: Studies Concerning the Properties of an Accelerant Factor for Transplantable Mouse Mammary Cancer.
Major Adviser: Dr. J. T. Syverton.
1954. BOUCHER, NORMAN EDWARD, JR. B.S. '41, M.S. '52, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Effects of Radioactive Phosphorus (P^{32}) and Cortisone upon the Response of Mice to Transplanted Mouse Mammary Cancer.
Major Adviser: Dr. J. T. Syverton.
1954. BOYD, WILLIAM LEE. B.A. '50, University of Tennessee; M.S. '52, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Effect of Carbohydrates on the Tryptophanase and Several Deaminase Systems of Bacteria.
Major Adviser: Prof. H. C. Lichstein.
1954. MURPHY, WILLIAM HENRY, JR. B.S. '50, M.S. '51, Pennsylvania State College.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Absorption and Translocation of Encephalomyelitic Viruses by Plants.
Major Adviser: Dr. J. T. Syverton.

1954. PETERSON, GLEN ERVIN. B.A. '49, Luther College;
M.S. '52, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Role of Antibiotics in the Nutrition of the Rat and
Certain Bacteria.
Major Advisers: Profs. K. R. Johansson and D. W. Watson.
1954. SIEBURTH, JOHN MCNEILL. B.S.A. '49, University of British
Columbia; M.S. '51, State College of Washington.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Bluecomb Disease of Turkeys: Antibiotic Prophylaxis and
Etiology.
Major Advisers: Profs. B. S. Pomeroy and J. J. Jezeski.
1955. DICK, ELLIOT COLTER. B.A. '50, M.S. '53, University of
Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Mode of Action of Antibiotics in Stimulating the
Growth of Animals.
Major Adviser: Prof. K. A. Johansson.
1955. GIFFORD, GEORGE EDWIN. B.A. cum laude '49, M.S. '53,
University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Studies That Concern Measurements of Polioyielitis
Virus Synthesis in Strain Hela Cells.
Major Adviser: Dr. J. T. Syverton.
1955. GINZBURG, YAEL. M.Sc. '50, Hebrew University.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Biosynthesis of Hyaluronate by Group A Streptococci¹.
Major Adviser: Prof. D. W. Watson.
1955. LINDORFER, ROBERT KARL. B.S. '47, College of St. Thomas;
M.S. '53, University of Minnesota.
Major: Bacteriology. Minor: Physiological Chemistry.
Thesis: The Influence of Hormonal Alterations and Avitaminosis D
on Swine Influenza Virus Infection in Mice.
Major Adviser: Dr. J. T. Syverton.
1955. ROTH, FRANK JACOB, JR. B.S. cum laude '42, Ohio University;
M.S. '47, University of North Carolina.
Major: Bacteriology. Minor: Zoology.
Thesis: A Study of the Effect of Cortisone and Roentgen Radiation
on Innate Resistance to Experimental Mycoses.
Major Adviser: Dr. J. T. Syverton.

1955. SMITH, JOSEPHINE DAUBNEY. B.Ch.E. '48, B.B.A. '48, M.S. '53, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: Aspartase: Properties of the Enzyme in the Intact Bacterial Cell and in Cell-Free Preparations.
Major Adviser: Prof. H. C. Lichstein.
1956. GREENE, VELVL WILLIAM. B.S.A. '49, University of Manitoba; M.S. '51, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: The Effect of Heat Treatment of Milk and Milk Powder on the Development and Activity of Lactic Acid Cultures (Cheese Starters).
Major Adviser: Prof. J. J. Jezeski.
1956. MIZUNO, WILLIAM GEORGE. B.A. cum laude '48, M.S. '50, University of Minnesota.
Major: Bacteriology. Minor: Agricultural Biochemistry.
Thesis: A Study of the Formation of Acetoin by Mixed Lactic Streptococci and Leuconostoc.
Major Adviser: Prof. J. J. Jezeski.

BIOCHEMISTRY

1941. WELLS, BENJAMIN BAXTER. B.A. '31, M.D. '35, Baylor University.
Major: Biochemistry. Minor: Physiology.
Thesis: The Biochemical and Physiologic Properties of Compounds Separated from the Adrenal Cortex.
Major Adviser: Dr. E. C. Kendall.

DERMATOLOGY AND SYPHILOLOGY

1943. STRAKOSCH, ERNEST ANTHONY. M.D. '35, University of Vienna; M.S. '42, M.D. '42, University of Minnesota.
Major: Dermatology and Syphilology. Minor: Pathology.
Thesis: Studies on Ointments. The Local Action of Salicylic Acid Plus Sulfur from Various Ointment Basis. The Local Action of Resorcinol from Various Ointment Bases. The Local Action of Chrysarobin from Various Ointment Basis. Zinc Paste. Sulfonamide Ointments.
Major Adviser: Dr. H. E. Michelson.
1952. FITZPATRICK, THOMAS BERNARD. B.A. '41, University of Wisconsin; M.D. '45, Harvard Medical School.
Major: Dermatology and Syphilology. Minor: Pathology.
Thesis: Studies on Human Melanogenesis: I. Biochemical Studies in Normal Pigment Cells and Pigment-Cell Neoplasms. II. Biochemical Factors Regulating Melanogenesis. III. Biochemical Basis of Pigmentary Disorders.
Major Adviser: Dr. Hamilton Montgomery.

1940. BURCHELL, HOWARD BERTRAM. M.D. '32, University of Toronto.
 Major: Medicine. Minor: Experimental Physiology.
 Thesis: The Re-establishment of the Coronary Circulation on the Dog's Heart after Coronary Occlusions, with Special Reference to the Efficacy of Pedicled Tissue Grafts as a Source of Blood Supply.
 Major Adviser: Dr. F. C. Mann.
1940. NESBITT, SAMUEL. B.S. cum laude '31, Princeton University; M.D. '35, Harvard University.
 Major: Medicine. Minor: Physiologic Chemistry.
 Thesis: A Quantitative and Qualitative Study of Porphyrin Metabolism.
 I. Introduction. II. Porphyrin Excretion in Hepatic Disease.
 III. A Study of Acute Porphyria: Presentation of Three Cases.
 Major Adviser: Prof. A. M. Snell.
1941. DEARING, WILLIAM H. B.A. '29, M.A. '34, M.D. '35, University of Pennsylvania.
 Major: Medicine. Minor: Physiology.
 Thesis: A. Studies on the Effect of Calculated Therapeutic and Toxic Doses of Digitalis on the Cellular Structure of the Myocardium, the Electrocardiogram, the Coronary Blood Flow and the Cellular Structure of the Brain in Experimental Animals. B. Comparative Studies in Cats of the Changes Produced in the Electrocardiogram, Heart and Brain after Prolonged Systemic Oxygen Deprivation, Large Doses of Pitressin and Toxic Doses of Digitalis.
 Major Adviser: Dr. A. R. Barnes.
1941. LADUE, JOHN SAMUEL. B.S. '32, M.S. in Med. '40, University of Minnesota; M.D. '36, Harvard University.
 Major: Medicine. Minor: Pathology.
 Thesis: A Preliminary Clinical and Experimental Investigation.
 Major Adviser: Dr. George Fahr.
1941. LAYNE, JOHN ANTHONY. B.S. '34, M.D. '35, University of Minnesota.
 Major: Medicine. Minor: Bacteriology.
 Thesis: An Endoscopic Study of the Appearance of the Gastric Mucosa in the Anesthetized Dog with Particular Reference to the Production of Gastric Lesions.
 Major Adviser: Dr. C. J. Watson.
1941. ROSENBERG, EDWARD FRANK. B.A. '29, M.A. '30, University of Delaware; M.D. '34, Jefferson Medical College; M.S. in Med. '38, University of Minnesota.
 Major: Medicine. Minor: Pathology.
 Thesis: The Brain in Malignant Hypertension.
 Major Advisers: Drs. J. W. Kernohan and A. R. Barnes.

1942. BERRY, MAXWELL RUFUS, JR. B.A. '31, M.D. '35, Cornell University.
Major: Medicine. Minor: Physiology.
Thesis: A Plethysmokyomographic Method for Determining Quantitative
Blood Flow Through the Extremities of Humans.
Major Adviser: Dr. E. V. Allen.
1942. SPRAGUE, RANDALL GEORGE. B.S. '30, M.S. '34, M.D. '35,
Northwestern University.
Major: Medicine. Minor: Physiology.
Thesis: The Role of the Adrenal Cortex in Carbohydrate Metabolism.
Major Adviser: Dr. R. M. Wilder, Sr.
1943. WILDER, RUSSELL MORSE, JR. B.A. '33, Princeton University;
M.D. '38, Harvard University.
Major: Medicine. Minor: Experimental Physiology.
Thesis: The Peripheral and Hepatic Uptake and Output of Glucose:
An Experimental Study.
Major Adviser: Dr. J. L. Bollman.
1945. FLINK, EDMUND BERNEY. B.S. '37, M.D. '38, University of Minnesota.
Major: Internal Medicine. Minor: Pathology.
Thesis: Certain Aspects of Hemoglobinemia, Its Relation to Renal Damage
in Dogs and Its Diagnostic Significance in Transfusion Reactions.
Major Adviser: Dr. C. J. Watson.
1946. LARSON, EVREL ARTHUR. B.S. '37, M.D. '39, University of Minnesota.
Major: Medicine. Minor: Pathology.
Thesis: A Study of the Porphyrin Excretion in Animals and Human Subjects
under Varying Experimental Conditions. Some Observations on the
Synthesis of Porphyrins by Bacteria.
Major Adviser: Dr. C. J. Watson.
1947. COLFER, HARRY FRANCIS. B.A. '40, Montana State University;
M.D. '43, Marquette University.
Major: Medicine. Minor: Physiology.
Thesis: The Relationship between the Distribution of Cerebral Cortical
Electrolytes and the Convulsogenic Mechanism: An Investigation by
Means of Microincineration and Microcrystallographic Analysis, and
by Studies of the Responses of Animals to Diets of Altered Mineral
Content and to Desoxycorticosterone Acetate.
Major Adviser: Dr. H. E. Essex.
1948. CARRYER, HADDON MCCUTCHEEN. B.A. '35, Drake University;
M.D. '39, M.S. '39, Northwestern University.
Major: Medicine. Minor: Experimental Physiology.
Thesis: Studies on the Release of Histamine during Hemolytic Reactions
in Blood and the Effects of Adrenal Cortical Compound E and Anti-
Histamine Agents in These Reactions.
Major Adviser: Dr. C. F. Code.

1950. BRAUDE, ABRAHAM ISAAC. B.S. '37, M.D. '40, University of Chicago.
Major: Internal Medicine. Minor: Bacteriology.
Thesis: Studies in the Pathology and Pathogenesis of Experimental
Brucellosis.
Major Adviser: Dr. W. W. Spink.
1950. GASTINEAU, CLIFFORD FELIX. B.A. '40, M.D. '43, University of
Oklahoma.
Major: Internal Medicine. Minor: Physiology.
Thesis: A Study of the Excretion of Chorionic Gonadotrophin.
Major Adviser: Dr. A. Albert.
1950. HALL, WENDELL HOWARD. B.S. with distinction '38, M.D. '41,
University of Minnesota.
Major: Internal Medicine. Minors: Pathology and Bacteriology.
Thesis: Studies of Immunity to Brucellosis and the Bactericidal Action
of Human Blood Against Brucella.
Major Adviser: Dr. W. W. Spink.
1950. HOGBEN, CHARLES ADRIAN MICHAEL. B.S. '41, M.D. '43, University
of Wisconsin.
Major: Medicine. Minor: Physiology.
Thesis: Renal Excretion of Phosphate.
Major Adviser: Dr. J. L. Bollman.
1950. MORGAN, EDWARD HENRY. B.A. '38, DePauw University; M.D. '43,
Northwestern University.
Major: Medicine. Minor: Physiology.
Thesis: The Relationship of Arterial Oxygen Tension and Saturation to
Alveolar Oxygen Pressure in Normal Subjects.
Major Adviser: Dr. H. B. Burchell.
1950. OWEN, CHARLES ARCHIBALD, JR. B.A. '36, Monmouth College;
M.D. '41, State University of Iowa.
Major: Medicine. Minor: Physiology.
Thesis: Studies on the Conversion of Prothrombin to Thrombin; Effect of
Conversion Variations on Prothrombin Tests.
Major Adviser: Dr. Victor Johnson.
1952. HOWARD, ROBERT BRUCE. B.A. magna cum laude '42, M.D. '45,
University of Minnesota.
Major: Medicine. Minors: Pathology and Anatomy.
Thesis: Studies on the Metabolism of Iron.
Major Adviser: Dr. C. J. Watson.
1952. RALL, JOSEPH EDWARD. B.A. '40, North Central College; M.S. '44,
M.D. '45, Northwestern University.
Major: Medicine. Minor: Physiology.
Thesis: Iodine in the Blood and Urine of Man.
Major Adviser: Dr. R. G. Sprague.

1952. ZIEVE, LESLIE. B.A. magna cum laude '37, M.A. '39, M.D. '43,
University of Minnesota.
Major: Medicine. Minor: Biostatistics.
Thesis: Part I. The Incidence of Residuals of Viral Hepatitis. Part II.
An Evaluation of Factors Influencing the Discriminative Effectiveness
of a Group of Liver Function Tests.
Major Adviser: Dr. C. J. Watson.
1953. WILSON, RUSSELL HOWARD. B.S. '38, M.D. '40, University of Oklahoma;
M.S. in Med. '49, University of Minnesota.
Major: Medicine. Minor: Pathology.
Thesis: Pathologic-Physiology of Chronic Diffuse Pulmonary Emphysema.
Major Adviser: Dr. R. V. Ebert.
1954. ROVELSTAD, RANDOLPH ANDREW. B.A. '40, St. Olaf College; M.D. '44,
Northwestern University.
Major: Medicine. Minor: Physiology.
Thesis: Factors Influencing the Continuous Recording of the in situ pH
of Gastric and Duodenal Contents in Normal Persons and Patients with
Duodenal Ulcer.
Major Adviser: Dr. M. W. Comfort.
1954. SCHMID, RUDI. M.D. '47, University of Zurich.
Major: Medicine. Minor: Anatomy.
Thesis: Studies in Human and Experimental Porphyria.
Major Adviser: Dr. C. J. Watson.
1955. FRICK, PAUL GUSTAV. M.D. '47, University of Zurich.
Major: Medicine. Minor: Anatomy.
Thesis: Basic Studies of Disturbances of Coagulation in Human Disease.
Major Adviser: Dr. C. J. Watson.

NEUROLOGY AND PSYCHIATRY

1938. ECKER, ARTHUR DAVID. B.A. '31, Dartmouth College; M.D. '34,
Johns Hopkins University; M.S. in Neurology '38, University of Minnesota.
Major: Neurology. Minor: Pathology.
Thesis: Arsenic and the Nervous System with Special Reference to Subacute
and Chronic Encephalitis.
Major Adviser: Dr. H. W. Woltman.
1940. SKOGLAND, JOHN EDMUND. M.D. '37, M.S. in Neuropsychiatry '39,
University of Minnesota.
Major: Neuropsychiatry. Minor: Neuroanatomy.
Thesis: A Quantitative Study of Normal and Pathologic Station in Human
Subjects.
Major Adviser: Dr. J. C. McKinley.

1942. POLAN, CHARLES GABRIEL. B.A. '31, B.S. '33, University of West Virginia; M.D. '36, Rush Medical College.
Major: Neuropsychiatry. Minor: Neuroanatomy.
Thesis: Galvanic Reactivity after Experimentally Induced Stress in Normal and Psychopathic Subjects.
Major Adviser: Dr. J. C. McKinley.
1944. AITA, JOHN ANDREW. M.D. '37, University of Iowa.
Major: Neurology and Psychiatry. Minor: Physiology.
Thesis: Tin: An Investigation of Its Toxicity.
Major Adviser: Dr. C. F. Code.
1944. NORAN, HAROLD H. B.M. '36, M.D. '37, University of Minnesota.
Major: Neuropathology. Minor: Neuropsychiatry.
Thesis: Intracranial Vascular Tumors and Malformations.
Major Adviser: Dr. A. B. Baker.
1944. YEAGER, CHARLES LEVANT. B.S. '29, Emmanuel Missionary College; M.D. '33, College of Medical Evangelists; M.S. in Neurology and Psychiatry '41, University of Minnesota.
Major: Neurology and Psychiatry. Minor: Neuropathology.
Thesis: Electro-encephalography: a Comprehensive Review of the Literature and Studies on the Localization and Differentiation of Lesions of the Frontal Lobe of the Brain, Confirmed Pathologically.
Major Adviser: Dr. H. W. Woltman.
1949. CHALGREN, WILLIAM SCHULTZ. B.A. cum laude '39, M.D. '43, University of Minnesota.
Major: Neurology. Minor: Neuropathology.
Thesis: Neurological Complications of Medical Diseases.
Major Adviser: Dr. A. B. Baker.
1951. DALY, DAVID DE ROUEN. B.A. '40, Stanford University; B.S. '43, M.D. '45, University of Minnesota.
Major: Neurology. Minor: Neuropathology.
Thesis: Electroencephalographic Studies of Photic Driving in Normal Individuals.
Major Adviser: Dr. R. G. Bickford.
1951. TICHY, FAE YVONNE. B.S. '43, M.D. '45, University of Minnesota.
Major: Neurology. Minor: Neuropathology.
Thesis: Barbiturate Encephalitis.
Major Adviser: Dr. A. B. Baker.
1953. BROWN, IAN ALEXANDER. B.A. '41, Dartmouth College; M.D., C.M. '44, McGill University.
Major: Neurology. Minor: Pathology.
Thesis: Cerebro-Hepatic Relationships.
Major Adviser: Dr. A. B. Baker.

1953. SHAPIRO, SIDNEY KEITH. M.D. '43, University of Western Ontario.
Major: Neurology. Minor: Neuropathology.
Thesis: Parkinsonism.
Major Adviser: Dr. A. B. Baker.

NEUROSURGERY

1941. RAAF, JOHN ELBERT. B.A. '26, M.D. '30, Stanford University;
M.S. in Surgery '35, University of Minnesota.
Major: Neurosurgery. Minor: Pathology.
Thesis: A Study of the External Granular Layer in the Cerebellum and
Its Relationship to Medulloblastomas.
Major Adviser: Dr. A. W. Adson.
1946. TITRUD, LEONARD ALBERT. B.S. '35, M.D. '36, M.S. in Surgery '39,
University of Minnesota.
Major: Neurosurgery. Minor: Pathology.
Thesis: Injuries of the Brain.
Major Adviser: Dr. W. T. Peyton.
1947. FRENCH, LYLE ALBERT. B.S. '35, M.D. '40, M.S. in Neurosurgery '46,
University of Minnesota.
Major: Neurosurgery. Minor: Neuropathology.
Thesis: Brain Tumors in Children.
Major Adviser: Dr. W. T. Peyton.
1947. SIMONS, DONALD RAY. B.A. '39, M.D. '43, Wayne University;
M.S. in Neurol. Surgery '47, University of Minnesota.
Major: Neurological Surgery. Minor: Neuropathology.
Thesis: Cerebral Edema Associated with Brain Tumors and Abscesses.
Major Adviser: Dr. W. T. Peyton.
1951. COOPER, IRVING S. B.A. '42, M.D. '45, George Washington University;
M.S. in Neurosurg. '51, University of Minnesota.
Major: Neurosurgery. Minor: Neuropathology.
Thesis: Subarachnoid Glial Heterotopias: Their Histopathologic Character-
istics, Mode of Origin, and Relation to Meningeal Gliomas.
Major Adviser: Dr. J. W. Kernohan.
1951. FISHER, ROBERT GEORGE. B.S. '38, Rutgers University; M.D. '42,
University of Pennsylvania.
Major: Neurosurgery. Minor: Neuropathology.
Thesis: Spina Bifida and Cranium Bifidum. A Clinico-pathological Study.
Major Adviser: Dr. J. W. Kernohan.
1952. JOHNSON, DONALD A. M.D. '45, George Washington University; M.S. '49,
University of Minnesota.
Major: Neurosurgery. Minor: Physiology.
Thesis: Factors Affecting Cortical and Subcortical Responses to Photic
Stimulation in the Cat.
Major Adviser: Dr. W. McK. Craig.

1942. MCLENNAN, CHARLES EWART. B.A. cum laude '30, M.A. '32, M.D. with distinction '34, University of Minnesota.
Major: Obstetrics and Gynecology. Minor: Anatomy.
Thesis: Antecubital and Femoral Venous Pressure in Normal and Toxic Pregnancy.
Major Adviser: Dr. J. L. McKelvey.
1952. HOLLY, ROY GROVES. B.S. '41, M.D. '44, University of Minnesota.
Major: Obstetrics and Gynecology. Minor: Anatomy.
Thesis: Anemia of Pregnancy with Special Reference to Iron Metabolism in Pregnancy.
Major Adviser: Dr. J. L. McKelvey.
1953. KAISER, IRWIN HERBERT. B.A. '38, Columbia University; M.D. '42, Johns Hopkins University.
Major: Obstetrics and Gynecology. Minor: Physiology.
Thesis: The Contractile Activity of the Pregnant Human Uterus Prior to Labor—A Study with the Reynolds Tokodynamometer.
Major Adviser: Dr. J. L. McKelvey.

OPHTHALMOLOGY

1941. HARLEY, ROBISON DOOLING. B.S. '32, Rutgers University; M.D. '36, University of Pennsylvania.
Major: Ophthalmology. Minor: Neuroanatomy.
Thesis: A Quantitative Study of the Cells and Fibers in the Nucleus-Nerve Complexes of the Fourth and Sixth Cranial Nerves.
Major Adviser: Dr. W. L. Benedict.
1950. DAILY, LOUIS, JR. B.S. '40, Harvard College; M.D. '43, University of Texas.
Major: Ophthalmology. Minor: Pathology.
Thesis: The Effect of Microwaves on the Eye.
Major Adviser: Dr. K. G. Wakim.

OTOLARYNGOLOGY AND RHINOLOGY

1944. ALBERS, GEORGE DONALD. B.A. '35, Hope College; M.D. '39, University of Michigan.
Major: Otolaryngology and Rhinology. Minor: Surgical Pathology.
Thesis: Branchiogenic Cystadenoma. Part 2. History and Etiology.
Major Adviser: Dr. H. L. Williams.

PATHOLOGY

1942. HEBBEL, ROBERT. B.A. '29, B.S. '32, M.D. '33, M.S. '39, University of Minnesota.
Major: Pathology. Minor: Hematology.
Thesis: Chronic Gastritis—Its Relation to Gastric and Duodenal Ulcer and to Gastric Carcinoma.
Major Adviser: Dr. E. T. Bell.

1942. KARLSON, ALFRED GUSTAV. B.S. '34, D.V.M. '35, M.S. '37,
Iowa State College.
Major: Pathology. Minor: Veterinary Medicine.
Thesis: Malignant Lymphoblastomatosis of Cattle: Clinical, Postmortem,
and Histo-pathologic Observations.
Major Adviser: Dr. E. T. Bell.
1943. HIGGINS, GEORGE KENDALL. B.S. '25, M.D. '28, M.S. '35,
University of Minnesota.
Major: Pathology. Minor: Roentgenology.
Thesis: The Effect of Pulmonary Tuberculosis upon the Heart Mass.
Major Adviser: Dr. E. T. Bell.
1944. WILMER, HARRY ARON. B.S. with distinction '33, M.S. '40,
M.D. '41, University of Minnesota.
Major: Pathology. Minor: Anatomy.
Thesis: Some Observations on the Pathological Physiology of the Renal
Tubules.
Major Adviser: Dr. E. T. Bell.
1951. AREY, JAMES BLANDING. B.S. '35, M.D. '38, M.S. '40, University of
Minnesota.
Major: Pathology. Minor: Hematology.
Thesis: Causes of Fetal and Neonatal Death with Special Reference to
Pulmonary and Inflammatory Lesions.
Major Adviser: Dr. J. R. Dawson.
1952. LOBER, PAUL HALLAM. B.S. '42, M.D. '44, University of Minnesota.
Major: Pathology. Minors: Bacteriology and Anatomy.
Thesis: A Study of the Pathogenesis of Coronary Sclerosis—An Analysis
of Its Development with Relation to Age, Sex, and Other Factors.
Major Adviser: Dr. J. R. Dawson, Jr.
1953. BAHN, ROBERT CARLTON. M.D. '47, University of Buffalo.
Major: Pathology. Minor: Physiology.
Thesis: The Effects of Stress, ACTH, cortisone and Desoxycorticosterone
on the Quantitative Histological Distribution of Ascorbic Acid in the
Adrenal Gland of the Rat and the Monkey.
Major Adviser: Dr. J. W. Kernohan.
1953. COHEN, MAYNARD MANUEL. B.A. '41, University of Michigan; M.D. with
distinction '44, Wayne University.
Major: Pathology. Minor: Neurology.
Thesis: Phosphorous Metabolism of the Brain.
Major Adviser: Dr. A. B. Baker.
1953. MOULTON, JACK EDWARD. B.S. '47, D.V.M. '49, The State College of
Washington.
Major: Pathology. Minor: Veterinary Medicine.
Thesis: The Negri Bodies of Rabies: Histochemical and Isolation Studies.
Major Adviser: Dr. J. R. Dawson, Jr.

1954. NERENBERG, SAMUEL THEODORE. B.S. '45, M.D. '46, M.S. in Pathology '52, University of Minnesota.
Major: Pathology. Minors: Anatomy and Neuropathology.
Thesis: A Study of the Effects of Physiological Strain on the Beta Cells of the Islets of Langerhans.
Major Adviser: Dr. J. R. Dawson.
1955. LACY, PAUL ESTON. B.A. '45, M.S. '48, M.D. '48, Ohio State University.
Major: Pathology. Minor: Physiology.
Thesis: Studies on the in vitro Perfusion of the Beef, Rabbit and Dog Thyroid Glands Using Radioactive Iodide as a Tracer Element.
Major Adviser: Dr. Alexander Albert.
1956. DAWE, CLYDE JOHNSON. B.A. summa cum laude '42, Lafayette College; M.D. '45, Johns Hopkins University.
Major: Pathology. Minor: Hematology.
Thesis: Hodgkin's Disease and Its Interrelationships with Other Disorders.
Major Adviser: Dr. J. R. McDonald.

PEDIATRICS

1940. ANDERSON, JOHN ADOLPH. B.S. '33, M.D. '34, University of Minnesota.
Major: Pediatrics. Minor: Physiology.
Thesis: The Effect of the Environmental Humidity on the Insensible Weight Loss and the Skin and Rectal Temperatures of the Newborn.
Major Adviser: Dr. Irvine McQuarrie.
1941. SAKO, WALLACE SABURO. B.S. '35, M.D. '36, University of Minnesota.
Major: Pediatrics. Minors: Bacteriology and Pharmacology.
Thesis: Effects of Variations in Contents of Dietary Protein, Carbohydrate, and Fat on Growth of Mice and Resistance to Infection.
Major Adviser: Dr. Irvine McQuarrie.
1943. ADAMS, JOHN MILTON. B.S. cum laude '29, Princeton University; M.D. '33, Columbia University.
Major: Pediatrics. Minor: Bacteriology.
Thesis: Epidemic Virus Pneumonia in Newborn Infants.
Major Adviser: Dr. Irvine McQuarrie.

PHARMACOLOGY

1941. RODMAN, FLOYD SILAS BEVERLY. B.S. in Pharm. with distinction '29, B.S. with honors '30, M.S. '32, University of Saskatchewan.
Major: Pharmacology. Minor: Physiology.
Thesis: The Comparative Distribution and Retention of the Crystalloid and Colloid Fractions of Arsphenamine and Neoarsphenamine in the Blood and Tissues of the Rat.
Major Adviser: Prof. H. N. Wright.

1942. PETERS, LAWRENCE. B.S. in Pharm. '38, University of Saskatchewan.
Major: Pharmacology. Minor: Physiological Chemistry.
Thesis: The Trypanocidal Activity and Arsenic Content of Rat Blood
Following the Intravenous Administration of Mapharsen.
Major Adviser: Prof. H. N. Wright.
1944. CRANSTON, ELIZABETH MORRISON. B.A. '25, M.S. '37, University
of Minnesota.
Major: Pharmacology. Minor: Physiology.
Thesis: The Effect of Lithospermum Ruderale on the Oestrous Cycle and
Growth of Mice.
Major Adviser: Prof. R. N. Bieter.
1944. FINK, LEWIS DARWIN. B.S. '37, M.S. '39, University of Nebraska.
Major: Pharmacology. Minor: Physiology.
Thesis: An Investigation of the Nature and Extent of the Binding of
Oxophenarsine (Mapharsen) by the Red Blood Cell of Rabbit in vitro.
Major Adviser: Prof. H. N. Wright.
1945. JONES, LEO MEYER. B.A. '35, DePauw University; M.S. '39,
D.V.M. '39, Iowa State College.
Major: Pharmacology. Minor: Physiological Chemistry.
Thesis: Sulfonamide Therapy in Calf Pneumonia.
Major Adviser: Prof. R. N. Bieter.
1950. KANEGIS, LEON ABBOTT. D.V.M. '43, Iowa State College.
Major: Pharmacology. Minor: Veterinary Medicine.
Thesis: Certain Aspects of the Pharmacology of Sulfonamides in Normal
Turkeys.
Major Advisers: Profs. R. N. Bieter and R. H. Roepke.
1950. MCMANUS, EDWARD CLAYTON. B.S. with distinction '40, University
of Minnesota; D.V.M. '44, Iowa State College.
Major: Pharmacology. Minor: Bacteriology.
Thesis: A Chemotherapeutic Study of Eimeria tenella.
Major Adviser: Prof. R. N. Bieter.
1950. O'DELL, THOMAS BENIAH. B.A. '42, Wabash College.
Major: Pharmacology. Minor: Bacteriology.
Thesis: Chemotherapeutic Studies on an Animal Virus.
Major Adviser: Dr. R. N. Bieter.
1952. EDDS, GEORGE TYSON. B.S. '36, D.V.M. '36, M.S. '38, Texas
Agricultural and Mechanical College.
Major: Pharmacology. Minor: Veterinary Medicine.
Thesis: Effect of Certain Drugs Alone and in Combination on Micrococci
Isolated from the Bovine Udder.
Major Adviser: Dr. R. N. Bieter.

1953. GRACA, JOSEPH GEORGE. B.S. '39, College of St. Thomas.
Major: Pharmacology. Minor: Bacteriology.
Thesis: The Relationship of Drug Action to the Hemato-Encephalic Barrier.
Major Adviser: Dr. R. N. Bieter.
1953. NASH, CHARLES WILLIAM. B.Sc. '42, University of Manitoba;
M.S. '47, University of Minnesota.
Major: Pharmacology. Minor: Physiological Chemistry.
Thesis: Pharmacological Studies of Peripheral Resistance Changes under
the Influence of Epinephrine, Norepinephrine and Serotonin.
Major Adviser: Prof. H. N. Wright.
1953. OSTERBERG, ARNOLD CURTIS. B.A. '42, State University of Iowa.
Major: Pharmacology. Minor: Physiological Chemistry.
Thesis: A Method for Testing Analgesic Drugs in Animals.
Major Adviser: Dr. R. N. Bieter.
1953. ROTH, FRANKLIN ERNEST. B.A. '47, Antioch College.
Major: Pharmacology. Minor: Physiology.
Thesis: The Effects of Hypoxia and Certain Drugs Upon the Experimental
Production of Bacterial Endocarditis in Rats.
Major Adviser: Dr. R. N. Bieter.
1955. GHAZAL, ABDELRAHIM MOHAMED. B.Pharm. '46, M.Pharm. '51,
Fouad I University.
Major: Pharmacology. Minor: Pharmaceutical Chemistry.
Thesis: Some Studies on Salicylate Poisoning and Its Treatment.
Major Adviser: Prof. H. N. Wright.
1955. HAMMOND, PAUL BOUCHARD. D.V.M. '49, Colorado State College
of Agriculture and Mechanic Arts.
Major: Pharmacology. Minor: Veterinary Medicine.
Thesis: A Simplified Laboratory Procedure for the Diagnosis of Lead
Poisoning in Cattle.
Major Adviser: Prof. H. N. Wright.
1955. STOWE, CLARENCE M. JR. B.S. '46, Queens College; V.M.D. '50,
University of Pennsylvania.
Major: Pharmacology. Minor: Veterinary Medicine.
Thesis: Some Aspects of the Pharmacology of Succinylcholine in the
Horse and Cow.
Major Adviser: Dr. R. N. Bieter.

PHYSICAL MEDICINE

1954. STILLWELL, GEORGE KEITH. B.A. '38, University of Saskatchewan;
M.D.,C.M. '42, Queen's University.
Major: Physical Medicine. Minor: Physiology.
Thesis: The Evaluation of the Errors Involved in the Measurement of
Surface Temperatures with Thermocouples Affixed to the Surface
by Adhesive Tape.
Major Adviser: Dr. F. J. Kottke.

1938. BERNHART, FINN WESTELIUS. B.S. '32, South Dakota State College;
M.S. '34, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: The Chemical Effects of the Ultra-Violet Irradiation of Crystal-
line Egg Albumin.
Major Adviser: Prof. J. F. McClendon.
1939. STONE, WILLIAM ELLIS. B.S. '33, California Institute of Technology.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: Intermediary Carbohydrate Metabolism of the Brain: Quantitative
Studies of Lactic Acid and Some Carbonyl Compounds.
Major Adviser: Prof. J. F. McClendon.
1940. BARNES, RICHARD HENRY. B.A. '33, San Diego State College.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: Fat Transport.
Major Advisers: Drs. M. B. Visscher and G. O. Burr.
1940. BARNUM, CYRUS PAINE, JR. B.A. '36, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: Polarographic Investigations of the Cystine-Cysteine System.
Major Adviser: Dr. M. B. Visscher.
1940. LOEB, HAROLD GORDON. B.S. '35, Harvard University.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: The Composition of Rats Maintained on Diets High in Carbohydrate
and Saturated Fat but Devoid of Unsaturated Fatty Acids, with
Emphasis on the Lipid Component.
Major Adviser: Prof. G. O. Burr.
1941. BERRYMAN, GEORGE HUGH. B.S. '35, University of Scranton;
M.S. '36, Pennsylvania State College.
Major: Physiological Chemistry. Minor: Nutrition.
Thesis: Studies on the Role of the Liver in the Formation of the Plasma
Proteins.
Major Adviser: Dr. J. L. Bollman.
1941. SWENDSEID, MARIAN EDNA. B.A. '38, M.A. '39, University of North
Dakota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: The Use of Stable Isotope Heavy Carbon in the Study of
Intermediary Metabolism.
Major Adviser: Prof. Allan Hemingway.
1942. ABRAMS, IRVING MELVIN. B.Ch. '38, University of Minnesota.
Major: Physiological Chemistry. Minors: Physiology and Chemistry.
Thesis: Studies on Model Membranes With Particular Reference to Anomalous
Osmosis.
Major Advisers: Prof. Karl Sollner and Dr. Maurice B. Visscher.

1942. OLSEN, NORMAN STANLEY. B.S. '38, The College of the City of New York.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: The Synthesis and Metabolism of Glycine.
Major Adviser: Dr. Allan Hemingway.
1942. SZEGO, CLARA MARIAN. B.A. '37, Hunter College; M.S. '39,
University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: Studies on Methods of Chemical Assay of Estrogenic Substances
and the Physiological Problem of Steroid Metabolism.
Major Adviser: Prof. George O. Burr.
1943. ECKLES, NYLENE ELVIRA. B.A. '29, Carleton College; M.S. '31,
University of Minnesota.
Major: Physiological Chemistry. Minor: Biochemistry.
Thesis: Studies on Intravenous Administration of Emulsified Fat.
Major Advisers: Dr. G. T. Evans and Prof. G. O. Burr.
1943. ROBERTS, SIDNEY. B.S. '39, Massachusetts Institute of Technology;
M.S. '42, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: The Influence of Previous Diet on the Preferential Utilization
of Foodstuffs.
Major Adviser: Prof. L. T. Samuels.
1943. RUSOFF, IRVING ISADORE. B.S. with honors '37, M.S. '39, University
of Florida.
Major: Physiological Chemistry. Minor: Plant Physiology.
Thesis: Spectral Absorption Characteristics of Lipids.
Major Adviser: Prof. G. O. Burr.
1944. GREENBERG, GOODWIN. B.A. '41, M.S. '42, University of Minnesota.
Major: Physiological Chemistry. Minor: Pharmacology.
Thesis: An Ultraviolet Spectroscopic Study of the Structure of Amino
Acids and Proteins.
Major Adviser: Prof. G. O. Burr.
1944. HOLMAN, RALPH THEODORE. B.S. '39, University of Minnesota;
M.S. '41, Rutgers University.
Major: Physiological Chemistry. Minor: Agricultural Biochemistry.
Thesis: Studies in the Autoxidation of Lipids.
Major Adviser: Prof. G. O. Burr.
1945. ACKERMAN, ELIZABETH MONROE. B.A. '42, University of California.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: An Enzymatic Study of the Submicroscopic Particles of Cytoplasm.
Major Advisers: G. O. Burr and C. P. Barnum.

1945. GARST, JOSEPHINE BURGIS. A.B. '26, M.S. '38, University of Michigan.
Major: Physiological Chemistry. Minor: Biochemistry.
Thesis: Clinical Studies of Sex Sterols.
Major Adviser: Prof. G. T. Evans.
1945. LERNER, AARON. B.A. cum laude '41, M.S. '42, University of Minnesota.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: Studies on Plasma Proteins. I. The Nature and Significance of Serum Turbidity. II. The Ultraviolet Absorption of the Plasma Proteins. III. An Ultraviolet Basis for the Determination of Serum Albumin and Globulin.
Major Advisers: Profs. C. P. Barnum and G. O. Burr.
1947. KRETCHMER, NORMAN. B.S. '44, Cornell University; M.S. '45, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: A Serial Study of the Chemistry and Histology of the Mouse Liver Cell Cytoplasm during Carbon Tetrachloride Induction of Hepatoma.
Major Adviser: Prof. C. P. Barnum.
1948. CASTER, WILLIAM OVIATT. B.A. '42, M.S. '44, University of Wisconsin.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: The Excretion of Thiamine and Its Degradation Products.
Major Advisers: Profs. Olaf Mickelsen and A. B. Keys.
1948. TSUBOI, KENNETH KAZUTAKA. B.S. '44, College of St. Thomas; M.S. '46, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: A Chemical and Enzymatic Study of Pentose Nucleic Acids and Their Hydrolysis by Cytoplasmic Fractions of Liver Tissue.
Major Adviser: Prof. C. P. Barnum.
1949. LINDENBAUM, ARTHUR. B.S. '39, M.A. '42, Niagara University.
Major: Physiological Chemistry. Minor: Agricultural Biochemistry.
Thesis: Investigations with Radioactive Isotopes.
Major Adviser: Prof. W. D. Armstrong.
1950. BITMAN, JOEL. B.A. '46, Cornell University; M.S. '48, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: A Study of the Acetate Buffer Hydrolysis of the Conjugated 17-Ketosteroids of Normal Male Urine.
Major Adviser: Prof. Saul Cohen.
1950. GRIM, EUGENE DONALD. B.S. '45, M.S. '46, Kansas State College.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: An Experimental Study of Anomalous Osmosis with Particular Reference to its Possible Physiological Significance.
Major Advisers: Drs. W. D. Armstrong and Karl Sollner.

1950. NEIHOF, REX ALBERT. B.S. in Ch.E. '43, Texas Technological College.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: An Experimental Study of Mosaic Membranes which are Composed of
Selectively Anion and Selectively Cation Permeable Parts.
Major Advisers: Drs. W. D. Armstrong and Karl Sollner.
1951. MALMSTROM, BO GUNNAR. B.S. '48, Muhlenberg College.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: A Quantitative Histochemical Method for the Determination of
Zinc and Its Application to Studies on the Gastric Mucosa.
Major Adviser: Prof. David Glick.
1951. NYGAARD, ODDVAR FRITHJOF. B.Chem. '47, Norwegian Technical
University.
Major: Physiological Chemistry. Minor: Pharmaceutical Chemistry.
Thesis: Studies on the Kinetics of Acid Hydrolysis of Pentose Nucleic
Acid Derivatives.
Major Adviser: Prof. C. P. Barnum.
1951. ONESON, IRVING BERNT. B.S. '40, University of Wisconsin.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Studies on the Conjugated Steroids of Human Urine.
Major Adviser: Dr. S. T. Cohen.
1951. SAVCHUCK, WILLIAM BASIL. B.S. '38, College of the City of New York;
D.D.S. '47, University of Minnesota.
Major: Physiological Chemistry. Minor: Pathology.
Thesis: Fluoride Analytical Studies and Turnover in the Mammalian
Skeleton.
Major Adviser: Dr. W. D. Armstrong.
1951. VON KORFF, RICHARD W. B.A. '47, University of Minnesota.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Studies on Gastric Urease Employing Isotopic Urea.
Major Adviser: Prof. David Glick.
1952. COHEN, WILLIAM DAVID. B.S. '47, State University of Iowa;
M.S. '50, University of Minnesota.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Hormonal Influences on the Carbohydrate Metabolism of Isolated
Muscle.
Major Advisers: Prof. E. G. Frame and Dr. W. D. Armstrong.
1952. NORCIA, LEONARD NICHOLAS. B.Chem. '46, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: The Use of Synthetic, Simple, Pure Triglycerides in a Study
Relating to Fat Metabolism.
Major Adviser: Prof. W. O. Lundberg.

1952. TOWEY, JOHN PATRICK. B.A. '36, University of Minnesota.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: Influence of Some Nutritional Factors on the Ash Content,
Breaking Stress, and Elasticity of Rat Bones.
Major Adviser: Dr. W. D. Armstrong.
1953. HAMILTON, JAMES GUTHRIE, JR. B.S. '48, M.S. '50, Oklahoma A.
& M. College.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Displacement Separation of Lipids.
Major Adviser: Dr. W. D. Armstrong.
1953. MCGUCKIN, WARREN FRANCIS. B.S. '47, M.S. '50, Iowa State College.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: The Partial Synthesis and Physiologic Study of Some Analogs of
Adrenal Hormones.
Major Advisers: Drs. H. L. Mason and W. D. Armstrong.
1953. NAYYAR, SOM NATH. B.S. '43, M.S. '44, University of Punjab.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: Quantitative Histological Distribution of B-Glucuronidase in
the Adrenal Gland in Various Physiological States.
Major Adviser: Prof. David Glick.
1954. DRAY, SHELDON. B.S. '41, University of Chicago; M.D. '46,
M.S. '47, University of Illinois.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: A Quantitative Theory of Dynamic Polyionic Potentials Across
Membranes of Ideal Ionic Selectivity in Terms of Transference
Numbers and Its Experimental Test with Permselective Membranes.
Major Advisers: Profs. W. D. Armstrong and Karl Sollner.
1955. CLAUSEN, DONALD FREDERICK. M.S. '50, University of Minnesota.
Major: Physiological Chemistry. Minor: Physiology.
Thesis: Studies on the Determination of Inulin and Evans Blue in
Blood and Tissues.
Major Adviser: Prof. C. P. Barnum, Jr.
1955. JARDETZKY, CHRISTINE D. B.A. '50, Macalester College.
Major: Physiological Chemistry. Minor: Physical Chemistry.
Thesis: Kinetic Studies on the Nucleic Acids of Regenerating Mouse Liver.
Major Adviser: Prof. C. P. Barnum.
1955. PETERS, JOHN HENRY. B.S. with honor '49, University of Cincinnati;
M.S. '50, University of Florida.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Studies on the Metabolism of Carcinogenic Fluorene Derivatives.
Major Adviser: Prof. H. R. Gutmann.

1955. WOODS, KENNETH RAY. B.A. with distinction '48, Arizona State Teachers College.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Magnesium Metabolism Studies.
Major Adviser: Dr. W. D. Armstrong.
1956. SIMMONS, NOEL. B.S. '44, City College of New York; M.S. '48, Ohio State University.
Major: Physiological Chemistry. Minor: Organic Chemistry.
Thesis: Studies on Glycine-2-C¹⁴ Incorporation into Mouse Liver Constituents.
Major Adviser: Prof. C. P. Barnum.

PHYSIOLOGICAL HYGIENE

1950. TUCKER, ROBERT GENE. B.A. with high distinction '40, Southwestern Missouri State College; M.S. '48, University of Minnesota.
Major: Physiological Hygiene. Minor: Pharmaceutical Chemistry.
Thesis: The Relationship in Man between the Protein-bound Iodine in the Serum and the Basal Metabolic Rate.
Major Adviser: Prof. Ancel Keys.
1954. BUSKIRK, ELSWORTH ROBERT. B.A. magna cum laude '50, St. Olaf College; M.A. '51, University of Minnesota.
Major: Physiological Hygiene. Minor: Physical Education.
Thesis: Relationships in Man Between the Maximal Oxygen Intake and Components of Body Composition.
Major Adviser: Prof. H. L. Taylor.

PHYSIOLOGY

1940. CODE, CHARLES FREDERICK. B.S. '34, M.D. '34, University of Manitoba.
Major: Physiology. Minor: Experimental Surgery.
Thesis: Studies on the Histamine Content of the Blood During Anaphylactic Shock.
Major Adviser: Dr. F. C. Mann.
1940. MOE, GORDON KENNETH. B.S. '37, M.S. '39, University of Minnesota.
Major: Physiology. Minors: Physical Chemistry and Plant Physiology.
Thesis: Quantitative Studies of the Physiologic Actions of Certain Cardioactive Glucosides on the Isolated Heart.
Major Adviser: Prof. M. B. Visscher.
1940. STICKNEY, JOHN CLIFFORD. B.S. with honor '33, Wheaton College; M.S. '36, University of Washington.
Major: Physiology. Minor: Zoology.
Thesis: The Effect of Epinephrine, Injected or Secreted, on the Potassium Balance of Various Animals.
Major Adviser: Dr. Ancel Keys.

1940. WOOD, EARL HOWARD. B.A. '34, Macalester College; M.S. '39, University of Minnesota.
Major: Physiology. Minor: Physical Chemistry.
Thesis: The Distribution of Electrolytes and Water between Cardiac Muscle and Blood Serum with Special Reference to the Effects of Digitalis.
Major Adviser: Dr. M. B. Visscher.
1941. HART, WILLIAM MILTON. B.A. '37, Southeast Missouri State Teachers College; M.S. '38, State University of Iowa.
Major: Physiology. Minor: Biochemistry.
Thesis: Urine Secretion in the Fowl (Gallus domesticus).
Major Adviser: Dr. H. E. Essex.
1941. REINECKE, ROGER MINSKE. B.S. '37, M.A. '38, University of Minnesota.
Major: Physiology. Minor: Anatomy.
Thesis: The Metabolism of Fructose by the Eviscerated Rat.
Major Adviser: Dr. M. B. Visscher.
1941. SALZBURG, PETER FRIEDRICH. M.D. '34, University of Rome; B.A. '38, University of Cambridge.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: A Study of the Penetration of Polyhydroxyhydrocarbons into Animal Tissue Cells.
Major Adviser: Dr. M. B. Visscher.
1941. SHELLEY, WALTER BROWN. B.S. '40, University of Minnesota.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Chemical Studies on the Hypertrophied Rat Heart.
Major Adviser: Dr. M. B. Visscher.
1941. WAKIM, KHALIL GEORGES. B.A. '29, M.D. '33, American University (Beirut).
Major: Physiology. Minor: Experimental Surgery.
Thesis: Studies on the Intrahepatic Circulation in the Intact Animal.
Major Adviser: Dr. F. C. Mann.
1942. TAYLOR, HENRY LONGSTREET. A.B. '35, Harvard University.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: The Colloid Osmotic Pressure of Blood Plasma and the Contained Albumin and Globulin.
Major Adviser: Prof. Ansel Keys.
1943. LIFSON, NATHAN. B.A. '31, University of Minnesota; M.D. '37, Columbia University.
Major: Physiology. Minor: Physical Chemistry.
Thesis: Studies of Osmotic Phenomena in Biological Systems by the Hill-Baldes Vapor Tension Method.
Major Adviser: Dr. M. B. Visscher.

1943. LORBER, VICTOR. B.S. '33, University of Chicago; M.D. with high honors '38, University of Illinois.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Some Aspects of the Metabolism of the Completely Isolated Mammalian Heart.
Major Adviser: Dr. M. B. Visscher.
1944. HALLENBECK, GEORGE AARON. B.S. '36, M.D. '40, Northwestern University.
Major: Physiology. Minor: Experimental Surgery.
Thesis: Some Effects of Thymoxyethyldiethylamine (929F) and N-Diethyl-aminoethyl-N-Ethylaniline (1571 F) on Gastric Secretion and Gastric Motility in the Dog.
Major Adviser: Dr. C. F. Code.
1944. KOTKE, FREDERIC JAMES. B.S. '41, M.S. '41, University of Minnesota.
Major: Physiology. Minor: Pathology.
Thesis: Studies of the Effects of Oxygen Tension and Environmental Temperature on Several Species of Animals.
Major Adviser: Dr. M. B. Visscher.
1946. KUBICEK, WILLIAM GEORGE. B.S. '42, University of Minnesota.
Major: Physiology. Minor: Physical Chemistry.
Thesis: Methods and Results of Stimulation of Certain Autonomic Nerves in Relation to Arterial Blood Pressure in the Dog.
Major Adviser: Dr. M. B. Visscher.
1946. REINER, JOHN MAXIMILIAN. B.Sc. '39, M.Sc. '39, University of Chicago.
Major: Physiology. Minors: Physiological Chemistry and Physics.
Thesis: Studies in the Physiology and Biochemistry of Enzymatic Variation in Yeast.
Major Advisers: Profs. H. G. Wood and M. B. Visscher.
1947. CASAS, CARMEN BUSO. B.A. '28, B.S. '38, University of Puerto Rico; M.A. '42, Boston University.
Major: Physiology. Minor: Pathology.
Thesis: The Influence of Caloric Restriction on the Adrenals and Other Organs in Ovariectomized C₃H Mice.
Major Advisers: Drs. M. B. Visscher and J. T. King.
1949. BROWN, ERNEST BENTON, JR. B.S. with distinction '37, M.S. '42, University of Kentucky.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Studies of the Effects of Prolonged Hyperventilation in Man.
Major Advisers: Dr. M. B. Visscher and Prof. Allan Hemingway.
1950. HYDE, JANE EVELYN. B.A. '43, Radcliffe College; M.S. '47, University of Minnesota.
Major: Physiology. Minor: Neuroanatomy.
Thesis: Factors Influencing Patterns of Muscular Activity in Response to Stimulation of Cerebral Motor Cortex.
Major Adviser: Prof. Ernst Gellhorn.

1950. JOHNSON, JOHN ALEXANDER. B.S. '46, University of Minnesota.
Major: Physiology. Minor: Physical Chemistry.
Thesis: Studies of Water Transport Employing Isotopes.
Major Adviser: Prof. Nathan Lifson.
1950. OMACHI, AKIRA. B.A. '44, University of Buffalo.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Studies in Intermediary Metabolism with the Use of Isotopic Carbon.
Major Adviser: Prof. M. B. Visscher.
1952. CAVERT, HENRY MEAD. B.S. '42, M.D. '51, University of Minnesota.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Metabolism of Carbon 13-Labeled Substrates and Kinetics of Deuterium Oxide Exchange in the Isolated Heart.
Major Adviser: Dr. Nathan Lifson.
1952. DEWS, PETER B. M.D. '44, University of Leeds.
Major: Physiology. Minor: Pharmacology.
Thesis: Studies on the Effect of Adrenalectomy and of Cortisone on Anaphylaxis and Related Phenomena.
Major Adviser: Dr. C. F. Code.
1952. HIGHTOWER, NICHOLAS CARR, JR. B.S. '42, North Texas State Teachers College; M.D. '44, University of Texas; M.S. in Medicine '49, University of Minnesota.
Major: Physiology. Minor: Medicine.
Thesis: The Registration of Gastro-Intestinal Intraluminal Pressures in Man: The Comparison of a Balloon Method and a Direct-Pressure Measuring Method of Recording.
Major Adviser: Dr. C. F. Code.
1953. HADDY, FRANCIS JOHN. B.S. '44, M.D. '46, M.S. '49, University of Minnesota.
Major: Physiology. Minor: Medicine.
Thesis: Physiological Studies of the Venous System.
Major Adviser: Dr. M. B. Visscher.
1953. HOSHIKO, TOM. B.S. cum laude '49, Kent State University.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: A Study of Mesonephric Tubular Transport of Electrolyte.
Major Adviser: Dr. M. B. Visscher.
1953. LEE, JUI SHUAN. B.S. '36, National Tsing Hua University; M.S. '50, University of Minnesota.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Studies on the Absorption of Water from the Intestine.
Major Adviser: Dr. M. B. Visscher.

1953. NAHAS, GABRIEL GEORGES. B.A. '37, M.D. '44, University of Toulouse; M.S. '49, University of Rochester.
Major: Physiology. Minor: Experimental Physiology.
Thesis: Some Studies on the Effects of Hypoxia upon the Respiration and Circulation of Non-Narcotized Dogs.
Major Adviser: Dr. M. B. Visscher.
1953. PUH-LEE, CHIUNG Y. B.S. '39, National Central University; M.S. '51, University of Minnesota.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Some Effects of Specific Dietary Alterations Upon the Life Span and the Causes of Death in C₃H Male Mice.
Major Adviser: Dr. J. T. King.
1953. SIMMONS, DANIEL HAROLD. B.A. with highest honors '41, University of California at Los Angeles; M.D. '49, University of Southern California.
Major: Physiology. Minors: Physical Chemistry and Physiological Chemistry.
Thesis: The Pituitary-Adrenal Factor in Sodium Homeostasis.
Major Adviser: Dr. M. B. Visscher.
1953. SWANSON, ROBERT EUGENE. B.A. cum laude '49, University of Minnesota.
Major: Physiology. Minor: Physical Chemistry.
Thesis: Relative Contribution of the Glomerulus and Renal Tubule to the Urinary Water in the Isolated Doubly-Perfused Bullfrog Kidney.
Major Adviser: Dr. M. B. Visscher.
1953. WARNER, HOMER RICHARDS. B.A. '46, M.D. '49, University of Utah.
Major: Physiology. Minor: Medicine.
Thesis: The Central Arterial Pressure Pulse Contour as an Index to Left Ventricular Stroke Volume in Man.
Major Adviser: Dr. E. H. Wood.
1954. HARVEY, RODNEY BRYCE. B.A. '44, M.D. '47, University of Minnesota.
Major: Physiology. Minor: Zoology.
Thesis: Some Factors Influencing the Renal Excretion of Sodium.
Major Adviser: Dr. M. B. Visscher.
1954. REDGATE, EDWARD STEWART. B.S. summa cum laude '49, Bethany College; M.S. '52, University of Minnesota.
Major: Physiology. Minor: Electrical Engineering.
Thesis: The Effect of Variations in Hypothalamic Excitability on Blood Pressure, Pulse Rate and the Reflex Responsiveness to Hypotensive Drugs.
Major Adviser: Dr. Ernst Gellhorn.
1956. MCCLINTOCK, RUTH. B.S. '46, M.S. '47, University of Minnesota.
Major: Physiology. Minor: Physiological Chemistry.
Thesis: Measurement of Total Gaseous Metabolism by Use of Doubly Labeled Water.
Major Adviser: Dr. Nathan Lifson.

1939. TRUOG, CLARENCE P. B.S. '26, M.B. '27, M.D. '29,
University of Minnesota.
Major: Radiology. Minor: Pathology.
Thesis: Clinical and Experimental Studies on the Pathology and
Roentgen Findings of Bronchial Asthma.
Major Adviser: Dr. L. G. Rigler.
1940. FRIEDEL, HYMER LOUIS. B.S. '35, M.D. '36, University of Minnesota.
Major: Radiology. Minor: Physiology.
Thesis: The Estimation of the Size and Stroke Output of the Heart by
Means of Roentgenkymography.
Major Advisers: Drs. L. G. Rigler and Ancel Keys.
1950. O'LOUGHLIN, BERNARD JAMES. B.S. '37, College of St. Thomas;
M.S. '42, M.D. '42, Creighton University.
Major: Radiology. Minor: Pathology.
Thesis: Roentgen Visualization of the Human Inferior Vena Cava by
Artificial Contrast Methods.
Major Adviser: Dr. L. G. Rigler.
1951. VERMUND, HALVOR. M.D. '43, University of Oslo.
Major: Radiology. Minor: Cancer Biology.
Thesis: Effects of Roentgen Irradiation on Incorporation of Radio-
phosphorus into Intracellular Constituents of Transplanted Mouse
Mammary Carcinoma.
Major Advisers: Drs. K. W. Stenstrom and L. G. Rigler.
1954. JORGENS, JOSEPH. B.S. '41, M.D. '43, M.S. in Rad. '52,
University of Minnesota.
Major: Radiology. Minor: Physiological Hygiene.
Thesis: The Relationship Between Certain Physiological Variables and
the Electrokymographic Recording of Ventricular Action.
Major Adviser: Dr. L. G. Rigler.
1956. NICE, CHARLES MONROE, JR. B.A. '39, M.D. '43, University of
Kansas; M.S. '48, University of Colorado.
Major: Radiology. Minor: Pathology.
Thesis: Acquired Resistance to Roentgen Irradiation in Experimental
Lymphoma.
Major Adviser: Dr. K. W. Stenstrom.

SURGERY

1938. BOWERS, WARNER FREMONT. B.A. '29, University of Omaha;
B.S. '30, M.D. '32, University of Nebraska; M.S. in Surg. '37,
University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: A Study of Appendicitis with Especial Reference to Its
Pathogenesis, Bacteriology, and Healing.
Adviser: Dr. O. H. Wangensteen.

1938. COFFEY, ROBERT JAMES. M.D. '32, Georgetown University;
M.S. in Med. '38, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: The RÔle of the Pancreas in the Digestion and Absorption
of Food: An Experimental Study.
Major Adviser: Dr. F. C. Mann.
1940. BERGH, GEORGE SVERDRUP. B.S. '31, M.D. '33, University of Minnesota;
M.S. '34, Northwestern University.
Major: Surgery. Minor: Physiology.
Thesis: The Sphincter Mechanism of the Common Bile Duct in Human
Subjects: Its Reactions to Certain Types of Stimulation.
Major Adviser: Dr. O. H. Wangensteen.
1940. DENNIS, CLARENCE. B.S. '31, Harvard College; M.D. '35, Johns
Hopkins University; M.S. '38, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: The Relation of the Physiological Behavior of the Human
Appendix to the Problem of Appendicitis.
Major Adviser: Dr. O. H. Wangensteen.
1940. RIENIETS, JOHN HENRY. B.S. '22, M.D. '24, University of Iowa;
M.S. in Surg. '30, University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: A Comprehensive Study of Gastric Adenomas with Special
Reference to Their Pathologic Anatomy, Complications, and Tendency
to Malignant Transformation.
Major Adviser: Dr. A. C. Broders.
1941. BELLIS, CARROLL JOSEPH. B.S. '30, M.S. '32, Ph.D. '34, M.D. '36,
University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: A Study of the Physical Factors Concerned in Inflammation.
Major Adviser: Dr. O. H. Wangensteen.
1942. PAULSON, DONALD LOWELL. B.S. '35, M.D. '36, M.S. '37, University
of Minnesota.
Major: Surgery. Minor: Surgical Pathology.
Thesis: Studies in Goiter. I. Experimental Exophthalmos and Muscle
Degeneration Induced by the Thyrotropic Hormone. II. Cabbage
Goiter and Cretinism in Rabbits.
Major Adviser: Dr. J. T. Priestley.
1943. ALEXANDER, HAROLD BAZIL. M.B.Ch.B. '36, Otago University Medical
School (New Zealand); M.D. '43, M.S. in Surgery '43, University
of Minnesota.
Major: Surgery. Minor: Surgical Pathology.
Thesis: Functioning Parathyroid Tumors and Hyperparathyroidism.
Major Adviser: Dr. A. C. Broders.

1944. LANNIN, BERNARD GEORGE. B.S. '37, M.D. '38, M.S. '42,
University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: Experimental Evaluation of a Satisfactory Operation for Ulcer.
Major Adviser: Dr. O. H. Wangensteen.
1944. VARCO, RICHARD LYNN. M.D. '37, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: The Preoperative Dietary Management of Surgical Patients
with Special Reference to Lesions of the Stomach and Duodenum.
Major Adviser: Dr. O. H. Wangensteen.
1945. LICHTMAN, AARON LEE. B.S. '34, College of the City of New York;
M.D. '38, Cornell University; M.S. in Surgery '44, University of
Minnesota.
Major: Surgery. Minor: Surgical Pathology.
Thesis: Birefringence in Tissues and Foreign Bodies with a Study
of Talc Granuloma.
Major Adviser: Dr. J. R. McDonald.
1946. DOBYNS, BROWN MCILVAINE. B.A. '35, Illinois College; M.D. '39,
Johns Hopkins University; M.S. in Surgery '44, University of
Minnesota.
Major: Surgery. Minor: Surgical Pathology.
Thesis: A Study of Exophthalmos and Tissue Changes Resulting from
the Administration of Various Thyrotropic Hormone Preparations.
Major Adviser: Dr. G. M. Higgins.
1946. KOLOUCH, FRED, JR. B.A. '36, M.A. '38, M.D. '41,
University of Minnesota.
Major: Surgery. Minors: Anatomy and Pathology.
Thesis: Rationale of the Short Afferent Duodeno-jejunal Loop in
Gastric Resection for Ulcer.
Major Adviser: Dr. O. H. Wangensteen.
1946. MERENDINO, KING ALVIN AURELIUS. B.A. '36, Ohio University;
M.D. '40, Yale University.
Major: Surgery. Minor: Pathology.
Thesis: The Effect of Various Drugs on Pouch and Gastric Secretions
in Dog and Man, and the Production of Ulcers in Smaller Experi-
mental Animals, with Special Reference to (1) Opium Alkaloids,
(2) Phenobarbital, and (3) Caffeine.
Major Adviser: Dr. O. H. Wangensteen.
1946. STATE, DAVID. B.A. '36, M.D. '39, University of Western Ontario;
M.S. in Surgery '44, University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: A Clinical Evaluation of Bovine Serum Albumin as a Blood
Substitute.
Major Adviser: Dr. O. H. Wangensteen.

1947. BARONOVSKY, IVAN DONALD. B.A. '38, University of California; M.D. '43, Marquette University.
Major: Surgery. Minor: Pathology.
Thesis: Portal Hypertension with Special Reference to the Acid-Peptic Factor in the Causation of Hemorrhage.
Major Adviser: Dr. O. H. Wangensteen.
1947. DETERLING, RALPH ALDEN, JR. B.A. '38, M.D. '41, Stanford University; M.S. in Surgery '46, University of Minnesota.
Major: Surgery. Minor: Experimental Surgery.
Thesis: I. The Morbid Anatomy and Pathologic Physiology of Arteriovenous Fistula. II. Experimental Renal Hypertension, and Its Course Following the Production of an Arteriovenous Fistula.
Major Adviser: Dr. H. E. Essex.
1947. KREMEN, ARNOLD JAMES. B.S. '37, M.D. '38, University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: The Problem of Parenteral Nitrogen Administration in Surgical Patients with Special Consideration of Preoperative Preparation and of the Means of Effecting Favorable Nitrogen Balance.
Major Adviser: Dr. O. H. Wangensteen.
1949. FRIESEN, STANLEY RICHARD. B.A. '40, M.D. '43, University of Kansas.
Major: Surgery. Minors: Physiology and Pathology.
Thesis: The Genesis of Gastroduodenal Ulcer Following Burns: An Experimental Study.
Major Adviser: Dr. O. H. Wangensteen.
1949. HAY, LYLE JOSEPH. M.D. '38, University of Minnesota.
Major: Surgery. Minor: Bacteriology.
Thesis: A Clinical Evaluation of Gastric Adenomas.
Major Adviser: Dr. O. H. Wangensteen.
1949. SANCHEZ-PALOMERA, ENRIQUE. B.S. '34, Colegio Frances Morelos; M.D. '40, Escuela Medico Militar.
Major: Surgery. Minor: Pathology.
Thesis: A Study on the Action of Spices on Some Aspects of Gastric Function.
Major Adviser: Dr. O. H. Wangensteen.
1949. WATKINS, DAVID HYDER. B.A. '36, M.D. '41, University of Colorado; M.S. in Surgery '47, University of Minnesota.
Major: Surgery. Minor: Surgical Pathology.
Thesis: The Role of the Hidradenocyte (Sweat-gland Epithelium) in Diseases of the Female Breast.
Major Adviser: Dr. Victor Johnson.

1950. ANKNER, FRANK JOSEPH. B.S. '36, University of Chicago;
M.D. '38, Rush Medical College.
Major: Surgery. Minor: Pathology.
Thesis: Primary Osteotomy for the Treatment of Intracapsular Fracture
of the Neck of the Femur.
Major Adviser: Dr. Clarence Dennis.
1950. LEWIS, FLOYD JOHN. B.S. '38, M.S. '41, M.D. '42, University of
Minnesota.
Major: Surgery. Minor: Anatomy.
Thesis: An Experimental Study Regarding the Effects of Various Sym-
pathetic and Parasympathetic Denervations on Total Stomach Pouch
Secretion and Peptic Ulcer Susceptibility in Dogs.
Major Adviser: Dr. O. H. Wangensteen.
1950. MOORE, GEORGE EUGENE. B.A. '42, M.A. '43, M.D. '46, University
of Minnesota.
Major: Surgery. Minor: Cancer Biology.
Thesis: Diagnosis and Localization of Brain Tumors. A Clinical and
Experimental Study Employing Fluorescent and Radioactive Tracer
Methods.
Major Adviser: Dr. O. H. Wangensteen.
1950. NIX, JAMES THOMAS, JR. B.S. '36, Loyola University; M.D. '40,
Louisiana State University.
Major: Surgery. Minor: Physiology.
Thesis: The Protein Constituents of Liver and Intestinal Lymph.
Major Adviser: Dr. Victor Johnson.
1951. ELLIS, FRANKLIN HENRY, JR. B.A. '41, Yale University; M.D. '44,
Columbia University.
Major: Surgery. Minor: Pathology.
Thesis: Studies on the Bronchial Arteries.
Major Adviser: Dr. J. H. Grindley.
1951. FERGUSON, DONALD JOHN. B.S. '39, Yale University; M.D. '43,
M.S. '51, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: Studies on the Antral Phase of Gastric Secretion.
Major Adviser: Dr. O. H. Wangensteen.
1951. LILLEHEI, CLARENCE WALTON. B.S. with distinction '39,
M.D. '42, M.S. '51, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: Experimental Studies on the Etiology of Peptic Ulcer with
Particular Reference to the Autonomic Nervous System.
Major Adviser: Dr. O. H. Wangensteen.

1951. PELTIER, LEONARD FRANCIS. B.A. '41, University of Nebraska;
M.D. '45, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: Observations on Respiration Using a Pneumotachograph.
Major Adviser: Dr. O. H. Wangensteen.
1951. SAKO, YOSHIO. B.A. '40, University of California; M.D. '47,
University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: Studies in Wound Healing of the Aorta with Special Reference
to Problems of Anastomosis and Grafting Technic.
Major Adviser: Dr. R. L. Varco.
1951. SMITH, FRANKLIN ROBERT. M.D. '42, Marquette University.
Major: Surgery. Minor: Pathology.
Thesis: An Analysis of Variations of the Segmental Bronchi of the
Right Lower Lobe of Fifty Injected Lungs.
Major Advisers: Drs. H. K. Gray and E. A. Boyden.
1952. HOOD, ROBERT THURLOW, JR. B.A. '40, M.A. '42, Amherst College;
M.D. '44, University of Pittsburgh.
Major: Surgery. Minor: Pathology.
Thesis: Studies on the Gastric Secretory Depressant in Canine
Gastric Juice.
Major Adviser: Dr. C. F. Code.
1952. KARLSON, KARL EUGENE. B.S. '43, M.D. '45, University of Minnesota.
Major: Surgery. Minor: Pathology.
Thesis: The Problem of Construction of a Pump and Oxygenator to
Replace the Heart and Lungs for Brief Periods.
Major Advisers: Drs. Clarence Dennis and R. L. Varco.
1952. STUTZMAN, FRANCIS LLOYD. B.S. '43, M.D. '46, M.S. '49,
University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: Studies in Magnesium Metabolism.
Major Adviser: Dr. L. J. Hay.
1952. VAN PATER, WARD N. M.D. '44, University of Western Ontario.
Major: Surgery. Minor: Pathology.
Thesis: Sarcoid-like Lesions of the Small and Large Bowel.
Major Adviser: Dr. M. B. Dockerty.
1953. BLOCK, MELVIN AUGUST. B.S. '42, M.D. '44, Indiana University.
Major: Surgery. Minor: Pathology.
Thesis: A Study of Renal Hemodynamics with Emphasis on the Influence
of the Renal Nerves.
Major Adviser: Dr. K. G. Wakim.

1953. CROSS, FREDERICK SAMUEL. B.A. '42, Oberlin College; M.D. '45, Western Reserve University.
Major: Surgery. Minor: Pathology.
Thesis: The Effect of Increased Atmospheric Pressures and the Inhalation of 95 Percent Oxygen and Helium-Oxygen Mixtures on the Viability of the Bowel Wall and the Absorption of Gas in Closed Loop Obstructions.
Major Adviser: Dr. O. H. Wangensteen.
1953. EPPERSON, DEAN PAUL. B.A. '42, M.D. '45, Harvard University; M.S. in Surg. '52, University of Minnesota.
Major: Surgery. Minor: Biochemistry.
Thesis: Diphosphopyridine Nucleotide Pyrophosphatase in Venom and Mammalian Tissues.
Major Adviser: Dr. G. A. Fleisher.
1953. FELDER, DAVITT ALEXANDER. B.S. '38, Rollins College; M.D. '42, Yale University.
Major: Surgery. Minor: Physiology.
Thesis: Anatomical and Clinical Correlations of Phlebography of the Lower Extremities.
Major Adviser: Dr. O. H. Wangensteen.
1953. HUBBARD, THOMAS BRANNON, JR. B.A. '38, Princeton University; M.D. '42, Columbia University.
Major: Surgery. Minor: Pathology.
Thesis: Non-Simultaneous Bilateral Breast Cancer.
Major Adviser: Dr. O. H. Wangensteen.
1953. MASON, EDWARD EATON. B.A. '43, M.D. '45, State University of Iowa.
Major: Surgery. Minor: Pathology.
Thesis: A Study of Iodide Transport in Living Cells.
Major Adviser: Dr. G. E. Moore.
1953. ZIMMERMANN, BERNARD. M.D. '45, Harvard University.
Major: Surgery. Minor: Physiology.
Thesis: A Study of Endocrine Factors Related to Electrolyte Balance in the Postoperative Surgical Patient.
Major Adviser: Dr. O. H. Wangensteen.
1954. CAMPBELL, GILBERT S., JR. B.A. '43, M.D. '46, University of Virginia; M.S. '49, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: Effect of pH Changes on Vagal Inhibition of the Heart.
Major Adviser: Dr. O. H. Wangensteen.
1954. COHEN, MORLEY. M.D. '48, University of Manitoba.
Major: Surgery. Minor: Pathology.
Thesis: Studies on Experimental Methods for Intracardiac Surgery: Their Development and Physiologic Basis.
Major Adviser: Dr. C. W. Lillehei.

1954. HITCHCOCK, CLAUDE RAYMOND. B.A. '40, B.S. '43, M.D. '45, University of Minnesota.
Major: Surgery. Minor: Cancer Biology.
Thesis: Attempts to ~~Abot~~ the Action of Methylcholanthrene in the Induction of Gastric Cancers in Mice, Using Dietary Chemical Additives and Dietary Deficiencies.
Major Adviser: Dr. O. H. Wangensteen.
1954. NELSON, RUSSELL MARION. B.A. with high honors '45, M.D. '47, University of Utah.
Major: Surgery. Minor: Physiology.
Thesis: Metabolic Effects of Canine Infusion with the Paracolon Bacillus, a Contaminant of Perfusions with Temporary Pump-Oxygenator Supplantation of Heart and Lungs.
Major Adviser: Dr. O. H. Wangensteen.
1955. BRAASCH, JOHN WILLIAM. B.S. '43, Yale University; M.D. '46, Harvard University.
Major: Surgery. Minor: Physiology.
Thesis: A Quantitative Study of the Iodine Containing Compounds of the Human Thyroid.
Major Adviser: Dr. Alexander Albert.
1955. KELLY, WILLIAM DANIEL. B.S. '43, M.D. '46, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: The Influence of the Anatomical Relationships of the Gastric Antrum on Gastric Secretion and Gastrojejunal Ulcer.
Major Adviser: Dr. O. H. Wangensteen.
1955. MILLER, FLETCHER ALLEN. B.A. '43, M.D. '46, State University of Iowa.
Major: Surgery. Minor: Physiology.
Thesis: Studies in Respiratory Acidosis.
Major Adviser: Dr. R. L. Varco.
1955. SPELLMAN, MITCHELL WRIGHT. B.A. magna cum laude '40, Dillard University; M.D. '44, Howard University.
Major: Surgery. Minor: Physiology.
Thesis: A Study of the Pathogenetic Mechanisms Which Underlie the Production of Bacterial Endocarditis in Dogs with Large, Chronic Arteriovenous Fistulae.
Major Adviser: Dr. C. W. Lillehei.
1956. BRACKNEY, EDWIN LELAND. B.A. magna cum laude '43, M.D. '47, University of Minnesota.
Major: Surgery. Minor: Physiology.
Thesis: The Role of the Duodenum in the Control of Gastric Secretion.
Major Adviser: Dr. O. H. Wangensteen.

1956. SMITH, GRAFTON ADRIAN. M.D. '48, Washington University.
Major: Surgery. Minor: Cancer Biology.
Thesis: A Study of Intestinal Intubation.
Major Adviser: Dr. O. H. Wangenstein.

UROLOGY

1941. GREENE, LAURENCE FRANCIS. B.S. '32, University of Chicago;
M.D. '36, Harvard University.
Major: Urology. Minor: Surgical Pathology.
Thesis: The Renal and Ureteral Changes Induced by Dilating the
Ureter: An Experimental Study.
Major Adviser: Dr. G. J. Thompson.
1956. SIBLEY, JOHN ADAMS. B.S. '43, Massachusetts Institute of
Technology; M.D. '46, University of Chicago.
Major: Urology. Minor: Physiology.
Thesis: Significance of Aldolase in the Serum and Tissues: An
Experimental and Clinical Study.
Major Adviser: Dr. O. S. Culp.

PHILOSOPHY, PSYCHOLOGY, EDUCATION, AND CHILD WELFARE

CHILD WELFARE

1938. RUNKEL, JOSEPH EDWIN. B.A. '33, Carroll College; M.A. '34, University of Wisconsin.
Major: Child Welfare. Minor: Psychology.
Thesis: The Measurement of Physical Strength in Children and the Relationship of Strength Laterality to Functional Laterality.
Major Adviser: Prof. J. E. Anderson.
1938. SMART, RUSSELL COOK. B.A. '34, Dartmouth College; M.A. '35, University of Minnesota.
Major: Child Welfare. Minor: Psychology.
Thesis: An Empirical Contribution to Certain Theories of Factor Analysis.
Major Advisers: Profs. J. E. Anderson and F. L. Goodenough.
1941. PHILP, ALICE JANE. B.A. '36, Stanford University; M.A. '39, University of Minnesota.
Major: Child Welfare. Minor: Psychology.
Thesis: The Psychological Nature of Mental Deficiency. A Comparison of Normal Children, Borderline Subjects and Mental Defectives Matched for M.A. on Exploratory "Tests" of Mental "Rigidity".
Major Adviser: Prof. J. E. Anderson.
1943. FORD, MARY ELIZABETH NESTLERODE. B.A. '32, Wellesley College; M.A. '33, University of Toronto.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: The Application of the Rorschach Test to Young Children.
Major Adviser: Prof. Florence Goodenough.
1944. MAURER, KATHARINE MATHER. B.A. '28, M.A. '38, University of Minnesota.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: Intellectual Status at Maturity as a Criterion for Selecting Items in Preschool Tests.
Major Adviser: Prof. F. L. Goodenough.
1944. PREVEY, ESTHER ELIZABETH. B.S. '25, M.A. '34, University of Alberta.
Major: Child Welfare. Minor: Nutrition.
Thesis: A Quantitative Study of Family Practices in Training Children in the Use of Money.
Major Adviser: Prof. F. L. Goodenough.
1944. RADKE, MARIAN JEANETTE. B.A. '39, University of Wisconsin; M.A. '41, University of Minnesota.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: The Relation of Parental Authority to Children's Behavior and Attitudes.
Major Adviser: Prof. F. L. Goodenough.

1944. ROBERTS, SHEARLEY OLIVER. B.A. '32, M.A. '33, Brown University.
Major: Child Welfare. Minor: Psychology.
Thesis: The Measurement of Adjustment of Negro College Youth:
Personality Scales for Whites Versus Criteria Intrinsic to Negro
Group.
Major Adviser: Prof. J. E. Anderson.
1945. MILES, KATHERINE ADELE. B.S. '25, B.A. with distinction '25,
M.A. '27, Ohio State University.
Major: Child Welfare. Minor: Psychology.
Thesis: The Relationship between Certain Factors in the Home Background
and the Qualities of Leadership Shown by Children.
Major Adviser: Prof. F. L. Goodenough.
1946. HARRIS, ESTHER KITE. B.A. '32, Cornell University; M.A. '37,
Smith College.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: The Responsiveness of Kindergarten Children to the Behavior
of Their Fellows.
Major Adviser: Prof. John E. Anderson.
1947. TEMPLIN, MILDRED CLARA EMMA. B.A. '36, M.A. '37, University of
Wisconsin.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: Development of Reasoning in Children with Normal and
Defective Hearing.
Major Adviser: Prof. J. E. Anderson.
1948. MARTIN, WILLIAM ELLSWORTH. B.S. '39, Nebraska State Teachers
College; M.A. '41, University of Minnesota.
Majors: Child Welfare and Education. Minor: Educational Psychology.
Thesis: Quantitative Expression in Young Children.
Major Advisers: Profs. J. E. Anderson and W. W. Cook.
1949. PHILLIPS, EWING LAKIN. B.S. '37, Central Missouri State Teachers
College; M.A. '40, University of Missouri.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: Intellectual and Personality Factors Associated with Social
Class Attitudes among Junior High School Students.
Major Adviser: Prof. D. B. Harris.
1951. GRIFFITHS, WILLIAM. B.A. '35, M.A. '36, Western Reserve University.
Major: Child Welfare. Minor: Education.
Thesis: Behavior Difficulties of Children as Perceived and Judged by
Parents, Teachers, and Children Themselves.
Major Adviser: Prof. J. E. Anderson.

1951. LANE, LEONORA CARRINGTON. B.S. '24, Wilberforce University; M.A. '30, Columbia University.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: A Study of Social Acceptance in Negro Children.
Major Adviser: Prof. D. B. Harris.
1952. BRODY, DAVID S. B.S. with distinction '32, M.A. '36, University of Minnesota.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: Developmental Factors Affecting Sociality Traits and Work Habits Among College Women.
Major Adviser: Prof. J. E. Anderson.
1953. BIEHLER, ROBERT FREDERICK. B.A. magna cum laude '50, Syracuse University; M.A. '51, University of Minnesota.
Major: Child Welfare. Minor: Psychology.
Thesis: An Analysis of Free Painting Procedures as Used with Pre-school Children.
Major Adviser: Prof. D. B. Harris.
1953. BLODGETT, HARRIET ELEANOR. B.S. magna cum laude '40, Tufts College; M.A. '43, University of Minnesota.
Major: Child Welfare. Minor: Psychology.
Thesis: An Experimental Approach to the Measurement of Self-Evaluation Among Adolescent Girls.
Major Adviser: Prof. D. B. Harris.
1953. HOLBROOK, SARAH FITCH. B.S. '41, University of Wisconsin.
Major: Child Welfare. Minor: Psychology.
Thesis: A Study of the Development of Motor Abilities Between the Ages of Four and Twelve, Using a Modification of the Oseretsky Scale.
Major Adviser: Prof. D. B. Harris.
1954. BROOKS, SYLVIA. B.A. '48, Boston University; M.A. '50, University of Wisconsin.
Major: Child Welfare. Minor: Psychology.
Thesis: Complexity of Task as a Factor in Rigidity Behavior of Children in Problem Solving Situations.
Major Adviser: Prof. M. C. Templin.
1954. DREYER, ALBERT STANLEY. B.A. cum laude '49, Brooklyn College; M.A. '51, University of Minnesota.
Major: Child Welfare. Minor: Psychology.
Thesis: Behavior in a Level of Aspiration Situation as Affected by Group Comparison.
Major Advisers: Profs. D. B. Harris and Leon Festinger.
1954. MARTORANA, ANNA AGNES. B.S. '42, Buffalo State Teachers College; M.A. '45, Columbia University.
Major: Child Welfare. Minor: Psychology.
Thesis: A Comparison of the Personal, Emotional, and Family Adjustment of Crippled and Normal Children.
Major Adviser: Prof. J. E. Anderson.

1956. HARRELL, LESTER EDWARD, JR. B.S. '42, Baylor University; M.A. '47, University of Texas.
Major: Child Welfare. Minor: Psychology.
Thesis: An Inter-Comparison of the Quality and Rate of the Development of Oral and Written Language in Children.
Major Adviser: Prof. J. E. Anderson.
1956. MCHALE, JULIA LOIS. B.A. magna cum laude '49, Syracuse University.
Major: Child Welfare. Minor: Educational Psychology.
Thesis: Set as a Determinant in the Associations of Normal and Retarded Children.
Major Adviser: Prof. J. E. Anderson.

EDUCATION

1938. DRAKE, RICHARD MATTHEWS. B.S. '28, M.A. '33, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Effect of Instruction in the Vocabulary of Algebra upon Achievement in Ninth Grade Mathematics.
Major Adviser: Prof. C. W. Boardman.
1938. EDMAN, MARION LOUISE. B.A. summa cum laude '26, Gustavus Adolphus College; M.A. '35, University of Minnesota.
Major: Education. Minor: English.
Thesis: An Analysis of the Language Arts Program in English in the Public Schools of Winona, Minnesota, in Its Relation to the Needs of the Community.
Major Adviser: Prof. D. V. Smith.
1938. FROGNER, ELLEN ANNETTE. B.S. with distinction '27, M.A. '33, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study of the Relative Efficacy of a Grammatical and a Thought Approach to the Improvement of Sentence Structure in Grades Nine and Eleven.
Major Adviser: Prof. D. V. Smith.
1938. MOTT, GEORGE FOX. A.B. '29, A.M. '31, Leland Stanford University.
Major: Educational Administration.
Minor: Political Science.
Thesis: Housing of College Students in the United States.
Major Adviser: Prof. M. G. Neale.
1939. ANFINSON, RUDOLPH DONALD. B.E. '32, St. Cloud Teachers College; M.A. '33, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: School Progress and Pupil Adjustment.
Major Advisers: Profs. L. J. Brueckner and G. L. Bond.

1939. EGGERTSEN, CLAUDE ANDREW. B.A. '30, M.A. '33, Brigham Young University.
Major: Education. Minor: History.
Thesis: The Monitorial System of Instruction in the United States.
Major Adviser: Prof. E. B. Wesley.
1939. JEWETT, ARNO JOSEPH. B.S. '32, M.A. '37, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study to Determine the Results of Instruction in the Detecting and Analyzing of Propaganda in the Eleventh and Twelfth Grades.
Major Adviser: Prof. Dora V. Smith.
1939. REICHERT, EDWIN CLARK. B.A. '32, University of Wisconsin; M.A. '33, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Development of Decimal Abilities.
Major Adviser: Prof. L. J. Brueckner.
1939. SUNDERMAN, LLOYD FREDERICK. B.A. '33, Western Union College; M.Mus. '34, Syracuse University.
Major: Education. Minor: Educational Psychology.
Thesis: A History of Public School Music in the United States, 1830-1900.
Major Adviser: Prof. E. B. Wesley.
1940. CLARK, ELLA CALLISTA. B.S. '29, M.A. '30, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: An Experimental Evaluation of the School Excursion in Four Sixth Grade Units of Instruction.
Major Adviser: Prof. P. O. Johnson.
1940. EVANS, MARY CATHERINE. B.A. with highest honors '29, Friends University; M.A. '31, University of Kansas.
Major: Educational Psychology. Minor: Education.
Thesis: The Measurement of Different Types of Introversion-Extroversion and Their Relationship to Scholastic Achievement.
Major Advisers: Profs. C. G. Wrenn and T. R. McConnell.
1940. HATCHER, HAZEL MAURINE. B.S. '27, University of Missouri; M.S. '33, Iowa State College.
Major: Education. Minor: Home Economics.
Thesis: An Experimental Study to Determine Relative Effectiveness at the Secondary Level of Two Methods of Instruction.
Major Adviser: Prof. C. M. Brown.
1940. LAUGHLIN, WILLIAM PATRICK. B.B.A. '29, M.A. '33, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: Changes of Intelligence Scores of College Students Over a Period of Approximately Four Years.
Major Adviser: Prof. T. R. McConnell.

1940. PAIGE, JOHN WALTER.* B.S. '37, M.A. '38, University of Minnesota.
Major: Educational Administration. Minor: Political Science.
Thesis: Classification of Local Units in Minnesota for Purposes of School Legislation.
Major Adviser: Prof. M. G. Neale.
1940. SHORES, JAMES HARLAN. B.A. '37, University of Kansas; M.A. '38, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Reading and Study Skills as Related to Comprehension of Science and History in the Ninth Grade.
Major Advisers: Profs. M. G. Neale and G. L. Bond.
1941. ANDERSON, GEORGE LESTER. B.A. magna cum laude '32, Nebraska State Teachers College; M.A. '37, Colorado State College of Education.
Major: Educational Psychology. Minor: Education.
Thesis: A Comparison of the Outcomes of Instruction under Two Theories of Learning.
Major Adviser: Prof. T. R. McConnell.
1941. HAN, CHING-LIEN. B.A. '28, Yenching University; M.A. '39, University of Minnesota.
Major: Educational Administration. Minor: Political Science.
Thesis: A Comparative Study of Administration of Publicly Supported Higher Education in the United States and China.
Major Adviser: Prof. M. G. Neale.
1941. HARRIS, DALE BENNER. B.A. '35, DePauw University; M.A. '37, University of Minnesota.
Major: Educational Psychology. Minors: Child Welfare and Psychology.
Thesis: A Study of Patterns in Play Activities Reported by Delinquent Boys.
Major Adviser: Prof. W. S. Miller.
1941. HAWKINSON, ELLA AMELIA. B.A. '20, M.A. '26, University of Minnesota.
Major: Education. Minor: History.
Thesis: Selected Difficulties of Social Studies Teachers.
Major Advisers: Prof. E. B. Wesley and Dean W. E. Peik.
1941. HOLLAND, CLEMENT JOSEPH. B.A. '25, College of St. Thomas; M.A. '33, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Student Guidance and Welfare Procedures in Member Colleges of the Mid-west Regional Unit of the National Catholic Education Association.
Major Adviser: Prof. M. G. Neale.

*Degree conferred under the name of John Walter Pajari.

1941. KOENKER, ROBERT HENRY. B.E. '35, Mankato State Teachers College; M.A. '37, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Characteristic Differences Between Excellent and Poor Achievers in Sixth Grade Division.
Major Adviser: Prof. L. J. Brueckner.
1941. MICHEELS, WILLIAM JORDAN. B.S. '32, The Stout Institute; M.A. '38, University of Minnesota.
Major: Industrial Education. Minor: Education.
Thesis: State Supervision of Industrial Arts Education: Definition, Evaluation, and Comparison of the Supervisory Policies and Procedures of State Education Officials Who Visit Industrial Arts Teachers.
Major Adviser: Prof. H. J. Smith.
1941. POLMANTIER, PAUL CHURCHILL. B.A. '34, Municipal University of Omaha; M.A. '35, University of Nebraska.
Major: Educational Psychology. Minor: Educational Administration.
Thesis: A Comparative Study of the Reading Interests and Abilities of Delinquent and Non-Delinquent Boys.
Major Adviser: Prof. G. L. Bond.
1941. SCHULTZ, FRANK GUST. B.A. cum laude '26, Northland College; M.A. '35, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: An Investigation of Factors Associated with the College Attendance of Wyoming High School Graduates.
Major Adviser: Prof. M. G. Neale.
1941. SOUDER, HUGH COWAN. B.A. '06, Maryville College; M.A. '15, University of South Dakota; M.A. '21, Teachers College, Columbia University.
Major: Education. Minor: Educational Psychology.
Thesis: The Construction and Evaluation of Certain Readiness Tests in Common Fractions.
Major Adviser: Prof. L. J. Brueckner.
1941. STANDAHL, ROY FRANCIS. B.A. '26, Mayville State Teachers College; M.A. '35, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Extent to Which the Present Laws of the State of Minnesota Tend to Equalize the Burden of Educational Support.
Major Adviser: Prof. M. G. Neale.
1941. SWENSON, ESTHER JEANETTE. B.S. with high distinction '31, M.A. '38, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Generalization as a Factor in Transfer and Retroactive Inhibition.
Major Adviser: Prof. T. R. McConnell.

1941. VAN ALSTINE, FRANK L. B.S. '29, Southwestern State Teachers College (Oklahoma); M.S. '36, Oklahoma Agricultural and Mechanical College.
Major: Education. Minor: Educational Psychology.
Thesis: The Relation between the Housing of Students and Their Scholarship at the University of Minnesota.
Major Advisers: Dean W. E. Peik and Prof. P. O. Johnson.
1942. BULLARD, CATHERINE LOUISE. B.S. '28, M.A. '29, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study of the Preparation in English of Prospective Teachers of English in Minnesota.
Major Adviser: Prof. Dora V. Smith.
1942. DALLMANN, MARTHA ELSIE. B.S. '27, M.A. '31, University of Minnesota; M.A. '37, Columbia University.
Major: Education. Minor: Educational Psychology.
Thesis: An Analysis of the Professional Preparation of Intermediate-Grade Teachers in the Field of Reading.
Major Advisers: Dean Wesley E. Peik and Prof. Guy L. Bond.
1942. DUGAN, WILLIS EDWIN. B.E. '37, St. Cloud Teachers College; M.A. '39, University of Minnesota.
Major: Educational Psychology. Minor: Curriculum and Instruction.
Thesis: A Study of the Influence of Teacher Knowledge of Individual Pupil Characteristics Upon Achievement and Other Developmental Outcomes.
Major Adviser: Prof. C. Gilbert Wrenn.
1942. FATTU, NICHOLAS ALBERT. B.S. '31, M.S. '31, University of Idaho.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Organization of Certain Measured Personality Traits in Terms of Inter-Individual and Intra-Individual Relationships.
Major Adviser: Dean T. R. McConnell.
1942. HAHN, MILTON EDWIN. B.A. '27, Hamline University; M.S. in Psychometrics '38, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: An Investigation of Measured Aspects of Social Intelligence in a Distributive Occupation.
Major Adviser: Dean T. R. McConnell.
1942. HUMBER, WILBUR JAMES. B.A. '34, Macalester College; M.A. '37, University of Chicago; B.D. '37, Chicago Theological Seminary; M.A. '40, University of Minnesota.
Major: Educational Psychology. Minor: Sociology.
Thesis: An Experimental Analysis of Selected Reading Skills as Related to Certain Content Fields at the University of Minnesota.
Major Advisers: Profs. C. G. Wrenn and M. A. Tinker.

1942. LAYMAN, MARTHA ELIZABETH. B.S. in Ed. '30, M.A. '35, University of Missouri.
Major: Education. Minor: History.
Thesis: A History of Indian Education in the United States.
Major Adviser: Prof. E. B. Wesley.
1942. LEIPOLD, LOUIS EDMOND. B.S. '28, M.A. '38, University of Minnesota.
Major: Education. Minor: Political Science.
Thesis: The Administrative Relationships of the Elementary School Principal.
Major Adviser: Prof. M. G. Neale.
1942. MESHKE, EDNA DOROTHY. B.S. '27, University of Minnesota; M.A. '34, Columbia University.
Major: Education. Minor: Home Economics.
Thesis: The Effects of Utilizing Selected Community Resources in Ninth-Grade and Tenth-Grade Homemaking Classes.
Major Adviser: Prof. C. M. Brown.
1942. PICCARD, JEANNETTE. B.A. '18, Bryn Mawr College; M.S. '19, University of Chicago.
Major: Education. Minor: Organic Chemistry.
Thesis: The Housing of Married Graduate Students at the University of Minnesota, Fall Quarter, 1939-40.
Major Adviser: Prof. M. G. Neale.
1942. SIFERT, EARL ROLAND. B.A. '13, Des Moines University; M.A. '26, State University of Iowa.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: A Study of the In-Service Education of High School Principals in a Selected Group of Schools.
Major Adviser: Prof. C. W. Boardman.
1942. STEEL, HARRY JOHNSON. B.A. '17, M.A. '25, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: A Functional Test for Measuring the Ability to Teach Spelling.
Major Adviser: Prof. L. J. Brueckner.
1942. STEIN, HARRY L. B.A. '22, M.A. '35, University of Manitoba.
Major: Education. Minor: Educational Psychology.
Thesis: Characteristic Differences in Mathematical Traits of Good, Average, and Poor Achievers in Demonstrative Geometry.
Major Adviser: Prof. L. J. Brueckner.
1942. THOMPSON, ANTON OLIVER. B.E. '32, St. Cloud State Teachers College; M.A. '39, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Use of Superintendents' Annual Reports in Educational Interpretation.
Major Adviser: Prof. M. G. Neale.

1942. TREACY, JOHN PATRICK. B.S. '26, M.S. '27, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Relationship of Reading Skills to the Ability to Solve
Arithmetic Problems.
Major Adviser: Prof. L. J. Brueckner.
1943. BOVEE, DOROTHY ANNICE. B.S. '21, M.A. '30, University of Minnesota.
Major: Education. Minor: History.
Thesis: Vitalizing the Teaching of History, A Study in Methods of
Instruction.
Major Adviser: Prof. A. C. Krey.
1943. FRIEDMAN, KOPPLE CLAYTON. B.S. with distinction '31, M.A. '32,
University of Minnesota.
Major: Education. Minor: Social Sciences.
Thesis: The Growth of Time Concepts.
Major Adviser: Prof. E. B. Wesley.
1943. HANSEN, CARL WALLACE. B.S. '26, University of Minnesota;
M.A. '30, University of Chicago.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Factors Associated with Superior and Inferior Achievement in
Problem Solving in Sixth Grade Arithmetic: A Statistical Analysis.
Major Adviser: Prof. L. J. Brueckner.
1943. JOHNSON, HARRY CARL. B.S. '30, M.A. '33, University of Minnesota.
Major: Education. Minors: Mathematics and Biostatistics.
Thesis: The Effect of Instruction in Mathematical Vocabulary upon
Problem Solving in Arithmetic.
Major Adviser: Prof. L. J. Brueckner.
1943. NOHAVEC, HAZEL BECKWITH. B.F.A. '24, University of Nebraska;
B.A. '27, Nebraska State Normal College; M.A. '29, Claremont Colleges.
Major: Education. Minor: Educational Psychology.
Thesis: The Ability Pattern of Senior College Students Majoring in
Music Education at the University of Minnesota.
Major Adviser: Dean W. E. Peik.
1943. SHAFER, HUGH MEXICO. B.S. '33, M.A. '35, West Virginia University.
Major: Educational Administration. Minor: Political Science.
Thesis: Democratic Personnel Relationships in School Administration:
A Study of Principles.
Major Adviser: Prof. M. G. Neale.
1943. SMITH, VICTOR CLYDE. B.A. '26, State College of Washington;
M.A. '29, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Factors Affecting Learning of General Science.
Major Adviser: Prof. M. J. Van Wagenen.

1944. HOYT, CYRIL JOSEPH. B.S. with distinction '28, M.A. '37, University of Minnesota.
Major: Educational Psychology. Minor: Mathematics.
Thesis: Tests of Certain Linear Hypotheses and Their Application to Educational Problems in Elementary College Physics.
Major Adviser: Prof. P. O. Johnson.
1944. PETERSON, SHAILER ALVAREY. B.A. '30, M.A. '32, University of Oregon.
Major: Curriculum and Instruction. Minor: Educational Psychology.
Thesis: The Comparison of the Achievement of Students in the Traditional High School Physics and Chemistry Courses, Each of One Year's Duration, with the Achievement of Students in the Integrated Course in Physics and Chemistry over a One-year Period.
Major Adviser: Prof. P. O. Johnson.
1945. COOK, KERMIT ALDERSON. B.A. '29, M.A. '31, West Virginia University.
Major: Education. Minor: Social Sciences.
Thesis: A History of the Influence of Certain Educational Organizations and Agencies in Establishing the Principle of Professional Qualifications for Teachers in Three Selected States.
Major Adviser: Prof. E. B. Wesley.
1945. FINK, STUART DANIELSON. B.S. '26, M.A. '30, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Instructional Organization in the Public Elementary Schools of American Cities.
Major Adviser: Prof. M. G. Neale.
1945. GUSTIN, ARNO ANTHONY. B.A. with honor '29, St. John's University; M.A. '34, Catholic University of America.
Major: Education. Minor: Educational Administration.
Thesis: The Development of the Idea of State Responsibility for Education in England, Germany, and France.
Major Adviser: Prof. E. B. Wesley.
1945. HANDLAN, BERTHA. B.A. '31, West Virginia University.
Major: Education. Minor: English.
Thesis: A Comparison of the Characteristics of Certain Adolescent Readers and the Qualities of the Books They Read.
Major Adviser: Prof. Dora V. Smith.
1945. MOORE, MARJORIE ELEANOR. B.A. '30, Macalester College.
Major: Education. Minor: Biostatistics.
Thesis: The Evaluation of Certain Factors for Predicting the Success of Students Entering the College of Pharmacy of the University of Minnesota from 1933 through 1943.
Major Adviser: Prof. P. O. Johnson.

1945. STACEY, CHALMERS LEONARD. B.A. '34, Acadia University; M.A. '38, University of Minnesota.
Major: Educational Psychology. Minor: History and Philosophy of Education.
Thesis: The Law of Effect in the Retained Situation with Meaningful Material.
Major Adviser: Prof. T. R. McConnell.
1946. CARLSON, THORSTEN ROBERT. B.E. '39, St. Cloud State Teachers College; M.A. '41, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship between Speed and Accuracy of Comprehension of Reading.
Major Adviser: Prof. G. L. Bond.
1946. CARR, EDWIN REMMEN. B.A. cum laude '27, Jamestown College; M.A. '32, Columbia University Teachers College.
Major: Education and Social Sciences.
Thesis: Great Falls to Nome: The Inland Air Route to Alaska, 1940-1945.
Major Adviser: Prof. E. B. Wesley.
1946. GAYNE, CLIFTON ALEXANDER, JR. B.S. '37, Massachusetts School of Art; M.A. '38, University of Minnesota.
Major: Education. Minor: Fine Arts.
Thesis: A Study of Art in Selected Schools in Minnesota.
Major Adviser: Prof. L. J. Brueckner.
1946. LANDSKOV, NORVIN LAWRENCE. B.A. '26, St. Olaf College; M.A. '34, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Survival Study of Three College of Education Classes with Implications for Adjustment of Admission Standards.
Major Adviser: Prof. W. E. Peik.
1946. LEEDS, CARROLL HENRY. B.A. '31, University of Illinois; M.A. '32, University of Texas.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Construction and Differential Value of a Scale for Determining Teacher-Pupil Attitudes.
Major Adviser: Prof. W. W. Cook.
1946. NAHM, HELEN. B.A. '26, University of Missouri; M.S. in Psychometrics '39, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: An Evaluation of Selected Schools of Nursing with Respect to Certain Educational Objectives.
Major Adviser: Prof. W. W. Cook.

1946. PEPINSKY, HAROLD B. B.A. cum laude '38, M.S. in Psychometrics '40, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Reliability of a Set of Problem Categories for Use in the Clinical Counseling of College Students.
Major Adviser: Prof. W. W. Cook.
1946. SISTER DIGNA BIRMINGHAM. B.A. '27, University of Minnesota; M.A. '31, Catholic University of America.
Major: Education. Minor: English.
Thesis: Graduates of a Catholic Liberal Arts College.
Major Adviser: Prof. W. E. Peik.
1946. ZIEGFELD, EDWIN. B.S.L.A. '27, B.S. '33, Ohio State University; M.L.A. '29, Harvard University.
Major: Educational Psychology. Minor: Architecture.
Thesis: An Experimental Investigation to Determine the Effect of Different Methods of Instruction in Painting and Drawing on the Ability to Make Discriminatory Judgments in the Field of Painting and in Other Fields of Art.
Major Adviser: Prof. T. R. McConnell.
1947. BENTLEY, RALPH ROBERT. B.S. '26, M.S. '36, Iowa State College.
Major: Education. Minor: Agricultural Education.
Thesis: An Experimental Evaluation of the Relative Effectiveness of Certain Audio-Visual Aids in Vocational Agriculture.
Major Adviser: Prof. P. O. Johnson.
1947. BROWN, HUGH STUART. B.A. '31, University of Manitoba; B. of Pedagogy '37, University of Toronto.
Major: Educational Psychology. Minor: Education.
Thesis: An Investigation of the Validity of the Minnesota Multiphasic Personality Inventory for a College Population, and the Relationship of Certain Personality Traits to Achievement.
Major Advisers: Profs. W. W. Cook and P. E. Meehl.
1947. EMBREE, ROYAL BURDICK, JR. B.A. '29, Washington and Lee University; M.A. '30, Ohio State University.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Graduates of University High School from 1921 to 1945 with Special Reference to Their Subsequent Academic Careers.
Major Adviser: Prof. W. S. Miller.
1947. HOLLISTER, GEORGE ERWIN. B.S. '30, South Dakota Eastern State Normal School; M.A. '32, George Peabody College.
Major: Education. Minor: Educational Psychology.
Thesis: The Adjustment Problems of Beginning Students in Minnesota Teachers Colleges with Implications for Teacher Education.
Major Advisers: Profs. G. L. Anderson and W. E. Peik.

1947. KELLER, ROBERT JOHN. B.E. '37, Winona State Teachers College; M.A. '40, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of Intrinsic Factors of Student Leadership in Selected Minnesota High Schools.
Major Adviser: Prof. C. W. Boardman.
1947. TINSLEY, WILLA VAUGHN. B.S. '28, Texas State College for Women; M.S. '36, Colorado State College.
Major: Education. Minor: Home Economics.
Thesis: Development of Instruments for Evaluating Food Practices, Nutrition Information, and School Lunch Programs and Their Use in Nutrition Education at the Elementary Level.
Major Adviser: Prof. C. B. Army.
1948. CALLIS, ROBERT. B.Ed. '42, Southern Illinois State Normal University; M.A. '46, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: Change in Teacher-Pupil Attitudes Related to Training and Experience.
Major Adviser: Prof. W. W. Cook.
1948. CARLSEN, GEORGE ROBERT. B.A. magna cum laude '38, B.S. '40, M.A. '43, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study of the Effect of Reading Books about the Negro on the Racial Attitudes of a Group of Eleventh Grade Students in Northern Schools.
Major Adviser: Prof. D. V. Smith.
1948. FAY, LEO CHARLES. B.S. with distinction '42, M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship between Specific Reading Skills and Selected Areas of Sixth Grade Achievement.
Major Adviser: Prof. G. L. Bond.
1948. FORD, JAMES LAWRENCE COLLIER. B.A. magna cum laude '28, Lawrence College; M.A. '39, University of Wisconsin.
Major: Education. Minor: Journalism.
Thesis: A Study of the Pre-War Curricula of Selected Schools of Journalism.
Major Advisers: Profs. T. R. McConnell and R. D. Casey.
1948. GILL, CLARK CYRUS. B.A. cum laude '35, Hamline University; M.A. '39, University of Minnesota.
Major: Education. Minor: Social Sciences.
Thesis: The Role of the Federal Government in Public Education in Mexico.
Major Adviser: Prof. E. B. Wesley.

1948. HARTSHORN, HERBERT HADLEY. B.S. '30, Lincoln University; M.A. '40, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Vocational Interest Patterns of Negro Professional Men.
Major Adviser: Prof. W. W. Cook.
1948. JOHNSON, DONOVAN A. B.S. cum laude '31, M.A. '33, University of Minnesota.
Major: Education. Minor: Mathematics.
Thesis: An Experimental Study of the Relative Effectiveness of Certain Visual Aids in Teaching Geometry.
Major Adviser: Prof. P. O. Johnson.
1948. KAMM, ROBERT BALTHASAR. B.A. '40, Iowa State Teachers College; M.A. '46, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: An Analysis of the Counseling Interview in Terms of Client Acceptance of Information Presented: An Investigation of Certain Factors Related to Acceptance of Information Presented during Educational-Vocational Planning Interviews with Lower Ability Students.
Major Adviser: Prof. C. G. Wrenn.
1948. KEARNEY, NOLAN CHARLES. B.S. '24, M.A. '32, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Development of Administrative Control in the St. Paul Public Schools.
Major Adviser: Prof. M.G. Neale.
1948. KYLE, GARLAND DEAN. B.A. '31, University of Toledo; M.A. '36, Ohio State University; M.S. '40, University of Michigan.
Major: Education. Minor: Statistics and Mathematics.
Thesis: Contributions to the Theory of Multivariate Statistical Analysis with Some Special Applications to Studies of Differential Abilities in College Mathematics.
Major Adviser: Prof. P. O. Johnson.
1948. LOYE, EDWARD SCOTT. B.E.E. with distinction '31, M.S. in E.E. '33, B.S. '34, University of Minnesota.
Major: Education. Minor: Mathematics and Mechanics.
Thesis: A Comparison of Veterans and Non-veterans who Entered the Institute of Technology Fall 1947 on Certain Specific Factors.
Major Adviser: Prof. C. W. Boardman.
1948. NICKERSON, JAMES FINDLEY. B.S. '32, Nebraska Wesleyan University; M.A. '40, Columbia University Teachers College.
Major: Educational Psychology. Minor: Education.
Thesis: A Comparison of Performances of the Same Melody Played in Solo and in Ensemble with Reference to Equi-tempered, Just, and Pythagorean Intonations.
Major Adviser: Prof. M. A. Tinker.

1948. SEEMAN, JULIUS. B.S. '42, Johns Hopkins University; M.A. '44, University of Maryland.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of Preliminary Interview Methods in Vocational Counseling and Client Reactions to Counseling.
Major Adviser: Prof. W. W. Cook.
1948. WENDT, PAUL ROBERT. B.A. '31, Harvard College; M.A. '42, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Factors Affecting Fixation Points in Viewing an Educational Motion Picture.
Major Adviser: Prof. W. W. Cook.
1949. ANDERSON, KENNETH EUGENE. B.S. '32, M.A. '34, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relative Achievements of the Objectives of Secondary School Science in a Representative Sampling of Fifty-six Minnesota Schools.
Major Adviser: Prof. P. O. Johnson.
1949. BIESTER, LILLIAN LYDIA. B.A. '25, North Central College; M.A. '31, University of Wisconsin.
Major: Education. Minor: Political Science.
Thesis: What Possibilities Are There for Distributive Education in Minnesota?
Major Adviser: Prof. N. L. Bossing.
1949. BIRKMAIER, EMMA MARIE. B.A. '28, College of St. Catherine; M.A. '38, University of Minnesota.
Major: Education. Minor: German.
Thesis: An Investigation of the Outcomes in the Eclectic, Reading, and the Modified Army Methods Courses in the Teaching of a Second Language. A Study Made at the University of Minnesota, Department of German, from 1944 to 1945 and from 1947 to 1948 with a Followup Study in the Spring of 1948 of the 1944 to 1945 Courses.
Major Adviser: Prof. N. L. Bossing.
1949. BOETTCHER, HENRY JOHN. B.A. '32, M.A. '38, University of Alberta.
Major: Education. Minor: Philosophy.
Thesis: Activities in Religious Education: An Experimental Study to Determine the Relative Effectiveness of Two Types of Teaching-Learning Processes in Religious Education.
Major Advisers: Profs. L. J. Brueckner and G. L. Bond.
1949. BUTLER, JOHN MERTON. B.S. with distinction '39, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: Self Evaluations of Personality by Adolescents.
Major Adviser: Prof. C. G. Wrenn.

1949. CARLSEN, ANNE HELEN. B.A. cum laude '36, University of Minnesota; M.A. '46, Colorado State College of Education.
Major: Education. Minor: English.
Thesis: A Comparative Study of the Responses of Crippled and Non-crippled Adolescents on Some Personality and Interest Tests.
Major Adviser: Prof. G. L. Bond.
1949. COFFEY, WALTER CALVIN, JR. B.A. '36, Lawrence College; M.A. '39, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Characteristics Determining Success in a Non-selling Position in the Distributive Trades.
Major Advisers: Profs. D. G. Paterson and W. W. Cook.
1949. DREIER, WILLIAM HERMAN. B.S. '40, Iowa State College; M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Differential Achievement of Rural Graded and Ungraded School Pupils at the Elementary and High School Level.
Major Adviser: Prof. C. P. Archer.
1949. GJERDE, CLAYTON MORRIS. B.A. cum laude '35, Augsburg College; M.A. '44, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Parent-child Resemblances in Vocational Interests and Personality Traits.
Major Adviser: Prof. W. W. Cook.
1949. GOOSSEN, CARL VERNON. B.S. with honor '46, Winona State Teachers College; M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Curriculum and Instruction.
Thesis: The Construction and Validation of a Disguised Intelligence Test to be Used in Public Opinion Interviewing.
Major Adviser: Prof. W. W. Cook.
1949. GRAY, ARCHIE L. B.A. '25, Upper Iowa University; M.A. '43, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relation of Size of High School to Collegiate Success.
Major Adviser: Prof. M. G. Neale.
1949. HALL, WILLIAM FRANK. B.S. '40, Hamline University; M.A. '41, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Relationship between Adjustment and Achievement in Sixth Grade Pupils.
Major Adviser: Prof. G. L. Bond.

1949. HOLMGREN, MARVIN EDWARD. B.S. '40, St. Cloud State Teachers College; M.A. '46, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: State Public School Financial Accounting Procedures.
Major Adviser: Prof. M. G. Neale.
1949. KESTON, MORTON J. B.S. '33, M.A. '37, M.S. '41, University of Chicago.
Major: Educational Psychology. Minors: Psychology and Philosophy.
Thesis: An Experimental Evaluation of the Efficacy of Two Methods of Teaching Music Appreciation.
Major Adviser: Prof. P. O. Johnson.
1949. KREITLOW, BURTON WILLIAM. B.S. '41, M.A. '47, University of Minnesota.
Major: Education. Minor: Sociology.
Thesis: A Study of the Teaching of Letter Writing in the Sixth Grade of Graded and Ungraded Rural Schools.
Major Adviser: Prof. C. P. Archer.
1949. LOBAN, WALTER DEITEN. B.S. with distinction '33, University of Minnesota; M.A. '37, University of Chicago.
Major: Education. Minor: English.
Thesis: Adolescents of Varying Sensitivity and Their Responses to Literature Intended to Evoke Sympathy.
Major Adviser: Prof. D. V. Smith.
1949. MOULY, GEORGE JOSEPH. B.A. with distinction '45, B.Ed. '46, M.Ed. '47, University of Saskatchewan.
Major: Educational Psychology. Minor: Psychology.
Thesis: A Study of the United States Employment Service General Aptitude Test Battery, B-100L for Use on the Population of High School Seniors in the State of Minnesota.
Major Advisers: Profs. P. O. Johnson and C. G. Wrenn.
1949. PEPINSKY, PAULINE NICHOLS. B.A. '39, M.A. '41, Louisiana State University.
Major: Educational Psychology. Minor: Psychology.
Thesis: Some Psycho-social Behavior Patterns of a Group of Negro Adolescents.
Major Adviser: Prof. W. W. Cook.
1949. ROBINSON, LESLIE GEORGE MACKAY. B.A. '30, M.E. '36, University of Manitoba.
Major: Educational Psychology. Minor: Education.
Thesis: An Appraisal of the United States Employment Service General Aptitude Test Battery, B-100L, for the Grade Ten Population of Minnesota.
Major Advisers: Profs. W. W. Cook and P. O. Johnson.

1949. SIRO, EINAR ELI. B.S. '33, Stout Institute; M.A. '36, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Preparation and Up-Grading of Industrial Education Personnel in the United States.
Major Adviser: Prof. H. J. Smith.
1950. BARNES, KATHARINE FAY DALE. B.S. '38, M.A. '39, University of Minnesota.
Major: Education. Minor: English.
Thesis: The Influence of Reading Ability on Performance on Certain Aptitude Tests.
Major Adviser: Prof. G. L. Bond.
1950. BLACKWELL, SARA ELIZABETH. B.S. with honors '38, M.S. '44, The Pennsylvania State College.
Major: Education. Minor: Home Economics.
Thesis: Development of Instruments for Evaluating Certain Aspects of High School Homemaking Programs.
Major Adviser: Prof. C. B. Army.
1950. BOECK, CLARENCE HARRY. B.S. with distinction '35, M.A. '41, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Inductive Compared to the Deductive Approach to Teaching Secondary School Chemistry.
Major Adviser: Prof. P. O. Johnson.
1950. BUSWELL, MARGARET MARY. B.A. cum laude '41, Lawrence College; B.S. '46, M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Curriculum and Instruction.
Thesis: The Relationship between the Social Structure of the Classroom and the Academic Success of the Pupils.
Major Adviser: Prof. G. L. Bond.
1950. COOK, RUTH CATHLYN. B.S. '30, M.A. '35, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Identification of Topics in Prevailing Elementary School Curricula and the Study of Certain Implications Related to Their Treatment in the General and Professional Education of Teachers.
Major Advisers: Prof. W. E. Peik and Prof. P. O. Johnson.
1950. COUTTS, HERBERT THOMAS. B.A. '35, University of Toronto; M.A. '42, University of Alberta.
Major: Education. Minor: English.
Thesis: The Relation between the Reading Competence of Alberta Ninth-Grade Pupils in Four Content Fields and Their Achievement in Those Fields.
Major Advisers: Profs. D. V. Smith and G. L. Bond.

1950. EDSON, WILLIAM HERBERT. B.A. '39, Hastings College; M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Relationships between Visual Characteristics and Specific Silent Reading Abilities.
Major Advisers: Profs. G. L. Bond and W. W. Cook.
1950. FARLEY, JOHN ARTHUR. B.S. '30, M.A. '32, University of Minnesota.
Major: Education. Minor: Economics.
Thesis: Changes and Growth in Catholic Secondary Education in Minnesota.
Major Adviser: Prof. C. W. Boardman.
1950. GILES, LAWRENCE ELMER. B.A. '36, State College of Washington; M.A. '48, University of Minnesota.
Major: Education. Minor: Social Science.
Thesis: The Teaching of State History in the Public Schools of the United States.
Major Adviser: Prof. E. B. Wesley.
1950. GRANT, CLAUDE WILSON. B.S. '46, University of Houston; M.S. '47, University of Utah.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Relation of Subtle Items and Response Bias to Measured Patterns of Personality.
Major Adviser: Prof. C. G. Wrenn.
1950. HAUGH, OSCAR MARTIN. B.S. with high distinction '31, M.A. '40, University of Minnesota.
Major: Education. Minor: English.
Thesis: The Comparative Value of Reading and Listening in the Acquisition of Information and the Changing of Attitudes of Eleventh Grade Students.
Major Adviser: Prof. D. V. Smith.
1950. JOHNSON, WALTER FRANK, JR. B.S. with distinction '40, M.A. '42, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Efficiency of Certain Factors for Predicting Achievement of Veterans at the Junior College Level in the College of Science, Literature, and the Arts at the University of Minnesota.
Major Adviser: Prof. C. G. Wrenn.
1950. KELLEY, WILLIAM FREDERICK. B.A. cum laude '36, Ph.L. '38, M.A. '39, S.T.L. '46, St. Louis University.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Inservice Improvement of College Instruction in Catholic Colleges for Women.
Major Adviser: Prof. M. G. Neale.

1950. PAWELEK, ALAN ROBERT. B.Ed. '36, Winona State Teachers College; M.A. '38, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Nation's Offerings and Activities in Air-Age Instruction of General Education Import, with Particular Reference to the Preparation and Upgrading of Teachers: Justifications, Present Status and Suggestion of Programs, Content, Procedures and Instructional Aids.
Major Adviser: Prof. H. J. Smith.
1950. PRICE, ROBERT DIDDAMS. B.A. '37, M.A. '46, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: An Experimental Evaluation of the Relative Effectiveness of the Use of Certain Multi-Sensory Aids in Instruction in Division of Fractions.
Major Adviser: Prof. L. J. Brueckner.
1950. REYNOLDS, MAYNARD CLINTON. B.S. '42, Moorhead State Teachers College; M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: A Study of the Relationships between Auditory Characteristics and Specific Silent Reading Abilities.
Major Adviser: Prof. W. W. Cook.
1950. SCHRUPP, MANFRED HENRY. B.S. '35, M.Ed. '41, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Differential Effects of the Development of Athletic Ability of a High Order.
Major Advisers: Prof. C. L. Nordly and Prof. G. L. Anderson.
1950. SCHUNERT, JIM R. B.S. with distinction '34, M.A. '41, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Association of Mathematical Achievement with Certain Factors Resident in the Teacher, in the Teaching, in the Pupil, and in the School.
Major Adviser: Prof. P. O. Johnson.
1950. SHAW, JACK. B.A. with honors '34, University of Saskatchewan; B.Ed. '39, M.Ed. '42, University of Manitoba.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Function of the Interview in Determining Fitness for Teacher-Training.
Major Adviser: Prof. C. G. Wrenn.
1950. SORNSON, HELEN HENRIETTA. B.Ed. '42, Superior State Teachers College; M.A. '46, University of Minnesota.
Major: Education. Minor: Curriculum and Instruction.
Thesis: A Longitudinal Study of the Relationship between Various Child Behavior Ratings and Success in Primary Reading.
Major Adviser: Prof. G. L. Bond.

1950. WIENER, DANIEL NORMAN. B.A. '41, M.A. '42, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Relation of Personality Characteristics to Selected Disabilities.
Major Adviser: Prof. C. G. Wrenn.
1951. ADAMS, EDWARD LARRABEE, JR. B.A. '37, M.A. '39, University of Michigan; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of Certain Determinants of Social Sensitivity in Residence Hall Counselors' Perception of Group Structure.
Major Adviser: Prof. R. E. Eckert.
1951. BUDD, WILLIAM CLAUDE. B.A. '44, Hamline University; B.S. '48, M.A. '48, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Effect of the 1947 and 1949 State Aid Legislation on the Financing of Education in Minnesota.
Major Adviser: Prof. M. G. Neale.
1951. BURTON, DWIGHT LOWELL. B.S. with high distinction '43, M.A. '47, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Comparison of Three Methods of Teaching Appreciation of the Short Story to Twelfth-Grade Students.
Major Adviser: Prof. D. V. Smith.
1951. DOMIAN, OTTO EMIL. B.A. cum laude '21, Hamline University; M.A. '28, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: State-wide Problems in the Housing of Public Education Based on a Study of Conditions in Minnesota.
Major Adviser: Prof. M. G. Neale.
1951. ESTENSON, LYLE OSBERN. B.A. magna cum laude '36, Luther College; M.A. '42, State University of Iowa.
Major: Educational Psychology. Minor: English.
Thesis: An Investigation of the Relationship between Personality as Measured by the Minnesota Multiphasic Personality Inventory and Occupational Interests as Measured by Strong's Vocational Interest Blanks.
Major Adviser: Prof. C. G. Wrenn.
1951. GERRITZ, ELLSWORTH M. B.E. cum laude '38, St. Cloud State Teachers College; M.A. '47, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Influence of the Pattern of High School Subjects on Academic Success in the First Year of the College of Science, Literature, and the Arts of the University of Minnesota.
Major Adviser: Prof. M. G. Neale.

1951. GREVE, ANNA CAROLINE. B.A. '29, Kletzing College; M.S. '37, Iowa State College.
Major: Education. Minor: Home Economics.
Thesis: Practices and Procedures Developed in the North Central Association Study for the Improvement of Liberal Arts Education.
Major Advisers: Profs. C. B. Army and R. E. Eckert.
1951. HOVET, KENNETH ORIAN. B.A. '26, St. Olaf College.
Major: Education. Minors: Educational Administration, and History and Philosophy of Education.
Thesis: An Examination of Curriculum Research with Special Reference to the Development of Scope and Sequence in the Core Curriculum.
Major Adviser: Prof. N. L. Bossing.
1951. KOESTER, GEORGE ARTHUR. B.S. '37, Midland College; M.A. '42, University of Colorado.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of Insight in the Diagnostic Process Through the Analysis of Counselors' Use of Diagnostic Information.
Major Adviser: Prof. C. G. Wrenn.
1951. KRUGLAK, HAYM. B.A. '34, M.A. '36, University of Wisconsin.
Major: Education. Minor: Physical Science.
Thesis: Experimental Outcomes of Laboratory Instruction in Elementary College Physics.
Major Adviser: Prof. P. O. Johnson.
1951. LARSON, RAYMOND HOWARD. B.S. '37, University of Nebraska; M.A. '39, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Success Patterns in Industrial Education. A Study of Factors of Influence in the Backgrounds of 237 First Degree and 166 Second Degree Graduates of Minnesota, with Major Interest in Industrial Education.
Major Adviser: Prof. H. J. Smith.
1951. SISTER AGNES LANCTOT. B.A. '26, College of St. Catherine; M.A. magna cum laude '43, University of Notre Dame.
Major: Education. Minor: English.
Thesis: The Relationship between the Sensitivity of Eighth Grade Students to Their Own Needs and to the Needs of Others for Economic Security and Belonging and Their Response to Selected Stories Revealing These Needs.
Major Adviser: Prof. D. V. Smith.
1951. SJODING, THEODORE C. B.A. '32, University of Saskatchewan; M.A. '44, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Factors Affecting the Employment of New and Inexperienced Teachers in the Public Schools of Minnesota.
Major Adviser: Prof. M. G. Neale.

1951. WALL, GUSTAVE SULO. B.S. '31, M.A. '37, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Dual-Purpose Industrial Education at the College Level.
Major Adviser: Prof. H. J. Smith.
1951. WEST, EDITH. B.A. cum laude '38, B.S. '39, M.A. '46, University of Minnesota.
Major: Education. Minor: Political Science.
Thesis: The Treatment of International Relations in Twelfth Grade Social Studies Textbooks.
Major Adviser: Prof. H. T. Morse.
1952. ANDERSON, MARY ROBERDEAU. B.A. '41, The Saint Lawrence University; M.A. '42, Teachers College, Columbia University.
Major: Educational Psychology. Minor: Education.
Thesis: A Descriptive Study of Values and Interests of Four Groups of Graduate Women at the University of Minnesota.
Major Adviser: Prof. C. G. Wrenn.
1952. BJORAKER, WALTER THOMAS. B.S. '42, M.S. '48, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of Upper Classmen in Vocational Agriculture to Identify Certain Factors Associated with the Level of Desire to Remain on the Farm.
Major Adviser: Prof. M. J. Peterson.
1952. CHRISTENSEN, CLIFFORD M. B.A. cum laude '48, M.A. '49, University of Minnesota.
Major: Educational Psychology. Minors: Psychology and Statistics.
Thesis: Multivariate Statistical Analysis of Differences between Selected Groups of College Students.
Major Advisers: Profs. W. W. Cook and P. O. Johnson.
1952. CLYMER, THEODORE WILLIAM. B.S. '49, River Falls State Teachers College; M.A. '51, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: The Influence of Reading Ability on the Validity of Group Intelligence Tests.
Major Adviser: Prof. G. L. Bond.
1952. CROOKS, WILLIAM RAMSDEN. B.A. '37, University of California; M.A. '39, University of Connecticut.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Value of Personality Adjustment Questionnaire Items in the Prediction of Outcomes in College Engineering Training.
Major Advisers: Profs. W. W. Cook and C. G. Wrenn.

1952. HEIMERL, RAMON PAUL. B.E. with honors '38, B.S. '46, St. Cloud State Teachers College; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Status of Business Education in the Public Secondary Schools of Minnesota.
Major Adviser: Prof. R. G. Price.
1952. JOHNSTON, RUTH VIVIAN. B.A. '30, State University of Iowa; M.A. '40, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Trends in Secondary Education School Curriculum Concepts, Their Implications for the Teaching Function and Teacher Preparation.
Major Adviser: Prof. N. L. Bossing.
1952. MARCHETTI, JEROME JOHN. B.A. cum laude '40, M.A. '44, St. Louis University.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Conditions of Faculty Service in Mid-west Jesuit Colleges and Universities.
Major Adviser: Prof. M. G. Neale.
1952. MITZEL, HAROLD EUGENE. B.A. magna cum laude '43, University of Wichita; M.A. '50, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: Interest Factors Predictive of Teachers' Rapport with Pupils.
Major Adviser: Prof. W. W. Cook.
1952. NELSON, HELEN YOUNG. B.S. '38, M.S. '42, University of Minnesota.
Major: Education. Minor: Home Economics.
Thesis: Factors Related to the Extent of Mortality among Home Economics Students in Certain Colleges of Minnesota, Wisconsin and Iowa during 1943-50.
Major Advisers: Profs. C. G. Wrenn and C. B. Arny.
1952. NELSON, KENNETH GLENN. B.S. '39, Iowa State College of Agriculture and Mechanic Arts; M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: The Interests of Teachers of Vocational Agriculture as Related to Vocational Satisfaction.
Major Adviser: Prof. W. W. Cook.
1952. PERLMAN, JAMES SOL. B.S. '35, Illinois Institute of Technology; Graduate '38, Chicago Teachers College.
Major: Education. Minor: Physical Science.
Thesis: Historical Versus Contemporary Problem-Solving Use of the College Physical Science Laboratory Period for General Education.
Major Adviser: Prof. P. O. Johnson.

1952. **QUANBECK, MARTIN.** B.A. '29, Augsburg College; M.A. '33, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of Teacher Education in the Lutheran Colleges of Minnesota, Based on a Follow-up of Graduates.
Major Adviser: Prof. Ruth Eckert.
1952. **RENZAGLIA, GUY ANTHONY.** B.S. '39, George Washington University; M.Ed. '41, M.A. '48, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: Some Correlates of the Self-Structures as Measured by an Index of Adjustment and Values.
Major Adviser: Prof. C. G. Wrenn.
1952. **STEVENS, GLENN ZEBULON.** B.S. with honors '32, M.S. '35, Pennsylvania State College.
Major: Education. Minor: Sociology.
Thesis: Factors Involved in the Selection of Supervising Teachers of Vocational Agriculture in Minnesota.
Major Adviser: Prof. M. J. Peterson.
1952. **TINKHAM, ROBERT ALAN.** B.E. '39, Mankato State Teachers College; M.A. '49, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Design in Industrial Arts—A Study of Creative Modern Design as It Relates to the Teaching of Industrial Arts.
Major Adviser: Prof. W. J. Micheels.
1953. **ADEE, DONALD D.** B.S. '42, Kansas State College of Agriculture and Applied Science; M.Ed. '48, University of Minnesota.
Major: Education. Minor: Physiological Hygiene.
Thesis: The Effect of Environmental Temperature on Heart Rate, Deep Body Temperature, and Performance in Swimming.
Major Adviser: Prof. C. L. Nordly.
1953. **AFTRETH, ORVILLE BENDOLPH.** B.S. '36, M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Effect of the Systematic Analysis of Errors on Achievement in the Study of Fractions at the Sixth Grade Level.
Major Adviser: Prof. L. J. Brueckner.
1953. **BALCZIAK, LOUIS WILLIAM.** B.S. '40, Duluth State Teachers College; M.A. '49, University of Minnesota.
Major: Education. Minor: Inorganic Chemistry.
Thesis: The Role of the Laboratory and Demonstration in College Physical Science in Achieving the Objectives of General Education.
Major Adviser: Prof. P. O. Johnson.

1953. BOYLE, RENA ETHEL. B.S. with distinction '41, M.A. '46, University of Minnesota.
Major: Education. Minor: Psychology.
Thesis: A Study of Programs of Professional Education for Teachers of Nursing in Nineteen Selected Universities.
Major Adviser: Prof. R. E. Eckert.
1953. CARLSON, CARL RAYMOND. B.S. magna cum laude '42, Hamline University; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of the Relative Effectiveness of Lecture and Directed Discussion Methods of Teaching Tests and Measurements to Prospective Air Force Instructors.
Major Adviser: Prof. C. W. Boardman.
1953. EKRAMI, ABBAS, Graduate '39, Tehran University.
Major: Education. Minor: Educational Psychology.
Thesis: A Program for the Improvement of Elementary Education in Iran.
Major Adviser: Prof. M. G. Neale.
1953. FLOOD, HAZEL ARNETTE. B.A. '23, Sioux Falls College; M.A. '43, University of Nebraska.
Major: Education. Minor: Educational Psychology.
Thesis: Some Factors Involved in Learning Shorthand—Analysis of the Learning Load of Two Systems of Shorthand.
Major Adviser: Prof. R. G. Price.
1953. GUTHRIE, MEARL RAYMOND, JR. B.S. '48, M.A. '49, Ball State Teachers College.
Major: Education. Minor: Educational Psychology.
Thesis: The Measurement of Personal Factors Related to Success of Office Workers.
Major Adviser: Prof. R. G. Price.
1953. HAGENAH, THEDA. B.A. '37, George Washington University; M.S. '39, Wellesley College.
Major: Educational Psychology. Minor: Education.
Thesis: A Normative Study of the Revised Strong Vocational Interest Blank for Men.
Major Advisers: Profs. J. G. Darley and Marcia Edwards.
1953. HANSON, JOSEPH THOMAS. B.S. '27, M.A. '39, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Responsibilities, Professional Characteristics, and Training Recommendations of Counselors in Public Junior Colleges of California.
Major Advisers: Profs. R. J. Keller and R. E. Eckert.

1953. JARVIS, JOHN ASA. B.S. in M.E. '31, University of Wisconsin; B.S. '36, The Stout Institute; M.Ed. '41, Wayne University.
Major: Education. Minor: Industrial Education.
Thesis: Student Survival Factors in The Stout Institute.
Major Adviser: Prof. H. J. Smith.
1953. JOHNSON, ROBERTA A. E. B.S. '47, M.A. '48, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship Between Reading Ability and the Use of Communication Media by Adolescents.
Major Adviser: Prof. G. L. Bond.
1953. LUCOW, WILLIAM HARRISON. B.A. '46, B.Ed. '48, M.Ed. '51, University of Manitoba; M.A. '50, University of Ottawa.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Use of Analysis of Variance in Estimating the Components of Variation in an Experimental Study of Learning.
Major Adviser: Prof. P. O. Johnson.
1953. MOORE, FORREST GURNEY. B.A. '39, Upper Iowa University; M.A. '46, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Factors Affecting the Academic Success of Foreign Students in American Universities.
Major Adviser: Prof. M. G. Neale.
1953. MORK, GORDON MATTHEW ALFRED. B.S. '31, University of North Dakota; M.A. '42, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Effects of an In-Service Teacher Training Program on Pupil Outcomes in Fifth and Sixth Grade Science.
Major Adviser: Prof. P. O. Johnson.
1953. PRICE, WILMOTH CHRISTIAN. B.S. '50, St. Cloud State Teachers College; M.A. '51, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Status of Consumer Education Courses in Colleges and Universities.
Major Adviser: Prof. R. G. Price.
1953. ROBBINS, GLAYDON DONALDSON. B.S. '29, M.A. '37, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Recommendations Regarding Concept Content and Level of Treatment in Selected Areas of the Undergraduate Professional Education Curriculum for Secondary School Teachers in Minnesota.
Major Adviser: Prof. C. W. Boardman.

1953. SAMONTE, SOLEDAD ESPEJO. B.S.E. '47, University of Santo Tomas; M.A. '49, University of the Philippines.
Major: Education. Minor: Educational Psychology.
Thesis: The Program and Supervision of Elementary Student Teaching in Three Mid-Western Teacher Educating Institutions and Their Implications for Teacher Education in the Philippines.
Major Adviser: Prof. P. R. Grim.
1953. STIBAL, WILLARD OCTIVE. B.E. '39, St. Cloud State Teachers College; M.A. '48, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: An Analysis and Critical Evaluation of Hollerith-Type Punched Card Methods in Connection with Student Records and Reports at the University of Minnesota.
Major Adviser: Prof. M. G. Neale.
1953. STORDAHL, KALMER ELIEF. B.S. '47, Bemidji State Teachers College; M.A. '50, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Stability of Strong Vocational Interest Blank Patterns for Pre-college Males.
Major Adviser: Prof. W. E. Dugan.
1953. SWAN, ROBERT JUNIOR. B.A. '46, University of Michigan; M.A. in Public Administration '48, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Application of a Couple Analysis Approach to the Minnesota Multiphasic Personality Inventory in Marriage Counseling.
Major Advisers: Profs. C. G. Wrenn and W. E. Dugan.
1953. WARDEBERG, HELEN LUCILLE. B.S. '45, Moorhead State Teachers College; M.A. '48, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship of Reading Ability to the Newspaper Reading Done by Adolescents.
Major Adviser: Prof. G. L. Bond.
1953. WATKINS, MARY. B.S. cum laude '46, Butler University; M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Comparison of the Reading Proficiencies of Normal-Progress and Reading Disability Cases of the Same I.Q. and Reading Level.
Major Adviser: Prof. G. L. Bond.
1953. ZUMWINKLE, ROBERT GORDON. B.A. '43, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Factors Associated with the Compatibility of Roommates: A Test of the Birds-of-a-Feather Hypothesis.
Major Adviser: Prof. W. W. Cook.

1953. ZWETSCHKE, EARL THEODORE. B.S. '46, Washington University; M.P.S. '47, University of Colorado.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Function of the MMPI in Determining Fitness for Student Teaching at the Nursery School, Kindergarten, and Primary School Level.
Major Adviser: Prof. W. E. Dugan.
1954. AARON, IRA EDWARD. A.B.J. '41, M.Ed. '47, University of Georgia.
Major: Educational Psychology. Minor: Education.
Thesis: The Relationship of Auditory-Visual Discrimination to Spelling Ability.
Major Advisers: Profs. W. W. Cook and G. L. Bond.
1954. ALM, RICHARD SANFORD. B.S. '42, M.A. '48, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study of the Assumptions Concerning Human Experience Underlying Certain Works of Fiction Written for and about Adolescents.
Major Adviser: Prof. D. V. Smith.
1954. ANDERSON, WILLIAM CARLISLE. B.S. '36, Nebraska State Teachers College; M.A. '42, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Student Teaching in Industrial Arts Education.
Major Adviser: Prof. H. J. Smith.
1954. BAKER, JASPER N. B.S. '42, M.S. '47, Oklahoma A. and M. College.
Major: Education. Minor: Agricultural Economics.
Thesis: A Study of the Relative Effectiveness of Sources from Which Farmers Get Information Regarding Agriculture Experiment Station Results.
Major Adviser: Prof. M. J. Peterson.
1954. BANKS, RICHMOND GRENFELL. B.Ed. '42, Superior State Teachers College; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Comparative Study of Certain Aspects of the Social Adjustment of Farm and Non-Farm Pupils in Selected Minnesota High Schools.
Major Adviser: Prof. C. W. Boardman.
1954. BURGESS, THOMAS CHARLES. B.A. with honors '42, Montana State University.
Major: Educational Psychology. Minor: Psychology.
Thesis: A Study of Certain Relationships between Self-Concept, Vocational Interests, and Occupational Stereotypes.
Major Adviser: Prof. C. G. Wrenn.
1954. DONAHOO, ALVIN WILLIAM. B.S. '41, M.S. '49, Iowa State College.
Major: Education. Minor: Agricultural Economics.
Thesis: Differential Attitudes of Farmers Toward the Grain Marketing System.

1954. FRICKE, BENNO G. B.A. '48, University of Saskatchewan; B.E. '49, M.Ed. '50, University of Alberta.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Development of an Empirically Validated Personality Test Employing Configuration Analysis for the Prediction of Academic Achievement.
Major Adviser: Prof. W. E. Dugan.
1954. HAAS, LEONARD C. B.Ed. '35, Eau Claire State Teachers College; Ph.M. '38, University of Wisconsin.
Major: Education. Minor: History.
Thesis: The Academic Dean in American Teachers Colleges.
Major Adviser: Prof. R. E. Eckert.
1954. HOYT, KENNETH BOYD. B.S. '48, University of Maryland; M.A. '50, George Washington University.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Effects of Teacher Knowledge of Pupil Characteristics on Pupil Achievement and Attitudes Towards Classwork.
Major Adviser: Prof. W. E. Dugan.
1954. JOHNSON, MURRAY CLEMENS. B.S. '43, M.A. '50, University of Minnesota.
Major: Educational Psychology. Minor: Statistics.
Thesis: Classification by Multivariate Analysis with Objectives of Minimizing Risk, Minimizing Maximum Risk, and Minimizing Probability of Misclassification.
Major Adviser: Prof. P. O. Johnson.
1954. JUEL, MARTIN OLIVER, JR. B.A. '37, St. Olaf College; M.Ed. '40, University of Minnesota.
Major: Education. Minor: Public Health.
Thesis: The Effects of Present Methods of Teaching on Attitudes of Men Students at Southwest Texas State Teachers College Toward Recreational Physical Activity.
Major Adviser: Prof. C. L. Nordly.
1954. JUNG, JOSEPH WEILAND. B.S. '39, M.S. '42, University of Minnesota.
Major: Education. Minor: Music.
Thesis: A Study of Factors Associated with Music Participation by Secondary School Pupils in the Suburban Areas of Minneapolis and St. Paul.
Major Advisers: Profs. N. L. Bossing and R. J. Keller.
1954. KARLSEN, BJÖRN. B.S. '50, M.A. '51, University of Nebraska.
Major: Educational Psychology. Minor: Child Welfare.
Thesis: A Comparison of Some Educational and Psychological Characteristics of Successful and Unsuccessful Readers at the Elementary School Level.
Major Adviser: Prof. G. L. Bond.

1954. KRANTZ, LA VERN LAUREL. B.S. '29, M.A. '30, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Relationship of Reading Abilities and Basic Skills of the Elementary School to Success in the Interpretation of the Content Materials in the High School.
Major Advisers: Profs. G. L. Bond and M. G. Neale.
1954. MANBECK, MAURICE WESLEY. B.S. '40, Hamline University; M.A. '49, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of Critical Incidents in Effective Secondary School Teaching as Conceived by Pupils and Faculty.
Major Advisers: Profs. C. J. Hoyt and W. W. Cook.
1954. MEDLEY, DONALD MATTHIAS. B.S. cum laude '38, College of St. Thomas; M.A. '50, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Relationship of Test Reliability to the Standard Errors of Individual Scores.
Major Advisers: Profs. W. W. Cook and C. J. Hoyt.
1954. METAWEH, IBRAHIM ESMAT. B.S. '44, Fouad University (Egypt); Ed. Diploma '46, High Institute of Ed. (Egypt); M.A. '52, University of Minnesota.
Major: Education. Minor: Sociology.
Thesis: Improvement of Rural Teacher Education in Egypt.
Major Adviser: Prof. C. P. Archer.
1954. MILLS, WILLIAM WILLIS. B.A. '39, St. Louis University.
Major: Educational Psychology. Minor: Education.
Thesis: MMPI Profile Pattern and Scale Stability Throughout Four Years of College Attendance.
Major Adviser: Prof. W. W. Cook.
1954. NELSON, CARL BERTIL. B.M.E. '39, Augustana College; M.Ed. '47, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: An Experimental Evaluation of Two Methods of Teaching Music in the Fourth and Fifth Grades.
Major Advisers: Profs. W. W. Cook and C. J. Hoyt.
1954. PEITERSEN, DANA NORMAN. B.Mus. '40, Colorado Agricultural and Mechanical College; M.Ed. '51, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: An Experimental Evaluation of the Transfer Effects of Rhythm Training in Spaced Notation on Subsequent Reading of Commercially Printed Music.
Major Adviser: Prof. W. W. Cook.

1954. PEREZ, PRESENTACION T. B.S.E. '29, Philippine Women's University; M.A. '35, M.S. '36, Teachers College, Columbia University.
Major: Education. Minor: Home Economics Education.
Thesis: Problems of Employed Women in Certain Professional Groups in the Philippines and Their Educational Implications.
Major Advisers: Profs. C. G. Wrenn and William Micheels.
1954. POEHLER, WILLY AUGUST. B.D. '29, Concordia Seminary; M.A. '45, University of Minnesota.
Major: Education. Minor: German.
Thesis: The Appraisal of the Outcomes of Two Kinds of Pre-Ministerial Training in the Lutheran Church—Missouri Synod.
Major Advisers: Profs. R. E. Eckert and R. J. Keller.
1954. POUNCEY, ANTHONY TRUMAN. B.A. with highest honors '33, B.J. with high honors '35, M.A. '42, University of Texas.
Major: Educational Psychology. Minor: Journalism.
Thesis: Psychological Correlates of Journalism Training Completion.
Major Advisers: Profs. C. G. Wrenn and R. L. Jones.
1954. PRENTIS, ROY CLIFFORD. B.E. '37, Winona State Teachers College; M.A. '46, University of Minnesota.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Relationship Between School District Organization and Public Schoolhousing Needs in Minnesota.
Major Adviser: Prof. M. G. Neale.
1954. QUICK, OTHO JAMES. B.Ed. '36, Eastern Illinois State Teachers College; M.A. '46, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Teaching and Non-Teaching Baccalaureate Degree Graduates with Industrial Arts Majors.
Major Adviser: Prof. H. J. Smith.
1954. ROCCHIO, PATRICK DOMINIC. B.A. '41, College of St. Thomas; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Teacher-Pupil Attitudes as Related to Teachers' Personal Characteristics and Pupil Adjustment.
Major Advisers: Profs. M. G. Neale and W. W. Cook.
1954. ROESSEL, FRED PAUL. B.E. '33, Superior State Teachers College; M.A. '35, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Minnesota Multiphasic Personality Inventory Results for High School Drop-outs and Graduates.
Major Advisers: Profs. L. J. Brueckner and S. R. Hathaway.

1954. STRAND, WILLIAM H. B.A. '39, St. Olaf College; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Forecasting Enrollment in the Public Schools.
Major Adviser: Prof. M. G. Neale.
1954. SWANSON, GORDON IRA. B.S. with distinction '42, M.S. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Qualitative and Quantitative Variables Affecting Successful Experience in the Agricultural Education Curriculum.
Major Adviser: Prof. M. J. Peterson.
1955. ANDERSON, PHILIP STANLEY. B.S. '41, Wisconsin Central State Teachers College; M.A. '46, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Effects of Teacher Attitudes Toward Learning Theories and Toward Children on Pupil Achievement in Fourth Grade Arithmetic and Reading.
Major Adviser: Prof. G. L. Bond.
1955. BERTNESS, HENRY JEROLD. B.A. '47, Augsburg College; M.A. '48, University of Minnesota.
Major: Educational Psychology. Minor: Educational Administration.
Thesis: An Analysis of the Interests of Lutheran Ministers as Measured by the Strong Vocational Interest Blank.
Major Advisers: Profs. W. E. Dugan and C. J. Hoyt.
1955. BOND, BETTY WELLS. B.S. '45, Western Reserve University; M.P.H. '52, University of Minnesota.
Major: Education. Minor: Public Health.
Thesis: The Group Discussion-Decision Approach--An Appraisal of Its Use in Health Education.
Major Advisers: Profs. R. E. Eckert and R. E. Grout.
1955. BONER, AGNES VERONICA. B.S. '35, M.A. '48, University of Minnesota.
Major: Education. Minor: English.
Thesis: An Historical Study of the Education of Secondary School Teachers of English with Reference to Their Work in the Schools.
Major Adviser: Prof. D. V. Smith.
1955. BOWERS, NORMAN DALE. B.A. '47, DePauw University; M.A. '51, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Development and Initial Validation of an Instrument Designed to Appraise Certain Aspects of Teacher Job Satisfaction.
Major Advisers: Profs. P. R. Grim and C. J. Hoyt.

1955. BRITT, LAURENCE VINCENT. B.A. '33, University of Detroit;
M.A. '39, Loyola University.
Major: Education. Minor: Educational Psychology.
Thesis: Liberal Arts Degrees in Jesuit Colleges of Arts and Sciences
in the United States.
Major Adviser: Prof. M. G. Neale.
1955. BROWN, ROBERT DEAN. B.S. with distinction '49, M.A. '52,
University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: A Criterion Study of the Industrial Arts Competencies Needed
by Elementary Teachers with Implications for Curriculum Development
for the Preparation of Elementary Teachers in This Area.
Major Adviser: Prof. W. J. Micheels.
1955. CARLSON, WILLIAM DONALD. B.Ed. '39, St. Cloud State Teachers
College; M.A. '51, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: An Analysis of the Achievement Outcomes of the Six-Hour
Class Program at the University of Minnesota High School.
Major Adviser: Prof. C. G. Wrenn.
1955. CLAUSEN, JOHN NORMAN. B.S. '43, M.A. '48, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: The Effect of an Entrance Requirement on Success in Selected
Engineering Courses.
Major Adviser: Prof. W. J. Micheels.
1955. CROSS, THEODORE RYLAND. B.A. '43, Iowa State Teachers College;
M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: An Exploratory Investigation of the Personality and Background
Factors Characterizing Entering College Men Who Possess a Low
Intensity of Vocational Interests.
Major Adviser: Prof. C. G. Wrenn.
1955. CURTIS, ETHEL LOUISE. B.A. '37, Iowa State Teachers College;
M.A. '42, State University of Iowa.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of the Mathematical Backgrounds of Students Who Are
Preparing to Be Elementary Teachers and Who Are Enrolled in Certain
Colleges in Minnesota.
Major Advisers: Profs. L. J. Brueckner and P. R. Grim.
1955. DUPUIS, ADRIAN MAURICE. B.A. '48, M.A. '48, Catholic University
of America.
Major: Education. Minor: Curriculum and Instruction.
Thesis: Group Dynamics—Its Philosophical Presuppositions and
Implications.
Major Adviser: Prof. R. H. Beck.

1955. FARQUHAR, WILLIAM WALTER. B.A. '50, M.A. '51, University of Omaha.
Major: Educational Psychology. Minor: Psychology.
Thesis: An Investigation of the Relationship of Three Teaching Methods to Student Behavior in a How to Study Course.
Major Adviser: Prof. C. G. Wrenn.
1955. GEMEINHARDT, WILLIAM CHARLES. B.S. '50, M.A. '52, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Effects of Increasing the Rate of Dictation of the Number Combinations on Children's Accuracy of Response.
Major Adviser: Prof. L. J. Brueckner.
1955. GERRITZ, HAROLD GEORGE JOHN. B.E. '34, St. Cloud State Teachers College; M.A. '41, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship of Certain Personal and Socio-Economic Data to the Success of Resident Freshmen Enrolled in the College of Science, Literature, and the Arts at the University of Minnesota.
Major Adviser: Prof. M. G. Neale.
1955. HADLEY, WENDELL EMMETT. B.A. '27, Friends University; M.A. '37, University of Colorado.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: Higher Education Under Control of the Society of Friends, With Special Emphasis on Quaker Colleges of the North Central Association.
Major Adviser: Prof. R. J. Keller.
1955. HAINES, PETER GEORGE. B.S. cum laude '48, M.A. '49, University of Minnesota.
Major: Education. Minor: Business Administration and Economics.
Thesis: An Analysis of Selected Factors in the Socio-Economic and Occupational Experience Backgrounds of Distributive Personnel in Limited-Line Stores.
Major Advisers: Profs. R. G. Price and W. G. Meyer.
1955. JAROLIMEK, JOHN. B.S. '43, River Falls State Teachers College; M.A. '49, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of Current Practices of Individualizing Instruction in Minnesota Schools.
Major Advisers: Profs. W. W. Cook and G. L. Bond.
1955. JESNESS, CARL FRANDALL. B.S. '43, Bemidji State Teachers College; M.A. '51, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Effects of Counseling on the Self-Perceptions of College Men.
Major Adviser: Prof. C. G. Wrenn.

1955. JOHNSON, RALPH HAAKON. B.E. '34, St. Cloud State Teachers College; M.A. '44, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Factors Related to the Success of Disabled Veterans of World War II in the Rehabilitation Training Program Approved for Mechanics and Repairmen, Motor Vehicle.
Major Adviser: Prof. M. G. Neale.
1955. KAVANAUGH, WILLIAM ARNOLD. B.S. '47, M.A. '48, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: Electricity in the Secondary School--A Study of the Objectives and Activities of Electrical Instruction in the Secondary School.
Major Adviser: Prof. W. J. Micheels.
1955. KEHL, RAYMOND ALFRED. Ph.B. '34, Marquette University; M.A. '37, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of the Characteristics and Ranking of Grammatical Usage in the Speech of Twelfth Grade Pupils According to Sex, Intelligence, and Socio-Economic Status.
Major Adviser: Prof. D. V. Smith.
1955. KITCHELL, MYRTLE ELIZABETH. B.S. with distinction '39, M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: A Study of the Relationship of Certain Socio-Economic Factors to the Choice of Educational Institution and Program of First-Year Students in Nursing in the North Central Region.
Major Adviser: Prof. M. G. Neale.
1955. KRAUSE, VICTOR CLARENCE. B.S. '40, Concordia Teachers College (River Forest); M.A. '47, Columbia University.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: An Opinion Analysis of the Supporting Clientele of Concordia Teachers College, River Forest, Illinois.
Major Adviser: Prof. M. G. Neale.
1955. KRUMBOLTZ, JOHN DWIGHT. B.A. cum laude '50, Coe College; M.A. '51, Teachers College, Columbia University.
Major: Educational Psychology. Minor: Psychology.
Thesis: An Investigation of the Effect of Three Teaching Methods on Motivational Outcomes in a How to Study Course.
Major Advisers: Profs. C. G. Wrenn and W. E. Dugan.
1955. LAHTI, ARNOLD M. B.A. '47, B.A. '48, Western Washington College of Education.
Major: Education. Minor: History and Philosophy of Science.
Thesis: The Efficacy of the Physical Science Laboratory in Promoting a General Education Objective.
Major Adviser: Prof. P. O. Johnson.

1955. LEBEDA, AGNES. B.A. '35, Northwestern State Teachers College (Oklahoma); M.S. '45, Oklahoma A. and M. College.
Major: Education. Minor: Economics.
Thesis: An Analysis and Comparison of Consumer-Economic Education Practices Among Subject Areas in the Iowa Public Secondary Schools.
Major Adviser: Prof. R. G. Price.
1955. LETON, DONALD ALPHON. B.S. '47, Central State Teachers College (Wisconsin); M.A. '49, University of Minnesota.
Major: Educational Psychology. Minor: Psychology.
Thesis: An Evaluation of Certain Methods of Teaching Mental Hygiene.
Major Adviser: Prof. W. E. Dugan.
1955. LEWIS, CHARLES LEONARD. B.S. with honor '49, Ohio University; M.A. '52, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Possible Determinants and Outcomes of the Orientation Program at the University of Minnesota.
Major Adviser: Prof. C. G. Wrenn.
1955. MAHLER, CLARENCE ANGUS. B.A. '39, Colorado State College of Education; M.A. '42, Columbia University.
Major: Educational Psychology. Minor: Psychology.
Thesis: A Study of Student and Faculty Reactions to Student Personnel Work.
Major Adviser: Prof. C. G. Wrenn.
1955. MCFARLAND, KEITH NIELSON. B.S. with distinction '42, M.A. '52, University of Minnesota.
Major: Education. Minor: Sociology.
Thesis: Factors Related to Occupational Choice of Rural Farm Male High School Graduates.
Major Advisers: Profs. C. J. Hoyt and W. W. Cook.
1955. MITCHELL, STERLING BOWMAN. B.S. in Adm.E. '35, M.S. '39, Syracuse University.
Major: Education. Minor: Educational Psychology.
Thesis: The Comparative Achievement of Engineering Students Who Enter the Institute of Technology Directly from Minnesota High Schools With Those Who Secure Their Pre-Professional Education in Minnesota Junior, Liberal Arts, and Teachers' Colleges.
Major Adviser: Prof. R. J. Keller.
1955. NORMAN, RALPH PAUL. B.S. '41, M.A. '47, University of Minnesota.
Major: Education. Minor: Industrial Education.
Thesis: An Experimental Investigation to Determine the Relative Effectiveness of Two Different Types of Teaching Methods in Engineering Drawing.
Major Adviser: Prof. W. J. Micheels.

1955. PATTERSON, CECIL HOLDEN. B.A. '38, University of Chicago;
M.A. '45, University of Minnesota.
Major: Educational Psychology. Minor: Child Welfare.
Thesis: Test and Background Factors Related to Success in an Industrial
Institute.
Major Adviser: Prof. C. G. Wrenn.
1955. PEARSON, ARVID NEIL. B.S. '42, M.S. '51, University of Minnesota.
Major: Education. Minor: Agricultural Education.
Thesis: A Study of the Relationships Between Attitudes, Intelligence,
and Achievement of University of Minnesota Majors in Education
Grouped by Major Area of Specialization.
Major Adviser: Prof. M. J. Peterson.
1955. PERSON, GERALD ALTON. B.A. '39, Augsburg College; M.Ed. '47,
University of Minnesota.
Major: Education. Minor: Educational Administration.
Thesis: A Comparative Study of University of Minnesota Men Physical
Education Graduates Employed in Related Occupations and Those in
Other Vocations.
Major Adviser: Prof. L. F. Keller.
1955. REMPEL, PETER PETER. B.A. with distinction '37, B.Ed. '38,
University of Saskatchewan.
Major: Educational Psychology. Minor: Psychology.
Thesis: The Use of Multivariate Statistical Analysis of Minnesota
Multiphasic Personality Inventory Scores in the Classification of
Delinquent and Nondelinquent High School Boys.
Major Advisers: Profs. C. G. Wrenn and R. J. Keller.
1955. RYSTROM, JOHN KENNETH. B.A. '37, B.Ed. '41, University of Sask-
atchewan; M.Ed. '46, University of Manitoba.
Major: Educational Administration. Minor: Educational Psychology.
Thesis: The Control and Support of Higher Education in the Lutheran
Church in America.
Major Adviser: Prof. M. G. Neale.
1955. SAYOVITZ, JOSEPH JOHN. B.S. '41, St. Cloud State Teachers College;
M.S. '47, Iowa State College.
Major: Education. Minor: Industrial Education.
Thesis: Certification Status and Procedures for Industrial Arts Teachers
in the United States.
Major Adviser: Prof. W. J. Micheels.
1955. SKAURUD, MARVIN H. B.S. '36, M.A. '41, University of Minnesota.
Major: Education. Minor: History.
Thesis: A Survey of the Changing Trends in the Senior High School
American History Curriculum During the Last Half Century.
Major Adviser: Prof. N. L. Bossing.

1955. SNOKE, MARTIN L. B.S. '37, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Behavior of Men Students of High and Low Measured Hostility Under Two Conditions of Goal Clarity.
Major Advisers: Profs. W. W. Cook and N.A. Flanders.
1955. STROM, INGRID MATHILDA. B.E. '35, Duluth State Teachers College; M.A. '44, University of Minnesota.
Major: Education. Minor: English.
Thesis: A Study of the Relationship Between the Ability to Read Materials of an Informative or Literary Nature and the Ability to Analyze the Grammar and Syntax of the Sentences Read.
Major Adviser: Prof. D. V. Smith.
1955. SUNDET, STANLEY ALTO. B.S. '35, South Dakota State College; M.S. '39, Iowa State College.
Major: Education. Minor: Educational Psychology.
Thesis: An Attitude Inventory for Teachers of Vocational Agriculture.
Major Adviser: Prof. M. J. Peterson.
1955. SWANSON, ROBERT STERLING. B.S. '49, M.S. '50, The Stout Institute.
Major: Education. Minor: Industrial Education.
Thesis: The Operational Definition and Measurement of Educational Philosophy.
Major Adviser: Prof. W. J. Micheels.
1955. TAYLOR, CYRUS BYRDART. B.S. '30, Hampton Institute; M.S. '40, Iowa State College.
Major: Education. Minor: Industrial Education.
Thesis: Mechanic Arts Programs in Land-Grant Colleges Established for Negroes.
Major Adviser: Prof. W. J. Micheels.
1955. WARD, JOHN NOAH. B.S. '48, M.A. '49, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Group Study Versus Lecture Demonstration Method in Physical Science Instruction for General Education College Students.
Major Adviser: Prof. P. O. Johnson.
1955. WILLIAMS, WARD RAYMOND. B.A. '33, McPherson College; M.A. '47, University of Minnesota.
Major: Education. Minor: Educational Psychology.
Thesis: Post High-School Education in Minnesota, 1952-53.
Major Adviser: Prof. M. G. Neale.
1956. CALDWELL, CLEON CARTHUE. B.S. '38, M.Ed. '43, University of Oregon.
Major: Education. Minor: Educational Psychology.
Thesis: The Development of Concepts Regarding the Use of Tax Funds for Public and Parochial Schools.
Major Advisers: Profs. O. E. Domian and C. V. Goossen.

1956. CASPERS, WESLEY. B.S. '40, Superior State Teachers College; M.A. '50, University of Minnesota; M.S. '52, California Institute of Technology.
Major: Education. Minor: Educational Psychology.
Thesis: An Experimental Evaluation of Certain Motion Picture Films in Selected Educational Psychology Classes in Kansas Colleges.
Major Adviser: Prof. R. J. Keller.
1956. KELLOGG, THEODORE EDWARD. B.S. '47, M.A. '51, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: The Relative Effects of Variations in Pure and Physical Approaches to the Teaching of Euclidean Geometry on Pupils' Problem Solving Ability.
Major Adviser: Prof. C. J. Hoyt.
1956. KING, LESLIE ALBERT. B.S. '42, Winona State Teachers College; M.A. '47, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: Factors Associated with the Stability of Vocational Interests of General College Freshmen.
Major Advisers: Profs. W. E. Dugan and C. J. Hoyt.
1956. KLOSTER, CLAIR GARFIELD. B.A. cum laude '38, Luther College; M.A. '48, University of Minnesota.
Major: Educational Psychology. Minor: Education.
Thesis: The Relation Between Measured Vocational Interests and Job Satisfaction.
Major Adviser: Prof. W. W. Cook.
1956. KRUMBOLTZ, HELEN BRANDHORST. B.A. '45, Pomona College; M.Ed. '49, Washington University.
Major: Education. Minor: Educational Psychology.
Thesis: The Relationship of Birth Rank and Number of Siblings to Certain Personality Characteristics of Teacher Education Candidates.
Major Adviser: Prof. C. G. Wrenn.
1956. MAYO, SAMUEL TURBERVILLE. B.E.E. '43, Alabama Polytechnic Institute; M.A. '51, Emory University.
Major: Educational Psychology. Minor: Psychology.
Thesis: Some Designs for the Collection of and Methods for the Analysis of Enumerative Data Characteristic of Attributes, with Special Applications to a Follow-up of Education Graduates.
Major Adviser: Prof. P. O. Johnson.
1956. OCAMPO, PATROCINIO SISON. B.A. '50, Sterling College; M.A. '51, Northwestern University.
Major: Education. Minor: Educational Administration.
Thesis: Inservice Education Practices in Selected Secondary Schools and Their Implications for the Improvement of Teaching Faculties in the Philippines.
Major Adviser: Prof. R. J. Keller.

1956. SCHUMMERS, JOHN LEWIS. B.S. '51, University of Minnesota.
Major: Educational Psychology. Minor: Child Welfare.
Thesis: Word Pronunciation in the Oral Sight-Reading of Third-Grade Children.
Major Adviser: Prof. G. L. Bond.
1956. THOMPSON, JORGEN SOGN. B.A. cum laude '47, St. Olaf College; M.P.S. '50, University of Colorado.
Major: Educational Psychology. Minor: Education.
Thesis: A Study of the Relationships Between Certain Measured Psychological Variables and Achievement in the First Year of Theological Seminary Work.
Major Adviser: Prof. C. G. Wrenn.

MUSIC

1954. GOOSSEN, JACOB FREDERIC. B.A. summa cum laude '49, M.A. '50, University of Minnesota.
Major: Music. Minor: History.
Thesis: Symphony No. I.
Major Adviser: Prof. P. M. Oberg.
1956. FETLER, PAUL. B.Mus. '43, Northwestern University; B.Mus. '47, M.Mus. '48, Yale University.
Major: Music. Minor: Art.
Thesis: Symphony No. 3—I. Allegro con Spirito; II. Allegretto; III. Vivace.
Major Adviser: Prof. P. M. Oberg.

PHILOSOPHY

1942. AHLÉN, AXEL CARL MAURITZ. B.A. cum laude '32, University of Minnesota; B.D. '32, North Western Lutheran Theological Seminary; M.A. '33, University of Minnesota.
Major: Philosophy. Minor: Sociology.
Thesis: Critics of Utilitarianism Within and Without the Movement.
Major Adviser: Prof. George P. Conger.
1946. THORNTON, ROBERT AMBROSE. B.S. '22, Howard University; M.S. '25, Ohio State University.
Major: Philosophy. Minor: Physics.
Thesis: Measurement, Concept Formation and Principles of Simplicity: A Study in the Logic and Methodology of Physics.
Major Adviser: Prof. Herbert Feigl.
1952. TURNBULL, ROBERT GEORGE. B.A. '39, University of Minnesota; B.D. '43, Oberlin College.
Major: Philosophy. Minor: Sociology.
Thesis: An Examination of C. D. Broad's Moral Philosophy.
Major Adviser: Prof. W. S. Sellars.

1954. CASTAÑEDA, HECTOR NERI. B.A. '50, M.A. '52, University of Minnesota.
Major: Philosophy. Minor: Mathematics.
Thesis: The Logical Structure of Moral Reasoning.
Major Adviser: Prof. W. S. Sellars.
1954. LINNELL, JOHN S. B.A. '47, Augustana College (Illinois);
M.A. '48, State University of Iowa.
Major: Philosophy. Minor: Mathematics.
Thesis: Berkeley's Criticism of Abstract Ideas.
Major Adviser: Prof. W. S. Sellars.
1954. NEUMAIER, JOHN JOSEPH. B.A. magna cum laude '47, University of Minnesota.
Major: Philosophy. Minor: Sociology.
Thesis: Bertrand Russell's Social Philosophy and Its Relations to Logic, Ethics, and Sociology.
Major Adviser: Prof. W. S. Sellars.

PSYCHOLOGY

1938. MCNAMARA, WALTER JOSEPH. B.S. in A. E. '30, Catholic University of America; M.A. '35, Fordham University.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Influence of Size of Type on the Speed of Reading in the Primary Grades.
Major Adviser: Prof. D. G. Paterson.
1938. SEDER, MARGARET ALINE. B.A. summa cum laude '35, M.A. '37, University of Minnesota.
Major: Psychology. Minors: Mathematics and Biometry.
Thesis: Vocational Interest Patterns of Professional Women.
Major Adviser: Prof. D. G. Paterson.
1939. CROOK, GUY HAMILTON, JR. B.S. '35, University of Chicago.
Major: Psychology. Minor: Neurology.
Thesis: The Effect of Exercise on the Recovery of Motor Function in the Rat.
Major Adviser: Prof. W. T. Heron.
1939. HARRIS, ROBERT EUGENE. B.A. cum laude '35, University of Minnesota.
Major: Psychology. Minor: Neurology.
Thesis: Motivation in Rats Which Differ Genetically in Maze Learning Performance.
Major Adviser: Prof. W. T. Heron.
1939. MCGREERY, OTIS CLAIR. B.S. '22, M.A. '28, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Influence of College Residence on Attitude.
Major Adviser: Prof. D. G. Paterson.

1940. HACKMAN, RAY CARTER. B.A. '35, M.A. '36, University of Nebraska.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Differential Prediction of Success in Two Contrasting Vocational Areas.
Major Adviser: Prof. D. G. Paterson.
1940. OWENS, WILLIAM ABBOTT, JR. B.E. with honor, '35, Winona State Teachers College.
Major: Psychology. Minor: Educational Psychology.
Thesis: Inter-individual Differences Versus Intra-individual Differences in Motor Skills.
Major Advisers: Profs. D. G. Paterson and P. O. Johnson.
1940. SCHNEIDLER, GWENDOLEN GOETTE. B.A. '31, M.S. in Psychometrics '35, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Further Studies in Clerical Aptitude.
Major Adviser: Prof. D. G. Paterson.
1940. SELOVER, ROBERT BRIGGS. B.A. with high honor '35, M.A. '36, Ohio University.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Sophomore Testing Program at the University of Minnesota from 1933 Through 1936.
Major Adviser: Prof. D. G. Paterson.
1941. BAXTER, BRENT NELSON. B.A. '37, Western Reserve University; M.A. '39, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: An Application of Factorial Design to a Psychological Problem.
Major Adviser: Prof. M.A. Tinker.
1941. CARROLL, JOHN BISSELL. B.A. '37, Wesleyan University.
Major: Psychology. Minor: Child Welfare.
Thesis: A Factor Analysis of Verbal Abilities.
Major Adviser: Prof. B. F. Skinner.
1941. INGLE, DWIGHT JOYCE. B.S. '29, M.S. '31, University of Idaho.
Major: Psychology. Minor: Neurology.
Thesis: The Reversal of Fatigue in the Adrenalectomized Rat by Glucose and Other Agents.
Major Adviser: Prof. W. T. Heron.
1941. SISTER MARY ANNETTE WALTERS. B.S. '33, College of St. Catherine; M.A. '35, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Genetic Study of Geometrical-Optical Illusions.
Major Adviser: Prof. M. A. Tinker.

1941. TYLER, LEONA ELIZABETH. B.S. '25, M.S. in Psychometrics '39, University of Minnesota.
Major: Psychology. Minors: Biostatistics and Educational Psychology.
Thesis: Factors Conditioning the Development of Interests in Adolescent Girls.
Major Adviser: Prof. D. G. Paterson.
1941. WESLEY, SILAS MEDFORD. B.A. '37, M.S. in Psychometrics '39, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Study of the Use of Recent Memory Tests in the Measurement of Intellectual Deterioration.
Major Advisers: Profs. D. G. Paterson and S. R. Hathaway.
1942. BERDIE, RALPH FREEMUTH. B.A. '38, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Factors Related to Vocational Interests.
Major Adviser: Prof. D. G. Paterson.
1942. BERMAN, ISABEL ROSENSTEIN. B.A. '30, M.A. '30, University of Minnesota.
Major: Psychology. Minors: Mathematics and Biometry.
Thesis: Intelligence and Personality in Relation to Allergy.
Major Adviser: Prof. D. G. Paterson.
1942. SHAKLEE, ALFRED BARRAL. A.B. '37, Washington University.
Major: Psychology. Minor: Neurology.
Thesis: Psychological Effects of Vitamin B₁ Supplements to a "Normal" Diet.
Major Adviser: Prof. W. T. Heron.
1943. ARNOLD, DONALD CUTLER. B.S. with high honors '36, M.S. '37, University of Idaho.
Major: Psychology. Minors: Anatomy and Zoology.
Thesis: The Clinical Validity of the Humm-Wadsworth Temperament Scale in Psychiatric Diagnosis.
Major Advisers: Profs. D. G. Paterson and S. R. Hathaway.
1943. ESTES, WILLIAM KAYE. B.A. summa cum laude '40, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Experimental Study of Punishment.
Major Adviser: Prof. B. F. Skinner.
1943. HUNT, HOWARD FRANCIS. B.A. with high honor '40, Michigan State College.
Major: Psychology. Minor: Anatomy (Neurology).
Thesis: A Psychological Examination for the Detection of Intellectual Deterioration in Organic Brain Disease.
Major Adviser: Prof. S. R. Hathaway.

1943. MACDONALD, GEORGINA ANNETTE. B.A. '37, University of Washington.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Role of the Unconditioned Stimulus in the Formation of
Conditioned Avoidance Responses with Human Subjects.
Major Adviser: Prof. M. A. Tinker.
1944. ROTHE, HAROLD FREDERICK. B.A. magna cum laude '39, Bates College;
M.A. '41, University of Minnesota.
Major: Psychology. Minor: Business Administration.
Thesis: An Analysis of Production Records in a Selected Manual Operation.
Major Advisers: Profs. M. A. Tinker and D. G. Paterson.
1945. ANDERSON, GORDON VLADIMIR. B.A. '32, Augustana College; M.A. '40,
University of Nebraska.
Major: Psychology. Minor: Educational Psychology.
Thesis: Factorial Analysis of Attitudes Toward Community Problems.
Major Adviser: Prof. D. G. Paterson.
1945. ESTES, KATHERINE CONSTANCE WALKER. B.A. with distinction '38,
M.A. '41, Stanford University.
Major: Psychology. Minor: Child Welfare.
Thesis: Some Effects of Reinforcement upon Verbal Behavior of Children.
Major Advisers: Profs. F. L. Goodenough and B. F. Skinner.
1945. MEEHL, PAUL EVERETT. B.A. summa cum laude '41, University of Minne-
sota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Investigation of a General Normality or Control Factor in
Personality Testing.
Major Adviser: Prof. S. R. Hathaway.
1946. BRAYFIELD, ARTHUR HILLS. B.S. cum laude '39, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Interrelation of Measures of Ability, Aptitude, Interests,
and Job Satisfaction Among Clerical Employees.
Major Adviser: Prof. D. G. Paterson.
1946. FARABAUGH, MARY ELIZABETH. B.A. '34, Trinity College; M.S. in
Psychometrics '42, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Longitudinal Study of Vocational Adjustment during the
Depression Years.
Major Adviser: Prof. D. G. Paterson.
1946. JEFFERY, MARY ELIZABETH. B.A. '42, Queen's University; M.A. '43,
Radcliffe College.
Major: Psychology. Minor: Psychiatry.
Thesis: Some Factors Influencing Answers on the Multiphasic K Scale.
Major Adviser: Prof. S. R. Hathaway.

1946. KENDALL, WILLIAM EUGENE. B.S. '38, M.S. '39, Northwestern University.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Effect of Length of Series, Time of Exposure and Order of Presentation of Nonsense Material by 'Good, Average, and Poor Learners'
Major Advisers: Profs. M. A. Tinker and P. O. Johnson.
1946. MACCORQUODALE, KENNETH. B.A. magna cum laude '41, M.A. '42, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Effects of Angular Acceleration and Centrifugal Force on Non-Visual Space Orientation during Flight.
Major Adviser: Prof. W. T. Heron.
1947. DAVIS, ALONZO JOSEPH. B.S. '31, M.S. '32, Howard University.
Major: Psychology. Minor: Child Welfare.
Thesis: Status Factors in Personality Characteristics of Negro College Students.
Major Advisers: Profs. S. R. Hathaway and D. G. Paterson.
1947. MILLARD, KENNETH ALBERT. B.A. summa cum laude '39, Hamline University.
Major: Psychology. Minors: Educational Psychology and Biostatistics.
Thesis: A Personnel Study of Supervisors in Business and Industry.
Major Adviser: Prof. D. G. Paterson.
1947. PAGE, ROGER BETHEL. B.A. '38, University of Richmond.
Major: Psychology. Minor: Educational Psychology.
Thesis: Application of the Minnesota Multiphasic Personality Inventory to Tuberculosis Patients.
Major Advisers: Profs. D. G. Paterson and S. R. Hathaway.
1947. VIG, MARCELLA JANE. B.A. summa cum laude '42, University of Minnesota; M.A. '44, Radcliffe College.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Clinical Investigation into the Psychological Aspects of Multiple Sclerosis.
Major Adviser: Prof. S. R. Hathaway.
1948. MCCLELLAND, WILLIAM AGNEW. B.A. magna cum laude '41, Brown University; M.A. '46, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: An Analysis of a Selection Program for Sales Engineers.
Major Adviser: Prof. D. G. Paterson.
1948. SCHOFIELD, WILLIAM. B.S. with highest praise '42, Springfield College; M.A. '46, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: MMPI Response Changes with Certain Therapies.
Major Adviser: Prof. S. R. Hathaway.

1949. ANDERSEN, ALBERT LLOYD. B.A. with high honors '46, University of Utah.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Effect of Laterality Localization of Focal Brain Lesions on Psychometric Measures of Deterioration.
Major Adviser: Prof. P. E. Meehl.
1949. DAHLSTROM, WILLIAM GRANT. B.A. cum laude '44, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Exploration of Mental Status Syndromes by Factor Analytic Techniques.
Major Adviser: Prof. S. R. Hathaway.
1949. GOFFARD, SIDNEY JAMES. B.A. with distinction '38, M.A. '40, University of Michigan.
Major: Psychology. Minor: Educational Psychology.
Thesis: Some Dynamic Correlates of Sociometric Status.
Major Adviser: Prof. P. E. Meehl.
1949. GOUGH, HARRISON GOULD. B.A. summa cum laude '42, M.A. '47, University of Minnesota.
Major: Psychology. Minor: Sociology.
Thesis: Personality Correlates of Social and Ethnic Attitudes among High School Students.
Major Adviser: Prof. P. E. Meehl.
1949. GUSTAD, JOHN WILBERT. B.A. cum laude '43, Macalester College; M.A. '48, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Study of Social Behavior Variables in College Freshmen.
Major Advisers: Profs. E. G. Williamson and D. G. Paterson.
1949. GUTHRIE, GEORGE MCRUER. B.A. with honors '46, University of Western Ontario.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Study of the Personality Characteristics Associated with the Disorders Encountered by an Internist.
Major Adviser: Prof. P. E. Meehl.
1949. HALES, WILLIAM MANSFIELD. B.A. with high honors '29, M.A. '31, University of Utah.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Relation of Muscular Work to Spontaneous Activity in the Rat.
Major Adviser: Prof. W. T. Heron.
1949. HANVIK, LEO JOSEPH. B.A. magna cum laude '38, St. Thomas College; M.A. '42, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Some Psychological Dimensions of Low Back Pain.
Major Adviser: Prof. P. E. Meehl.

1949. KRIEDT, PHILIP HENRI. B.A. '35, M.A. '47, University of Minnesota.
Major: Psychology. Minors: Economics and Educational Psychology.
Thesis: Differential Interest Patterns of Psychologists.
Major Adviser: Prof. D. G. Paterson.
1949. OLSEN, MARJORIE ANN. B.A. summa cum laude '44, Lawrence College;
M.A. '46, University of Minnesota.
Major: Psychology. Minor: Biostatistics.
Thesis: Validation of the Forced Choice Technique in Personality
Measurement.
Major Adviser: Prof. D. G. Paterson.
1949. BOY, HOWARD LAUGHLIN. B.E. '33, Winona State Teachers College;
M.S. in Psychometrics '41, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Construction of a College Satisfaction Index.
Major Adviser: Prof. D. G. Paterson.
1949. WELSH, GEORGE SCHLAGER. B.A. '40, University of Pennsylvania.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Projective Figure-Preference Test for Diagnosis of Psycho-
pathology: I. A Preliminary Investigation.
Major Adviser: Prof. P. E. Meehl.
1950. FRIEDMAN, SAMUEL HERMAN. B.A. '43, Ohio University.
Major: Psychology. Minor: Psychiatry.
Thesis: Psychometric Effects of Frontal and Parietal Lobe Brain Damage.
Major Adviser: Prof. P. E. Meehl.
1950. JENKINS, JAMES JEROME. B.S. '44, University of Chicago; B.A. '47,
William Jewell College; M.A. '48, University of Minnesota.
Major: Psychology. Minors: Biostatistics and Economics.
Thesis: Prediction of Forecasting Efficiency for Army Weather Forecasters.
Major Adviser: Prof. D. G. Paterson.
1950. KLARE, GEORGE ROGER. B.A. cum laude '46, M.A. '47, University of
Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Evaluation of Quantitative Indices of Comprehensibility in
Written Communication.
Major Adviser: Prof. D. G. Paterson.
1950. LAYBOURN, GOVE PETTIT. B.A. cum laude '43, M.A. '47, University
of Minnesota.
Major: Psychology. Minors: Journalism and Business Administration.
Thesis: A Study of Attitudes toward Advertising and Certain Correlates
of These Attitudes with Special Reference to the Relationship between
Consumers' Attitudes toward Advertising and Their Purchasing Behavior.
Major Adviser: Prof. H. P. Longstaff.

1950. LEVINE, ABRAHAM SETH. B.A. '41, State University of Iowa; M.A. '47, University of Minnesota.
Major: Psychology. Minors: Educational Psychology and Biostatistics.
Thesis: A Psycho-Analogies Test as an Evaluation Instrument for Psychology Students.
Major Adviser: Prof. D. G. Paterson.
1950. RICHARDSON, HAROLD. B.A. magna cum laude '46, M.A. '48, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Efficacy of Group Preparation for Counseling.
Major Advisers: Profs. D. G. Paterson and Henry Borow.
1950. SEEMAN, WILLIAM. B.S. '37, Johns Hopkins University; M.A. '47, Columbia Teachers College.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Investigation of Day Dreams.
Major Adviser: Prof. P. E. Meehl.
1950. SIMOS, IRVING. B.A. '43, M.A. '44, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Rosenzweig PF Study as Used with Psychiatric Patients.
Major Adviser: Prof. P. E. Meehl.
1950. STONE, CHRISTOPHER HAROLD. B.A. '35, Pasadena College; M.A. '38, University of Southern California.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Personnel Study of Newspapermen.
Major Adviser: Prof. D. G. Paterson.
1951. JONES, ROBERT LEON. B.A. '42, University of Wichita; M.A. '47, University of Minnesota.
Major: Psychology. Minors: Educational Psychology and Journalism.
Thesis: A Personnel Study of Communication Specialists.
Major Advisers: Profs. D. G. Paterson and W. W. Cook.
1951. MORGAN, HENRY HOLLINGSHEAD. B.A. '41, Harvard College; M.S. '48, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: An Analysis of Certain Structured and Unstructured Test Results of Achieving and Nonachieving High Ability College Students.
Major Advisers: Profs. H. P. Longstaff and Ephraim Rosen.
1951. ROSEN, HJALMAR. B.A. '43, M.A. '44, University of Minnesota.
Major: Psychology. Minors: Business Administration and Educational Psychology.
Thesis: Job Attitudes among Union Factory Workers.
Major Adviser: Prof. D. G. Paterson.

1951. WILLIAMS, HAROLD LEROY. B.A. '44, University of Nebraska.
Major: Psychology. Minor: Psychiatry.
Thesis: Differential Effects of Focal Brain Damage on the Minnesota
Multiphasic Personality Inventory.
Major Adviser: Dr. S. R. Hathaway.
1952. BOULGER, JOHN RICHARD. B.B.A. '42, M.A. '50, University of
Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Discriminant Function and Differential Aptitude Testing.
Major Advisers: Profs. D. G. Paterson and P. O. Johnson.
1952. BUCHWALD, ALEXANDER MILLER. B.S. '48, Columbia University.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Studies in Motivation and Conflict in the Rat.
Major Adviser: Prof. P. E. Meehl.
1952. CANTOR, JOEL MALCOLM. B.A. '46, Brooklyn College; M.A. '48,
University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Syndromes Found in a Psychiatric Population Selected for Certain
MMPI Code Endings.
Major Adviser: Prof. P. E. Meehl.
1952. FARR, JAMES NOBLE. B.A. cum laude '48, M.A. '49, University of
Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Job Analysis by the Method of Critical Incidents of Psych-
iatric Aides in Mental Hospitals.
Major Adviser: Prof. D. G. Paterson.
1952. GILBERSTADT, HAROLD. B.A. '48, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Exploratory Investigation of the Hathaway-Meehl Method of
Minnesota Multiphasic Personality Inventory Profile Analysis with
Psychiatric Clinical Data.
Major Adviser: Prof. S. R. Hathaway.
1952. HARMON, LINDSEY RICHARD. B.A. cum laude '35, M.S. in Psychometrics
'38, University of Minnesota.
Major: Psychology. Minors: Educational Psychology and Biostatistics.
Thesis: Inter-Relations of Patterns on the Kuder Preference Record and
the Minnesota Multiphasic Personality Inventory.
Major Advisers: Profs. D. G. Paterson and P. E. Meehl.
1952. HOLLAND, JOHN LEWIS. B.A. '42, University of Omaha; M.A. '47,
University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Study of Measured Personality Variables and Their Behavioral
Correlates as Seen in Oil Paintings.
Major Adviser: Prof. J. G. Darley.

1952. JACOBS, STANLEY EVERS. B.S. '36, Northwestern University; M.A. '49, University of Minnesota.
Major: Psychology. Minor: Biostatistics.
Thesis: Compulsory Military Training in College and Subsequent Success in the Armed Forces during World War II.
Major Adviser: Prof. D. G. Paterson.
1952. JENKINS, WILLIAM LORNE. B.A. '46, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Minnesota Multiphasic Personality Inventory Applied to the Problem of Prognosis in Schizophrenia.
Major Advisers: Prof. P. E. Meehl and William Schofield.
1952. LINDBOM, THEODORE RUDOLPH. B.S. with distinction '48, M.A. '49, University of Minnesota.
Major: Psychology. Minors: Statistics and Business Administration.
Thesis: Supervisory Training and Employee Attitudes.
Major Adviser: Prof. D. G. Paterson.
1952. MALOS, HERBERT BERNARD. B.A. magna cum laude '47, Lafayette College.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Some Psychometric Evaluations of Epilepsy.
Major Adviser: P. E. Meehl.
1952. MEE, ELIZABETH ANN. B.A. '40, M.A. '47, Southern Methodist University.
Major: Psychology. Minor: Psychiatry.
Thesis: A Psychometric Study of Diffuse and Focal Cerebral Pathology Groups.
Major Adviser: Prof. P. E. Meehl.
1952. MELTON, RICHARD STANLEY. B.A. summa cum laude '48, Gustavus Adolphus College; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Comparison of Clinical and Actuarial Methods of Prediction with an Assessment of the Relative Accuracy of Different Clinicians.
Major Adviser: Prof. R. F. Berdie.
1952. MYATT, MARY FRANCES. B.A. '30, M.A. '48, Southern Methodist University.
Major: Psychology. Minor: Psychiatry.
Thesis: A Study of the Relationship between Motivation and Test Performance of Patients in a Rehabilitation Ward.
Major Adviser: Prof. P. E. Meehl.
1952. NELSON, SHERMAN EDDIE. B.A. magna cum laude '47, University of Minnesota.
Major: Psychology. Minor: Psychiatry.
Thesis: The Development of an Indirect, Objective Measure of Social Status, and Its Relationship to Certain Psychiatric Syndromes.
Major Adviser: Prof. William Schofield.

1952. PETERSON, DONALD ROBERT. B.A. summa cum laude '48, M.A. '50, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Predicting Hospitalization of Psychiatric Outpatients.
Major Adviser: Prof. P. E. Meehl.
1952. ROSEN, ALBERT. B.A. '39, University of Pittsburgh; M.A. '48, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Development of Some New Minnesota Multiphasic Personality Inventory Scales for Differentiation of Psychiatric Syndromes within an Abnormal Population.
Major Adviser: Prof. P. E. Meehl.
1952. SOAR, ROBERT STEPHEN. B.A. with high honors '48, University of Florida; M.A. '49, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Height-Width Proportion and Stroke-Width in Numeral Visibility.
Major Advisers: Profs. D. G. Paterson and M.A. Tinker.
1952. SUNDBERG, NORMAN DALE. B.A. with distinction '47, University of Nebraska; M.A. '49, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Relationship of Psychotherapeutic Skill and Experience to Knowledge of Other People.
Major Adviser: Prof. William Schofield.
1952. SUTTON, MARY LYON. B.A. '47, Randolph-Macon Woman's College; M.A. '48, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Profile Patterning and Descriptive Correlates of Patients Having Low Scores on Scale 9 of the MMPI.
Major Adviser: Prof. S. R. Hathaway.
1952. UECKER, ALBERT ELI. B.A. '41, Minot State Teachers College; M.A. '46, Columbia University Teachers College.
Major: Psychology. Minor: Psychiatry.
Thesis: A Comparative Study of the Vocational Interests, Aspirations, and Achievements of Selected Groups of Veteran Psychiatric Patients.
Major Adviser: Prof. William Schofield.
1952. ZIMNY, GEORGE HENRY. Ph.B. '46, M.A. '49, Loyola University.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Effects of Certain Techniques of Inducing Motivation upon a Learning and a Performance Task.
Major Advisers: Profs. M. A. Tinker and W. A. Russell.
1953. BELDO, LESLIE ALLEN. B.B.A. with distinction '48, M.A. '50, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Multiple Classification Study of Phrasing Attitude Statements.
Major Advisers: Profs. H. P. Longstaff and R. L. Jones.

1953. BLACK, JOHN DAVIES. B.S. '41, M.A. '42, Northwestern University.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Interpretation of MMPI Profiles of College Women.
Major Adviser: Prof. William Schofield.
1953. ERLANDSON, FORREST LEROY. B.A. cum laude '48, M.A. '52,
University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Socio-Economic Factors Related to Vocational Interests as
Measured by the Strong Vocational Interest Blank for Men.
Major Adviser: Prof. R. F. Berdie.
1953. GAMELIN, FRANCIS CLIFFORD. B.A. magna cum laude '38, Gustavus
Adolphus College; M.A. '46, University of Minnesota.
Major: Psychology. Minor: Child Welfare.
Thesis: Intercollege Comparisons of Student Satisfaction with College
Life.
Major Adviser: Prof. D. G. Paterson.
1953. HERBERT, MARVIN JAMES. B.A. '41, Olivet College; M.A. '42,
University of Nebraska.
Major: Psychology. Minor: Neurophysiology.
Thesis: The Generation of the Fractionated Goal Response by Differential
Effector Activity at the Goal Box.
Major Adviser: Prof. W. T. Heron.
1953. HOCHBAUM, GODFREY MARTIN. B.A. '47, The American University;
M.A. '49, George Washington University.
Major: Psychology. Minor: Sociology.
Thesis: Certain Personality Aspects and Pressures to Uniformity in
Social Groups: An Investigation of Sources of Resistance to Pressures
to Uniformity.
Major Adviser: Prof. J. G. Darley.
1953. MCCOLLUM, ERNEST LELAND. B.S. with high distinction '47, M.A. '49,
Arizona State College.
Major: Psychology. Minor: Education.
Thesis: A Study of the Vocational Interest Profiles of USAF Personnel
Officers With and Without Formal Personnel Training.
Major Adviser: Prof. D. G. Paterson.
1953. FERRY, DALLIS KAY. B.S. cum laude '50, University of Washington;
M.A. '51, University of Minnesota.
Major: Psychology. Minor: Economics.
Thesis: Forced Choice versus I-I-D Response Items in Vocational Interest
Measurement.
Major Advisers: Profs. D. G. Paterson and K. E. Clark.

1953. RUSSELL, DAVID LAWSON. B.A. with honors '42, Wesleyan University.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Comparison of Rating, Test, and Sociometric Methods of
Personality Measurement.
Major Adviser: Prof. J. G. Darley.
1953. SCHENKEL, KENNETH FRANCIS. B.S. '47, University of Florida;
M.A. '50, The American University.
Major: Psychology. Minor: Economics.
Thesis: Tabulator Operator Selection, Emphasizing Relationships Among
Aptitudes, Interests, Proficiency, Job- and Vocational-Satisfaction.
Major Adviser: Prof. D. G. Paterson.
1953. SNYDER, DOROTHY FRANCES. B.A. '44, The American University;
M.A. '48, George Washington University.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Study of Relationships Between Certain Socio-Economic Factors
and the Strong Vocational Interest Blank for Women.
Major Adviser: Prof. R. F. Berdie.
1953. STEVENS, WILLIAM CHARLES. B.A. '40, Birmingham-Southern College;
M.A. '41, Vanderbilt University.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Quantification of Personal Data for Use in a Multivariate
Statistical Analysis of Differences Between Selected Groups of
College Students.
Major Advisers: Profs. J. G. Darley and P. O. Johnson.
1953. SWANSON, EDWARD ORLEY. B.A. summa cum laude '48, M.A. '49,
University of Minnesota.
Major: Psychology. Minor: Education.
Thesis: A Follow-up Study of College Trained vs. Non-college Trained
High School Graduates of High Ability.
Major Adviser: Prof. D. G. Paterson.
1953. SYDOW, DONALD WAYNE. B.S. '42, Hamline University.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Psychometric Differentiation Between Functional Psychotics and
Non-Psychotics with Organic Brain Damage.
Major Adviser: Prof. William Schofield.
1954. CLAYTON, FRANCES LOUISE. B.A. '49, Indiana University; M.S. '51,
Brown University.
Major: Psychology. Minor: Educational Psychology.
Thesis: Secondary Reinforcement as a Function of Reinforcement Sched-
uling.
Major Adviser: Prof. Kenneth MacCorquodale.

1954. DUNNETTE, MARVIN D. B.Ch.E. with distinction '48, M.A. '51, University of Minnesota.
Major: Psychology. Minors: Educational Psychology and Biostatistics.
Thesis: A Special Analogies Test for the Evaluation of Graduate Engineers.
Major Adviser: Prof. D. G. Paterson.
1954. HELMSTADTER, GERALD CARL. B.S. '49, M.S. '50, Iowa State College.
Major: Psychology. Minor: Statistics.
Thesis: The Relative Effectiveness of Varied Pattern Analysis Techniques as Applied to Non-cognitive Data.
Major Adviser: Prof. K. E. Clark.
1954. HEWER, VIVIAN HUMPHREY. B.S. with distinction '29, M.S. in Psychometrics '41, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Vocational Interest-Achievement-Ability Interrelationships at the College Level.
Major Adviser: Prof. D. G. Paterson.
1954. HOYT, DONALD PAUL. B.S. '48, University of Illinois; M.A. '50, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Differential Outcomes of Counseling with College Men.
Major Adviser: Prof. D. G. Paterson.
1954. KIRCHNER, WAYNE KERMIT. B.A. magna cum laude '49, M.A. '51, University of Minnesota.
Major: Psychology. Minor: Economics.
Thesis: Attitudes Toward Employment of Older Persons.
Major Adviser: Prof. D. G. Paterson.
1954. LOCKMAN, ROBERT FRANK. B.A. magna cum laude '50, Syracuse University; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: An Evaluation of Naval Aviation Cadet Selection Measures Using Multivariate Discriminatory Statistical Techniques.
Major Advisers: Profs. D. G. Paterson and J. J. Jenkins.
1954. MAGOON, THOMAS MAYO. B.A. '47, Dartmouth College; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: General and Specific Outcomes of Counseling with College Men.
Major Adviser: Prof. R. F. Berdie.
1954. MANNING, HORACE MILTON. B.A. cum laude '47, M.Ed. '49, Lewis & Clark College; M.A. with honors '51, University of Oregon.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Effect of Varying Conditions of Hunger and Thirst on Two Responses Learned to Hunger or Thirst Alone.
Major Adviser: Prof. W. A. Russell.

1954. MATHERS, BOYD L. B.S. '49, Florida State University; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Learning Theory and Induced Anxiety in the Rat.
Major Adviser: Prof. W. T. Heron.
1954. MCBRIDE, DOROTHY. B.A. summa cum laude '49, M.A. '52, University of Minnesota.
Major: Psychology. Minor: Sociology.
Thesis: The Effects of Public and Private Changes of Opinion on Intra-Group Communication.
Major Adviser: Prof. K. E. Clark.
1954. MCCORNACK, ROBERT LINDY. B.A. '49, State University of Iowa; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Sex Differences in the Vocational Interests of a Professional Group.
Major Adviser: Prof. D. G. Paterson.
1954. PEARSON, JOHN SUMNER. B.A. '44, Gustavus Adolphus College.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Psychometric Correlates of Emotional Immaturity.
Major Adviser: Prof. S. R. Hathaway.
1954. PETERSON, LLOYD RICHARD. B.A. '44, Gustavus Adolphus College; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Variable Delayed Reinforcement.
Major Adviser: Prof. Kenneth MacCorquodale.
1954. POWERS, MABEL KATHRYN. B.A. '25, College of St. Catherine; M.A. '47, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Longitudinal Study of Vocational Interests During the Depression Years.
Major Adviser: Prof. D. G. Paterson.
1954. ROADMAN, HARRY EDWARD. B.A. '49, Duquesne University; M.A. '53, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Relationship of Measured Interests to Career Data for Air Force Officers in the Comptroller Field.
Major Adviser: Prof. K. E. Clark.
1954. SAMENFELD, HERBERT WILLIAM. B.A. '49, Drew University; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Effect of Acceptance and Rejection Upon Attitudes and Participation in a Leaderless Group Discussion.
Major Advisers: Profs. R. F. Berdie and Ben Willerman.

1954. SMITH, BERTRAM JOSEPH. Ph.B. '39, Louvain University; M.A. '50, University of Minnesota.
Major: Psychology. Minor: Industrial Engineering.
Thesis: Validation of Certain Tests of Ocular Dominance Against a Criterion of Bombsight Design Preference.
Major Advisers: Profs. M. A. Tinker and D. G. Paterson.
1954. SWANSON, ROBERT ALDEN. B.B.A. '38, University of Minnesota.
Major: Psychology. Minors: Educational Psychology and Economics.
Thesis: The Relative Effectiveness of Differing Visual Presentations of a Complex Aircraft System in Three Learning Situations.
Major Adviser: Prof. H. P. Longstaff.
1954. WILLARD, NORMAN, JR. B.A. '48, College of Puget Sound; M.A. '49, Columbia University.
Major: Psychology. Minor: Educational Psychology.
Thesis: Level of Performance in the Rat as a Function of Training and of Subsequent Partial Reinforcement.
Major Adviser: Prof. W. T. Heron.
1955. AALTO, BARBARA A. PHILLIPS. B.A. '44, Bates College; M.A. '45, Boston University.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Scale Measuring Attitudes Toward Working for the Government.
Major Adviser: Prof. D. G. Paterson.
1955. AARONSON, BERNARD SEYMOUR. B.A. '47, University of Illinois.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Some Quantitative Properties of Verbal Behavior in Psychotherapy.
Major Adviser: Prof. P. E. Meehl.
1955. BREHM, JACK WILLIAMS. B.A. magna cum laude '52, Harvard College.
Major: Psychology. Minor: Child Welfare.
Thesis: Post-Decision Changes in the Desirability of Alternatives.
Major Adviser: Prof. Leon Festinger.
1955. BRIGGS, PETER FARKASCH. B.A. '50, Reed College.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Preliminary Validation of a Standard Personal History for Psychiatric Diagnosis.
Major Adviser: Prof. William Schofield.
1955. BURDICK, HARVEY. B.A. cum laude '49, Syracuse University; M.A. '50, University of Minnesota.
Major: Psychology. Minor: Sociology.
Thesis: The Compliant Behavior of Deviates Under Conditions of Threat.
Major Adviser: Prof. Charles Bird.
1955. CORRIGAN, SHIRLEY M. B.A. '50, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Psychological Correlates of the Physiological Response to Mecholyl in Psychiatric Outpatients.
Major Adviser: Prof. Ephraim Rosen.

1955. GEE, HELEN HOFER. B.A. cum laude '42, M.A. '45, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Empirical vs. Homogeneous Scoring Keys in Interest Measurement.
Major Advisers: Profs. D. G. Paterson and K. E. Clark.
1955. GUTTMAN, ISAIAH. B.A. cum laude '52, M.A. '53, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Relation of Rigidity of Set to Intellect.
Major Adviser: Prof. D. G. Paterson.
1955. HALBOWER, CHARLES CARSON. B.S. '47, M.S. '49, Kansas State College of Agriculture and Applied Science.
Major: Psychology. Minor: Psychiatry.
Thesis: A Comparison of Actuarial Versus Clinical Prediction to Classes Discriminated by the Minnesota Multiphasic Personality Inventory.
Major Adviser: Prof. P. E. Meehl.
1955. HOLT, SHIRLEY MAE. B.A. cum laude '47, Hamline University; M.S. '50, State College of Washington.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Prognostic Factors in Psychoneurosis, Mixed Type.
Major Advisers: Profs. S. R. Hathaway and Ephraim Rosen.
1955. JAHNSON, SHIRLEY MANOR. B.A. summa cum laude '49, M.A. '53, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Effect of Anxiety Level and Verbal Association Strengths on the Learning of Word Pairs.
Major Adviser: Prof. William Schofield.
1955. JENSON, PAUL GERHARD. B.A. '48, Luther College; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Normative Study of the Strong Vocational Interest Blank for Male Adult Workers.
Major Adviser: Prof. D. G. Paterson.
1955. LOFQUIST, LLOYD HENRY. B.A. '40, M.A. '41, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Adapting Vocational Counselling Procedures to Different Disability Groups.
Major Adviser: Prof. D. G. Paterson.
1955. LYKKEN, DAVID THORESON. B.A. cum laude '49, M.A. '52, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Study of Anxiety in the Sociopathic Personality.
Major Adviser: Prof. Ephraim Rosen.

1955. MACKINNEY, ARTHUR CLINTON, JR. B.A. '51, William Jewell College; M.A. '53, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Validation of Tachistoscopic Training for Clerical Workers.
Major Adviser: Prof. J. J. Jenkins.
1955. NAHINSKY, IRWIN DAVID. B.A. summa cum laude '52, University of Minnesota.
Major: Psychology. Minor: Statistics.
Thesis: The Transfer of a Drive Intensity Discrimination Between Two Drives.
Major Advisers: Profs. M.A. Tinker and W. A. Russell.
1955. PETERSON, MARGARET JEAN. B.A. cum laude '51, University of Minnesota; M.A. '53, University of Denver.
Major: Psychology. Minor: Educational Psychology.
Thesis: Verbal Response Strength as a Function of Cultural Frequency, Schedule of Reinforcement and Number of Trials.
Major Adviser: Prof. W. A. Russell.
1955. PREMACK, DAVID. B.A. magna cum laude '49, M.A. '51, University of Minnesota.
Major: Psychology. Minor: Philosophy.
Thesis: Influence of Prior Learning of One Discrimination Component on Learning of the Second Component When the Two Components Are Presented in Combination.
Major Adviser: Prof. Kenneth MacCorquodale.
1955. SMITH, LOUIS MILDE. B.A. '50, Oberlin College; M.A. '53, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: A Validity Study of Six Personality and Adjustment Tests for Children.
Major Advisers: Profs. R. F. Berdie and M. C. Templin.
1955. SMITH, ROBERT EDWARD. B.A. cum laude '49, Drew University; M.A. '51, University of Minnesota.
Major: Psychology. Minor: Educational Psychology.
Thesis: Personality Configurations of Adult Male Penal Populations as Revealed by the Minnesota Multiphasic Personality Inventory.
Major Advisers: Profs. R. F. Berdie and E. D. Monachesi.
1955. TOMS, ESTHER CHRISTINE. B.A. '45, Wellesley College; M.A. '47, Catholic University of America.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Personality Characteristics of Mothers of Schizophrenic Veterans.
Major Adviser: Prof. Ephraim Rosen.

1955. WIRT, ANNE ANTELMAN. B.S. '51, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: Prediction of Commitment of Hospitalized Psychiatric Patients.
Major Adviser: Prof. Ephraim Rosen.
1956. BROEN, WILLIAM ERNEST, JR. B.A. '52, M.A. '54, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: A Factor-Analytic Study of Religious Attitudes.
Major Adviser: Prof. P. E. Meehl.
1956. FREED, DOUGLAS WILLIAM. B.A. magna cum laude '52, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: An Investigation of the Connotative Meaning Function in Schizophrenic Patients and Normals.
Major Adviser: Prof. W. A. Russell.
1956. HOSMER, CLARK LOUIS. B.S. '36, West Point Military Academy;
M.S. '40, California Institute of Technology; M.A. '47, University of Minnesota.
Major: Psychology. Minor: Economics.
Thesis: Status Factors Within the Armed Forces.
Major Adviser: Prof. D. G. Paterson.
1956. KALMAN, DAVID. B.A. magna cum laude '48, University of Minnesota.
Major: Psychology. Minor: Neuropsychiatry.
Thesis: The Effects of Inter-Trial Spacing and of Stimulus Variability on Verbal Conditioning.
Major Adviser: Prof. P. E. Meehl.
1956. OAKES, WILLIAM FRANCIS. B.A. cum laude '51, M.A. '52, University of Wichita.
Major: Psychology. Minor: Educational Psychology.
Thesis: The Relationship Between the Effectiveness of a Secondary Reinforcer and Certain Stimulus Conditions.
Major Adviser: Prof. Kenneth MacCorquodale.
1956. PATTERSON, GERALD ROY. B.S. '49, M.S. '51, University of Oregon.
Major: Psychology. Minor: Child Welfare.
Thesis: A Tentative Approach to the Classification of Children's Behavior Problems.
Major Adviser: Prof. R. F. Berdie.

SPEECH PATHOLOGY

1948. SHEETS, BOYD VERNE. B.A. '40, M.A. '41, University of Utah.
Major: Speech Pathology. Minor: Anatomy.
Thesis: A Comparative Study of a Flat Frequency Response Pattern and High-Tone Emphasis Patterns in a Commercial Hearing Aid.
Major Adviser: Prof. Bryng Bryngelson.

1949. THORN, KATHERINE FRANCES. B.A. '30, Elmira College; M.S. '43, University of Minnesota.
Major: Speech Pathology. Minor: Child Welfare.
Thesis: A Study of the Personality of Stutterers as Measured by the Minnesota Multiphasic Personality Inventory.
Major Adviser: Prof. Bryng Bryngelson.
1953. PTACEK, PAUL HENRY. B.A. '40, University of Colorado; M.A. '47, University of Denver.
Major: Speech Pathology. Minor: Psychology.
Thesis: An Investigation of Various Factors Influencing the Selection and Repetition of Words Presented Dichotically at a Supra Threshold Level.
Major Adviser: Prof. E. H. Henrikson.
1955. LOW, GORDON MORRIS. B.S. with high honors '49, M.S. '50, University of Utah.
Major: Speech Pathology. Minor: Psychology.
Thesis: An Objective Index of Nasality.
Major Adviser: Prof. E. H. Henrikson.
1955. LUNDEEN, DALE J. B.S. '47, Western Michigan College; M.A. '49, Indiana University.
Major: Speech Pathology. Minor: Psychology.
Thesis: An Investigation of the Relationship of Vertical Mandibular Movement to Loudness and Rate of Speech and to Aspects of Individual Variation.
Major Adviser: Prof. Bryng Bryngelson.

PHYSICAL SCIENCES, MATHEMATICS, AND ENGINEERING

CHEMISTRY

1938. KIESS, MATTHEW ALBIN. B.A. '21, St. John's University; M.S. '28, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Jacobsen Reaction and Certain Ethyltrimethyl Benzenes.
Major Adviser: Prof. L. I. Smith.
1938. LEEKLEY, ROBERT MITCHELL. B.S. '33, Dakota Wesleyan University; M.A. '34, University of South Dakota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies of the Allyl Phenyl Ether Rearrangement.
Major Adviser: Prof. W. M. Lauer.
1938. UNGNADE, HERBERT ERNST. B.S. '33, M.S. '34, Michigan State College.
Major: Organic Chemistry. Minor: Biochemistry.
Thesis: Studies of the Allyl Phenyl Ether Rearrangement.
Major Adviser: Prof. W. M. Lauer.
1938. VINCENT, JOHN RICHARD. B.Ch. '33, M.S. '36, University of Minnesota.
Major: Organic Chemistry. Minor: Biochemistry.
Thesis: The Action of Diazomethane on Cyclohexandione.
Major Adviser: Prof. L. I. Smith.
1939. ANTHES, JOHN ALLEN. B.Ch.E. '34, University of Minnesota.
Major: Organic Chemistry. Minor: Biochemistry.
Thesis: A Study in the peri-Naphthindone.
Major Adviser: Prof. C. F. Koelsch.
1939. BACHMANN, JOHN HENRY. B.Ch.E. '31, University of Minnesota.
Major: Physical Chemistry. Minors: Physics and Mathematics.
Thesis: Studies in Molecular Structure by Means of the Raman Effect in Relation to Van der Waal's Forces.
Major Adviser: Prof. George Glockler.
1939. BRECHT, EDWARD ARMOND. B.S. '33, M.S. '34, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Physical Chemistry and Pharmacology.
Thesis: A Study of the Oxidation of Salicylates in Alkaline Solutions.
Major Adviser: Dean C. H. Rogers.
1939. CHEH, CHING. B.S. '36, Nankai University; M.S. '37, State University of Iowa.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Oxygen-Containing Organic Inhibitors of Corrosion.
Major Adviser: Prof. C. A. Mann.

1939. CROMWELL, NORMAN HENRY. B.S. in Ch.E. with honors '35, Rose Polytechnic Institute.
Major: Organic Chemistry. Minor: Chemical Engineering.
Thesis: The Preparation and Properties of Aldehydes Containing Deuterium in the Functional Group, and the Acylation of β -Aminocrotonic Esters.
Major Adviser: Prof. W. M. Lauer.
1939. EGGERTSEN, FRANK THOMAS. B.A. with high honors '34, University of Utah.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: The Aging of Lead Chromate.
Major Adviser: Prof. I. M. Kolthoff.
1939. GOLDBLUM, KENNETH BERNARD. B.Ch.E. '33, M.S. in Ch.E. '35, University of Minnesota.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: A Further Study of the Piria Reaction.
Major Adviser: Prof. R. E. Montonna.
1939. HARRISON, STUART AMOS. B.Ch.E. '35, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Study of P-Azophenol.
Major Adviser: Prof. W. M. Lauer.
1939. HURD, FRANK WILSON. B.A. '31, Drake University; B.S. '33, Iowa State College.
Major: Physical Chemistry. Minor: Physics.
Thesis: Photosensitized Oxidation of Aqueous Solutions: Dye-Sensitized Oxidation of Potassium Iodide Solutions.
Major Adviser: Prof. R. S. Livingston.
1939. JOHNSON, OTTO. B.A. '23, M.S. '25, University of Minnesota.
Major: Physical Chemistry. Minor: Biochemistry.
Thesis: Studies in Molecular Structure.
Major Adviser: Prof. George Glockler.
1939. JOHNSON, PAUL ROBERT. B.A. '34, University of Wisconsin.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Pyrolysis of 1, 1, 3 Triphenylpropylene.
Major Adviser: Prof. C. F. Koelsch.
1939. KAISER, EDWARD WILLIAM. B.Ch.E. '34, University of Minnesota.
Major: Organic Chemistry. Minor: Chemical Engineering.
Thesis: Part I--The Reaction of Grignard Reagents with Aliphatic Diazo Compounds; Part II--Studies on the Reaction of Sodium Enolates with Substituted Quinones.
Major Adviser: Prof. L. I. Smith.

1939. LE CLAIRE, CLAIRE DEAN. B.S. in Ch.E. '33, South Dakota State School of Mines.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Reactions of Certain Alpha-Diketones.
Major Adviser: Prof. C. F. Koelsch.
1939. PRICHARD, WILLIAM W., III. B.Ch. '35, University of Minnesota.
Major: Organic Chemistry. Minor: Biochemistry.
Thesis: The Reaction of Trimethylquinone with Metallic Enolates.
Major Adviser: Prof. L. I. Smith.
1939. WAWZONEK, STANLEY. B.S. '35, Brown University.
Major: Organic Chemistry. Minor: Chemical Engineering.
Thesis: A Study of Beta-Diketones of the Cyclopentene and Cyclopentane Series and an Attempt To Prepare a Substituted Cyclooctatetraene.
Major Adviser: Prof. C. F. Koelsch.
1939. WEST, FRANK BEACH. B.Ch.E. '36, University of Minnesota.
Major: Chemical Engineering. Minors: Physical Chemistry and Organic Chemistry.
Thesis: A Study of Some Reactions of Calcium and Barium Carbides.
Major Adviser: Prof. R. E. Montonna.
1939. WHITE, RALPH VICTOR. B.Ch. '34, University of Minnesota.
Major: Organic Chemistry. Minor: Physiological Chemistry.
Thesis: The Synthesis and Study of Some Fully Substituted Indenes.
Major Adviser: Prof. C. F. Koelsch.
1940. BALLARD, EDWARD COOPER. B.S. '36, North Dakota Agricultural College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Rearrangement of O-Benzoyl Derivatives of Beta Dicarboxyl Compounds.
Major Adviser: Prof. W. M. Lauer.
1940. BERG, CLYDE HUET ORVIL. B.Ch.E. '36, University of Minnesota.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: Diffusional Processes in Turbulent Flow.
Major Advisers: Profs. C. A. Mann and G. H. Montillon.
1940. BUSHEY, ALBERT HENRY. B.A. '32, Wittenberg College.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Studies on the Formation and Aging of Barium Sulfate.
Major Adviser: Prof. I. M. Kolthoff.
1940. BYERS, DONALD JAMES. B.S. '36, Iowa State College.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Addition of Sodium Malonic Ester to Dibromomethoxyloquinone.
Major Adviser: Prof. L. I. Smith.

1940. CHAMBERLAIN, DONALD FRANK. B.Ch.E. '36, University of Minnesota.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: The Effect of Light on Methyl Cellulose.
Major Adviser: Prof. R. E. Montonna.
1940. CROSSEN, GEORGE EDWARD. B.S. '33, M.S. '37, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Inorganic Chemistry and
Organic Chemistry.
Thesis: Preparation, Properties, Toxicity, and Anesthetic Value of
Some Alkyl N-acetyl-Sulfanilates.
Major Adviser: Prof. C. H. Rogers.
1940. ELDRIDGE, GEORGE GILBERT. B.S. in Ch.E. '36, Oregon State College.
Major: Chemical Engineering. Minors: Physical Chemistry and Organic
Chemistry.
Thesis: A Study of the Action of Organic Sulfur Compounds As Inhibitors
of Corrosion of Iron in Acid.
Major Adviser: Prof. C. A. Mann.
1940. FISCHER, EARL BRITZIUS. B.S. '19, University of Minnesota.
Majors: Pharmaceutical Chemistry and Agricultural Biochemistry.
Minors: Botany and Pharmacology.
Thesis: The Application of the Schaffer-Somogyi Method in the Study of
the Deterioration of Digitalis Tincture and of Changes Taking Place
in Digitalis Leaves under Various Conditions and Rates of Drying.
Major Adviser: Dean C. H. Rogers.
1940. GUSS, CYRUS OMAR. B.S. '32, Jamestown College; M.S. '36, Univer-
sity of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Polyethylbenzenes.
Major Adviser: Prof. L. I. Smith.
1940. HOEHN, HARVEY HERBERT. B.E. '35, Eau Claire State Teachers College.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: A Study of the Reaction between Diphenylketene and Acetylenes.
Major Adviser: Prof. L. I. Smith.
1940. HORNER, JAMES WILLIAM, JR. B.Ch. '35, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Nitration of Pentamethylbromobenzene.
Major Adviser: Prof. L. I. Smith.
1940. IRWIN, WILLA BERNICE. B.A. cum laude '34, University of Colorado.
Major: Organic Chemistry. Minor: Bacteriology.
Thesis: An Investigation of the Orientation Effects in Quinones and
Related Phenols.
Major Adviser: Prof. L. I. Smith.

1940. LAITINEN, HERBERT AUGUST. B.Ch. '36, University of Minnesota.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: A Quantitative Study of Diffusion Processes by Electrolysis with Microelectrodes.
Major Adviser: Prof. I. M. Kolthoff.
1940. LEADER, GORDON ROBERT. B.S. '37, University of Wisconsin.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: A Study of Molecular Structure by the Raman Effect.
Major Adviser: Prof. George Glockler.
1940. LOEPPERT, RICHARD HENRY. B.S. with distinction '35, Northwestern University.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: Activation of Chemical Reactions by Means of Ions and Electrons.
Major Adviser: Prof. George Glockler.
1940. MARTIN, ALLAN ERNEST. B.Ch. '35, University of Minnesota.
Major: Physical Chemistry. Minor: Metallurgy.
Thesis: A Study of the Form of Occurrence of Sulphur in Blast Furnace Slags.
Major Adviser: Prof. George Glockler.
1940. MILLER, CARL STINSON. B.S. '35, M.S. '36, University of Alberta.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Investigations with the Dropping Mercury Electrode.
Major Adviser: Prof. I. M. Kolthoff.
1940. MITCHELL, GEORGE EDWARD. B.Ch.E. '35, University of Minnesota.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: The Teaching of Inorganic Salts with Aqueous Solutions.
Major Adviser: Prof. G. H. Montillon.
1940. NETZ, CHARLES VAIL. B.S. '21, M.S. '24, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Physical Chemistry.
Thesis: A Phytochemical and Histological Study of Purshia tridentata D.C.
Major Adviser: Dean C. H. Rogers.
1940. OPIE, JOSEPH WENDELL. B.Ch. '35, University of Minnesota.
Major: Organic Chemistry. Minors: Agricultural Biochemistry and Inorganic Chemistry.
Thesis: The Reaction Between Quinones and Metallic Enolates. XIII Trimethyl Ethyl Quinone and Sodium Malonic Ester, Together with the Synthesis of the Three 3-Carboxy-6-Hydroxy-5, 7, 8-Dimethyl Ethyl Coumarins.
Major Adviser: Prof. L. I. Smith.
1940. PAN, YU-DJAI. B.S. '35, University of Shanghai; M.S. '37, University of Michigan.
Major: Analytical Chemistry. Minor: Chemical Engineering.
Thesis: Amperometric Titrations.
Major Adviser: Prof. I. M. Kolthoff.

1940. SANDERS, PAUL AMSDON. B.Ch. '35, University of Minnesota.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Studies of the Allyl Phenyl Ether Rearrangement.
Major Adviser: Prof. W. M. Lauer.
1940. SEDIN, MARIAN WINIFRED. B.Ch. '34, University of Minnesota.
Major: Analytical Chemistry. Minors: Physical Chemistry and Bacteriology.
Thesis: Studies on the Aging of Freshly Precipitated Silver Iodide.
Major Adviser: Prof. I. M. Kolthoff.
1940. WHITE, ALLEN INGOLF. B.S. '37, M.S. '38, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical Study of *Salvia Carnosa*.
Major Adviser: Prof. G. L. Jenkins.
1940. WHITNEY, AMBROSE GRUNHAGEN. B.S. '36, College of St. Thomas.
Major: Organic Chemistry. Minors: Analytical Chemistry and Physical Chemistry.
Thesis: A Study of the Reaction of Cuprous Cyanide with Aromatic Bromides and a New Synthesis of Coumarone Dicarboxylic Acids.
Major Adviser: Prof. C. F. Koelsch.
1941. AUSTIN, FRANKLIN LEE. B.S. '37, University of Wisconsin.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction Between Quinones and Metallic Enolates XV. Dibromo-*o*-Xyloquinone and Sodium Malonic Ester. The Nitration of the Bromo- and Dibromo-*sym*-Tetraethylbenzenes. The Attempted Preparation of Benzochromans and Benzocoumarans.
Major Adviser: Prof. L. I. Smith.
1941. BEMMELS, CYRUS WOODROW. B.A. '36, Simpson College.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Sorption of Chlorine and the Hydrogen Halides by Silica Gel.
Major Adviser: Prof. L. H. Reyerson.
1941. BORDWELL, FREDERICK G. B.Ch. '37, University of Minnesota.
Major: Organic Chemistry. Minors: Bacteriology and Agricultural Biochemistry.
Thesis: Studies in the Mills-Nixon Effect.
Major Adviser: Prof. R. T. Arnold.
1941. CARLIN, ROBERT BURNELL. B.Ch. '37, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Syntheses of Chromenes and Chromanes.
Major Adviser: Prof. L. I. Smith.
1941. GORDON, MOSES. B.Ch.E. '29, University of Minnesota; M.S. '32, University of North Dakota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Studies on Heat Transmission in an Agitated System.
Major Advisers: Profs. G. H. Montillon and C. A. Mann.

1941. HUFFMAN, CLARENCE WILLIAM. B.A. magna cum laude '34, Ripon College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Chemistry of the Oximes of Cyclic Ketones and Diketones.
Major Adviser: Prof. C. F. Koelsch.
1941. JACK, LAURINE DAVISON. B.S. '29, M.S. '37, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical and Pharmacological Study of the Berries of *Phytolacca Americana*.
Major Adviser: Dean C. H. Rogers.
1941. LLOYD, WILLIAM REESE. B.A. '34, B.S. in Pharm. '36, University of Colorado.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical Study of *Leptotaenia multifida* (Nuttall).
Major Adviser: Prof. G. L. Jenkins.
1941. MCCOOL, JOHN CUMMINGS. B.S. magna cum laude '36, College of St. Thomas; M.S. '38, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies on Compounds Related to the Mills-Nixon Problem.
Major Adviser: Prof. R. T. Arnold.
1941. MILLER, HENRY CHARLES. B.A. cum laude '37, M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Chemistry of Vitamin E: The Synthesis of Chromane and Alpha-Tocopherol.
Major Adviser: Prof. L. I. Smith.
1941. ORLEMANN, EDWIN FRANKLYN. B.S. summa cum laude '36, College of St. Thomas.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: A Polarographic Study of the Reduction of Iodate and Bromate Ions and an Anomalous Reduction of Water.
Major Adviser: Prof. I. M. Kolthoff.
1941. PRILL, ERHARD JOHN. B.Ch. '37, University of Minnesota.
Major: Organic Chemistry. Minors: Physical Chemistry and Biochemistry.
Thesis: The Synthesis of an Indone Quinone and a Structure Study in the Piperidone Series.
Major Adviser: Prof. C. F. Koelsch.
1941. RITCHELL, EDWARD CLEMENS. B.Ch.E. '37, University of Minnesota.
Major: Chemical Engineering. Minor: Bacteriology.
Thesis: The Rate of Dehydration of Meat Products.
Major Adviser: Prof. C. A. Mann.

1941. SAGE, CHARLES GELDMAN. B.S. magna cum laude '35, M.S. '38, University of Minnesota.
Major: Physical Chemistry. Minor: Physics.
Thesis: Studies in Molecular Structure by the Raman Effect.
Major Adviser: Prof. F. H. MacDougall.
1941. SCHEIDERBAUER, ROBERT ALBERT. B.S. summa cum laude '36, College of St. Thomas.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Tautomerism of Indenes.
Major Adviser: Prof. C. F. Koelsch.
1941. SEELIG, HERMAN S. B.S.Ch.E. with honors '36, University of Arkansas; M.S. '38, Georgia School of Technology.
Major: Physical Chemistry. Minor: Chemical Engineering.
Thesis: A Study of the Kinetics of Some Exchange Reactions Using Radioiodine.
Major Adviser: Prof. D. E. Hull.
1941. URIST, HAROLD. B.S. in Pharm. '37, M.S. '38, University of Michigan.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: Heterocyclic Derivatives Related to Sulfanilamide.
Major Adviser: Prof. G. L. Jenkins.
1941. WALDON, CURTIS HENRY. B.S. in Pharm. '35, M.S. '37, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical and Pharmacological Study of *Hermidium alipes*, S. Wats.
Major Adviser: Prof. G. L. Jenkins.
1941. ZAUGG, HAROLD ELMER. B.A. '37, Oberlin College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Mills-Nixon Effect.
Major Adviser: Prof. R. T. Arnold.
1942. AUBRECHT, DON ALBERT. B.Ch.E. with high distinction '37, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Heat Transfer Study in an Inclined Tube Evaporator.
Major Adviser: Prof. G. H. Montillon.
1942. BRYAN, CARL EDDINGTON. B.A. with special distinction '37, University of Mississippi.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Synthesis of Strepto- and Cyclopolybenzoyls.
Major Adviser: Prof. C. F. Koelsch.

1942. CARNEY, JAMES JOSEPH. B.S. summa cum laude '33, College of St. Thomas; M.S. '34, Catholic University of America.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: A Study of the Structure and Chemical Behavior of the Dyestuff from Furfural, Aniline and Aniline Hydrochloride.
Major Adviser: Prof. C. F. Koelsch.
1942. CINES, MARTIN RICHARD. B.S. in Ch.E. '38, M.S. in Ch.E. '38, Massachusetts Institute of Technology.
Major: Physical Chemistry. Minor: Chemical Engineering.
Thesis: The Sorption of Hydrocarbon Vapors by Silica Gels.
Major Adviser: Prof. L. H. Reyerson.
1942. CLEGG, JOHN WILLIAM. B.S. in Ch.E. with highest honors '37, Georgia School of Technology.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: Studies on Distillation in Packed Columns.
Major Adviser: Prof. R. E. Montonna.
1942. COAD, LOWELL KEITH. A.B. '38, University of Kansas.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: Electrokinetic Studies on the Aging of Precipitates.
Major Adviser: Prof. L. H. Reyerson.
1942. GENSLER, WALTER JOSEPH. B.Ch. '38, M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Cis-traumatic Acid and Related Compounds.
Major Adviser: Prof. W. M. Lauer.
1942. HADLEY, WILLARD JESSE. B.S. '38, Ohio State University; M.S. '40, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical Study of Eriodictyon Angustifolium.
Major Adviser: Prof. Ole Gisvold.
1942. GROVE, CORNELIUS SHERMAN, JR. B.A. '25, Lenoir Rhyne College; B.S. in Ch.E. '28, Ch.E. '32, North Carolina State College; M.S. '34, Massachusetts Institute of Technology.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: The Rate of Crystal Growth in Aqueous Solutions (Potassium Alum).
Major Adviser: Prof. C. A. Mann.
1942. HOWARD, KENNETH LEON. B.S. '33, University of Wisconsin.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Addition of Aliphatic Diazo Compounds to Alpha Beta Un-saturated Ketones.
Major Adviser: Prof. L. I. Smith.

1942. KING, JOHN ALBERT. B.A. '38, Indiana University; M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minors: Physiology and Pharmacology.
Thesis: The Chemistry of Vitamin E, XL. I. Condensations of Butadiene and of Crotyl Systems With Trimethylhydroquinone. II. Nitrogen Analogues of the Tocopherols. III. 2-Isopropyl-4, 6, 7-Trimethyl-5-Hydroxycoumaran.
Major Adviser: Prof. L. I. Smith.
1942. KWONG, JOSEPH NENG SHUN. B.A. '37, Stanford University; M.S. '39, University of Michigan.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Surface and Energy Relationship in Crushing of Minerals.
Major Advisers: Profs. G. H. Montillon and E. L. Piret.
1942. LAWSON, JULIAN KEITH, JR. B.S. '38, University of Maryland.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Acylation of *p*-Aminocrotonic Esters.
Major Adviser: Prof. Walter M. Lauer.
1942. MOE, OWEN. B.A. '35, St. Olaf College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies of the Allyl Phenyl Ether Rearrangement.
Major Adviser: Prof. W. M. Lauer.
1942. ROUAULT, GEORGE FRANCIS. B.S. '38, The Pennsylvania State College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: I Synthesis of Poly-Alkyl Phenols from Acetoacetic Ester.
II Synthesis of Phytol Ketone.
Major Adviser: Prof. L. I. Smith.
1942. SPILLANE, LEO JEROME. B.S. summa cum laude '37, College of St. Thomas; M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minors: Chemical Engineering and Physical Chemistry.
Thesis: A Study of the Reaction Between Dimethylacrylic Acid and Meta-Xylene in the Presence of Aluminum Chloride. A Study of the Nitration of Methyl Beta-(3, 5-Dimethylphenyl) Isovalerate.
Major Adviser: Prof. L. I. Smith.
1942. SYVERSON, ALDRICH. B.Ch.E. with distinction '38, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Studies on Heat Transmission to Boiling Liquids in an Electrically Heated Tube.
Major Adviser: Prof. G. H. Montillon.
1942. VOIGT, RALPH FERDINAND. B.S. '31, M.S. '37, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Botany.
Thesis: A Pharmacognostic and Pharmacological Study of Adonis vernalis L. and Adonis autumnalis L.
Major Adviser: Dean C. H. Rogers.

1942. WALLER, COY WEBSTER. B.S. '37, University of North Carolina; M.S. '39, University of Buffalo.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: A Phytochemical Study of *Larrea Divaricata*.
Major Adviser: Prof. Ole Gisvold.
1943. ALEXANDER, LEROY ELBERT. B.E. '37, River Falls State Teachers College; M.S. '42, University of Minnesota.
Major: Physical Chemistry. Minor: Physics.
Thesis: The Crystal Structure of Ammonium Pentachlorozincate.
Major Adviser: Prof. H. P. Klug.
1943. BARNES, RODERICK ARTHUR. B.S. '39, University of Wisconsin.
Major: Organic Chemistry. Minors: Physical and Analytical Chemistry.
Thesis: The Chloromethylation of Tetralin and the Jacobsen Rearrangement in Cyclic Systems.
Major Adviser: Prof. R. T. Arnold.
1943. BOEKELHEIDE, VIRGIL CARL. B.A. magna cum laude '39, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Reaction between Aromatic Diazonium Compounds and α,β -Unsaturated Compounds.
Major Adviser: Prof. C. F. Koelsch.
1943. BOOTHE, JAMES HOWARD. B.S. with honors '39, State College of Washington.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: The Synthesis of Derivatives of Thiobarbituric Acid.
Major Adviser: Prof. C. O. Wilson.
1943. BUELOW, DONALD WILLIAM. B.S. '37, M.S. '39, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Phytochemical Investigation of *Hermidium alipes*.
Major Adviser: Prof. Ole Gisvold.
1943. CARR, CHARLES WILLIAM. B.Ch. '38, M.S. '39, University of Minnesota.
Major: Physical Chemistry. Minor: Physiological Chemistry.
Thesis: Investigations on Collodion Membranes.
Major Adviser: Prof. L. H. Reyerson.
1943. HORN, GERTRUDE MARY. B.S. '38, M.S. '39, State College of Washington.
Major: Pharmaceutical Chemistry. Minors: Pharmacology and Organic Chemistry.
Thesis: A Phytochemical Study of *Larrea divaricate* with Special Emphasis on Its Yellow Pigments.
Major Adviser: Prof. Ole Gisvold.

1943. HUME, DAVID NEWTON. B.A. '39, M.A. '40, University of California.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: The Application of the Polarographic Method to the Study of
Some Complex Ions.
Major Adviser: Prof. I. M. Kolthoff.
1943. JANG, HU JAMES JOSEPH. B.S. with honors '38, University of Cal-
ifornia; M.S. in Ch.E. '40, University of Minnesota.
Major: Chemical Engineering. Minor: Pharmaceutical Chemistry.
Thesis: Kinetics of Crystal Growth in Supersaturated Solutions
(Magnesium Sulfate Heptahydrate).
Major Advisers: Prof. G. H. Montillon and C. A. Mann.
1943. KASLOW, CHRISTIAN EDWARD. B.S. '24, Hamline University;
M.S. '29, University of Iowa.
Major: Organic Chemistry. Minor: Biochemistry.
Thesis: Action of Alkyl Iodides on β -Anilino-crotonic Acid Esters.
Major Adviser: Prof. W. M. Lauer.
1943. NICHOLS, JOSEPH. B.S. '38, College of the City of New York;
M.S. '41, University of Minnesota.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Reaction Between Quinones and Metallic Enolates XVII;
the Reaction of Dibromoparaxyloquinone with Sodio Malonic Ester.
Major Adviser: Prof. L. I. Smith.
1943. SOINE, TAITO OLAF. B.S. '38, M.S. '39, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and
Pharmacology.
Thesis: A Phytochemical Study of Argemone hispida.
Major Adviser: Prof. Ole Gisvold.
1943. SPRUNG, JOSEPH ASHER. B.Ch. '38, M.S. '39, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Ortho Effect.
Major Adviser: Prof. R. T. Arnold.
1943. STRATTON, CHARLES HOWARD. B.S. '39, River Falls State Teachers
College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Preparation of 3, 4-disubstituted Pyrrolidines
and Piperidines.
Major Adviser: Prof. C. F. Koelsch.
1943. WATTERS, JAMES ISAAC. B.S. '31, University of Minnesota.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Analytical Applications of the Dropping Mercury Electrode.
Major Adviser: Prof. I. M. Kolthoff.

1944. ALLEN, MARTIN. B.A. '38, Brooklyn College; M.S. '41, University of Minnesota.
Major: Physical Chemistry. Minor: Inorganic Chemistry.
Thesis: The Solubility of Silver Acetate in Mixed Solvents Containing Strong Electrolytes.
Major Adviser: Prof. F. H. MacDougall.
1944. ANDUR, ELIAS. B.Ch. with high distinction '38, M.S.Ch.E. '41, University of Minnesota.
Major: Chemical Engineering. Minors: Physical Chemistry and Physiological Chemistry.
Thesis: The Dehydration of Vegetables.
Major Adviser: Prof. R. E. Montonna.
1944. BORTNICK, NEWMAN MAYER. B.A. magna cum laude '41, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Veratrole and the 1, 3-Benzodioxole Series.
Major Adviser: Prof. R. T. Arnold.
1944. COYNER, EUGENE CASPER. B.S. with high honors '40, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Diels-Alder Diene Synthesis.
Major Adviser: Prof. R. T. Arnold.
1944. ERICKSON, JOHN GERHARD. B.A. '38, St. Olaf College; M.S. '40, North Dakota Agricultural College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reactions of Aldehydes with β -Anilinocrotonic Esters.
Major Adviser: Prof. W. M. Lauer.
1944. HARRIS, WALTER EDGAR. B.Sc. '38, M.Sc. '39, University of Alberta.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Polarography of Uranium.
Major Adviser: Prof. I. M. Kolthoff.
1944. MATHER, CHARLES BECKMAN. B.S. in Ch.E. with honors '38, Montana State College; M.S. in Ch.E. '39, Virginia Polytechnic Institute.
Major: Chemical Engineering. Minors: Physical Chemistry and Mathematics.
Thesis: Turbulent Flow under Isothermal and Heat Transfer Conditions in a Smooth Pipe.
Major Adviser: Prof. C. A. Mann.
1944. MAY, DONALD ROBERT. B.S. '37, University of Wisconsin.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Studies of Solubilities in Aging of Precipitates.
Major Adviser: Prof. I. M. Kolthoff.

1944. MCBRADY, JOHN J. B.Ch. '38, University of Minnesota.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: A Study of Reversible and Irreversible Photobleaching of Uranium Compounds in Homogeneous Solutions.
Major Adviser: Prof. R. S. Livingston.
1944. MILLER, SHELBY ALEXANDER. B.S. in Ch.E. '35, University of Louisville.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: The Agitation of Two-Phase Systems of Immiscible Liquids.
Major Adviser: Prof. C. A. Mann.
1944. RAFFAUF, ROBERT FRANCIS. B.S. '36, College of the City of New York; M.A. '37, Columbia University.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: Studies in the Piperidine Series: The Determination of Configuration of 4,5-Diphenylpiperidone-2 and Related Compounds.
Major Adviser: Prof. C. F. Koelsch.
1944. RENFREW, EDGAR EARL. B.S. '36, University of Idaho.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: The Thermal Rearrangement of 2,2,3-Trimethyl-5-Allyloxy-coumaran.
Major Adviser: Prof. W. M. Lauer.
1944. ROLFSON, STANLEY THOMAS. B.S. '40, St. John's University.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Studies in the Piperidine Series: The Synthesis of Certain 3,4-Disubstituted Piperidines.
Major Adviser: Prof. C. F. Koelsch.
1944. SCHULTZ, EVERETT MAYNARD. B.A. '32, Drake University.
Major: Organic Chemistry. Minor: Pharmacology.
Thesis: A Study in the Synthesis of Isoquinolines Containing Methylene-dioxy-, Cyclopenteno-, and Cyclohexenobenzene Ring Systems.
Major Adviser: Prof. R. T. Arnold.
1944. SEARS, GEORGE WALLACE, JR. B.S. '39, University of Nevada.
Major: Inorganic Chemistry. Minor: Physical Chemistry.
Thesis: The Crystal Structure of Cesium Trichlorocuprate.
Major Adviser: Prof. H. P. Klug.
1944. SHAPIRO, ISADORE. B.Ch.E. '38, University of Minnesota.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Aging of Silver Bromide in the Dry State.
Major Adviser: Prof. I. M. Kolthoff.
1944. TESS, ROY WILLIAM HENRY. B.S. with highest honors '39, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: I. The Structure of Diduroquinone and a Contribution to the Study of the Structure of Dithymoquinone. II. The Red Oxidation Products of the Tocopherols: Mechanism of the Reaction Leading to Their Formation.
Major Adviser: Prof. L. I. Smith.

1944. WILEY, PAUL FEARS. B.S. with honors '38, M.S. '39, University of Illinois.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Reaction between Quinones and Metallic Enolates XX. A. Bromotrimethylquinone and Magnesium Malonic Enolate. B. Formation of Hydrocoumarins from Quinones and Metallic Enolates. C. Reaction between Bromometaxyloquinone and Malonic Ester.
Major Adviser: Prof. L. I. Smith.
1945. CHIAO, SHIH-JEN. B.S. '37, Yenching University; M.S. '40, University of Michigan.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: A Study of Nitrogen Containing Organic Inhibitors of Corrosion.
Major Adviser: Prof. C. A. Mann.
1945. CH'IN, NORMAN CHEN-HU. B.S. '38, Yenching University; M.S.Ch.E. '41, University of Minnesota.
Major: Chemical Engineering. Minor: Analytical Chemistry.
Thesis: Studies of Distillation in a Semi-commercial Size Packed Column.
Major Adviser: Prof. R. E. Montonna.
1945. GREGOR, HARRY PAUL. B.A. magna cum laude '39, University of Minnesota.
Major: Physical Chemistry. Minor: Physiological Chemistry.
Thesis: Investigations on Collodion Membranes.
Major Advisers: Profs. L. H. Reyerson and Karl Sollner.
1945. HUGGETT, CLAYTON MCKENNA. B.S. '38, University of Wisconsin; M.S. '43, University of Minnesota.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Mechanism of Burning of Double Base Propellants.
Major Adviser: Prof. B. L. Crawford.
1945. SMALL, LAVERNE DOREYN. B.S. '38, M.S. '43, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: A Study of Derivatives of Thiobarbituric Acid.
Major Adviser: Prof. C. O. Wilson.
1946. CHU, CHIEN. B.S. in Ch.E. '40, Purdue University; M.S. in Ch.E. '41, University of Minnesota.
Major: Chemical Engineering. Minors: Analytical Chemistry and Mechanical Engineering.
Thesis: Industrial Development of Ramie Fiber in China.
Major Adviser: Prof. R. E. Montonna.
1946. GLEDHILL, RONALD JAMES. B.A. cum laude '39, Ohio State University.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: Studies on Infrared Spectroscopy.
Major Adviser: Prof. B. L. Crawford.

1946. LEHMICKE, DAVID JOHN. B.S. '35, California Institute of Technology.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: A Polarographic Investigation of Phenolphthalein, Phenol Red,
and Thymol Blue.
Major Adviser: Prof. I. M. Kolthoff.
1946. LUCHT, FRED JOHN. B.S. with highest honors '38, University of
Illinois; M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Part I: Model Experiments on the Use of Cyclopentadiene in the
Synthesis of Sterol-Like Compounds. Part II: Pyridonation of
Xanthenes.
Major Adviser: Prof. C. F. Koelsch.
1946. REVEAL, WILLIAM SMITH. B.S. in Ch.E. with distinction '38,
Purdue University.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Heat Transmission Studies in a Natural Circulation Evaporator.
Major Adviser: Prof. E. L. Fiset.
1947. ARMSTRONG, WILLARD PATTERSON. B.S. in Ch.E. with high honors '38,
University of Illinois.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: The Leaching of Inorganic Salts with Aqueous Solutions.
Major Adviser: Prof. E. L. Fiset.
1947. BOYACK, GERALD ARTHUR. B.A. '39, Grinnell College.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Synthesis of the Coumaran Isomer of Vitamin E.
Major Adviser: Prof. L. I. Smith.
1947. HALL, MYRON WAYNE. B.Ch.E. '33, University of Minnesota.
Major: Chemical Engineering. Minor: Bacteriology.
Thesis: A Study of the Distillation Principles of Aqueous Formalde-
hyde Solutions.
Major Adviser: Prof. E. L. Fiset.
1947. HORWITZ, WILLIAM. B.S. '37, University of Chicago; M.S. '38,
University of Minnesota.
Major: Physical Chemistry. Minor: Agricultural Biochemistry.
Thesis: Polarization Studies in the Raman Effect.
Major Adviser: Prof. B. L. Crawford.
1947. LEIBEE, JOSEPH BRUCE. B.Ch. with distinction '40, University of
Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Phenyl Allyl Ether Rearrangement, The Rearrangement in
Aqueous Alkali.
Major Adviser: Prof. W. M. Lauer.

1947. LO, CHIEN-PEN. B.S. '35, National Tsing Hua University.
Major: Organic Chemistry. Minor: Pharmaceutical Chemistry.
Thesis: The Preparation and the Jacobsen Reaction of Some 6,7-Dialkyltetralins.
Major Adviser: Prof. L. I. Smith.
1947. PARR, ROBERT GHORMLEY. B.A. '42, Brown University.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Studies of Molecular Vibration.
Major Adviser: Prof. B. L. Crawford.
1947. PETERSON, SIGFRED. B.S. '40, University of California.
Major: Physical Chemistry. Minor: Physics.
Thesis: Equilibria in Silver Acetate Solutions.
Major Adviser: Prof. F. H. MacDougall.
1947. SCHUBERT, WOLFGANG MANFRED. B.S. with highest honor '41, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: I. The Nitrogen Analogues of α -Tocopherol. II. The Reaction Between Plymethyl-p-Methoxyanilines and Formaldehyde.
Major Adviser: Prof. L. I. Smith.
1947. SEARLES, SCOTT, JR. B.A. '41, M.A. '42, University of California.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: A Study of the Mechanism of the Grignard Cleavage of Hindered Allylic Esters and the Rearrangement of Allylic Esters of Diphenylacetic Acid.
Major Adviser: Prof. R. T. Arnold.
1948. ASANO, AKIRA. B.S. '44, Drake University; M.S. '45, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Pharmacology, Agricultural Biochemistry.
Thesis: The Synthesis of Some Substituted Dehydrocatechols.
Major Adviser: Prof. Ole Gisvold.
1948. BENICA, WILLIAM STEINHART. B.S. '42, Rutgers University; M.S. '43, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Physiological Chemistry.
Thesis: The Synthesis of Some Substituted Glutarimides.
Major Adviser: Prof. C. O. Wilson.
1948. BOPE, FRANK WILLIS. B.S. summa cum laude '41, Ohio State University.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: A Preliminary Phytochemical and Pharmacological Investigation of the Tannin Obtained from Pinus caribaea, Morelet.
Major Adviser: Prof. Ole Gisvold.

1948. BOVEY, FRANK ALDEN. B.S. '40, Harvard College.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Mechanism of the Emulsion Polymerization of Styrene.
Major Adviser: Prof. I. M. Kolthoff.
1948. CRAIG, PAUL NORMAN. B.S. cum laude '41, Hamline University.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Steric Effects of Methylene Groups.
Major Adviser: Prof. R. T. Arnold.
1948. CUTLER, FRANK ALLEN, JR. B.S. with highest honors '42,
University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction between Quinones and Metallic Enolates: XXII
Nitrotrimethylquinone and Sodiomalonic Ester; XXIII Aminotrimethyl-
quinone and Sodiomalonic Ester.
Major Adviser: Prof. L. I. Smith.
1948. DIGANGI, FRANK EDWARD. B.S. '40, Rutgers University; M.S. '42,
Western Reserve University.
Major: Pharmaceutical Chemistry. Minors: Physiological Chemistry and
Organic Chemistry.
Thesis: The Synthesis of Some Esters of *p*-Carboxybenzamidine.
Major Adviser: Prof. Ole Gislvoold.
1948. EARLE, PAUL LEWIS. B.Ch.E. '38, M.S. in Ch.E. '39,
University of Minnesota.
Major: Chemical Engineering. Minor: Mechanical Engineering.
Thesis: Studies in the Drying of Macaroni: Factors Effecting Checking.
Major Adviser: Prof. N. H. Ceaglske.
1948. ELMER, OTTO CHARLES. B.A. '43, Bluffton College.
Major: Organic Chemistry. Minor: Physiological Chemistry.
Thesis: The Mechanism of Decarboxylation of α,β - and β,γ -Unsaturated Acids.
Major Adviser: Prof. R. M. Dodson.
1948. ENGELHARDT, VAUGHN ARTHUR. B.A. with distinction '40, Northwestern
University; M.S. '44, University of Minnesota.
Major: Organic Chemistry. Minors: Physical Chemistry and Pharmaceutical
Chemistry.
Thesis: Studies in the Cyclopropane Series I: Nitrocyclopropyl Ketones
and Alcohols.
Major Adviser: Prof. L. I. Smith.
1948. HOUGEN, JOEL OLIVER. B.S. '36, University of Wisconsin; M.S. in
Ch.E. '46, University of Minnesota.
Major: Chemical Engineering. Minor: Bacteriology.
Thesis: Thermal Conductivities of Granular Solids through Which Gases
Are Flowing.
Major Advisers: Profs. C. A. Mann and E. L. Piret.

1948. JACKSON, MELBOURNE LESLIE. B.S.Ch.E. with honors '41, Montana State College.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Studies in Distillation: A Correlation of (HTU) Values with Physical Properties and Operating Variables.
Major Adviser: Prof. N. H. Ceaglske.
1948. JOHNSON, JOHN FREDERICK. B.Ch.E. with honors '42, University of Minnesota.
Major: Chemical Engineering. Minor: Bacteriology.
Thesis: Energy-New Surface Relationship in the Crushing of Solids.
III—Application of Gas Absorption Measurements to an Investigation of the Crushing of Quartz.
Major Adviser: Prof. E. L. Piret.
1948. KEMPE, LLOYD LUTE. B.Chem. '32, M.S. '38, University of Minnesota.
Major: Chemical Engineering. Minor: Bacteriology.
Thesis: The Effect of Continuously Controlled pH on the Lactic Acid Fermentation.
Major Advisers: Profs. E. L. Piret and H. O. Halvorson.
1948. KING, ROBERT EDWARD. B.S. cum laude '44, Ohio State University.
Major: Pharmaceutical Chemistry. Minor: Pharmacology.
Thesis: The Development of New Procedures for the Separation and Purification of the Active Principles from the Fresh Leaves of *Digitalis Purpurea*.
Major Adviser: Prof. Ole Gisvold.
1948. KITZES, ARNOLD STANLEY. B.Ch.E. '39, College of the City of New York; M.S. in Ch.E. '41, University of Minnesota.
Majors: Chemical Engineering and Dairy Husbandry. Minor: Agricultural Biochemistry.
Thesis: Factors Influencing the Design and Operation of a Spray Drier.
Major Advisers: Profs. A. E. Stoppel and S. T. Coulter.
1948. KNIGHT, JERE DONALD. B.S. magna cum laude '38, St. John's University.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: A Study of Some Aspects of Photosensitization.
Major Adviser: Prof. R. S. Livingston.
1948. MATSUYAMA, GEORGE. B.S. '40, University of California.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: A Polarographic Study of Diffusion Coefficients in Water-Ethanol Mixtures.
Major Adviser: Prof. F. H. MacDougall.
1948. MEDALIA, AVROM IZAK, B.A. cum laude '42, Harvard College.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Reactions Induced by the Peroxide-ferrous Iron Reaction.
Major Adviser: Prof. I. M. Kolthoff.

1948. OLSEN, AUSTIN CARLEN. B.S. in Ch.E. with honors '39, Montana State College; M.S. in Ch.E. '41, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: A Study in the Mechanism of Dielectric Drying.
Major Advisers: Profs. N. H. Ceaglske and C. A. Mann.
1948. RICHTER, JOHN WILLIAM. B.S. with highest honors '42, University of Illinois.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Studies in the Mills-Nixon Effect.
Major Adviser: Prof. R. T. Arnold.
1948. SUNDET, SHERMAN ARCHIE. B.A. '39, Concordia College; M.S. '41, University of Idaho.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Condensations of 3-Acetocoumarin in the Presence of Cyanoacetamide.
Major Adviser: Prof. C. F. Koelsch.
1948. VODONIK, JOSEPH LEONARD. B.Ch.E. with distinction '39, University of Minnesota.
Major: Chemical Engineering. Minor: Public Health.
Thesis: Some Physical Properties of Plastic Materials and Their Relation to Extrusion.
Major Adviser: Prof. C. A. Mann.
1949. AMIDON, ROGER WELTON. B.Chem. '36, M.S. '40, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: I. Reactions of Methylene-cyclopentane. II. Pyrolysis of Allyl 8-Ketoesters and an Allyl Glycidate.
Major Advisers: Profs. R. T. Arnold and R. M. Dodson.
1949. ARNETT, RAYMOND LEE. B.S. '36, Kent State University.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Energy of the Deformed Ethylene Molecule.
Major Adviser: Prof. B. L. Crawford.
1949. ARORA, SRINATH DAS. B.Sc. '22, M.Sc. '26, University of Allahabad.
Major: Inorganic Chemistry. Minor: Analytical Chemistry.
Thesis: Action of Ammonia on Mercury (I) Compounds.
Major Advisers: Profs. M. C. Sneed and W. N. Lipscomb.
1949. AXELSON, JOHN WILMER. B.S.Ch.E. '38, University of North Dakota.
Major: Chemical Engineering. Minor: Metallography.
Thesis: Energy-New Surface Relationship in the Crushing of Solids. IV. Application of Slow Compression to an Investigation of the Crushing of Crystalline Quartz.
Major Adviser: Prof. E. L. Fiert.

1949. BALLARD, JOHN HERBERT. B.Ch.E. with distinction '39, University of Minnesota.
Major: Chemical Engineering. Minor: Metallurgy.
Thesis: Limiting Flow Phenomena in Packed Liquid-Liquid Extraction Columns.
Major Adviser: Prof. E. L. Piret.
1949. BUCKLEY, JAY SELLECK, JR. B.A. '44, Williams College.
Major: Organic Chemistry. Minors: Pharmacology and Physiological Chemistry.
Thesis: The Dienone-phenol Rearrangement.
Major Advisers: Profs. R. T. Arnold and R. M. Dodson.
1949. DALE, WESLEY JOHN. B.S. with highest honors '43, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction between Quinones and Metallic Enolates, XXV.
I. The Condensation of Some Nitriles with Trimethylquinone.
II. Studies Related to the Structure of Diduroquinone.
Major Adviser: Prof. L. I. Smith.
1949. DAVIS, HORACE RAYMOND, JR. B.A. '43, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: I. The Reaction between Quinones and Metallic Enolates. XXIV. Synthesis and Reactions of Bis-(2,4,5-Trimethylquinonyl)-Methane.
II. Attempted Synthesis of a Nitrocyclopropyl Sulfone.
Major Adviser: Prof. L. I. Smith.
1949. DINSMORE, HOWARD LIVINGSTON. B.A. with honors '42, Johns Hopkins University.
Major: Physical Chemistry. Minor: Physics.
Thesis: Infrared Intensities of Some Simple Molecules.
Major Adviser: Prof. B. L. Crawford.
1949. DOERGE, ROBERT FRED. B.S. '43, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Pharmacology and Physiological Chemistry.
Thesis: Synthesis of Thiobarbituric Acid Derivatives.
Major Adviser: Prof. Ole Gisvold.
1949. EBEL, ROBERT ARTHUR. B.Ch.E. with distinction '40, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: A Study of Extraction from Solids. Diffusion Rates in Porous Solids.
Major Adviser: Prof. E. L. Piret.
1949. ELDRIDGE, JOHN WILLIAM. B.S. in Ch.E. '42, University of Maine; M.S. '45, Syracuse University.
Major: Chemical Engineering. Minor: Business Administration.
Thesis: Design of Continuous Stirred-Tank Reactors for Liquid-Phase Reactions.
Major Adviser: Prof. E. L. Piret.

1949. FINN, ROBERT KAUL. B.Chem. '41, Chem. E. '42, Cornell University.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: The Rate of Formation of Lactic Acid by Fermentation at Controlled pH.
Major Advisers: Profs. E. L. Piret and H. O. Halvorson.
1949. FLETCHER, WILLIAM HENRY. B.S. '39, College of Idaho.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Vibrational Spectra of Diazomethane.
Major Adviser: Prof. B. L. Crawford.
1949. FREERKS, MARSHALL CORNELIUS. B.A. '39, Carleton College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies on Aminochromanacetic Acid Lactams, Compounds Which Have Unusual Tricyclic Structures.
Major Adviser: Prof. C. F. Koelsch.
1949. GRAYDON, WILLIAM FREDERICK. B.A.Sc. '42, M.A.Sc. '45, University of Toronto.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: An Investigation of Solubilization.
Major Adviser: Prof. I. M. Kolthoff.
1949. HOEFLE, MILTON LOUIS. B.S. '43, University of Illinois; M.S. '44, University of Minnesota.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: I. The Study of the Coupling of Phenol and Ethyl γ -Bromocrotonate.
II. The Phenyl Allyl Ether Rearrangement in Aqueous Alkali.
Major Adviser: Prof. W. M. Lauer.
1949. JOHNSON, RALPH ALTON. B.A. '40, Hastings College; M.S. '42, University of Colorado.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Use of Organic Reagents in Amperometric Titrations.
Major Adviser: Prof. I. M. Kolthoff.
1949. KING, MURRAY VERNON. B.S. in Ch.E. '42, University of Utah.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: X-ray Diffraction Studies of the *n*-Propylammonium Halides.
Major Adviser: Prof. W. N. Lipscomb.
1949. KLEBER, JOHN WILLIAM. B.S. cum laude '43, Duquesne University.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: A Preliminary Phytochemical Study of *Lithospermum Ruderale*, Douglas.
Major Adviser: Prof. Ole Gisvold.

1949. LEE, THOMAS SEYMOUR. B.S. '43, California Institute of Technology.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Applications of Reaction Kinetics to Problems in Analytical Chemistry.
Major Adviser: Prof. I. M. Kolthoff.
1949. MADDEN, ARTHUR JOHN, JR. B.S. with high honors '40, University of New Hampshire.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Heat Transfer from Wires to Gases at Sub-atmospheric Pressures under Natural Convection Conditions.
Major Adviser: Prof. E. L. Piret.
1949. MASON, DONALD ROMAGNE. B.S. with high honors '42, University of Illinois.
Major: Chemical Engineering. Minor: Electrical Engineering.
Thesis: Design Factors in Continuous Reaction Systems—Transients.
Major Adviser: Prof. E. L. Piret.
1949. MURAI, KOTARO. B.S.Ch.E. with distinction '44, M.S. '45, University of Nebraska.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Hyperconjugative Effect of Methylene Groups.
Major Advisers: Profs. R. T. Arnold and R. M. Dodson.
1949. NEBERGALL, WILLIAM HARRISON. B.E. '36, Western Illinois State Teachers College; M.S. '39, University of Illinois.
Major: Inorganic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Steric Effects in Substituted Tricyclohexylgermanes and Tricyclohexylsilanes.
Major Advisers: Profs. O. H. Johnson and M. C. Sneed.
1949. PIKE, FREDERICK PHILIPS. B.S.E. '34, University of Virginia; M.S.Ch.E. '36, Massachusetts Institute of Technology.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Physical Properties of Some Propionic Acid-Solvent-Water Systems.
Major Advisers: Profs. C. A. Mann and N. H. Ceaglske.
1949. SANBORN, CHARLES EVAN. B.Ch.E. '41, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Product Formation Rates in Heterogeneous Catalytic Processes.
Major Adviser: Prof. E. L. Piret.
1949. SCHERMERHORN, JOHN WATSON. B.S. '42, Rutgers University.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: Further Studies on the Alkaloids of Argemone Hispidia.
Major Adviser: Prof. T. O. Soine.

1949. SMITH, GRANT GILL. B.A. with honor '43, University of Utah.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Mechanism of the Pyrolysis of Esters.
Major Advisers: Profs. R. T. Arnold and R. M. Dodson.
1949. STEINHAUER, ALFRED FREDERICK. B.Ch. with high distinction '43,
University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Synthesis of 3-azafluoranthene and the Study of Its
Chemical Properties (Nitration and Oxidation).
Major Adviser: Prof. C. F. Koelsch.
1949. STEPHENS, CHARLES ROBERT, JR. B.S. '43, Mississippi State College.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: Studies of the Internal Reaction Mischeal.
Major Adviser: Prof. C. F. Koelsch.
1949. WALKER, HARRY MATTHEWS. B.S. with highest distinction '42, M.S. '46,
University of Arizona.
Major: Organic Chemistry. Minor: Chemical Engineering.
Thesis: The Synthesis of Angularly Substituted Octahydroquinolinediones
from Products of the Brunson Reaction.
Major Adviser: Prof. C. F. Koelsch.
1949. WEBERS, VINCENT JOSEPH. B.S. '43, University of Wisconsin.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Steric Effect of Methylene Groups of Ortho-substituted
Dimethylanilines.
Major Adviser: Prof. R. M. Dodson.
1950. ANDERSON, RAY HAROLD. B.S. cum Laude '36, College of St. Thomas.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Reactions of Amines with Polyhydroxycarbonyl Compounds.
Major Adviser: Prof. L. I. Smith.
1950. BESSER, ELI DONALD. B.Ch.E. '37, M.S. in Ch.E. '41, University
of Minnesota.
Major: Chemical Engineering. Minor: Biochemistry.
Thesis: An Experimental Study of Dielectric Drying.
Major Adviser: Prof. E. L. Piret.
1950. BLEASDALE, JAMES LEWIS. B.S. '44, Allegheny College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Reactions of Diazocompounds with Nitroolefins.
Major Adviser: Prof. W. E. Parham.
1950. BRAENDEN, OLAV JOHAN. Cand. Pharm. '42, University of Oslo.
Major: Pharmaceutical Chemistry. Minors: Chemical Engineering and
Physiological Chemistry.
Thesis: The Action of Nitrogen Tetroxide on Sorbose.
Major Adviser: Prof. Ole Gisvold.

1950. BRITAIN, J. W. B.A. '42, Rice Institute; M.S. '49, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Action of Concentrated Sulfuric Acid on Some N-Alkylbenzoyl-acetanilides.
Major Adviser: Prof. C. F. Koelsch.
1950. CHOW, ALFRED WEN-JEN. B.S. '46, University of Michigan.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: Some New Esters of p-carboxy-Benzamidine.
Major Adviser: Prof. Ole Givold.
1950. COLLIN, ROBERT LOUIS. B.S. cum laude '45, Alfred University;
M.S. '45, University of Illinois.
Major: Physical Chemistry. Minor: Physics.
Thesis: The Crystal Structures of Hydrazine and Hydrogen Peroxide.
Major Adviser: Prof. W. N. Lipscomb.
1950. CUMMINGS, WILLIAM. B.S. '40, M.S. '41, Renssalaer Polytechnic Institute.
Major: Organic Chemistry. Minor: Inorganic Chemistry.
Thesis: Condensation of Salicylaldehyde and Levulinic Acid in the Presence of Hydrogen Chloride.
Major Adviser: Prof. C. F. Koelsch.
1950. DELAITSCH, DALE MARSHALL. B.S. '44, University of Chicago;
B.A. '46, St. Olaf College.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: The Protection of Hydroxyl and Sulfhydryl Groups.
Major Adviser: Prof. W. E. Parham.
1950. EDESKUTY, FREDERICK JAMES. B.Ch.E. with distinction '44, University of Minnesota.
Major: Chemical Engineering. Minor: Physics.
Thesis: A Problem in Adsorption.
Major Adviser: Prof. N. R. Amundson.
1950. FLESCH, ROBERT NEIL. B.S. magna cum laude '42, College of St. Thomas.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Synthesis of Fluorenone-1,4-Quinone and a Study of Certain Dimethoxyfluorenones.
Major Adviser: Prof. C. F. Koelsch.
1950. GORDON, IRVING. B.Chem. with distinction '44, University of Minnesota.
Major: Organic Chemistry. Minors: Analytical Chemistry and Pharmaceutical Chemistry.
Thesis: Studies in the Chemistry of Dibenzofuran and p-Oxathiene.
Major Adviser: Prof. W. E. Parham.

1950. HARRIS, DARREL MELVIN. B.S. '43, Kirksville State Teachers College; M.S. '48, University of Minnesota.
Major: Inorganic Chemistry. Minor: Physical Chemistry.
Thesis: The Chemistry of Diphenylgermane, Triphenylgermane and Some of Their Derivatives.
Major Adviser: Prof. O. H. Johnson.
1950. HOLMES, RICHARD REMSEN. B.A. cum laude '42, Oberlin College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction between Quinones and Metallic Enolates.
Major Adviser: Prof. L. I. Smith.
1950. HOOD, HORACE EDWARD. B.S. in Chem. with highest honors '44, University of Illinois.
Major: Organic Chemistry. Minor: Physiological Chemistry.
Thesis: The Synthesis of Compounds Related to Morphine; Partial Nuclear Hydrogenation of N-Methyl-2-Methoxy-1-Naphthalene-8thylamine.
Major Adviser: Prof. C. F. Koelsch.
1950. HOPPONEN, RAYMOND ELLWOOD. B.S. '43, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: A Phytochemical Investigation of Digitalis Lanata.
Major Adviser: Prof. Ole Gisvold.
1950. JOHNSON, WARREN FREDERICK. B.A. '41, University of Oklahoma.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: An Investigation of the Kinetics of Reactions in Detergent Solutions.
Major Adviser: Prof. L. I. Smith.
1950. KASTEN, PAUL RUDOLPH. B.S. '44, M.S. '47, Missouri School of Mines.
Major: Chemical Engineering. Minor: Mathematics and Mechanics.
Thesis: An Adsorption Theory Applied to Fluidized, Moving, and Stationary Beds of Porous Solids.
Major Adviser: Prof. N. R. Amundson.
1950. LANDGREN, CLARENCE ROBERT. B.S. '44, Iowa State College.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Studies of the Rate of Growth of Crystals from Aqueous Solution (Potassium Alum).
Major Adviser: Prof. N. H. Ceaglske.
1950. LAPIDUS, LEON. B.Ch.E. magna cum laude '45, M.Ch.E. '47, Syracuse University.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: The Evaluation of Rate-Determining Steps in Radial Adsorption Analysis.
Major Adviser: Prof. N. R. Amundson.

1950. MATLACK, ALBERT SHELTON. B.S.Ch. '44, University of Virginia.
Major: Organic Chemistry. Minor: Plant Physiology.
Thesis: The Reactions of Organometallic Compounds with Quinolones.
Major Adviser: Prof. C. F. Koelsch.
1950. MILLER, IVAN KEITH. B.S. with honor '43, South Dakota State College.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Chemistry of Persulfate.
Major Adviser: Prof. I. M. Kolthoff.
1950. MURTY, GOLLAKOTA GOPALA KRISHNA. B.Sc. Honors '42, Andhra University.
Major: Pharmaceutical Chemistry. Minors: Agricultural Biochemistry and Organic Chemistry.
Thesis: Enzymatic Studies on Digitalis Lanata.
Major Adviser: Prof. Ole Gisvold.
1950. PARRY, EDWARD PETERSON. B.S. '45, University of Utah.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Kinetic Currents in Polarography.
Major Adviser: Prof. I. M. Kolthoff.
1950. PUNDERSON, JOHN OLIVER. B.S. '40, University of Chicago.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies on the Michael Reaction.
Major Adviser: Prof. C. F. Koelsch.
1950. RAMP, FLOYD LESTER. B.S. '44, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Preparation of Intermediates for a Proposed Biotin Syntheses.
Major Adviser: Prof. W. E. Parham.
1950. ROBINSON, FRANKLIN MOORE. B.S. with distinction '43, Worcester Polytechnic Institute.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies of the Synthesis and Chemical Transformations of Ketopyrrolidines.
Major Adviser: Prof. C. F. Koelsch.
1950. ROGIER, EDGAR ROBERT. B.S. with highest honors '44, University of Illinois.
Major: Organic Chemistry. Minor: Physiological Chemistry.
Thesis: Studies in the Cyclopropane Series. IV. Cyclopropyl Nitro-cyclopropyl Ketones and Bicyclopropyl Hydrocarbons.
Major Adviser: Prof. L. I. Smith.
1950. SJOLANDER, JOHN ROGERS. B.A. '46, University of Wisconsin.
Major: Organic Chemistry. Minor: Inorganic Chemistry.
Thesis: The Alkylation of Methyl 1,1,2,2-Ethanetetracarboxylate.
Major Adviser: Prof. C. F. Koelsch.

1950. SMITH, NORMAN LEE. B.S. '43, University of Arkansas.
Major: Chemical Engineering. Minor: Economics.
Thesis: The Effect of Diffusion in Heterogeneous Systems.
Major Adviser: Prof. N. R. Amundson.
1950. STRASSBURG, ROGER WILLIAM. B.S. '42, Iowa State College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Chemistry of Dibenzofuran.
Major Adviser: Prof. W. E. Parham.
1950. TOBIAS, MELVIN. B.Ch.E. '44, College of the City of New York.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Condensation of Vapors of Immiscible Liquids: Two Component Systems.
Major Adviser: Prof. A. E. Stoppel.
1950. YANG, CHANG-TSING. B.S. '37, National University of Chekiang.
Major: Chemical Engineering. Minor: Pharmaceutical Chemistry.
Thesis: Distillation Principles of Aqueous Formaldehyde Solutions Vapor-liquid Equilibria and Effect of Pressure.
Major Adviser: Prof. E. L. Fiset.
1951. ABU-SHADY, HAMED A. B.Pharm. '45, M.Pharm. '48, Fouad I University.
Major: Pharmaceutical Chemistry. Minors: Pharmacology and Organic Chemistry.
Thesis: A Phytochemical Study of Ambrosia maritima L.
Major Adviser: Prof. T. O. Soine.
1951. BUCHDAHL, MYRON ROBERT. B.S. '44, Union College; M.S. '46, University of Michigan.
Major: Pharmaceutical Chemistry. Minor: Physiological Chemistry.
Thesis: The Synthesis of Some Substituted Piperidine Compounds from Dipicolinic Acid.
Major Adviser: Prof. T. O. Soine.
1951. CHIANG, LI-CHIN. B.S. '44, M.S. '46, The Catholic University (China); B.S. '47, Yenching University.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: The Synthesis of Some Tetrahydroxy Biphenyls.
Major Adviser: Prof. Ole Gisvold.
1951. DAY, JOHN TORNGREN. B.A. '47, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Some Aspects of Aromatic Substitution.
Major Adviser: Prof. W. M. Lauer.
1951. DREW, HOWARD FELSHAW. B.A. '44, M.A. '47, Amherst College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Eliminations and Rearrangements in the B-Disulfone Series.
Major Adviser: Prof. W. E. Parham.

1951. DULMAGE, WILLIAM JAMES. B.Sc. Honours '46, University of Manitoba.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Crystal Structures of Hydrogen Cyanide and Pentaborane.
Major Adviser: Prof. W. N. Lipscomb.
1951. EGGERS, DAVID FRANK, JR. B.S. with highest honors '43,
University of Illinois.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Vibrational Infrared Intensities.
Major Adviser: Prof. Robert Livingston.
1951. ERREDE, LOUIS ANTHONY. B.S.Chem. with distinction '47, University
of Michigan.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Some Aspects of Aromatic Substitution.
Major Adviser: Prof. W. M. Lauer.
1951. FORSTER, LESLIE STEWART. B.S. '47, University of California.
Major: Physical Chemistry. Minor: Physics.
Thesis: Fluorescence Measurements of Chlorophyll Solutions.
Major Adviser: Prof. R. S. Livingston.
1951. HENEY, LYSLE JOSEPH, JR. B.Ch.E. '45, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Energy-New Surface Relationship in the Crushing of Solids.
V. Impact Crushing of Single Particles of Crystalline Quartz.
Major Adviser: Prof. A. J. Madden, Jr.
1951. HOLMQUIST, HOWARD EMIL. B.S. with highest distinction '47,
Northwestern University.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Introduction of Isoprene Units into Some
Organic Compounds.
Major Adviser: Prof. W. E. Parham.
1951. HUNTER, WILLIAM THOMAS. B.Chem. '44, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies Related to the Bicyclo-(2,2,1)Heptadiene-2,5 Ring
System.
Major Adviser: Prof. W. E. Parham.
1951. JONES, LERROY VICTOR. B.A. '35, Carleton College.
Major: Inorganic Chemistry. Minor: Chemical Engineering.
Thesis: Investigations of Propylgermanes and Propylgermanic Acid.
Major Adviser: Prof. O. H. Johnson.
1951. KATZ, LEWIS. B.Chem. with distinction '46, University of Minnesota.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Crystal Structure of Iron Lazulite--A Synthetic Mineral
Related to Lazulite and the Crystal Structure of Diketene.
Major Adviser: Prof. W. N. Lipscomb.

1951. KELLY, RALPH ELMER. B.S. with highest honors '47, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Cyclopropane Series X—The Reaction of Nitro-cyclopropyl Ketones with Alkali.
Major Adviser: Prof. L. I. Smith.
1951. LINDQUIST, ROBERT MARION. B.S. '44, University of Wisconsin.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Fields of Benz(f)-isoquinolines and of Benz-(h)isoquinolines.
Major Adviser: Prof. C. F. Koelsch.
1951. PARISER, RUDOLPH. B.S. '44, University of California.
Major: Physical Chemistry. Minor: Physics.
Thesis: A Study of Some Oxidation-Reduction Reactions Photosensitized by Chlorophyll and Related Substances.
Major Adviser: Prof. Robert Livingston.
1951. ROSENBAUM, JEROME JOSEPH. B.A. '42, New York University.
Major: Organic Chemistry. Minors: Analytical Chemistry and Pharmaceutical Chemistry.
Thesis: Polyalkylbenzenes XXXV.
Major Adviser: Prof. L. I. Smith.
1951. RYAN, VICTOR ALBERT. B.S. with honor '42, University of Wyoming.
Major: Physical Chemistry. Minor: Physics.
Thesis: A Study of Some Optical Properties of Chlorophyll Solutions.
Major Adviser: Prof. R. S. Livingston.
1951. SCHULZ, NORMAN FREDERICK. B.Ch.E. with distinction '39, M.S. in Ch.E. '50, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Energy-New Surface Relationship in the Crushing of Solids. VI. Effect of Temperature.
Major Advisers: Profs. E. L. Piret and S. R. B. Cooke.
1951. SOLLMAN, PAUL BENJAMIN. B.S. '47, Indiana University.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Reactions of Mannich Bases of Ketoacids.
Major Adviser: Prof. W. M. Lauer.
1951. SUTOR, WALTER LOUIS. B.Ch.E. '44, University of Minnesota.
Major: Chemical Engineering. Minor: Electrical Engineering.
Thesis: Studies on Heat Transfer and Pressure Drop for Boiling Water Flowing in a Vertical Tube.
Major Adviser: Prof. A. J. Madden.

1951. TAUER, KENNETH JOHN. B.S. '44, St. John's University.
Major: Physical Chemistry. Minor: Physics.
Thesis: The X-Ray Diffraction Studies of Crystalline Methanol.
Major Adviser: Prof. W. N. Lipscomb.
1951. TURNER, HARRY WILLISON. B.A. '47, University of Minnesota.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Preparation and Reactions of α -Cyanoalkyl Benzenesulfonates.
Major Advisers: Profs. W. M. Lauer and R. M. Dodson.
1951. WEBB, WILLIAM PAUL. B.S. in Chem. cum laude '47, University of Notre Dame.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies of the Abnormal Reimer-Tiemann Reaction.
Major Adviser: Prof. C. F. Koelsch.
1951. ZUCKERBAUM, ALEXANDER. B.S. '43, University of Michigan;
M.S. '48, University of Minnesota.
Major: Organic Chemistry. Minors: Pharmaceutical Chemistry and Bacteriology.
Thesis: 6-Phenyl- Δ^1 -Cyclohexenyl-1-Carbonitrile.
Major Adviser: Prof. W. E. Parham.
1952. BRAND, ROBERT ARTHUR. B.S. '47, University of Chicago.
Major: Physical Chemistry. Minor: Inorganic Chemistry.
Thesis: The Calorimetric Determination of the Adsorption Energy of Gases on Solid Surfaces.
Major Adviser: Prof. L. H. Reyerson.
1952. EMBREE, HARLAND DUMOND. B.S. with honors '48, University of California.
Major: Organic Chemistry. Minor: Analytical Chemistry.
Thesis: Condensations of 3-Acetylcoumarin with Ketones and Amine Salts.
Major Adviser: Prof. C. F. Koelsch.
1952. GEIGER, ROBERT WARREN. B.Chem. '44, University of Minnesota.
Major: Analytical Chemistry. Minor: Agricultural Biochemistry.
Thesis: The Carbon Tetrachloride Extraction of Copper (II) Dithizonate.
Major Adviser: Prof. E. B. Sandell.
1952. HAMOR, GLENN HERBERT. B.S. '41, M.S. '47, Montana State University.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: The Synthesis of Some Derivatives of Saccharin.
Major Adviser: Prof. T. O. Soine.
1952. HEIN, ROWLAND FRANK. B.Ch.E. with distinction '44, University of Minnesota.
Major: Chemical Engineering. Minor: Agricultural Biochemistry.
Thesis: Continuous Stirred Tank Reactors: Mass Transfer Rates in Liquid-Liquid Systems.
Major Adviser: Prof. A. J. Madden.

1952. HONIG, JURGEN MICHAEL. B.A. '45, Amherst College.
Major: Physical Chemistry. Minor: Physics.
Thesis: The Adsorption of NO_2 - N_2O_4 and of N_2 on Rutile Surfaces.
Major Adviser: Prof. L. H. Reyerson.
1952. KOHLHASE, WILLIAM LAWRENCE. B.S. magna cum laude '47, Hamline University.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Cycloparaffins VIII--The Preparation of Two 1-Acyl-2-Nitro-2,3,3-Trimethylcyclopropanes and Their Reaction with Alkalis.
Major Adviser: Prof. L. I. Smith.
1952. KRESPAN, CARL GEORGE. B.S. with high distinction '48, University of Rochester.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Study of the Reimer-Tiemann Reaction on 1-Substituted-2-Naphthols.
Major Adviser: Prof. C. F. Koelsch.
1952. KROGH, LESTER CHRISTENSEN. B.S. in Ch.E. '45, M.S. '48, University of Nebraska.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in the Internal Michael Reaction.
Major Adviser: Prof. C. F. Koelsch.
1952. LANCASTER, JOHN EDGAR. B.S. '42, Duquesne University.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Vibrational Spectra of Some Deutero-Ethylenes.
Major Adviser: Prof. Bryce Crawford, Jr.
1952. LEE, WILLIAM WEI. B.S. '47, University of California.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in Allylic Systems: 1-(Chloromethyl)-Cyclohexene--Its Preparation and Reactions.
Major Adviser: Prof. R. T. Arnold.
1952. LINDSAY, KENNETH LAWSON. B.S. with highest honors '48, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Mechanism of the Reaction of Bromine with 2,2-Diphenyl-penten-4-oic Acid and Its Esters.
Major Adviser: Prof. R. T. Arnold.
1952. MATTERN, ROBERT VALENTINE. B.Ch.E. with distinction '44, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Continuous Flow Stirred Tank Reactors: Solid-Liquid Systems.
Major Adviser: Prof. E. L. Piret.

1952. MILLER, ROBERT HERMAN. B.S. '39, University of Minnesota.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: The Synthesis of Some N-Alkyl-p-Amidino-Benzamides.
Major Adviser: Prof. Ole Gisvold.
1952. MORELLO, EDWIN FRANCIS. B.S. '48, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction of α -Haloketones with Amines.
Major Adviser: Prof. W. E. Parham.
1952. PUTNEY, BLAKE FUQUA. B.S. '47, Medical College of Virginia.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: A Synthesis of Pseudopelletierine.
Major Adviser: Prof. T. O. Soine.
1952. REED, THOMAS BINNINGTON. B.S. '47, Northwestern University.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Crystal and Molecular Structure of 1,2-Dichloroethane at -140°C , the Crystallography of Solid Dinitrogen Trioxide at -115°C and the Crystallography of Cycloheptatriene.
Major Adviser: Prof. W. N. Lipscomb.
1952. RICHARDSON, PAUL NOEL. B.Chem. with high distinction '49, University of Minnesota.
Major: Organic Chemistry. Minors: Physiological Chemistry and Pharmacology
Thesis: The Deamination of the Aliphatic Amines.
Major Adviser: Prof. R. T. Arnold.
1952. RODER, THOMAS MICHAEL. B.S. '48, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Benzo-1,4-Dithiadene.
Major Adviser: Prof. W. E. Parham.
1952. ROST, WILLIAM JOSEPH. B.S. '48, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: The Synthesis of Some Esters of Some N-Alkyl p-Carboxybenzamidines.
Major Adviser: Prof. Ole Gisvold.
1952. RYAN, JOHN PETER. B.S. cum laude '43, College of St. Thomas.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: A Study of the Claisen Rearrangement Using Radioactive Carbon.
Major Advisers: Profs. F. H. MacDougall and P. R. O'Connor.
1952. SHOWELL, JOHN SHELDON. B.S. '46, M.S. '49, California Institute of Technology.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Cyclopropane XI: Action of Bases Upon Certain Tertiary Nitro-cyclopropyl Ketones.
Major Adviser: Prof. L. I. Smith.

1952. STUSIAK, MICHAEL. B.A.Sc. '43, M.A.Sc. '44, University of British Columbia.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: Studies in Vapor-Phase Esterification.
Major Adviser: Prof. N. R. Amundson.
1952. TOPOL, LEO ELI. B.S. with honor '46, Northeastern University.
Major: Physical Chemistry. Minor: Physiological Chemistry.
Thesis: Ionic Equilibria in Aqueous and Mixed Solvent Solutions of Silver Acetate and Silver Monochloroacetate.
Major Adviser: Prof. F. H. MacDougall.
1952. WEIL, SANFORD ARTHUR. B.A. cum laude '48, Brooklyn College.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: Studies of the Fluorescence of Solutions of Chlorophyll and Related Substances.
Major Adviser: Prof. R. S. Livingston.
1953. APPEL, ROBERT MARTIN. B.S. in Pharm. '50, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Pharmacology and Organic Chemistry.
Thesis: A Phytochemical Investigation of Digitalis Ferruginea.
Major Adviser: Prof. Ole Gisvold.
1953. BOBLITT, ROBERT LEROY. B.S. in Pharm. '48, Ohio Northern University.
Major: Pharmaceutical Chemistry. Minor: Organic Chemistry.
Thesis: The Synthesis of Some Esters of Some New N-Alkyl p-Carboxy-benzamidines.
Major Adviser: Prof. Ole Gisvold.
1953. BOWERS, RICHARD CHARLES. B.S. '48, University of Michigan.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Aging of Colloidal and Flocculated Silver Bromide.
Major Adviser: Prof. I. M. Kolthoff.
1953. BREZINSKI, JULIUS JOHN. B.S. with highest honors '49, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Use of the Internal Michael Reaction in the Synthesis of Morphine Analogues.
Major Adviser: Prof. C. F. Koelsch.
1953. BRODOWAY, NICOLAS. B.S.P. '49, University of British Columbia.
Major: Organic Chemistry. Minor: Inorganic Chemistry.
Thesis: The Rearrangements of Allyl Ethers of Some Hydroxymethylene Compounds.
Major Adviser: Prof. W. M. Lauer.

1953. CURTIS, RICHARD MILTON. B.S. '48, University of California.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: An X-ray Spectrometer Study of Elemadienolic Acid.
Major Adviser: Prof. W. N. Lipscomb.
1953. FRITZ, HENRY EDWARD. B.S. '47, M.S. '47, University of Illinois.
Major: Organic Chemistry. Minor: Inorganic Chemistry.
Thesis: The Dienone-Phenol Rearrangement.
Major Adviser: Prof. S. W. Fenton.
1953. GREGG, DAVID HENRY. B.S. '49, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Pharmacology and Organic Chemistry.
Thesis: A Preliminary Phytochemical Investigation of Digitalis Orientalis.
Major Adviser: Prof. Ole Gisvold.
1953. HASEK, WILLIAM ROBERT. B.S. '49, Carnegie Institute of Technology.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Part I: Reactions of Nitroolefins with Diazocompounds; Part II: Reactions of Benzo-1,4-Dithiadene.
Major Adviser: Prof. W. E. Parham.
1953. HOLLY, EARL DOUGLAS. B.S. with distinction '49, University of Michigan.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Cyclopropanes IX: A Review of the Work of Kohler and Williams—An Attempt to Prepare an Allenic Ketone.
Major Adviser: Prof. L. I. Smith.
1953. JONES, JOHN DONALD. B.S. '49, University of Wisconsin.
Major: Organic Chemistry. Minor: Agricultural Biochemistry.
Thesis: Benzo-1,4-Oxathiadene.
Major Adviser: Prof. W. E. Parham.
1953. KHALAFALLA, SANAA EL-SAYED. B.Sc., '44 Fouad I University; M.S. '49, University of Minnesota.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Theory of Polarographic Diffusion—Study of Instantaneous Current-Time Curves at the Dropping Mercury Electrode.
Major Adviser: Prof. I. M. Kolthoff.
1953. KYTE, JOHN RUSSELL. B.S. '43, Iowa State College.
Major: Chemical Engineering. Minor: Mechanical Engineering.
Thesis: Heat Transfer from Spheres and Cylinders to Gases at Sub-Atmospheric Pressures Under Natural Convection Conditions.
Major Adviser: Prof. E. L. Piret.
1953. LAVINE, LOUIS RICHARD. B.S. with distinction '48, M.S. '49, University of Michigan.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Crystal and Molecular Structure of B_5H_{11} .
Major Adviser: Prof. W. N. Lipscomb.

1953. LEUSSING, DANIEL LAWRENCE, JR. B.A. '45, University of Cincinnati; M.S. '47, University of Illinois.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Iron-Thioglycolic Acid Complexes.
Major Adviser: Prof. I. M. Kolthoff.
1953. LOCKWOOD, ROBERT GREENING. B.A. '49, Carleton College.
Major: Organic Chemistry. Minor: Inorganic Chemistry.
Thesis: Studies in the Rearrangement of Allylic Imido Ethers.
Major Adviser: Prof. W. N. Lauer.
1953. NORDMAN, CHRISTER ERIC. B.S. '49, Helsingfors Institute of Technology.
Major: Physical Chemistry. Minor: Physics.
Thesis: The Crystal and Molecular Structure of Tetraborane.
Major Adviser: Prof. W. N. Lipscomb.
1953. RHODES, HAROLD JESSE. B.S. '49, University of Minnesota.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: The Synthesis of 2-Hydroxyoctahydroquinolizine and Some of Its Esters.
Major Adviser: Prof. T. O. Soine.
1953. SAUERBRUNN, ROBERT DEWEY. B.S. '47, Southern Illinois State University.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Analytical Chemistry of Osmium Tetroxide.
Major Adviser: Prof. E. B. Sandell.
1953. SHEARD, JOHN LEO. B.A. cum laude '45, M.A. '47, Harvard University.
Major: Inorganic Chemistry. Minor: Analytical Chemistry.
Thesis: The Chemistry of Oxygen Fluoride (I)—A Study of the OF_2 -Ferrocyanide Reaction.
Major Adviser: Prof. T. D. O'Brien.
1953. SMUTNY, EDGAR JOSEF. B.A. cum laude '48, University of Colorado.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Chemistry of 10-Phenylphenanthrol-9, Particularly Electrophilic and Nucleophilic Substitution.
Major Adviser: Prof. C. F. Koelsch.
1953. TOOLE, RICHARD CHARLES. B.S. '48, University of Michigan.
Major: Inorganic Chemistry. Minor: Analytical Chemistry.
Thesis: Metal Complexes with Optically Active Diamines.
Major Adviser: Prof. T. D. O'Brien.
1953. WHEELER, EDWARD LOCKWOOD. B.S. cum laude '49, Brown University.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: Studies in a Synthesis of Dehydroabiatic Acid.
Major Adviser: Prof. W. E. Parham.

1954. ACRIVOS, ANDREAS. B.Ch.E. summa cum laude '50, Syracuse University; M.S. in Ch.E. '51, University of Minnesota.
Major: Chemical Engineering. Minor: Physical Chemistry.
Thesis: A Theoretical Discussion of Steady and Unsteady State Multi-component Rectification Including a Treatment of Mixtures with an Indefinite Number of Components.
Major Adviser: Prof. W. R. Amundson.
1954. ALSTAD, CHARLES DONALD. B.Ch.E. '46, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics and Mechanics.
Thesis: The Transient Behavior of Single-Phase, Natural-Circulation Loop Systems.
Major Adviser: Prof. W. R. Amundson.
1954. BAY, PAUL G. B.S. '50, George Washington University.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: The Synthesis of Some 4-Carbobenzoxy-3-Alkoxy Benzamidine Hydrochlorides and Other Amidines.
Major Adviser: Prof. Ole Gisvold.
1954. BROOKS, WENDELL VICTOR FLAGG. B.A. '48, Swarthmore College.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Vibrational Intensities of the Mixed Halogen Compounds.
Major Adviser: Prof. B. L. Crawford.
1954. BRUCKENSTEIN, STANLEY. B.S. '50, Polytechnic Institute of Brooklyn.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Acid-Base Equilibria in Glacial Acetic Acid.
Major Adviser: Prof. I. M. Kolthoff.
1954. DAVIS, BOB KEITH. B.S. with distinction '49, Bradley Polytechnic Institute.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Cyclopropanes XIII. The Reaction Between Quinones and Metallic Enolates XXVII.
Major Adviser: Prof. L. I. Smith.
1954. DEWALD, ARTHUR EUGENE. B.S. cum laude '47, Allegheny College.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Steric Effect of α -Methylene Groups.
Major Advisers: Profs. S. W. Fenton and R. T. Arnold.
1954. HEBERLING, JACK WAUGH, JR. B.S. '50, University of Illinois.
Major: Organic Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction of α -Haloacetals with Mercaptans Substitution Reactions of 1,2-Vinyl-Bissulfides.
Major Adviser: Prof. W. E. Parham.

1954. HOLUM, JOHN ROBERT. B.A. summa cum laude '50, St. Olaf College.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Cyclopropanes XIV.
Major Adviser: Prof. L. I. Smith.
1954. LLOYD, WALLIS ALLEN. B.S. '49, Pennsylvania State College.
Major: Chemical Engineering. Minor: Agricultural Biochemistry.
Thesis: A Study of the Kinetics of Iron Oxide Reduction.
Major Adviser: Prof. N. R. Amundson.
1954. MOORE, WILLIAM ROBERT. B.S. '50, University of California at
Los Angeles.
Major: Organic Chemistry. Minors: Physical, Analytical, and Inorganic
Chemistry.
Thesis: The Synthesis and Rates of Hydrolysis of Some Di-Benzcyclo-
alkenylchloromethanes.
Major Adviser: Prof. R. T. Arnold.
1954. MOULTON, WILBUR NORTON. B.S. magna cum laude '49, Sioux Falls
College; M.S. '52, University of Minnesota.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: 2-Phenyl-Al-Cyclohexenecarbonitrile.
Major Adviser: Prof. W. E. Parham.
1954. PETERSON, LOWELL EUGENE. B.Ch. with high distinction '50,
University of Minnesota.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Sorption of Gases Having Acidic and Basic Properties on
Nylon Fibers.
Major Adviser: Prof. L. H. Reyerson.
1954. RAMETTE, RICHARD WALES. B.A. '50, Wesleyan University.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Reaction Between Rhodamine B and Antimony.
Major Adviser: Prof. E. B. Sandell.
1954. TOMAN, ROBERT JOSEPH. B.Ch.E. with high distinction '49,
University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Study of Vapor Phase Catalytic Esterification.
Major Adviser: Prof. A. J. Madden.
1954. TOREN, PAUL EDWARD. B.A. '47, M.S. '48, University of Nebraska.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Formation and Stability of Some Complexes of Iron and Vanadium.
Major Adviser: Prof. I. M. Kolthoff.

1954. WORKMAN, WESLEY RAY. B.S. with high honor '49, M.S. '50, Michigan State College.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Unusual Reactions of Methylvinylnitrosamine and β -Chloroethylmethylnitrosamine.
Major Adviser: Prof. C. F. Koelsch.
1954. WUJGIAK, DONALD WALTER. B.S. '50, Rutgers University.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: The Claisen Rearrangement. The Allyl and Crotyl Ethers of 2,4-Dimethyl-6-Propenylphenol.
Major Adviser: Prof. W. E. Noland.
1955. ARTH, GLEN EDWARD. B.S. '34, St. John's University. M.S. '37, University of Colorado; M.S. '41, University of Minnesota.
Major: Organic Chemistry. Minors: Physical Chemistry and Analytical Chemistry.
Thesis: The Synthesis and Reactions of 3,4-Dihydro-2,5-Dimethyl-6-Vinyl-2H-Pyran.
Major Adviser: Prof. L. I. Smith.
1955. BATDORF, ROBERT LUDWIG. B.S. '50, Albright College.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Proton Magnetic Resonance in Phenols and Substituted Benzenes.
Major Adviser: Prof. J. E. Wertz.
1955. BILOUS, OLEGH. Diploma of Engineer '51, Ecole Polytechnique (France); M.S. in Ch.E. '53, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Studies on Continuous Reactor Design.
Major Adviser: Prof. E. L. Piret.
1955. DAVIS, DARWIN DARRELL. B.A. '51, Southern Illinois University.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Investigations in the Chemistry of Betaine-Phenopyridones. The Simplest Possible Merocyanine.
Major Adviser: Prof. C. F. Koelsch.
1955. DICKSON, ARTHUR DONALD. B.S. '50, Carnegie Institute of Technology.
Major: Physical Chemistry. Minor: Physics.
Thesis: Infra-red Intensities of the Fundamental Vibrations of Some Methyl Halides.
Major Adviser: Prof. Bryce Crawford.
1955. FRANZ, JOHN EDWARD. B.S. with honors '51, University of Illinois.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Stereospecific Reactions of Some Cyclic 1,2-Diols.
Major Adviser: Prof. S. W. Fenton.

1955. GOLIKE, RALPH C. B.S. '50, M.A. '52, University of Missouri.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: The Infrared Absorption Intensities of Ethylene and Some Deuterated Ethylenes.
Major Adviser: Prof. B. L. Crawford.
1955. GORMAN, JOHN WAYNE. B.Ch.E. with high distinction '48, University of Minnesota.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Molecular Diffusion and Interphase Transfer in the Solid Copper-Molten Lead System.
Major Adviser: Prof. G. W. Preckshot.
1955. NOWELL, PETER ADAM. B.S. '50, California Institute of Technology.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Crystal and Molecular Structure of 1,4-Dithiadene and the X-Ray Crystallography of, and a Possible Structure for, a Boron Hydride in the B_6 to B_9 Range.
Major Adviser: Prof. Robert Livingston.
1955. KRAUSE, HORATIO HENRY, JR. B.S. summa cum laude '39, St. Mary's College.
Major: Inorganic Chemistry. Minor: Analytical Chemistry.
Thesis: A Gravimetric Method for the Analysis of Organo-Germanium Compounds Using Phenylfluorone.
Major Adviser: Prof. C. H. Johnson.
1955. MACWILLIAMS, DALTON CARSON. B.Sc. (Hons.) '50, University of Alberta.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: The Induced Oxidation of Organic Matter by Chromium (VI).
Major Adviser: Prof. I. M. Kolthoff.
1955. MATHERS, WILSON GRAHAM. B.Eng. '49, McGill University.
Major: Chemical Engineering. Minor: Organic Chemistry.
Thesis: Simultaneous Heat and Mass Transfer in Natural Convection.
Major Advisers: Profs. E. L. Piret and A. J. Madden.
1955. MEYERS, EDWARD ARTHUR. B.S. '50, University of Michigan.
Major: Physical Chemistry. Minor: Physics.
Thesis: Structure Determinations of N_2O_2 and NH_2OH .
Major Adviser: Prof. B. L. Crawford.
1955. NAGASAWA, HERBERT TSUKASA. B.S. '50, Western Reserve University.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Studies in Polypeptide Syntheses: Some Polyglycyl Derivatives of Desoxyephedrine.
Major Adviser: Prof. W. M. Lauer.

1955. NIGHTINGALE, EUGENE RICHARD, JR. B.S. with highest honors '48, M.S. '49, University of Illinois.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Amperometric and Potentiometric Studies at Rotated Wire Electrodes.
Major Adviser: Prof. I. M. Kolthoff.
1955. OWENS, KENNETH EUGENE. B.S. '49, University of California.
Major: Physical Chemistry. Minor: Physics.
Thesis: A Study of the Oxidation of Allylthiourea Photosensitized by Chlorophyll A.
Major Adviser: Prof. Robert Livingston.
1955. PETERSEN, ROBERT VIRGIL. B.S. with honors '50, University of Utah.
Major: Pharmaceutical Chemistry. Minors: Organic Chemistry and Pharmacology.
Thesis: The Synthesis of Some Cyclic Acetals and Ketals of Cardiac Glycosidal Genins and Other Compounds.
Major Adviser: Prof. Ole Gisolvd.
1955. REIFF, HARRY ELMER. B.S. in Ch.E. with honors '49, M.S. '50, Lehigh University.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: The Reaction of Indene and Haloform.
Major Adviser: Prof. W. E. Parham.
1955. REYNOLDS, WARREN LIND. B.A. with honours '49, M.A. '50, University of British Columbia.
Major: Physical Chemistry. Minor: Analytical Chemistry.
Thesis: Kinetics and Mechanism of Reaction of Aquo and Complex Ferrous Iron with Hydroperoxides.
Major Adviser: Prof. I. M. Kolthoff.
1955. SCRIBNER, RICHARD MERRILL. B.S. '51, University of Michigan.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Cyclopropanes XV. 1-Benzoyl-6-nitrobicyclo-(3.1.0)hexane and Its Behavior Toward Alkaline Reagents.
Major Adviser: Prof. L. I. Smith.
1955. SJOBLUM, JORMA JULES. B.A. '40, Western Reserve University.
Major: Physical Chemistry. Minor: Organic Chemistry.
Thesis: The Mechanism of Oxygen-Quenching of Trypaflavine Phosphorescence in Silica Gel Adsorbates.
Major Adviser: Prof. R. S. Livingston.
1955. WISSLER, EUGENE HARLEY. B.S. '50, Iowa State College.
Major: Chemical Engineering. Minor: Physics.
Thesis: The Transient Behavior of a Two-Phase Natural Convection Loop.
Major Advisers: Profs. N. R. Amundson and H. S. Isbin.

1956. COETZEE, JOHANNES FRANCOIS. B.Sc. '44, B.Sc. (Hons.) '48, M.Sc. '49, University of South Africa.
Major: Analytical Chemistry. Minor: Physical Chemistry.
Thesis: Polarography in Acetonitrile.
Major Adviser: Prof. I. M. Kolthoff.
1956. GAU, GEORGES. Graduate '51, École Nationale Supérieure des Industries Chimiques.
Major: Chemical Engineering. Minor: Mathematics.
Thesis: Mechanism of a Two Phase Reaction Ethylation of Toluene.
Major Adviser: Prof. E. L. Piret.
1956. HAGLUND, EDWIN ALEXANDER. B.S. '48, M.S. '49, Michigan State College.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Transition Moments Based on an Anharmonic Potential-Function.
Major Adviser: Prof. B. L. Crawford.
1956. MOORE, EMMETT BURRIS, JR. B.S. with honors '51, State College of Washington.
Major: Physical Chemistry. Minor: Inorganic Chemistry.
Thesis: The Least Squares Refinement of $B_{10}H_{14}$ and the Crystal Structure of $Cl_2BC_2H_4BCl_2$.
Major Adviser: Prof. W. N. Lipscomb.
1956. SCHECHTER, ROBERT SAMUEL. B.S. in Ch.E. '50, Texas Agricultural and Mechanical College. Major: Chemical Engineering. Minor: Mathematics.
Thesis: Natural Convection Heat Transfer in Regions of Maximum Density.
Major Adviser: Prof. H. S. Isbin.
1956. STRIGHT, PAUL LEONARD. B.A. with honors '51, Grinnell College.
Major: Organic Chemistry. Minor: Chemistry.
Thesis: Reactions of Benzo-1, 4-dithiadene and Related Compounds.
Major Adviser: Prof. W. E. Parham.
1956. VIVO, JUANA LUISA. B.S. '51, University of Havana.
Major: Physical Chemistry. Minor: Mathematics.
Thesis: Electron Spin Resonance of Lattice Defects and Free Radicals.
Major Adviser: Prof. J. E. Wertz.

AERONAUTICAL ENGINEERING

1949. RUSZAJ, NORBERT FRANCIS. B.S.A.E. '38, University of Michigan; M.S.A.E. '39, University of Minnesota.
Major: Aeronautical Engineering. Minor: Mathematics and Mechanics.
Thesis: The Introduction of a Rational Method for the Determination of the Effect of a Dorsal Fin on an Airplane in Yaw.
Major Adviser: Prof. J. D. Akerman.

1950. STROM, GORDON HAAKON. B.Aero.E. with high distinction '36, M.S. '38, University of Minnesota.
Major: Aeronautical Engineering. Minor: Mathematics.
Thesis: Correlation of Theoretical and Experimental Studies of Airfoil Characteristics with Changing Angle of Attack as Affected by Time between Changes.
Major Adviser: Prof. J. D. Akerman.
1953. CHOU, KUANG-CHUN. B.S. in Aero.E. '43, National Northwestern College of Engineering (China); M.S. in Aero.E. '49, University of Minnesota.
Major: Aeronautical Engineering. Minor: Mathematics and Mechanics.
Thesis: Aerodynamic Characteristics of Swept-Back Wings in Subsonic Compressible Flow.
Major Adviser: Prof. J. D. Akerman.
1954. HSU, CHENG TING. B.S. '44, National Tsing Hua University; M.S. '49, University of Minnesota.
Major: Aeronautical Engineering. Minor: Mathematics and Mechanics.
Thesis: Stress Distribution in a Sheet-Stringer Panel. (A Shear-Lag Problem Showing Effects on Buckling.)
Major Adviser: Prof. J. A. Wise.
1955. LEADON, BERNARD MATHEW. B.S. '38, College of St. Thomas; M.S. '42, University of Minnesota.
Major: Aeronautical Engineering. Minor: Mathematics.
Thesis: Supersonic Flow About Pointed Bodies.
Major Adviser: Prof. J. D. Akerman.
1955. WERNER, FRANK DAVID. B.S. '43, Kansas State College of Agriculture and Applied Science; M.S. in Aero. Eng. '48, University of Minnesota.
Major: Aeronautical Engineering. Minors: Electrical Engineering and Mathematics and Mechanics.
Thesis: The Corona Anemometer and Its Application to Study of the Effect of Stilling Chamber Turbulence on Test Section Turbulence in a Wind Tunnel at Mach Number Three.
Major Adviser: Prof. J. D. Akerman.

CIVIL ENGINEERING

1942. MCNOWN, JOHN STEPHENSON. B.S. '36, University of Kansas; M.S. '37, University of Iowa.
Major: Hydraulics. Minor: Mathematics.
Thesis: A Study of Fluid Turbulence and Sand Transportation Caused by the Flow of Water in an Open Channel.
Major Adviser: Prof. L. G. Straub.
1944. PETERSON, FRANK GUSTAV ERIC. B.C.E. '33, M.S.C.E. '37, University of Minnesota.
Major: Civil Engineering (Structural). Minor: Mathematics and Mechanics.
Thesis: The Theory of Plasticity as an Aid to Economy in Structural Design.
Major Adviser: Prof. G. C. Priester.

1945. KERSTEN, MILES STOKES. B.C.E. '34, M.S. in C.E. '36, University of Minnesota.
Major: Civil Engineering (Highway Engineering). Minors: Sanitary Engineering and Mathematics and Mechanics.
Thesis: Subgrade Moisture Conditions and Their Role in Flexible Pavement Design.
Major Adviser: Prof. F. C. Lang.
1946. FLINSCH, HAROLD VON NEUFVILLE. Dipl. Ing. '33, Technische Hochschule, Munich, Germany; M.S. in C.E. '36, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: An Experimental Investigation of Wind-Generated Surface Waves.
Major Adviser: Prof. L. G. Straub.
1947. DELAPP, WARREN WILLIAM. B.S. in C.E. '35, Kansas State Agricultural College; M.S. '40, University of Iowa.
Major: Civil Engineering (Hydraulics). Minors: Mathematics and Civil Engineering (Structural Engineering).
Thesis: The High Velocity Flow of Water in a Small Rectangular Channel.
Major Adviser: Prof. L. G. Straub.
1948. NEUBAUER, LOREN WENZEL. B.C.E. with distinction '26, M.S. in C.E. '32, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: Some Effects of Viscosity Variation upon the Movement of Bed Sediment in an Open Channel.
Major Adviser: Prof. L. G. Straub.
1949. CUTTS, CHARLES EUGENE. B.C.E. '36, M.S. in C.E. '39, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: Stress Analysis of Curved Box Beams Subjected to Lateral Loads Applied Perpendicular to the Plane of Curvature.
Major Adviser: Prof. J. A. Wise.
1949. MOSTAFA, M. GAMAL. B.C.E. with honors '43, Fouad I University; M.S.C.E. '46, University of Washington.
Major: Civil Engineering. Minor: Mathematics.
Thesis: Analytical and Experimental Study of the Effects of Flow Characteristics and Fluid Viscosity upon the Movement of Bed-load in an Open Channel.
Major Adviser: Prof. L. G. Straub.
1949. MUKHOPADHYAY, SANTOSH KUMAR. B.S. '39, B.E. '44, University of Calcutta; M.S. in C.E. '48, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: Methods of Determination of Load Distribution on a Beam from Measurements on Its Deflected Form.
Major Adviser: Prof. Paul Andersen.

1950. ANDERSON, ALVIN GEORGE. B.C.E. with distinction '33, M.S. in C.E. '35, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: A Study of Waves Formed by Flowing Water in the Sediment Composing the Bed of an Open Channel.
Major Adviser: Prof. L. G. Straub.
1950. CHIANG, YEONG-CHIOU. B.S. '42, National Wu-Han University; M.S. '48, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: A Study of New Methods for Analysis of Stiffened Suspension Bridge.
Major Adviser: Prof. J. A. Wise.
1950. GRAVES, WALTER THOMAS. B.C.E. '40, M.S. in C.E. '47, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: The Elastic Behavior of Slabs Supported on Marginal Beams.
Major Adviser: Prof. J. A. Wise.
1950. LEE, HWA-NI. B.S. '45, La Universitato Utopia; M.S. in C.E. '47, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: Modified Plastic Theory of Reinforced Concrete Design.
Major Adviser: Prof. Paul Andersen.
1950. MORRIS, HENRY MADISON, JR. B.S.C.E. '39, Rice Institute; M.S.C.E. '48, University of Minnesota.
Major: Civil Engineering. Minors: Mathematics and Geology.
Thesis: A New Concept of Flow in Rough Conduits.
Major Adviser: Prof. L. G. Straub.
1952. AU, LI TANG. B.S. in C.E. '36, National Sun Yat-Sen University; M.S. in C.E. '46, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: The Effects of Knee Braces on the Economy of Rigid Steel Frames.
Major Adviser: Prof. Paul Andersen.
1952. HOLDHUSEN, JAMES STAFFORD. B.C.E. with high distinction '45, M.S. in C.E. '47, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: The Turbulent Boundary Layer in the Inlet Region of Smooth Pipes.
Major Adviser: Prof. L. G. Straub.
1952. JEN, CHAO-PE. B.S. '41, National Central University (China); M.S. in C.E. '47, University of Pennsylvania; M.S. in C.E. '50, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: The Elastic and Structural Properties of Asbestos-Cement.
Major Adviser: Prof. Paul Andersen.

1952. LING, JOSEPH TSO-TI. B.C.E. '44, Hangchow Christian College; M.S. in C.E. '50, University of Minnesota.
Major: Civil Engineering. Minors: Mathematics and Public Health.
Thesis: Filtration of Water Through Uniform Sand Filters.
Major Adviser: Prof. G. J. Schroepfer.
1953. AL-HAKIM, MOHAMED BAHIJ. Diplome d'Ingenieur Civil '44, Ecole Francaise de Ingenieurs (Syria); M.S. in C.E. '47, University of Minnesota.
Major: Civil Engineering. Minors: Mathematics and Organic Chemistry.
Thesis: Conglomeration and Dispersion Effects of Ultrasonic Vibrations as Applied to Some Sanitary Engineering Problems.
Major Adviser: Prof. G. J. Schroepfer.
1953. LIU, HSIN-KUAN. B.S. '43, National Northwestern College of Engineering; M.S. '49, State University of Iowa.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: Ripple Formation and Its Relation to Bed-Load Movement.
Major Adviser: Prof. L. G. Straub.
1954. BENVENISTE, JACQUES ELIAS. Graduate '51, Athens National Technical University; M.S. in C.E. '52, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: Theoretical Analysis of Reinforced Concrete Box Girders.
Major Adviser: Prof. J. A. Wise.
1954. EKBERG, CARL EDWIN, JR. B.C.E. '43, M.S. in C.E. '47, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics and Mechanics.
Thesis: An Investigation of the Two-Way Prestressed Concrete Slab.
Major Adviser: Prof. J. A. Wise.
1955. NORDBY, GENE MILO. B.S. '48, Oregon State College; M.S. in C.E. '49, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: An Investigation of the Use of Uncoated Steel Strand as a Concrete Prestressing Medium.
Major Adviser: Prof. J. A. Wise.
1955. TIMNEY, EDWY ROY. B.A.Sc. '47, University of British Columbia; M.S. in C.E. '48, University of Washington.
Major: Civil Engineering. Minor: Mathematics.
Thesis: A Study of the Mechanics of Degradation of a Bed of Uniform Sediment in an Open Channel.
Major Adviser: Prof. L. G. Straub.
1956. MUKHERJEE, ASH KUMAR. B.E. '47, University of Calcutta; M.S. in C.E. '54, University of Minnesota.
Major: Civil Engineering. Minor: Mathematics.
Thesis: An Investigation of the Dynamic Behaviour of Prestressed Concrete.
Major Adviser: Prof. J. A. Wise.

1955. BLATHERWICK, ALLAN A. B.S. in E.E. '36, State University of Iowa; M.S. '49, University of Minnesota.
 Major: Mechanics and Materials. Minor: Mathematics.
 Thesis: Effect of Change in the Cyclic Secant Modulus on the Bending Stress Distribution and Fatigue Strength of Various Cross Sections.
 Major Adviser: Prof. B. J. Lazan.

ELECTRICAL ENGINEERING

1940. MELLOH, ARTHUR W. B.E.E. '32, M.S. in E.E. '37, University of Minnesota.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: Damped Electromagnetic Waves in Hollow Metal Pipes.
 Major Adviser: Prof. H. E. Hartig.
1950. MUCKENHIRN, OSCAR WILLIAM. B.S. '38, M.S. '38, Massachusetts Institute of Technology.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: An Investigation of Ferro-Impregnated Plastic Tapes, with Especial Reference to Magnetic Recording and Reproduction.
 Major Adviser: Prof. H. E. Hartig.
1952. CHOW, WOO-FOUNG. B.S. in E.E. '45, La Universitato Utopia; M.S. in E.E. '49, University of Minnesota.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: Noise Study on Electrical Power Systems with Special Reference to Superimposed Signalling.
 Major Adviser: Prof. H. E. Hartig.
1953. CRAWFORD, HARRY DELAVAN. B.Phys. '44, M.A. '47, University of Minnesota.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: Microwave Spectroscopy in the X band Region (The X band Microwave Spectrum of Heavy Water).
 Major Adviser: Prof. A. Van der Ziel.
1953. LAIBERT, ROBERT FRANK. B.E.E. with high distinction '48, M.S. in E.E. '49, University of Minnesota.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: A Study of the Influence of Boundary-Layer Viscosity and Heat Conduction, Mechanical Wall Vibration, and Thermal Relaxation on the Damping of an Acoustical Cavity Resonator.
 Major Adviser: Prof. H. E. Hartig.
1953. NOMURA, KAWORU CADJ. B.Phys. with distinction '48, M.S. '49, University of Minnesota.
 Major: Electrical Engineering. Minor: Mathematics.
 Thesis: The Influence of Excess Oxygen on the Secondary Electron Emitting Properties of MgO Single Crystals.
 Major Adviser: Prof. W. G. Shepherd.

1954. LUDWIG, JOHN TRUMAN. B.E.E. with distinction '48, M.S. in E.E. '52, University of Minnesota.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: A Study in the Design of Magnetic Circuits Employing Soft Magnetic Materials and Superposed A-C and D-C Magnetization.
Major Adviser: Prof. H. E. Hartig.
1954. WATKINS, BRUCE O. B.S. in E.E. with high distinction '34, University of Arizona; M.S. in E.E. '49, University of Missouri.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: The Characteristics of Phase Sensitive Detector Circuits and the Influence of Such Circuits on Servomechanism Design.
Major Adviser: Prof. L. C. Caverley.
1955. HESS, PHILIP NORDEL. B.S. '49, North Dakota Agricultural College; M.S. '50, Oklahoma A. & M. College.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: Energy Transfer in Beam-Type Microwave Electron Tubes.
Major Adviser: Prof. L. A. Harris.
1955. LINDEMANN, WALLACE WALDO. B.E.E. with high distinction '50, M.S. in E.E. '55, University of Minnesota.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: An Experimental Investigation of Some Low Frequency Noises in Vacuum Tubes.
Major Adviser: Prof. Aldert van der Ziel.
1955. LING, CHENG. B.S. '43, University of Utopia; M.S. in E.E. '49, University of Minnesota.
Major: Electrical Engineering. Minor: Mathematics and Mechanics.
Thesis: Synthesis of Time-Varying Networks with Special Applications.
Major Advisers: Profs. H. E. Hartig and A. H. Koschmann.
1955. PETERSON, RALPH WILBUR. B.E.E. '48, University of Minnesota.
Major: Electrical Engineering. Minor: Physics.
Thesis: Diffusion and Chemical Activation in Oxide-Coated Cathodes.
Major Adviser: Prof. W. G. Shepherd.
1955. YU, SE PUAN. B.E.E. with distinction '48, M.S. in E.E. '51, University of Minnesota.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: Static Potential and Charge Distributions in a Smooth-Anode Magnetron.
Major Adviser: Prof. L. A. Harris.
1956. KLUMPP, JAMES HARRY. B.S. '49, M.S. '50, University of Wisconsin.
Major: Mechanics and Materials. Minor: Mathematics.
Thesis: Slip Damping of Press-fit Joints Under Linearly Varying Pressure.
Major Adviser: Prof. L. E. Goodman.

1956. MURPHY, GORDON JOHN. B.S. '49, Milwaukee School of Engineering;
M.S. in E.E. '52, University of Wisconsin.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: Extension of the Transfer-Function Concept to Class II
Compensators for Automatic Control Systems.
Major Adviser: Prof. H. E. Hartig.
1956. WARGO, PETER. B.S. '50, University of Illinois.
Major: Electrical Engineering. Minor: Mathematics.
Thesis: Surface Reactions in Some Alkaline Earth Oxides under
Electron Bombardment.
Major Adviser: Prof. W. G. Shepherd.

MECHANICAL ENGINEERING

1940. JORDAN, RICHARD CHARLES. B.Aero.E. '31, M.S. in M.E. '33,
University of Minnesota.
Major: Mechanical Engineering (Heating, Ventilating, and Refrigeration).
Minors: Mathematics and Metallography.
Thesis: The Quantitative Analysis of Atmospheric Dust.
Major Adviser: Prof. F. B. Rowley.
1949. BOLSTAD, MILO MYRUM. B.M.E. with distinction '36, University
of Minnesota; M.S. in M.E. '38, Massachusetts Institute of Technology.
Major: Mechanical Engineering. Minor: Metallography.
Thesis: Theory and Use of Capillary Tube Expansion Devices for
Refrigerant Control.
Major Adviser: Prof. R. C. Jordan.
1950. SNYDER, WARREN EDWARD. B.S. in Mech. E. '43, University of
Kansas; M.S. in Mech.E. '49, University of Minnesota.
Major: Mechanical Engineering. Minor: Physics.
Thesis: The Performance Characteristics of Centrifugal Power Ex-
hausters.
Major Advisers: Profs. A. B. Algren and N. A. Hall.
1951. SCHIAVOME, DANIEL CHARLES. B.M.E. with high distinction '43,
M.S. '49, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: Determination of the Friction Factors of Desiccants Used in
Refrigeration Driers.
Major Adviser: Prof. R. C. Jordan.
1952. TSAI, CHANG-KAING. B.S. '41, National Central University;
M.S. in M.E. '48, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: Investigation of the Effects of the Engine Mechanisms on the
Torsional Vibrations of Crankshafts.
Major Adviser: Prof. J. J. Ryan.

1953. BAILLIF, ERNEST ALLEN. B.Mech.E. with distinction '48, B.Aero.E. with distinction '48, M.S. in M.E. '50, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: An Investigation of Methods of Predicting the Performance of Automatic Controls.
Major Advisers: Profs. E. N. Kemler and M. H. LaJoy.
1953. HOWE, RICHARD JAMES. B.S. with distinction '50, M.S. in Mech.E. '51, University of Minnesota.
Major: Mechanical Engineering. Minor: Petroleum Engineering.
Thesis: An Investigation of Methods for Determining the Behavior of Sucker Rod Oil Well Pumping Systems.
Major Adviser: Prof. E. N. Kemler.
1953. IBELE, WARREN EDWARD. B.M.E. '44, Tulane University; M.S. in M.E. '47, University of Minnesota.
Major: Mechanical Engineering. Minor: Physics.
Thesis: An Extension of the Law of Corresponding States.
Major Adviser: Prof. N. A. Hall.
1953. KNAPPE, LAVERNE FRANK. B.M.E. '44, M.S. in M.E. '47, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: A Theoretical and Experimental Investigation of Factors Influencing Instrument Gear Accuracy.
Major Adviser: Prof. E. N. Kemler.
1953. MOKADAM, RAGHUNATH GANPATRAO. B.Sc. '46, Benares Hindu University; M.M.E. '49, University of Louisville.
Major: Mechanical Engineering. Minor: Electrical Engineering.
Thesis: Irreversible Thermodynamics of Vapor Transmission Through Porous Media.
Major Adviser: Prof. N. A. Hall.
1953. THRELKELD, JAMES LEROY. B.S. '45, M.S. '47, Iowa State College.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: Solar Energy as a Potential Heat Source for the Heat Pump.
Major Advisers: Profs. A. B. Algren and R. C. Jordan.
1954. FITZ, COLEMAN DUDLEY. B.M.E. with high distinction '43, M.S. in M.E. '46, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: An Investigation of the Intermittent Motion of Certain Bodies Sliding on Ice.
Major Adviser: Prof. R. C. Jordan.
1954. SHEN, CHI-NENG. B.C.E. '39, National Tsing Hua University; M.S. '50, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: Effect of Non-Linear Process Elements on the Stability of Closed Loop Control Systems.
Major Adviser: Prof. E. N. Kemler.

1954. SIEGLER, NEWMAN. B.M.E. '42, College of the City of New York; M.S. in M.E. '48, University of Minnesota.
Major: Mechanical Engineering. Minor: Statistics.
Thesis: A Study of Some Factors Affecting Element Time in Manual Work.
Major Adviser: Prof. J. M. MacKenzie.
1954. SOVRAN, GINO. B.A. '45, Assumption College; B.M.E. cum laude '48, University of Detroit; M.S. '49, Northwestern University.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: The Rate and Mechanism of Drying for Wheat Middling Particles.
Major Adviser: Prof. N. A. Hall.
1954. WHITBY, KENNETH THOMAS. B.S. in N.T. with high distinction '46, B.M.E. '48, University of Minnesota.
Major: Mechanical Engineering. Minor: Agricultural Biochemistry.
Thesis: The Mechanics of Fine Sieving.
Major Adviser: Prof. N. A. Hall.
1955. GERSHUN, THEODORE LEONARD. B.S. in M.E. '48, State University of Iowa; M.S. in M.E. '50, University of Washington.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: A Study of Conductive Heat Transfer with Change of Phase—Mathematical and Analogue Solutions.
Major Adviser: Prof. E. R. G. Eckert.
1955. KUSUDA, TAMAMI. B.S. '47, University of Tokyo; M.S. in M.E. '52, University of Washington.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: Theoretical and Experimental Analyses of Water Vapor Transmission through Sorptive Solids.
Major Adviser: Prof. A. B. Algren.
1956. CARLSON, WALTER OLIVER. B.Aero.E. with distinction '44, M.S. in M.E. '49, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: Interferometric Studies of Convective Flow Phenomena in Vertical, Plane Enclosed Air Layers.
Major Adviser: Prof. E. R. G. Eckert.
1956. IRVINE, THOMAS FRANCES, JR. B.S. '47, Pennsylvania State College; M.S. in M.E. '52, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics and Mechanics.
Thesis: A New Method for the Experimental Determination of Prandtl Numbers and Thermal Conductivities of Gases. Results for Air.
Major Adviser: Prof. E. R. G. Eckert.
1956. JOHNSON, ROBERT RAYMOND. B.M.E. '43, M.S. '52, University of Minnesota.
Major: Mechanical Engineering. Minor: Mathematics.
Thesis: Investigation of the Response Characteristics of Feedback Control Systems Due to Nonlinearities Built into the Controller.
Major Adviser: Prof. J. J. Ryan.

1940. TENENBAUM, MICHAEL. Met.E. '36, M.S. '37, University of Minnesota.
Major: Metallurgy. Minor: Physical Chemistry.
Thesis: The Refractive Indices and Microscopic Examination of Basic Open Hearth Slags.
Major Adviser: Prof. T. L. Joseph.
1941. SANDELIN, ROBERT WILLIAM. B.Ch.E. '30, M.S. in Ch.E. '31, Ch.E. '38, University of Minnesota.
Majors: Metallurgy and Metallography. Minor: Chemical Engineering.
Thesis: Galvanizing Special Steels.
Major Advisers: Profs. T. L. Joseph and R. L. Dowdell.
1941. SCOTT, FRANK WALTON. B.S. in Ch.E. with distinction '25, Purdue University; M.S. '37, University of Minnesota.
Major: Metallurgy. Minors: Metallography and Analytical Chemistry.
Thesis: The Distribution of Sulphur Between Molten Steel and Oxidized Slag at Equilibrium.
Major Adviser: Prof. T. L. Joseph.
1942. QUEST, CHARLES FREDERICK. B.Ch.E. '37, University of Minnesota.
Major: Metallurgy. Minors: Physical Chemistry and Metallography.
Thesis: The Distribution of Metalloids Between Molten Steel and Slag Under Open Hearth Conditions.
Major Adviser: Prof. T. L. Joseph.
1943. FINE, MORRIS EUGENE. B.Met.E. with distinction '40, M.S. '42, University of Minnesota.
Major: Metallography. Minor: Physical Chemistry.
Thesis: Solderability of Ordinary and Substitute Soft Solders.
Major Adviser: Prof. R. L. Dowdell.
1945. NAGLER, CHARLES ARTHUR. B.S.E. '38, M.S.E. '39, University of Michigan.
Major: Metallography. Minor: Metallurgy.
Thesis: Isothermal Transformation of Molybdenum Cast Iron.
Major Adviser: Prof. R. S. Dowdell.
1947. STUKEL, JOHN EDWARD. B.Ch.E. with distinction '40, University of Minnesota.
Major: Metallurgy. Minor: Physical Chemistry.
Thesis: Equilibrium in the System Manganese-Silicon-Oxygen.
Major Adviser: Prof. T. L. Joseph.
1951. BITSIANES, GUST. B.Ch.E. '41, University of Minnesota.
Major: Metallurgical Engineering. Minor: Chemical Engineering.
Thesis: The Mechanisms Involved in the Hydrogen Reduction of Iron Ores.
Major Adviser: Prof. T. L. Joseph.
1952. WIKLE, KEITH GORDON. B.S. in Met.E. '43, South Dakota School of Mines and Technology; M.S. '47, University of Minnesota.
Major: Metallurgical Engineering. Minor: Physical Chemistry.
Thesis: Grain Refinement in Magnesium Alloys.
Major Adviser: Prof. R. L. Dowdell.

1953. HARMS, WILLIAM OTTO. B.S. in Met. E. with high distinction '48, Wayne University; M.S. '50, University of Minnesota.
Major: Metallurgy. Minor: Physical Chemistry.
Thesis: A Thermodynamic Study of Liquid Thallium-Lead-Bismuth Solutions.
Major Adviser: Prof. H. S. Jerabek.
1953. MACKAY, WILLIAM BRYDON FRASER. B.E.E. '38, University of Manitoba; B.Met.E. '40, M.S. '47, University of Minnesota.
Major: Metallography. Minor: Industrial Engineering.
Thesis: High Strength Wrought Aluminum Alloys Based upon the Ternary System Aluminum-Zinc-Magnesium.
Major Adviser: Prof. R. L. Dowdell.
1954. ANDERSON, PAUL HERMAN. B.S. in Met.E. '43, South Dakota School of Mines and Technology; M.S. '49, University of Minnesota.
Major: Metallography. Minor: Mechanical Engineering.
Thesis: Theory of Nodular Graphite Formation in Ductile Cast Iron.
Major Adviser: Prof. R. L. Dowdell.
1954. DE MONEY, FRED WILLIAM. B.S. '41, Illinois Institute of Technology; M.S. '51, University of Minnesota.
Major: Metallurgy. Minor: Mechanical Engineering.
Thesis: Dynamic Creep, Stress-Rupture, Fatigue Properties and Fracture Characteristics of Rolled Aluminum Alloy 24S-T4 at Elevated Temperatures.
Major Adviser: Prof. R. L. Dowdell.
1954. SWALIN, RICHARD ARTHUR. B.S. with distinction '51, University of Minnesota.
Major: Metallurgy. Minor: Physical Chemistry.
Thesis: Solid State Diffusion of Several Elements in Nickel at Elevated Temperatures.
Major Adviser: Prof. A. E. Martin.
1955. BURLINGAME, RICHARD DEXTER. B.S. with distinction '51, M.S. '53, University of Minnesota.
Major: Metallurgical Engineering. Minor: Chemical Engineering.
Thesis: A Study of the Physical and Chemical Changes Occurring in a Bed of Iron Oxide Particles During the Sintering Process.
Major Advisers: Profs. T. L. Joseph and Gust Bitsianes.
1955. CHANDLER, WILLIS THOMAS. B.Met.E. '44, University of Minnesota.
Major: Metallurgical Engineering. Minor: Physical Chemistry.
Thesis: The Effect of Tensile Strains on the Electrical Resistivity of Alloys.
Major Adviser: Prof. Gust Bitsianes.

MINING ENGINEERING

1953. HARTMAN, HOWARD LEVI. B.S. '46, M.S. '47, The Pennsylvania State College.
 Major: Mining Engineering. Minor: Geology.
 Thesis: Dry Control of Dust Formed During Percussion Drilling.
 Major Adviser: Prof. T. L. Joseph.

PETROLEUM ENGINEERING

1947. LACABANNE, WASHINGTON DAVID. B.S. '29, M.S. '33, University of California.
 Major: Petroleum Engineering. Minors: Geology and Physics.
 Thesis: Settling of Heterogeneous Particles.
 Major Advisers: Profs. E. H. Comstock and G. A. Thiel.

GEOLOGY

1938. BERGQUIST, HARLAN RICHARD. B.A. '31, M.A. '35, University of Minnesota.
 Major: Geology. Minors: Metallurgy and Geology (Paleontology).
 Thesis: The Cretaceous of the Mesabi Range.
 Major Adviser: Prof. C. R. Stauffer.
1939. FREY, MAURICE GORDON. Geol. Eng. '36, University of Cincinnati;
 M.S. '37, University of Minnesota.
 Major: Geology. Minors: Physics and Petroleum Engineering.
 Thesis: Geology of the Region About the West End of Lake Superior.
 Major Adviser: Prof. G. A. Thiel.
1939. WAYLAND, RUSSELL GIBSON. B.S. '34, University of Washington;
 M.S. '35, University of Minnesota; M.A. '37, Harvard University.
 Major: Economic Geology. Minors: Mining Engineering and Physical Chemistry.
 Thesis: Geology of the Juneau Region, Alaska, with Special Reference to the Alaska Juneau Ore Body.
 Major Adviser: Prof. J. W. Gruner.
1940. ALLEN, CHARLES CAMERON. B.S. '36, University of Manitoba;
 M.S. '38, University of Minnesota.
 Major: Geology. Minor: Metallurgy.
 Thesis: Geology of Poohbah Lake, Ontario.
 Major Adviser: Prof. F. F. Grout.
1940. APSOURI, CONSTANTIN NICOLAS. B.A. '33, M.A. '34, Syracuse University.
 Major: Geology. Minor: Metallurgy.
 Thesis: The Pegmatites of the Keystone Area, South Dakota.
 Major Adviser: Prof. F. F. Grout.

1940. GROGAN, ROBERT MANN. B.S. '35, University of Chicago;
M.S. '36, University of Minnesota.
Major: Geology. Minors: Physical Chemistry and Metallurgy.
Thesis: Geology of a Part of the Minnesota Shore of Lake Superior
Northeast of Two Harbors, Minnesota.
Major Adviser: Prof. F. F. Grout.
1941. COWIE, ROGER HARRISON. B.S. '38, California Institute of
Technology; M.S. '40, University of Minnesota.
Major: Geology. Minor: Physics.
Thesis: Geology of the Zumbro River Valley Region.
Major Adviser: Prof. G. A. Thiel.
1942. FOLINSBEE, ROBERT EDWARD. B.Sc. '38, University of Alberta;
M.S. '40, University of Minnesota.
Major: Geology. Minors: Economic Geology and Metallurgy.
Thesis: Zone-Facies of Metamorphism in Relation to the Ore Deposits
of the Yellowknife-Beaulieu Region, Northwest Territories.
Major Adviser: Prof. F. F. Grout.
1942. O'NEILL, THOMAS FRANCIS. B.S. '38, M.S. '39, Oregon State College.
Major: Geology. Minors: Inorganic Chemistry and Metallurgy.
Thesis: The Artificial Alteration of Feldspars under Conditions of
Elevated Temperature and Pressure.
Major Adviser: Prof. W. H. Emmons.
1942. TODD, JAMES HOPKINS. B.A. '38, Dartmouth College.
Major: Geology. Minors: Economic Geology and Metallurgy.
Thesis: A Contribution to the Study of the Pleistocene History of
the Upper Mississippi River.
Major Adviser: Prof. F. F. Grout.
1944. HSU, KE-CHIN. B.S. '34, National Central University (China);
M.S. '41, University of Minnesota.
Major: Geology. Minor: Metallurgy.
Thesis: Geology of Tungsten Deposits.
Major Adviser: Prof. W. H. Emmons.
1946. GILLINGHAM, THOMAS ELLWOOD, JR. B.S. cum laude '34, Harvard
University; M.S. '36, University of Arizona.
Major: Geology. Minors: Metallurgy and Geophysics.
Thesis: The Solubility and Transfer of Silica and Other Non-Volatiles
in Steam.
Major Adviser: Prof. J. W. Gruner.
1946. PAN, CHUNG-HSIANG. B.S. '31, University of Peking; M.S. '44,
University of Minnesota.
Major: Geology. Minors: Metallurgy and Petroleum Engineering.
Thesis: The Geology and Metallogenetic Provinces of Eastern Asia.
Major Adviser: Prof. F. F. Grout.

1946. SKILLMAN, MARGARET WYCKOFF. B.A. '43, Wellesley College;
M.S. '45, University of Minnesota.
Major: Geology. Minor: Metallography.
Thesis: Intrusives of Central Minnesota.
Major Adviser: Prof. F. F. Grout.
1947. FENIAK, MICHAEL WALTER. B.Sc. '41, University of Alberta;
M.S. '43, University of Minnesota.
Major: Geology. Minors: Mining Engineering and Metallography.
Thesis: The Geology of Dowdell Peninsula, Great Bear Lake, Northwest
Territories.
Major Adviser: Prof. F. F. Grout.
1949. FRYKLUND, VERNE CHARLES, JR. B.A. '44, M.S. '46, University of
Minnesota.
Major: Geology. Minors: Metallography and Anthropology.
Thesis: The Titanium Ore Deposits of Magnet Cove, Hot Spring Co.,
Arkansas.
Major Adviser: Prof. G. M. Schwartz.
1949. NELSON, CLEMENS ARVID. B.A. '41, M.S. '42, University of Minnesota.
Major: Geology. Minors: Anthropology and Geology.
Thesis: Cambrian Stratigraphy of the St. Croix Valley.
Major Adviser: Prof. W. C. Bell.
1949. TU, KWANG-CHI. B.S. '44, Nankai University.
Major: Geology. Minors: Metallurgy and Petroleum Engineering.
Thesis: The Hydrothermal Synthesis of Mg-Mica and Mg-Chlorite.
Major Adviser: Prof. F. W. Gruner.
1950. EASTWOOD, GEORGE EDMUND PETER. B.E. '44, University of Sask-
atchewan.
Major: Geology. Minors: Physics and Mathematics.
Thesis: The Origin and Geologic History of the Snake Rapids Pluton,
Saskatchewan.
Major Adviser: Prof. G. M. Schwartz.
1950. LUND, ERNEST HOWARD. B.S. '44, University of Oregon.
Major: Geology. Minors: Petroleum Engineering and Geology (Pal-
eontology).
Thesis: Igneous and Metamorphic Rock of the Minnesota River Valley.
Major Adviser: Prof. S. S. Goldich.
1950. NEILSON, JAMES MAXWELL HART. B.Sc. '36, Queens University;
M.Sc. '47, McGill University.
Major: Geology. Minors: Metallurgy and Civil Engineering.
Thesis: Geology of the Lake Mistassini Region, Northern Quebec.
Major Adviser: Prof. J. W. Gruner.
1950. PALMER, ALLISON RALPH. B.S. '46, Pennsylvania State College.
Major: Geology. Minor: Zoology.
Thesis: The Fauna of the Upper Cambrian Riley Formation in Central Texas.
Major Adviser: Prof. W. C. Bell.

1950. RILEY, CHARLES MARSHALL. B.S. '42, University of Chicago;
M.S. '48, University of Minnesota.
Major: Geology. Minors: Geography and Physics.
Thesis: The Relations of the Physical and Chemical Properties to
the Bloating of Clays.
Major Adviser: Prof. J. W. Gruner.
1950. ZUMBERGE, JAMES HERBERT. B.A. '46, University of Minnesota.
Major: Geology. Minor: Soils.
Thesis: The Origin and Classification of Lakes of Minnesota.
Major Adviser: Prof. H. E. Wright, Jr.
1951. BERG, ROBERT RAYMOND. B.A. '48, University of Minnesota.
Major: Geology. Minor: Zoology.
Thesis: The Franconia Formation of Minnesota and Wisconsin.
Major Adviser: Prof. W. C. Bell.
1951. ERICKSON, RALPH LEROY. B.A. cum laude '47, Miami University;
M.S. '48, Michigan State College.
Major: Geology. Minors: Geology and Petroleum Engineering.
Thesis: Stratigraphy and Petrology of the Tascotal Mesa Quadrangle,
Texas.
Major Adviser: Prof. S. S. Goldich.
1951. GHEITH, MOHAMED AHMED. B.Sc. '45, Fouad I University; M.S. '50,
University of Minnesota.
Major: Geology. Minors: Petroleum Engineering and Metallurgy.
Thesis: Stability Relations of Ferric Oxides and Their Hydrates
Lipacombite; A New Synthetic "Iron Lazulite."
Major Adviser: Prof. J. W. Gruner.
1951. LANGENHEIM, RALPH LOUIS, JR. B.S. '43, University of Tulsa;
M.S. '47, University of Colorado.
Major: Geology. Minors: Zoology and Geology (Petrology).
Thesis: Pennsylvanian Stratigraphy in the Crested Butte Quadrangle,
Colorado.
Major Adviser: Prof. W. C. Bell.
1951. YARDLEY, DONALD HOMER. B.Sc. (Honours) '41, M.Sc. '47,
Queens University.
Major: Geology. Minor: Metallurgy.
Thesis: The Geology of the Northern Part of the Chalco Lake Area
Northwest Territories, Canada.
Major Adviser: Prof. G. M. Schwartz.
1952. CORWIN, GILBERT. B.S. cum laude '43, Harvard University.
Major: Geology. Minor: Mining.
Thesis: The Petrology and Structure of the Palau Volcanic Islands.
Major Adviser: Prof. S. S. Goldich.

1952. PETERSON, JAMES ALBERT. B.S. magna cum laude '48, St. Louis University; M.S. '49, University of Minnesota.
Major: Geology (Subsurface Stratigraphy). Minors: Geology (Petrography) and Biostatistics.
Thesis: Stratigraphy and Micropaleontology of the Sundance Group, Eastern Wyoming.
Major Adviser: Prof. F. M. Swain.
1953. BROBST, DONALD ALBERT. B.A. '47, Muhlenberg College.
Major: Geology. Minors: Metallurgy and Petroleum Engineering.
Thesis: Geology of the Plumtree Area, Spruce Pine District, North Carolina.
Major Adviser: Prof. G. M. Schwartz.
1953. ELLINWOOD, HOWARD LYMAN. B.A. magna cum laude '49, University of Minnesota.
Major: Geology. Minors: Petroleum Engineering and Geology.
Thesis: Late Upper Cambrian and Lower Ordovician Faunas of the Wilberns Formation in Central Texas.
Major Adviser: Prof. W. C. Bell.
1953. MAXWELL, JOHN ALFRED. B.Sc. '49, M.Sc. '50, McMaster University.
Major: Geology. Minor: Analytical Chemistry.
Thesis: Geochemical Study of Chert and Related Deposits.
Major Advisers: Profs. S. S. Goldich and E. B. Sandell.
1953. MILLER, MURRAY LLOYD. B.A. '41, M.A. '42, University of Toronto.
Major: Geology. Minor: Metallurgy.
Thesis: The Igneous-Metamorphic Complex of the St. Siméon Area, Quebec.
Major Adviser: Prof. G. M. Schwartz.
1953. WEISS, MALCOLM PICKETT. B.B.A. '47, M.S. '50, University of Minnesota.
Major: Geology. Minor: Zoology.
Thesis: The Stratigraphy and Stratigraphic Paleontology of the Upper Middle Ordovician Rocks of Fillmore County, Minnesota.
Major Adviser: Prof. W. C. Bell.
1954. LEPP, HENRY. B.Sc. '44, University of Saskatchewan.
Major: Geology. Minor: Mining.
Thesis: An Experimental Study of Interconversions Among Iron Carbonates, Oxides, and Sulfides.
Major Adviser: Prof. J. W. Gruner.
1954. WHITE, DAVID ARCHER. B.A. '50, Dartmouth College; M.S. '51, University of Minnesota.
Major: Geology. Minor: Metallurgy.
Thesis: Stratigraphy and Structure of the Mesabi Range, Minnesota.
Major Adviser: Prof. J. W. Gruner.

1955. BURWASH, RONALD ALLAN. B.Sc. '45, B.Ed. '47, M.Sc. '51, University of Alberta.
Major: Geology. Minors: Analytical Chemistry and Geophysics.
Thesis: A Reconnaissance of the Subsurface Precambrian of the Province of Alberta, Canada.
Major Adviser: Prof. S. S. Goldich.
1955. FRASER, JAMES ALLAN. B.A.Sc. with honours '49, University of Toronto.
Major: Geology. Minor: Geophysics.
Thesis: The Hydrothermal Synthesis of Hydrogarnet, Spheene, and Related Silicates.
Major Adviser: Prof. J. W. Gruner.
1955. HORSTMAN, ELWOOD LOUIS. B.S. cum laude '51, Lawrence College; M.S. '53, University of Minnesota.
Major: Geology. Minor: Analytical Chemistry.
Thesis: The Distribution of Lithium, Rubidium, and Cesium in Igneous and Sedimentary Rocks.
Major Adviser: Prof. S. S. Goldich.
1955. KRAFT, JOHN CHRISTIAN. B.S. '51, Pennsylvania State College; M.S. '52, University of Minnesota.
Major: Geology. Minors: Geophysics and Zoology.
Thesis: Morphologic and Systematic Relationships of Some Middle Ordovician Ostracoda.
Major Adviser: Prof. F. M. Swain.
1955. TAYLOR, RICHARD BARTLETT. B.S. with honor '51, California Institute of Technology; M.S. '53, University of Minnesota.
Major: Geology. Minors: Physics and Physical Chemistry.
Thesis: Petrology and Petrography of the Duluth Gabbro Complex Near Duluth, Minnesota.
Major Adviser: Prof. S. S. Goldich.

MATHEMATICS

1939. KOEHLER, FULTON. B.A. '36, M.A. '37, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Systems of Orthogonal Polynomials on Certain Algebraic Curves.
Major Adviser: Prof. Dunham Jackson.
1940. DIMSDALE, BERNARD. B.Ch. '33, M.A. '35, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Lacunary Orthogonal Polynomials.
Major Adviser: Prof. Dunham Jackson.
1944. MARTIN, MARGARET PEARL. B.S. '37, M.A. '39, University of Minnesota.
Major: Mathematics. Minor: Biostatistics.
Thesis: Some New Systems of Orthogonal Polynomials on Algebraic Curves.
Major Adviser: Prof. Dunham Jackson.

1945. AMUNDSON, NEAL RUSSELL. B.Ch.E. with distinction '37,
M.S. '41, University of Minnesota.
Major: Mathematics. Minor: Chemical Engineering.
Thesis: Solution of a Non-Linear Partial Differential Equation of
the Parabolic Type.
Major Adviser: Prof. G. C. Priester.
1946. SAUNDERS, ROY BLY. B.A. cum laude '33, Whitman College; M.A. '40,
University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Polynomial Approximation over Certain Infinite Intervals.
Major Adviser: Prof. Dunham Jackson.
1947. BEARMAN, JACOB E. B.A. magna cum laude '36, M.A. '38, University
of Minnesota.
Major: Mathematics. Minor: Biostatistics.
Thesis: Rotations in the Product of Two Wiener Spaces.
Major Adviser: Prof. R. H. Cameron.
1947. MCEWEN, WILLIAM ROBERT. B.E. '35, Duluth State Teachers College;
M.A. '39, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: An Upper Bound for the Number of Orthogonal Polynomials
of Any Specified Degree Associated with an Algebraic Curve in Space.
Major Advisers: Profs. Dunham Jackson and R. H. Cameron.
1947. MUNRO, WILLIAM DELMAR. B.A. magna cum laude '38, University of
Colorado; M.A. '40, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Orthogonal Trigonometric Sums with Auxiliary Conditions.
Major Advisers: Profs. Dunham Jackson and R. H. Cameron.
1947. OSTROM, THEODORE GLEASON. B.A. magna cum laude '37, B.S. '39,
M.A. '39, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: The Solution of Linear Integral Equations by Means of Wiener
Integrals.
Major Adviser: Prof. R. H. Cameron.
1947. SWANSON, LEONARD WILLIAM. B.S. summa cum laude '35, Kenyon
College; M.A. '40, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Solutions of Certain Differential Equations Associated with
the Theory of Orthogonal Polynomials.
Major Adviser: Prof. R. H. Cameron.
1948. GRAVES, ROSS EDWIN. B.S. '45, Massachusetts Institute of Technology.
Major: Mathematics. Minor: Philosophy.
Thesis: Integral Representations of Linear and Weak Linear Functionals
Defined over the Wiener Space C.
Major Adviser: Prof. R. H. Cameron.

1949. DONSKER, MONROE DAVID. B.A. cum laude '44, M.A. '46,
University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: The Invariance Principle for Wiener Functionals.
Major Adviser: Prof. R. H. Cameron.
1949. FLEMING, WALTER. B.A. '42, University of Saskatchewan;
M.A. '44, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: The Double Wiener Integral of a Function of a Certain Quadratic
Functional.
Major Adviser: Prof. R. H. Cameron.
1949. FRANCK, ABRAHAM. B.A. with honors '39, M.A. '40, University
of New Mexico.
Major: Mathematics. Minor: Physics.
Thesis: On Analytic Functions of Bounded Type.
Major Adviser: Prof. S. E. Warschawski.
1949. FULKS, WATSON BRYAN. B.S. '40, Arkansas State Teachers College;
M.A. '41, University of Arkansas.
Major: Mathematics. Minor: Mechanics.
Thesis: On Integral Representations and Uniqueness of Solutions of
the Heat Equation.
Major Adviser: Prof. S. E. Warschawski.
1949. LINDGREN, BERNARD WILLIAM. B.A. magna cum laude '43, M.A. '47,
University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: An Integral on the Space of Functions Which are Real and
Continuous but Otherwise Unrestricted on the Unit Interval.
Major Adviser: Prof. R. H. Cameron.
1949. POLANSKY, FRANK JOSEPH. B.A. cum laude '36, M.A. '38,
University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Some Approximation Theories in Conformal Mapping.
Major Adviser: Prof. S. E. Warschawski.
1949. SPECHT, EDWARD JOHN. B.S. '39, Walla Walla College; M.S. '41,
University of Colorado.
Major: Mathematics. Minor: Physics.
Thesis: Estimates on the Mapping Function and Its Derivatives in
Conformal Mapping of Nearly Circular Regions.
Major Adviser: Prof. S. E. Warschawski.
1950. BROCK, JOHN EDISON. B.S.M.E. '38, M.S.E. '41, Purdue University.
Major: Mathematics. Minor: Mechanics.
Thesis: Generalized Blaschke Products.
Major Adviser: Prof. S. E. Warschawski.

1950. COLSON, HENRY DANON. B.A. magna cum laude '41, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: An Existence Theorem for a Generalized Riemann-Stieltjes Integral.
Major Adviser: Prof. R. H. Cameron.
1950. CRAWFORD, WILLIAM STANLEY HAYES. B.A. magna cum laude '39, Mount Allison University; M.A. '42, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: The Evaluation of a Certain Class of Wiener Integrals.
Major Adviser: Prof. R. H. Cameron.
1950. OWCHAR, MARGARET. B.A. '45, University of Manitoba; M.A. '47, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: Wiener Integrals of Multiple Variations.
Major Adviser: Prof. R. H. Cameron.
1951. CUTHILL, ELIZABETH HAHNEMANN. B.A. cum laude '44, University of Buffalo; M.S. '46, Brown University.
Major: Mathematics. Minor: Physics.
Thesis: Integrals on Spaces of Functions Which Are Real and Continuous on Finite and Infinite Intervals.
Major Adviser: Prof. R. H. Cameron.
1951. EVANS, ROBERT LEONARD. B.Ch. with distinction '38, M.S. '39, University of Minnesota.
Major: Mathematics. Minor: Physical Chemistry.
Thesis: Asymptotic Solutions in the Neighborhood of a Turning Point for Linear Ordinary Differential Equations Containing a Parameter.
Major Adviser: Prof. H. L. Turrittin.
1951. FRIBERG, MARTIN SAMUEL. B.Ed. '36, Superior State Teachers College; M.Ph. '46, University of Wisconsin.
Major: Mathematics. Minor: Physics.
Thesis: A New Method for the Effective Determination of Conformal Maps.
Major Adviser: Prof. S. E. Warschawski.
1951. ITO, WALLACE HENRY. B.S.M.E. '44, Illinois Institute of Technology.
Major: Mathematics. Minor: Mathematics and Mechanics.
Thesis: On Conjugate Functions.
Major Adviser: Prof. S. E. Warschawski.
1951. SISTER MARY SERAPHIM GIBBONS. B.A. '33, The College of St. Catherine; M.A. '43, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: A Solution by Iteration of the Integral Equations Connected with the Dirichlet and Neumann Problems in Three Dimensions.
Major Adviser: Prof. S. E. Warschawski.

1951. THOMPSON, JAMES EDGAR. B.A. '43, College of Wooster.
Major: Mathematics. Minor: Mechanics.
Thesis: Studies of the Behavior of the Mapping Function on the Boundary in Conformal Mapping.
Major Adviser: Prof. S. E. Warschawski.
1952. TINGLEY, ARNOLD JACKSON. B.A. summa cum laude '49, Mount Allison University; M.A. '50, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: A Generalization of the Poisson Formula for the Solution of the Heat Flow Equation.
Major Adviser: Prof. R. H. Cameron.
1953. FAGEN, ROBERT ERNEST. B.A. magna cum laude '49, M.A. '50, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: Certain Probability Limit Theorems and Transformations of Stochastic Processes.
Major Adviser: Prof. M. D. Donsker.
1953. INDRITZ, JACK. M.S. '40, University of Chicago.
Major: Mathematics. Minor: Physics.
Thesis: Applications of the Rayleigh-Ritz Method to the Solutions of Partial Differential Equations.
Major Adviser: Prof. S. E. Warschawski.
1953. STRIMLING, WALTER EUGENE. B.Phys. with high distinction '45, M.A. '45, University of Minnesota.
Major: Mathematics. Minors: Chemistry and Electrical Engineering.
Thesis: Solution of a Linear, Second Order, Partial Differential Equation in Three Variables by Wiener Integration.
Major Adviser: Prof. R. H. Cameron.
1953. WANG, CHIH-YI. B.S. '41, Yenching University; M.A. '48, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: I. Polynomial Approximations to Solutions of Variational Problems in the Complex Domain. II. On the Mean Convergence of the Mapping Functions in Conformal Mapping of Regions Bounded by "Nearly Smooth" Curves.
Major Advisers: Profs. P. C. Rosenbloom and S. E. Warschawski.
1953. ZINK, ROBERT EDWIN. B.A. magna cum laude '49, M.A. '51, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Direct Unions of Measure Spaces.
Major Adviser: Prof. B. R. Gelbaum.

1954. BAXTER, GLEN EARL. B.A. magna cum laude '51, M.A. '52, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: An Application of Stochastic Processes to Certain Problems in the Brownian Motion of Continuous Media.
Major Adviser: Prof. M. D. Donsker.
1954. HAFSTROM, JOHN EDWARD. B.S. '36, North Dakota Agricultural College; M.A. '49, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: Non-Linear Transformations in Wiener Space of the Form $y(t) = x(t) + q [t; x(t_1), \dots, x(t_N)]$.
Major Adviser: Prof. R. H. Cameron.
1954. JOHNSTON, ERNEST RAYMOND. B.Ed. '38, Illinois State Normal University; M.S. '39, University of Illinois.
Major: Mathematics. Minor: Mechanics.
Thesis: A Study in Polynomial Approximation in the Complex Domain.
Major Adviser: Prof. S. E. Warschawski.
1954. PENEZ, JACQUELINE LYDIE. B.A. '45, Regis College; M.S. '47, Brown University.
Major: Mathematics. Minor: Mechanics.
Thesis: Approximation by Boundary Values of Analytic Functions.
Major Adviser: Prof. P. C. Rosenbloom.
1954. PRESTON, GERALD COWLES. B.A. magna cum laude '50, M.A. '51, University of Minnesota.
Major: Mathematics. Minor: Mechanics.
Thesis: On Locally Compact Totally Disconnected Abelian Groups and Their Character Groups.
Major Adviser: Prof. G. K. Kalisch.
1954. SHAPIRO, JESSE MARSHALL. B.A. '50, M.A. '51, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: An Error Estimate for the Convergence of Distributions of Sums of Independent Random Variables to Infinitely Divisible Distributions.
Major Adviser: Prof. M. D. Donsker.
1955. MAHOWALD, MARK E. B.A. cum laude '53, M.A. '54, University of Minnesota.
Major: Mathematics. Minor: Physics.
Thesis: Measure in Groups.
Major Adviser: Prof. B. R. Gelbaum.
1955. ROBERTS, JOSEPH BUFFINGTON. B.S. '44, Case School of Applied Science; M.A. '50, University of Colorado.
Major: Mathematics. Minor: Philosophy.
Thesis: Summability Methods in Valuation Fields.
Major Adviser: Prof. G. K. Kalisch.

1955. WOLF, FRANK LOUIS. B.S. in Ch.E. '44, M.A. '48, Washington University.
Major: Mathematics. Minor: Philosophy.
Thesis: Decidability in the Theory of Games Machine Computability in Game Theory.
Major Advisers: Profs. E. D. Nering and J. M. H. Olmsted.
1956. KIMPE, ERNEST GODFREY. B.A. magna cum laude '52, Pomona College; M.A. '54, University of Minnesota.
Major: Mathematics. Minor: Statistics.
Thesis: On the Convergence of Sequences of Stochastic Processes with Independent Increments.
Major Adviser: Prof. M. D. Donsker.

PHYSICS

1938. DISTAD, MERRIL FRANCIS. B.A. '31, Concordia College; M.A. '34, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Cathodo-Conductivity of Zincblende. An Experimental Investigation of the Effect of Electron Bombardment on the Electrical Conductivity of Zincblende Crystals.
Major Advisers: Dean J. T. Tate and Prof. J. W. Buchta.
1938. HAXBY, ROBERT OZIAS. B.E.E. '33, M.S. in E.E. '34, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Angular Distributions of the Disintegration Products of Light Elements Bombarded by Protons and Deuterons.
Major Adviser: Dean J. T. Tate.
1939. JAUCH, JOSEF MARIA. Graduate '38, Swiss Federal Institute of Technology.
Major: Physics. Minor: Mathematics.
Thesis: On Contact-Transformations and Group Theory in Quantum-Mechanical Problems.
Major Adviser: Prof. E. L. Hill.
1940. HAGSTRUM, HOMER DUPRE. B.E.E. '35, B.A. '36, M.S. '39, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: On an Extension of the Mass Spectrometric Method of Study of Ionization and Dissociation Processes in Diatomic Molecules under Electron Impact and Its Application to the Study of Hydrogen, Carbon Monoxide, Nitric Oxide, Nitrogen, and Oxygen.
Major Adviser: Dean J. T. Tate.
1940. WELCH, GEORGE IRA. B.S. in E.E. '34, South Dakota State School of Mines.
Major: Physics. Minor: Mathematics.
Thesis: Design and Performance of a New Type Galitzin Gravity Meter.
Major Adviser: Prof. W. W. Wetzel.

1941. LU, HOFF. B.S. '36, Yenching University; M.S. '39, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: A New Type High Intensity Mass Spectrometer and Its Application to the Separation of Boron Isotopes.
Major Advisers: Profs. A. O. C. Nier and L. H. Rumbaugh.
1947. BAILEY, CARL LEONARD. B.A. '40, Concordia College; M.A. '42, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Capture of Thermal Neutrons.
Major Adviser: Prof. J. H. Williams.
1947. BLAIR, JOHN MORRIS. B.S. with high distinction '40, Oklahoma Agricultural and Mechanical College; M.Ph. '42, University of Wisconsin.
Major: Physics. Minor: Mathematics.
Thesis: Fast Neutron Processes.
Major Adviser: Prof. J. H. Williams.
1947. COHEN, ARNOLD A. B.E.E. with high distinction '35, M.S. '38, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Application of an Electron Multiplier Mass Spectrometer to the Isotopic Analysis of Rhodium, Columbium, and Cerium.
Major Adviser: Prof. A. O. C. Nier.
1947. NUCKOLLS, RICHARD GREENOUGH. B.A. cum laude '35, Oberlin College; M.S. '37, Washington University.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Total Cross-Sections for Neutrons Scattered by Protons, Deuterons, and by Carbon and by Oxygen, as a Function of Neutron Energy Between 0.35 and 6 Mev.
Major Adviser: Prof. J. H. Williams.
1947. ROE, GLENN MAGNUS. B.A. '38, St. Olaf College; M.A. '40, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Theory of Acoustic and Electromagnetic Wave Guides and Cavity Resonators.
Major Adviser: Prof. E. L. Hill.
1948. ALDRICH, LYMAN THOMAS. B.A. '39, M.A. '46, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Occurrence of Helium-3 in Natural Sources of Helium.
Major Adviser: Prof. A. O. C. Nier.
1948. MURPHEY, BYRON FREEZE. B.A. with honors '39, Montana State University; M.A. '41, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Thermal Diffusion of Hydrogen, Deuterium and Helium.
Major Adviser: Prof. A. O. C. Nier.

1949. FREIER, GEORGE DAVID. B.S. '38, River Falls State Teachers College; M.A. '44, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of Cross Section Per Unit Solid Angle for the Scattering of Protons by Helium as a Function of Scattering Angle and Incident Proton Energy.
Major Adviser: Prof. J. H. Williams.
1949. LAMPI, EUGENE ELIAS. B.E.E. with distinction '40, M.S. '41, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Total Scattering Cross Section of Neutrons by Carbon and Hydrogen.
Major Adviser: Prof. J. H. Williams.
1949. SMART, JAMES SAMUEL. B.A. '39, Westminster College; M.S. '41, Louisiana State University.
Major: Physics. Minor: Mathematics.
Thesis: On the Formation and Relative Abundances of the Chemical Elements.
Major Adviser: Prof. C. L. Critchfield.
1950. DRUKEY, DONALD LEON. B.Ch.E. with distinction '43, M.S. '48, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Effect of Retardation on Nuclear Forces.
Major Adviser: Prof. J. W. Weinberg.
1950. FREIER, PHYLLIS ST. CYR. B.S. '42, M.A. '44, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Heavy Component of the Primary Cosmic Radiation.
Major Adviser: Prof. E. P. Ney.
1950. MCINTEER, BERTHUS BOSTON, JR. B.S. '41, University of Kentucky; M.S. '49, University of Minnesota.
Major: Physics. Minor: Physical Chemistry.
Thesis: The Use of a Third Component in Isotope Separation by Thermal Diffusion.
Major Adviser: Prof. A. O. C. Nier.
1950. ROBERTS, THOMAS REASER. B.A. cum laude '43, Harvard College; M.A. '49, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Determination of Secondary Atomic Mass Standards.
Major Adviser: Prof. A. O. C. Nier.
1950. WINN, EDWARD BARRIERE. B.S.E.E. cum laude '46, University of South Carolina; M.S. '47, University of Virginia.
Major: Physics. Minor: Mathematics.
Thesis: The Self Diffusion Coefficients of Argon, Neon, Nitrogen, Oxygen, Carbon Dioxide, and Methane.
Major Adviser: Prof. A. O. C. Nier.

1951. CLAASSEN, RICHARD STRONG. B.A. '43, Cornell University; M.A. '47, Columbia University.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Cross Section per Unit Solid Angle for the Scattering of Protons by Tritium as a Function of Scattering Angle and Incident Proton Energy.
Major Adviser: Prof. J. H. Williams.
1951. HAEFNER, RICHARD RAYMOND. B.A. cum laude '47, M.S. '48, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: An Investigation of the Properties of the Excited States of the Beryllium and Carbon Isotopes for an Alpha Particle Model.
Major Adviser: Prof. C. L. Critchfield.
1951. HEUSINKVELD, MYRON ELLIS. B.S. in E.E. '42, Iowa State College; M.S. '49, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Existence of the Inverted $P_{3/2}$ - $P_{1/2}$ Doublet in Li^{5*} by Means of Double Scattering of Protons by Helium.
Major Adviser: Prof. J. H. Williams.
1951. KELBER, CHARLES NORMAN. B.A. summa cum laude '47, M.S. '48, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Self-Energy Problem in Quantum Electrodynamics.
Major Advisers: Prof. E. L. Hill and C. L. Critchfield.
1951. LELAND, WALLACE THOMPSON. B.E.E. with distinction '43, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: An Isotopic Study of Scandium, Gadolinium, Dysprosium, Holmium, Erbium, Ytterbium, Tellurium, Vanadium, Iodine, and Platinum.
Major Adviser: Prof. A. O. C. Nier.
1951. OLEKSA, SOPHIE. B.A. magna cum laude '41, Brooklyn College; M.A. '42, Bryn Mawr College.
Major: Physics. Minor: Mathematics.
Thesis: Density of States in Light Nuclei.
Major Adviser: Prof. C. L. Critchfield.
1951. TAUBER, GERHARD E. B.A. (Honours) '46, University of Toronto; M.A. '47, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: A Study in Rotation and Gravitation.
Major Adviser: Prof. C. L. Critchfield.
1951. TRAINOR, LYNNE E. H. B.A. '46, M.A. '47, University of Saskatchewan.
Major: Physics. Minor: Mathematics.
Thesis: The Effects of Nuclear Symmetry Properties on Nuclear Dipole Transitions with Special Application to a Bound Excited State of ${}^2He^4$.
Major Adviser: Prof. C. L. Critchfield.

1952. HALSTED, RICHARD EMERSON. B.A. with high distinction '47, DePauw University; M.S. '50, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Isotopic Masses of Palladium, Cadmium, Indium, Tin, Tellurium, Iodine, and Xenon.
Major Adviser: Prof. A. O. C. Nier.
1952. LINSLEY, JOHN. B.Phys. with high distinction '46, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Influence of Nuclear Size on Meson Production at Very Great Energies.
Major Adviser: Prof. E. P. Ney.
1952. STRATTON, WILLIAM ROBERT. B.A. cum laude '47, M.S. '49, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of Cross Section per Unit Solid Angle for the Elastic Scattering of Deuterons by Tritons and the Elastic Scattering of Protons as a Function of Scattering Angle and Incident Deuteron Energy.
Major Advisers: Profs. J. H. Williams and G. D. Freier.
1952. YARNELL, JOHN LEONARD. B.A. '47, M.A. '49, University of Kansas.
Major: Physics. Minor: Mathematics.
Thesis: Determination of the Cross Section for the Production of Protons by the Deuteron Bombardment of He^3 as a Function of Proton Angle and Deuteron Energy.
Major Advisers: Profs. J. H. Williams and J. M. Blair.
1953. ANDERSON, GEORGE WATKINS, JR. B.A. magna cum laude '48, M.S. '50, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Time and Directional Dependence of the Flux of Primary Heavy Nuclei.
Major Adviser: Prof. C. L. Critchfield.
1953. BROWN, ROBERT JAMES SIDFORD. B.S. '48, California Institute of Technology; M.S. '51, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of Differential Cross Section for the Elastic Scattering of Deuterons by Helium-Three as a Function of Scattering Angle and Incident Deuteron Energy.
Major Advisers: Profs. J. H. Williams and G. D. Freier.
1953. NAUGLE, JOHN EARL. B.Phys. with distinction '49, M.S. '50, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: High Energy Phenomena in Nuclear Emulsions.
Major Adviser: Prof. E. P. Ney.

1954. HOLMGREN, HARRY DAHL. B.Phys. with high distinction '49, M.A. '50, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Differential Cross Sections for the $Cl_2(d,p)Cl_3$ Reaction for 3.29 Mev. Incident Deuterons and the $Cl_3(d,t)Cl_2$ Reaction for 2.19 Mev. and 3.29 Mev. Incident Deuterons as a Function of the Angle of the Emitted Particles.
Major Advisers: Profs. J. H. Williams and J. M. Blair.
1954. HORWITZ, NAHMIN. B.S. cum laude '49, Western Reserve University; M.S. '51, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Cerenkov Counter Measurement of Cosmic Ray Alpha Particles at 41° .
Major Adviser: Prof. E. P. Ney.
1954. STRATTON, THOMAS FAIRLAMB. B.S. '49, Union College; M.S. '52, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Experimental Determination of the Absolute Differential Cross Sections for the $Ol_6(d,p)Ol_7$, $Ol_6(d,p)Ol_7^*$ and $Ol_8(d,p)Ol_9^*$ Reactions as a Function of the Incident Deuteron Energy and the Angle of the Emitted Protons.
Major Advisers: Profs. J. H. Williams and J. M. Blair.
1955. ANDERSON, KINSEY AMOR. B.A. '49, Carleton College.
Major: Physics. Minors: Mathematics and Geology.
Thesis: Effects of Non-Primary Cosmic Radiation on the Primary Number-Energy Relation and Geomagnetic Correlations Near the Top of the Atmosphere.
Major Adviser: Prof. J. R. Winckler.
1955. BOHL, LELAND SHEAFF. B.S. '45, University of Kansas; M.S. '52, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Light Elements in Cosmic Rays: A Double-Scintillation-Counter Experiment.
Major Adviser: Prof. E. P. Ney.
1955. KETTNER, MAXWELL EDWARD. B.Sc. '42, University of Manitoba; M.A. '50, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Masses of the Stable Isotopes of Carbon, Nitrogen, Oxygen, Fluorine and Neon.
Major Adviser: Prof. A. O. C. Nier.
1955. LAGERGREN, CARL ROBERT. B.S. with honors '44, M.S. '49, State College of Washington.
Major: Physics. Minor: Mathematics.
Thesis: An Electron Impact Determination of the Dissociation Energy of Carbon Monoxide and the Electron Affinity of Carbon.
Major Adviser: Prof. A. O. C. Nier.

1955. LOVBERG, RALPH HARVEY. B.S. with honor '50, California Institute of Technology.
Major: Physics. Minor: Mathematics.
Thesis: The Absolute Differential Cross Section and Angular Distribution for the Elastic Scattering of 9.75 Mev Protons by Helium-3.
Major Adviser: Prof. J. H. Williams.
1955. MCDONALD, FRANK BETHUNE. B.S. '48, Duke University; M.A. '51, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: A Cloud-Chamber Scintillation Counter Determination of the Flux of Primary Cosmic Ray Alpha Particles.
Major Adviser: Prof. E. P. Ney.
1955. MITCHELL, EARL NELSON. B.A. with high distinction '49, M.S. '51, State University of Iowa.
Major: Physics. Minor: Mathematics.
Thesis: The Velocity Spectrum of Cosmic Ray Particles at Thirteen Grams Atmospheric Depth.
Major Adviser: Prof. J. R. Winckler.
1955. RASMUSSEN, STANLEY WHEELER. B.A. magna cum laude '43, University of Colorado; M.A. '52, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: Elastic and Inelastic Scattering of 10 Mev Protons from Beryllium.
Major Adviser: Prof. J. H. Williams.
1956. ERICKSON, WILLIAM CLARENCE. B.A. magna cum laude '51, M.A. '54, University of Minnesota.
Major: Physics. Minor: Mathematics.
Thesis: The Origin of Galactic and Extra-Galactic Radio Noise.
Major Adviser: Prof. W. B. Cheston.
1956. JOHNSON, WALTER HEINRICK. B.A. magna cum laude '50, M.A. '52, University of Minnesota.
Major: Physics. Minor: Mathematics and Mechanics.
Thesis: A Determination of Atomic Masses for the Stable Nuclei in the Mass Region $A=130$ to $A=154$.
Major Adviser: Prof. A. O. C. Nier.
1956. QUISENBERRY, KARL SPANGLER, JR. B.Sc. '49, University of Nebraska; M.A. '52, University of Minnesota.
Major: Physics. Minor: Mathematics and Mechanics.
Thesis: Atomic Masses of the Isotopes of Iron, Cobalt, Nickel, Copper, and Zinc.
Major Adviser: Prof. A. O. C. Nier.

1956. SCOLMAN, THEODORE THOMAS. B.S. summa cum laude '50, Beloit College.
Major: Physics. Minor: Mathematics.
Thesis: The Atomic Masses of the Stable Isotopes of Boron, Carbon,
Nitrogen, Oxygen, Fluorine, Neon, Sodium, Magnesium, and Silicon.
Major Adviser: Prof. A. O. C. Nier.
1956. SIMMONS, BOWEN EUGENE. B.S. magna cum laude '51, M.A. '53,
Duke University.
Major: Physics. Minor: Mathematics.
Thesis: The Coulomb Excitation of Neodymium and Samarium Nuclei by
Proton Bombardment.
Major Adviser: Prof. G. D. Freier.

SOCIAL SCIENCES

ANTHROPOLOGY

1948. GORDON, ALBERT ISAAC. B.A. '27, New York University;
M.A. '38, University of Minnesota.
Major: Anthropology. Minor: Sociology.
Thesis: The Jews of Minneapolis: A Study in Acculturation.
Major Adviser: Prof. W. D. Wallis.

BUSINESS ADMINISTRATION

1952. JOHNSON, CHARLES ELLICOTT. B.B.A. with distinction '42,
M.B.A. '48, University of Minnesota.
Major: Business Administration. Minor: Law.
Thesis: The Concept and Measurement of Business Income for Corporate Reporting.
Major Adviser: Prof. E. A. Hellman.
1952. MILLER, CHARLES WILLIAMS. B.S. '48, Marquette University;
M.A. '50, University of Minnesota.
Major: Business Administration. Minor: History.
Thesis: Post-War Price Determination in the Wisconsin Canning Industry—Theory and Practice.
Major Adviser: Prof. R. S. Vaile.
1953. MITTON, DARYL GORDON. B.Ch.E. with distinction '44, M.B.A. '48,
University of Minnesota.
Major: Business Administration. Minors: Industrial Engineering and Psychology.
Thesis: Effects of Decentralized Management in Selected Industries.
Major Adviser: Prof. George Filipetti.
1954. MULLEN, JAMES JOSEPH. B.B.A. '47, M.A. '49, University of Minnesota.
Major: Business Administration. Minors: Psychology and Journalism.
Thesis: Some Relationships Between the Volume of Sales of Green Giant Brand Peas and Advertising in Seventy-Four Market Areas.
Major Adviser: Prof. R. S. Vaile.
1955. SATYANARAYANA, JATAVALLABHULA. B.A. '40, B.A. (Hons.) '42, Andhra University; M.B.A. '54, University of Minnesota.
Major: Business Administration. Minor: Political Science.
Thesis: Recent Trends in the United States Market for Indian Burlap.
Major Adviser: Prof. R. S. Vaile.
1955. TAYLOR, NORMAN EUGENE. B.A. '41, M.B.A. '47, University of California (Berkeley).
Major: Business Administration. Minor: History.
Thesis: The Midland Cooperative Wholesale, Inc.: Its History and Analysis.
Major Adviser: Prof. R. S. Vaile.

1955. TEWFIK, GAMIL AHMED. B.Com. with honors '48, Alexandria University; M.A. '51, University of Minnesota.
Major: Business Administration. Minor: Agricultural Economics.
Thesis: A Study of Minnesota Credit Unions With Consideration of Adaptability of Such Institutions to Underdeveloped Countries.
Major Adviser: Prof. J. W. Stehman.
1956. CHAO, LIEN LINCOLN. B.L. '45, National Hunan University; M.A. '50, University of Minnesota.
Major: Business Administration. Minor: Sociology.
Thesis: Distinctive Patterns of Industrial Relations in Korea.
Major Adviser: Prof. Dale Yoder.

AGRICULTURAL ECONOMICS

1938. FERRIER, WALLACE THOMAS. B.A. '10, Tarkio College; M.A. '30, Colorado Agricultural College.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Farm Mortgage Credit in the Spring Wheat Region.
Major Adviser: Prof. O. B. Jesness.
1938. SALLIE, GEORGE ALDEN. B.S. '25, University of Illinois; M.S. '28, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Study of Agricultural Labor in Minnesota.
Major Adviser: Prof. G. A. Pond.
1938. TRELOGAN, HARRY CHESTER. B.S. '31, West Virginia University; M.S. '33, University of Minnesota.
Major: Agricultural Economics. Minor: Dairy Husbandry.
Thesis: An Economic Analysis of the Chicago Milk Market with Special Reference to the Operation of United States Milk License Number 30 in That Market.
Major Adviser: Prof. W. C. Waite.
1939. ARTHUR, IRA W. B.S. '16, M.S. '27, Iowa State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Public Regulation of Monopolistic Practices in the American Livestock and Wholesale Meat Trades.
Major Adviser: Prof. O. B. Jesness.
1939. HOLLANDS, HAROLD FULLER. B.S. '23, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Study of Reclamation Projects in Central Washington, with Particular Reference to Plans for Repayment of Construction Costs.
Major Adviser: Prof. O. B. Jesness.

1939. RANNEY, WILLARD PARMINTER. B.S. '17, M.S. '28, University of Illinois.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Analysis of the Selection and Use of Factors Affecting the Earnings of Dairy Farmers in Southeastern Minnesota.
Major Adviser: Prof. G. A. Pond.
1940. ENGENE, SELMER AMUND. B.S. '31, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Analysis of the Relationship of the Relative Ranking of Management Factors to Farm Earnings.
Major Adviser: Prof. G. A. Pond.
1941. MACFARLANE, DAVID LIVINGSTONE. B.S. '33, M.S. '34, University of Saskatchewan.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Selected Problems in Sampling for Crop and Livestock Estimating.
Major Adviser: Prof. W. C. Waite.
1941. PETERSON, GEORGE LEROY. B.S. '33, M.A. '35, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Agricultural Financing by Country Banks in Minnesota.
Major Adviser: Prof. O. B. Jesness.
1941. PHILLIPS, CARROLL DAVIDSON. B.S. '23, Colorado Agricultural College; M.S. '28, Purdue University.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Louisville Wholesale Fruit and Vegetable Market.
Major Adviser: Prof. O. B. Jesness.
1941. SPRAGUE, GORDON WADSWORTH. B.S. '26, M.S. '26, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Butter Price Quotations at Chicago.
Major Adviser: Prof. O. B. Jesness.
1942. HERRMANN, LOUIS FERDINAND. B.S. '32, Michigan State College; M.S. '34, West Virginia University.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Rates of Feeding and Milk Production in Some West Virginia Dairy Herds.
Major Adviser: Prof. O. B. Jesness.
1942. NODLAND, TRUMAN RAYMOND. B.S. '34, University of Minnesota.
Major: Agricultural Economics. Minor: Animal Husbandry.
Thesis: A Study of Management Factors Affecting Variations in Returns from Livestock in Southeastern Minnesota.
Major Adviser: Prof. G. A. Pond.

1942. OSGOOD, OTIS TRUMAN. B.S. '31, University of Arkansas; M.S. '38, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Planning Farm Organizations in the Eastern Ozarks of Arkansas.
Major Adviser: Prof. G. A. Pond.
1942. PROCTOR, ROY ESTES. B.S. '27, M.S. '30, University of Kentucky.
Major: Agricultural Economics. Minor: Economics.
Thesis: Factors Influencing Farm Organization in a General Live-stock Area in Kentucky.
Major Adviser: Prof. G. A. Pond.
1942. YANG, SHU-CHIA. B.A. '33, Central Political Institute (Nanking); M.S. '39, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of the Chinese Economy with Special Reference to Farm Credit.
Major Adviser: Prof. O. B. Jesness.
1943. HALVORSON, LLOYD CHESTER. B.S. '39, University of Minnesota.
Major: Agricultural Economics. Minor: Political Science.
Thesis: The Use of Normal Prices by the Farm Credit Administration.
Major Adviser: Prof. O. B. Jesness.
1943. WHITE, JOHN WILLIAM. B.S.A. '35, University of Arkansas; M.S. '39, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Economic Possibilities of Changes in Enterprise Combinations on Plantations in the Lower Arkansas River Delta.
Major Adviser: Prof. O.B. Jesness.
1946. *SALTER, LEONARD AUSTIN, JR. B.S. '32, Massachusetts State College; M.A. '35, University of Connecticut.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Critical Review of Research in Land Economics.
Major Adviser: Prof. O. B. Jesness.
1946. WHITNEY, RAMEY CHARLES. B.S. '31, M.A. '36, University of Nebraska.
Major: Agricultural Economics. Minor: Economics.
Thesis: Farm Income, Investment, and Value of Farm Land in Missouri.
Major Adviser: Prof. O. B. Jesness.
1947. PETERSON, WEBER HJALMAR. B.S. '36, M.S. '38, Montana State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Economics of Flaxseed Production in the United States.
Major Adviser: Prof. W. C. Waite.

*Degree conferred post obitum.

1947. SHORT, FREDERICK WALTER. B.A. '43, McMaster University (Canada):
M.S. '44, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Fruit Marketing with Special Reference to the Niagara
Peninsula of Ontario.
Major Adviser: Prof. O. B. Jesness.
1947. ZIVNUSKA, JOHN ARTHUR. B.S. '38, M.S. '40, University of California.
Major: Agricultural Economics. Minor: Forestry.
Thesis: Business Cycles, Building Cycles, and the Development of
Commercial Forestry in the United States.
Major Adviser: Prof. W. C. Waite.
1948. COTTON, WALTER PATTON. B.S. '32, M.S. '33, University of Tennessee.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of an Economic Adjustment of Market Milk Supplies
to Needs in North Carolina.
Major Adviser: Prof. O. B. Jesness.
1948. DOLL, RAYMOND JOSEPH. B.S. '35, M.S. '38, Kansas State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Agricultural Policy in Relation to the Beef Cattle Industry.
Major Adviser: Prof. O. B. Jesness.
1948. PINE, WILFRED HAROLD. B.S. with honors '34, M.S. '38, Kansas
State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Methods of Classifying Kansas Land According to Economic
Productivity.
Major Adviser: Prof. A. A. Dowell.
1948. SIELAFF, RICHARD OTTO. B.B.A. '39, B.S. in Law '39, B.S. '41,
M.B.A. '44, University of Minnesota.
Major: Agricultural Economics. Minor: Business Administration.
Thesis: A Study of the Theory of Monopolistic Competition as Applied
to an Agricultural Processing Industry.
Major Adviser: Prof. W. C. Waite.
1948. TSIANG, CHIEH. B.S. '35, University of Nanking; M.S. '46,
University of Minnesota.
Major: Agricultural Economics. Minor: Sociology.
Thesis: An Economic Study of Some Problems of Chinese Agriculture.
Major Adviser: Prof. A. A. Dowell.
1949. BENEKE, RAYMOND RUDOLF. B.S. '40, M.S. '46, Iowa State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Transfer of Farm Operatorship with Special Reference to
the Problems of Beginning Operators and the Utilization of Farm
Resources during the Establishment Phase.
Major Adviser: Prof. G. A. Pond.

1949. DAVIS, JOHN HERBERT. B.S. '28, Iowa State College; M.A. '35, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Tax Status of Farmer Cooperatives.
Major Adviser: Prof. O. B. Jesness.
1949. ENGELMAN, GERALD. B.S. '37, Iowa State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Some Economic and Physical Problems in the Marketing of Slaughter Hogs on the Basis of Carcass Weights and Grades in the United States.
Major Adviser: Prof. A. A. Dowell.
1949. HALL, ORVILLE JACQUELIN. B.S.A. '25, University of Arkansas; M.S. '28, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Drying of Arkansas Rice—Economic Considerations and Consequences.
Major Adviser: Prof. O. B. Jesness.
1949. MILLER, FRANK. B.A. '21, Park College; M.A. '37, University of Nebraska.
Major: Agricultural Economics. Minor: Economics.
Thesis: Agricultural Credit in Southeastern Nebraska.
Major Adviser: Prof. O. B. Jesness.
1949. SPAULDING, JOHN LLOYD. B.S. '36, Iowa State College; Ph.M. '38, University of Wisconsin.
Major: Agricultural Economics. Minor: Economics.
Thesis: Criteria for the Utilization of the Value Premise as an Analytical Device Examined with Special Reference to Certain Studies in Rural Land Economics.
Major Adviser: Prof. O. B. Jesness.
1950. BUTZ, DALE EVERETT. B.S. with distinction '43, Purdue University; M.S. '48, Cornell University.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Minnesota Dry Milk Industry.
Major Adviser: Prof. E. F. Koller.
1950. EPP, ABRAM W. B.Sc. in Agric. '33, M.A. '37, University of Nebraska.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Analysis of Adjustments in Farm Organization in Pawnee County, Nebraska, to Meet Soil Conservation Needs.
Major Adviser: Prof. G. A. Pond.
1950. HIRSCH, HANS GEORGE. B.S. with high distinction '41, M.S. '42, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Role of Milk Producers' Cooperatives under the Agricultural Marketing Agreement Act.
Major Adviser: Prof. W. C. Waite.

1950. KORZAN, GERALD EARL. B.S. '40, South Dakota State College; M.A. '48, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Marketing Dairy Products in Sparsely Populated Regions with Special Reference to Montana.
Major Adviser: Prof. O. B. Jesness.
1950. LIU, SONG-SENG. B.S. '43, National Central University; M.S. '46, Cornell University.
Major: Agricultural Economics. Minors: Economics and Sociology.
Thesis: Possibilities of Improving the Chinese Agricultural Situation through Industrialization.
Major Adviser: Prof. O. B. Jesness.
1951. BERG, SHERWOOD OLMAN. B.S. with highest honors '47, South Dakota State College; M.S. '48, Cornell University.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of Production Credit Associations in the State of Minnesota.
Major Adviser: Prof. E. F. Koller.
1951. BUCK, JOHN THOMAS. B.S. '38, Western Kentucky State Teachers College; M.S.A. '47, University of Kentucky.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Shift from Cream to Whole Milk in Minnesota Cooperative Creameries.
Major Adviser: Prof. O. B. Jesness.
1951. MCDANIEL, WILLIAM EARL. B.S. '42, University of Missouri; M.S. '43, University of Illinois.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Technological Change and Its Effect upon Production and Cash Expenses from 1910 to 1949 on Southeastern Minnesota Dairy Farms.
Major Adviser: Prof. G. A. Pond.
1951. OGREN, KENNETH ELLERY. B.S. with high distinction '42, M.A. '48, University of Minnesota.
Major: Agricultural Economics. Minor: Statistics.
Thesis: An Analysis of Consumer Demand for Fresh Citrus Fruits, Frozen Concentrated Orange Juice and Selected Canned Fruit Juices.
Major Adviser: Prof. O. B. Jesness.
1951. SIELAFF, THEODORE JOHN. B.S. '42, M.A. '44, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Study of Rural Electrification in Minnesota.
Major Adviser: Prof. O. B. Jesness.

1951. SWANTZ, ALEXANDER. B.S. with honors '41, Washington State College; M.S. '49, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Economic Effects of Federal Regulations of Fluid Milk Markets with Special Reference to the Minneapolis-St. Paul Market.
Major Adviser: Prof. O. B. Jesness.
1951. TAYLOR, FREDERICK ROBERT. B.S. '39, M.S. '47, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of Quality Deterioration in Minnesota Egg Marketing.
Major Adviser: Prof. O. B. Jesness.
1951. VANVIG, ANDREW. B.S. '42, North Dakota Agricultural College; M.S. '43, Cornell University.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Study of Farm Organization with Special Reference to Cropping Systems on the Heavy Soils Area of the Red River Valley.
Major Adviser: Prof. G. A. Pond.
1952. BITTING, HERBERT WAYNE. B.S. '33, University of Illinois; M.S. '37, Iowa State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Problems in Measuring and Analyzing Marketing Margins for Selected Fruits and Vegetables.
Major Adviser: Prof. R. W. Cox.
1952. BREKKE, ARNOLD. B.S. '42, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Development of Agricultural Policy.
Major Adviser: Prof. O. B. Jesness.
1952. GOLDBERG, RAY ALLAN. B.A. cum laude '48, Harvard University; M.B.A. '50, Harvard Graduate School of Business Administration.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Competitive Position of the Minnesota Soybean Producer and Processor.
Major Adviser: Prof. R. W. Cox.
1952. GRAY, ROGER WINKS. B.A. '42, M.A. '47, University of Colorado.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Impact of the Price Support Program upon the Development of the Potato Industry in the United States.
Major Adviser: Prof. W. W. Cochrane.

1952. KEITH, IAN FYVIE. B.Sc. '48, University of Aberdeen; M.S. '50, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Place of Livestock in the Systems of Farming in Southern Minnesota.
Major Adviser: Prof. G. A. Pond.
1952. KRAUSE, STANLEY FREDERICK. B.A. '49, University of Denver; M.S. '50, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Marketing and Pricing of Minnesota Creamery Butter.
Major Adviser: Prof. E. F. Koller.
1952. MANUEL, MILTON LLOYD. B.S. '41, M.S. '48, Kansas State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Historical Development and Evaluation of the Farm Management Service Associations in the United States.
Major Adviser: Prof. G. A. Pond.
1952. SHUTE, JAMES ALLAN. B.S. '42, M.S. '47, Pennsylvania State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Comparison of Dairy Cattle Labor Requirements for Stall and Loose Housing Barns.
Major Adviser: Prof. S. A. Engene.
1952. STOLTENBERG, CARL HENRY. B.S. '48, M.F. '49, University of California.
Major: Agricultural Economics. Minor: Forestry.
Thesis: Progress in Rural Zoning in Northeastern Minnesota.
Major Adviser: Prof. O. B. Jesness.
1953. DAY, LEE MONROE. B.S. '47, M.S. '48, Iowa State College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Comparative Efficiency of Farm Operations Under Alternative Leasing Systems.
Major Adviser: Prof. G. A. Pond.
1953. PIERCE, WALTER HENRY. B.S. with honors '36, North Carolina State College of Agriculture and Engineering; M.S. '48, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Opportunities for Economic Adjustments in Farming Systems, Central Coastal Plain, North Carolina, with Particular Reference to Small Tobacco Farms, Wilson County.
Major Adviser: Prof. G. A. Pond.
1953. PLAXICO, JAMES SAMUEL. B.S. '45, M.S. '48, Clemson Agricultural College.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of Intensive Forage Systems.
Major Adviser: Prof. S. A. Engene.

1953. SINCLAIR, SOLOMON. B.S.A. '32, M.Sc. '37, University of Saskatchewan.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Role of Subsidies in Farm-Mortgage Credit.
Major Adviser: Prof. O. B. Jesness.
1953. SORENSON, VERNON LYLE. B.S. with distinction '48, M.S. '48, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of the Nature and Cost of Government Programs Affecting Potatoes and Their Impact on Inter-Market Relationships.
Major Adviser: Prof. W. W. Cochrane.
1953. SUMMERS, GEORGE PERRY, SR. B.S. '28, M.S. '32, University of Kentucky.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Study of the Production Control and Price Support Program for Burley Tobacco with Particular Reference to Kentucky.
Major Adviser: Prof. O. B. Jesness.
1954. DAHL, REYNOLD PAUL. B.S. with high distinction '49, M.S. '50, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of the Agricultural Production Lending Activities of Minnesota Country Banks.
Major Adviser: Prof. E. F. Koller.
1954. KHAN, MASUDA. B.A. '49, M.A. '51, Muslim University.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Evaluation of Minnesota Farm Price Index Numbers and Recommendations for the Future.
Major Adviser: Prof. W. W. Cochrane.
1954. LEE, CHARLES EDGAR. B.A. '30, M.A. '31, University of Saskatchewan.
Major: Agricultural Economics. Minor: Economics.
Thesis: Economic Effects of Sanitary Regulations Relating to Milk Markets.
Major Adviser: Prof. O. B. Jesness.
1954. MANNING, TRAVIS WARREN. B.S. with distinction '49, M.S. '50, Oklahoma A. & M. College.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Analysis of the Economic Efficiency of Minnesota Dairy Cooperatives.
Major Adviser: Prof. E. F. Koller.
1954. MONTGOMERY, GEORGE. B.S. '25, M.S. '27, Kansas State Agricultural College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Wartime Control of Grain Prices in the United States.
Major Adviser: Prof. O. B. Jesness.

1954. NEWBERG, RICHARD RANDOLPH. B.A. '49, M.A. '50, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Analysis of Changes in Hog-Cattle Price Relationships, 1900-1953.
Major Advisers: Profs. A. A. Dowell and R. W. Cox.
1954. RORHOLM, NIELS. B.S. '46, Naessgaard Agricultural College.
Major: Agricultural Economics. Minor: Economics.
Thesis: Linear Programming as a Possible Refinement of Farm Budgeting Techniques.
Major Adviser: Prof. S. A. Engene.
1954. STANTON, BERNARD FREELAND. B.S. '49, Cornell University; M.S. '50, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Using Farm Records in Decision Making in Livestock Production.
Major Adviser: Prof. G. A. Pond.
1954. STUCKY, HAROLD RALPH. B.S. '27, University of Idaho; M.S. '42, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Settlement and Repayment Policies on Irrigation Projects.
Major Adviser: Prof. O. B. Jesness.
1954. WOOD, VI ALFRED. B.S. '34, M.S. '36, University of Alberta.
Major: Agricultural Economics. Minor: Economics.
Thesis: Public Land Policy for Alberta.
Major Adviser: Prof. A. A. Dowell.
1955. KEATON, CLYDE REECE. B.S. '48, M.S. '49, University of Tennessee.
Major: Agricultural Economics. Minor: Economics.
Thesis: An Economic Analysis of Apple Marketing, Hondo Valley, New Mexico.
Major Advisers: Profs. S. A. Engene and R. W. Cox.
1955. KOTTKE, MARVIN WALTER. B.S. '51, M.S. '52, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: A Study of Decision Sharing, Tenure Uncertainty, and the Choice of Farm Enterprise Combinations Under Farm Leasing Systems in Minnesota.
Major Adviser: Prof. P. M. Raup.
1955. MARTIN, JOE ALLEN. B.S. '46, M.S. '48, Clemson Agricultural College.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Impact of Industrialization upon Agriculture—A Study of Off-Farm Migration and Agricultural Development in Weakley County, Tennessee.
Major Adviser: Prof. O. B. Jesness.

1955. SWANSON, JAY P. B.S. '46, M.S. '47, State College of Washington.
Major: Agricultural Economics. Minor: Economics.
Thesis: The Economic Effects of Varying Amounts of Forage on the
Organization of Minnesota Farms.
Major Adviser: Prof. S. A. Engene.
1956. HAMOUDA, KHALIL ABDEL GHANI. B.S. '46, Farouk I University;
M.S. '52, University of Minnesota.
Major: Agricultural Economics. Minor: Economics.
Thesis: Economic Aspects of the Application of Cooperative Farming
in Egypt.
Major Adviser: Prof. P. M. Raup.

GENERAL ECONOMICS

1939. BODDY, FRANCIS MURRAY. B.B.A. '30, M.A. '36, University of
Minnesota.
Major: Economics. Minor: Mathematics.
Thesis: The Influence of Costs on Production and Price Policy in a
Joint-Product Industry.
Major Adviser: Prof. R. A. Stevenson.
1939. HAAS, HAROLD MILBURN. B.S. in M.E. '11, Purdue University;
M.B.A. '30, University of Washington.
Major: Economics. Minor: Economics (Marketing).
Thesis: Social and Economic Aspects of the Chain Store Movement.
Major Adviser: Prof. R. S. Vaile.
1940. CANOYER, HELEN GERTRUDE. B.S. '25, M.A. '30, University of
Minnesota.
Major: Economics. Minor: Economic History.
Thesis: National Brand Advertising and Monopolistic Competition.
Major Adviser: Prof. R. S. Vaile.
1940. KEBKER, VAMT WILMOT. B.A. '31, M.A. '33, University of Minnesota.
Major: Economics. Minor: Agricultural Economics.
Thesis: An Analysis of Consumers' Cooperation as a Form of Economic
Control.
Major Adviser: Prof. R. S. Vaile.
1940. LUND, REUEL ITHIEL. B.A. '19, University of Minnesota; M.A. '22,
University of Chicago.
Major: Economics. Minor: Economics (Accounting).
Thesis: The Problem of the Allocation of Income to Accounting Periods.
Major Adviser: Prof. E. A. Heilman.
1941. HIGGINS, BENJAMIN HOWARD. B.A. '33, University of Western Ontario;
M.S. '35, University of London.
Major: Economics. Minor: Economic History.
Thesis: Taxation Aspects of Fiscal Policy.
Major Adviser: Prof. A. W. Marget.

1941. NORDIN, JOHN ALGOT. B.A. '35, M.A. '37, University of Minnesota.
Major: Economics. Minor: Mathematics.
Thesis: Some Criteria for the Determination of the Period of Production.
Major Advisers: Profs. F. B. Garver and W. L. Hart.
1941. STOLTZ, MERTON PHILIP. B.B.A. with distinction '34, University of Minnesota; M.A. '36, Brown University.
Major: Economics. Minor: Agricultural Economics.
Thesis: The Use of Index Numbers as a Method of Adjusting Public Utility Valuation.
Major Adviser: Prof. F. B. Garver.
1942. GAUMNITZ, RICHARD KENNETH. B.Ch. '37, M.A. '38, University of Minnesota.
Major: Economics. Minor: Biostatistics.
Thesis: Sampling Unemployment Compensation Checks.
Major Adviser: Prof. B. D. Mudgett.
1943. BERRETTONI, JULIO NARCISO. B.Comm. '37, University of British Columbia; M.S. '38, Iowa State College.
Major: Economics. Minor: Mathematics.
Thesis: Theoretical and Statistical Cost Curves.
Major Advisers: Profs. G. J. Stigler and B. D. Mudgett.
1943. DUGAN, JAMES EDWARD. B.A. cum laude '36, M.A. '38, University of Minnesota.
Major: Economics. Minor: Political Science.
Thesis: Some Factors Affecting the Demand for Housing with Particular Reference to the Data Provided by the Minnesota Income Study.
Major Adviser: Prof. A. W. Marget.
1943. HART, ALEXANDER LINN. B.A. '36, M.A. '37, Pennsylvania State College.
Major: Economics. Minor: Mathematics.
Thesis: Investigation of a Sample of the Income of Minnesota Farm Operators and of Certain Related Items: An Application of the Analysis of Variance.
Major Adviser: Prof. B. D. Mudgett.
1943. LANGUM, JOHN KENNETH. B.A. magna cum laude '33, Colorado College; M.A. '36, University of Minnesota.
Major: Economics. Minor: Economic History.
Thesis: The Behavior of Cash Balances in the United States, 1934-1940.
Major Adviser: Prof. A. W. Marget.
1943. PETERSON, EDWARD JOSEPH. B.B.A. with distinction '38, M.A. '40, University of Minnesota.
Major: Economics. Minor: Economic History.
Thesis: The Flow of Money and Services in the Railway Industry.
Major Adviser: Prof. A. W. Marget.

1943. SIMPSON, FLOYD ROBERT OAKFORD. B.A. '33, M.A. '38, University of Minnesota.
Major: Economics. Minor: Political Science.
Thesis: Monopoly Building Techniques, Costs, Prices, and Market Structure in the Telephone Industry.
Major Adviser: Prof. J. W. Stehman.
1943. WELLER, EMANUEL W. THORNTON. B.A. '37, De Pauw University; M.A. '39, University of Minnesota.
Major: Economics. Minor: Law.
Thesis: The Flow of Money Payments and the Use of Accounting Data for Economic Analysis.
Major Adviser: Dean R. A. Stevenson.
1943. WORCESTER, DEAN ANDRY, JR. B.A. with distinction '39, M.A. '40, University of Nebraska.
Major: Economics. Minor: Psychology.
Thesis: An Analysis of Consumer Demand with Special Reference to High Levels of National Income.
Major Adviser: Prof. R. S. Valle.
1944. DEIN, RAYMOND CHARLES. B.S. '30, M.A. '35, University of Nebraska.
Major: Economics. Minor: Political Science.
Thesis: The Books of Account Approach to the Rate Base, with Special Reference to Intangibles.
Major Adviser: Prof. E. A. Heilman.
1944. MILLER, HERBERT ELMER. B.A. '36, M.A. '37, University of Iowa.
Major: Economics. Minor: Law.
Thesis: Accounting for Surplus Reserves.
Major Adviser: Prof. E. A. Heilman.
1944. NELSON, CARL LEROY. B.B.A. '31, University of Minnesota.
Major: Economics. Minor: Agricultural Economics.
Thesis: Financing of Capital Formation by Electrical Utilities, 1927-1938.
Major Adviser: Prof. E. A. Heilman.
1944. NIGHTINGALE, EDMUND ANTHONY. B.B.A. '33, M.A. '36, University of Minnesota.
Major: Economics. Minor: Agricultural Economics.
Thesis: Taxation in Great Britain: An Economic Analysis of British Taxation with Special Reference to the Organization and Administration of the National Tax System.
Major Adviser: Prof. R. G. Blakey.
1946. HANCHETT, PAUL EDWARD. B.A. '37, B.S. '39, University of Minnesota.
Major: Economics. Minor: Law.
Thesis: Federal Income Taxation of Cooperative Associations and their Patrons.
Major Adviser: Prof. R. G. Blakey.

1946. LEMKE, BERNHARD CARL. B.A. '32, M.A. '33, University of Wisconsin.
Major: Economics. Minor: Agricultural Economics.
Thesis: The Treatment of Bond Discount and Premium in Connection with Bond Refundings.
Major Adviser: Prof. E. A. Heilman.
1947. BURNS, MARY RAY. B.A. '16, University of Minnesota.
Major: Economics. Minor: Economic History.
Thesis: A Comparative Study of Four Railroad Reorganizations: Chicago Great Western Railroad Company; Chicago and North Western Railway Company; Chicago, Milwaukee, St. Paul and Pacific Railroad Company; Minneapolis, St. Paul and Sault Sainte Marie Railway Company.
Major Adviser: Prof. J. W. Stehman.
1947. HINES, LAWRENCE GREGORY. B.A. '38, University of Kansas; M.A. '42, University of Minnesota.
Major: Economics. Minor: Political Science.
Thesis: Some Aspects of the Economics of the Great Lakes Iron Ore Industry.
Major Advisers: Profs. E. W. Davis and F. B. Garver.
1947. VANCE, LAWRENCE LEE. B.B.A. '32, M.A. '33, University of Minnesota.
Major: Economics. Minor: Law.
Thesis: Applications of the Statistical Theory of Sampling to Auditing Procedure.
Major Adviser: Prof. E. A. Heilman.
1948. BURK, MARGUERITE CATHERINE. B.A. '37, M.A. '38, University of Kansas.
Major: Economics. Minor: Political Science.
Thesis: Analysis of Wartime Changes in Consumption.
Major Advisers: Profs. R. S. Vaile and W. C. Waite.
1948. HARDY, HAROLD ERNEST. B.A. '25, Pomona College.
Major: Economics. Minor: Agricultural Economics.
Thesis: The Integration of Manufacturing and Chain Distribution-- with Special Reference to Food Products.
Major Adviser: Prof. R. S. Vaile.
1948. HENEMAN, HERBERT GERHARD, JR. B.B.A. '38, M.A. '43, University of Minnesota.
Major: Economics. Minor: Psychology.
Thesis: Measurement of Short-run Family Participation in the Labor Force.
Major Adviser: Prof. Dale Yoder.
1948. WALLACE, ROBERT FENCIL. B.A. '34, M.A. '38, University of Kansas.
Major: Economics. Minor: History.
Thesis: Some Implications of Changed Agricultural Industry Liquidity and Agricultural Banking Area Liquidity for National Monetary and Agricultural Policy.
Major Adviser: Prof. A. R. Upgren.

1949. CHERNICK, JACK. B.A. '39, University of Manitoba; M.A. '42, University of Minnesota.
Major: Economics. Minor: Political Science.
Thesis: The Guaranteed Wage: An Economic Analysis of Its Scope and Limitations under a Private Enterprise System.
Major Adviser: Prof. F. M. Boddy.
1949. LUTHER, RODNEY FRANK. B.B.A. '46, M.B.A. '47, University of Minnesota.
Major: Economics. Minor: Mechanical Engineering.
Thesis: The Motion Picture Industry.
Major Adviser: Prof. R. S. Vaile.
1949. TOW, CLARENCE WESLEY. B.A. '28, M.A. '29, University of Iowa.
Major: Economics. Minor: Political Science.
Thesis: Factors Affecting the Yields of United States Government Securities, 1934-48.
Major Adviser: Prof. A. R. Upgren.
1949. YOUNGDAHL, CARL RICHARD. B.A. magna cum laude '37, Augustana College; M.A. '38, Fletcher School of Law and Diplomacy.
Major: Economics. Minor: History.
Thesis: The Structure of Interest Rates on Commercial Bank Loans, 1939-1948.
Major Adviser: Prof. A. R. Upgren.
1950. CAZELL, GABRIEL FRANCOIS. B.A. '37, M.S. '39, Texas Agricultural and Mechanical College.
Major: Economics. Minor: Agricultural Economics.
Thesis: A Postwar Tin Policy for the United States.
Major Adviser: Prof. A. R. Upgren.
1950. GREEN, JAMES LEROY. B.A. with honors '41, State College of Washington; M.A. '48, University of Minnesota.
Major: Economics. Minor: History.
Thesis: Some Alternatives to the Marginal Productivity Theory as an Explanation of Firm Employment Levels.
Major Adviser: Prof. Dale Yoder.
1951. BELCHER, DAVID WILLIAM. B.B.A. with distinction '39, M.A. '48, University of Minnesota.
Major: Economics. Minor: Psychology.
Thesis: Some Economic Factors Influencing Levels of Employment.
Major Adviser: Prof. Dale Yoder.
1951. YEAGER, FRANCIS SCOTT. B.A. '37, University of Western Ontario; M.A. '48, University of Minnesota.
Major: Economics. Minor: Law.
Thesis: The Metropolitan Twin Cities, A Regional Entrepot--An Economic Analysis and Interpretation of the Upper Midwest.
Major Adviser: Prof. R. S. Vaile.

1952. BARBER, CLARENCE LYLE. B.A. with great distinction '39, University of Saskatchewan; M.A. '41, Clark University.
Major: Economics. Minor: Mathematics.
Thesis: Inventories and the Business Cycle with Special Reference to Canada.
Major Adviser: Prof. A. R. Upgren.
1952. BILLINGTON, WILBUR THEODORE. B.S. '45, M.A. '47, University of Colorado.
Major: Economics. Minor: Agricultural Economics.
Thesis: Income in the Tenth Federal Reserve District--A Study in Economic Development.
Major Adviser: Prof. A. R. Upgren.
1952. HELLIE, JAMES. B.S. '26, M.A. '45, University of Minnesota.
Major: Economics. Minor: History.
Thesis: Securities Price Support, Interest Rates and Price Inflation.
Major Advisers: Profs. A. R. Upgren and J. W. Stehman.
1952. SCHNELLE, KENNETH EDWARD. B.A. '37, M.A. '41, Yale University; M.A. '50, University of Minnesota.
Major: Economics. Minor: Psychology.
Thesis: Manpower Resources in a Tight Labor Market.
Major Adviser: Prof. Dale Yoder.
1953. ANTON, HECTOR ROQUE. B.S. with honors '42, M.B.A. '47, University of California at Los Angeles.
Major: Economics. Minor: Law.
Thesis: A Critical Evaluation of Techniques of Analysis of the Flow of Business Funds.
Major Adviser: Prof. E. A. Heilman.
1953. CHIEN, I-NIEN. LL.B. '44, National Southwest Associated University (China); M.B.A. '47, University of Denver.
Major: Economics. Minor: Statistics.
Thesis: A Study of Tung Oil Price and Its Demand.
Major Adviser: Prof. R. S. Vaile.
1953. MARCOUX, DALE C. B.S. '29, M.B.A. '37, University of Kansas.
Major: Economics. Minor: Political Science.
Thesis: The Level of the Federal Personal Income Tax Exemption.
Major Adviser: Prof. W. W. Heller.
1954. BENEWITZ, MAURICE CHARLES. B.A. magna cum laude '47, Harvard College.
Major: Economics. Minor: History.
Thesis: Economic Factors in Migration to St. Paul, Minnesota, 1940-1950.
Major Adviser: Prof. Dale Yoder.

1954. COOKE, BLAINE MCLYMAN. B.A. '38, Hamline University.
Major: Economics. Minor: Statistics.
Thesis: Economic Education in Industry.
Major Adviser: Prof. R. K. Gaumnitz.
1954. NORBY, JOHN CHRISTIAN. B.A. '36, Eastern Washington College
of Education; B.S. '39, University of Washington; M.A. '48,
University of Minnesota.
Major: Economics. Minor: Agricultural Economics.
Thesis: An Evaluation of Norwegian Post-War Wage Policy—1945-50.
Major Adviser: Prof. Dale Yoder.
1955. CHEIT, EARL FRANK. B.S.L. '47, LL.B. '49, University of Minnesota.
Major: Economics. Minor: Law.
Thesis: A Study of Some Possible Incentive Effects of Workmen's
Compensation Benefits.
Major Adviser: Prof. Dale Yoder.
1955. LUNDQUIST, RICHARD EARL. B.B.A. with distinction '45, University
of Minnesota; M.B.A. '48, Northwestern University School of Commerce.
Major: Economics. Minor: Law.
Thesis: An Analysis of Accounting Standards for Quasi-Reorganization.
Major Adviser: Prof. E. A. Heilman.
1955. MORGNER, AURELIUS. B.S. '38, M.A. '40, University of Missouri.
Major: Economics. Minor: Political Science.
Thesis: National Debt in Relation to Economic Stability and Progress.
Major Adviser: Prof. W. W. Heller.
1955. ROZENTAL, ALEK ARON. B.Sc. '48, University of London;
M.A. '50, University of Minnesota.
Major: Economics. Minor: History.
Thesis: Capital Formation and the Structure of Capital Markets in
Underdeveloped Economies.
Major Adviser: Prof. W. W. Heller.
1956. MAHONEY, THOMAS ARTHUR. B.A. '50, Wabash College; M.A. '51,
University of Minnesota.
Major: Economics. Minor: Political Science.
Thesis: An Analysis of Some Associations of Labor Mobility and Wage
Differentials.
Major Adviser: Prof. Dale Yoder.

GEOGRAPHY

1941. BRIGHTMAN, GEORGE FORSHA. B.A. '35, M.S. '37, Washington
University (St. Louis).
Major: Geography. Minor: Geology.
Thesis: Economic Geography of the Brainerd Community, Minnesota.
Major Adviser: Prof. D. H. Davis.

1938. HECK, FRANK HOPKINS. B.A. '25, Lawrence College;
M.A. '29, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Civil War Veteran in Minnesota Politics.
Major Adviser: Prof. L. B. Shippee.
1938. JOHNSTONE, PAUL HOWARD. B.A. '29, M.A. '30, University of Minnesota.
Major: History. Minor: Romance Languages (French).
Thesis: Turnips and Romanticism.
Major Adviser: Prof. Herbert Heaton.
1939. BEESON, LEWIS. B.A. '27, M.A. '30, University of Oregon.
Major: History. Minor: Political Science.
Thesis: The Opposition among the Peers, 1603-1642.
Major Adviser: Prof. D. H. Willson.
1939. MCCOMB, WALTER JAY. B.S. '16, Union College; M.A. '23,
University of Nebraska.
Major: History. Minor: Political Science.
Thesis: The Insurgent Movement in the Republican Party During the
Roosevelt and Taft Administrations.
Major Adviser: Prof. G. M. Stephenson.
1939. MORSE, HORACE TAYLOR. B.A. '28, M.A. '30, University of Minnesota.
Major: History. Minor: Education.
Thesis: A History and Critical Analysis of the Measurement of the
Outcomes of Instruction in History.
Major Adviser: Prof. A. C. Krey.
1939. MOWAT, CHARLES LOCH. B.A. honours '34, Oxford University.
Major: History. Minor: Political Science.
Thesis: East Florida under British Rule, 1763-1783.
Major Adviser: Prof. E. S. Osgood.
1939. OVERMEYER, PHILIP HENRY. B.S. '31, M.S. '36, University of Oregon.
Major: History. Minor: Economics.
Thesis: The Oregon Justinian.
Major Adviser: Prof. L. B. Shippee.
1940. KARLIN, JULES ALEXANDER. B.S. '36, Georgetown University;
M.A. '37, University of North Carolina.
Major: History. Minor: Political Science.
Thesis: The Italo-American Incident of 1891.
Major Adviser: Prof. L. B. Shippee.
1940. MORRIS, WENTWORTH SEYMOUR. B.A. '35, West Virginia University.
Major: History. Minor: Political Science.
Thesis: Britain and the Holy Land Prior to the Third Crusade.
Major Advisers: Profs. A. C. Krey and A. B. White.

1940. SWANSON, EVADENE BURRIS. B.A. '32, M.A. '33, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Use and Conservation of Minnesota Game, 1850-1900.
Major Adviser: Prof. T. C. Blegen.
1940. THORSON, WINSTON BERNARD. B.A. '34, M.A. '35, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: Charles de Freycinet As Foreign Minister of France: A Study in the Diplomacy of the Early Third Republic.
Major Adviser: Prof. L. D. Steefel.
1941. BAHNER, ROBERT HENRY. B.A. '28, Valley City State Teachers College; M.A. '29, University of Colorado.
Major: History. Minor: Political Science.
Thesis: The Economic and Political Background of the Nonpartisan League.
Major Adviser: Prof. E. S. Osgood.
1941. JARCHOW, MERRILL EARL. B.A. '30, M.A. '33, University of Minnesota.
Major: History. Minor: Sociology.
Thesis: The Economic History of Minnesota Agriculture from 1837 to the Beginning of Diversification.
Major Adviser: Dean T. C. Blegen.
1941. KLEVEN, BERNHARDT JONAS. B.A. '22, Augsburg College; M.A. '30, University of Minnesota.
Major: History. Minor: Economics.
Thesis: Wisconsin Lumber Industry.
Major Adviser: Prof. G. M. Stephenson.
1941. MALLAM, WILLIAM DOUGLAS. B.A. '36, M.A. '38, University of Minnesota.
Major: History. Minor: English.
Thesis: General Benjamin Franklin Butler: a Critical Study.
Major Adviser: Prof. G. M. Stephenson.
1941. WALKER, KENNETH OLIVER. B.A. '37, Augustana College.
Major: History. Minor: Economics.
Thesis: The Influence of the Political Economists upon Government Economic Policy in England, 1815-1835.
Major Adviser: Prof. Herbert Heaton.
1942. FOGERTY, ROBERT PAUL. B.A. cum laude '28, University of Notre Dame; LL.B. '33, College of St. Thomas.
Major: History. Minor: Political Science.
Thesis: An Institutional Study of the Territorial Courts in the Old Northwest, 1788-1848.
Major Adviser: Prof. E. S. Osgood.

1942. MCCUNE, GEORGE HALL. B.Litt. '27, Grove City College;
M.A. '37, University of Pittsburgh.
Major: History. Minor: Education.
Thesis: Extension of the Telegraph in the Northwest, 1850-1880.
Major Adviser: Prof. E. S. Osgood.
1942. MUNDINGER, CARL SOLOMON. Graduate '17, Concordia Theological
Seminary; M.A. '31, University of Minnesota.
Major: History. Political Science.
Thesis: The Genesis of Decentralized Government in the Missouri Synod.
Major Adviser: Prof. G. M. Stephenson.
1942. NYDAHL, THEODORE LUDWIG. B.A. '22, Augsburg College; M.A. '31,
University of Minnesota.
Major: History. Minor: Education.
Thesis: The Diary of Ignatius Donnelly, 1859-1884.
Major Adviser: Prof. T. C. Blegen.
1943. CHATELAIN, VERNE ELMO. B.A. '18, Peru State Teachers College;
M.A. '25, University of Chicago.
Major: History. Minor: Political Science.
Thesis: The Defenses of Spanish Florida, 1565 to 1763.
Major Adviser: Prof. L. B. Shippee.
1943. HERWIG, ALETHA MARGUERITE. B.S. '28, M.A. '31, University of
Minnesota.
Major: History. Minor: Political Science.
Thesis: The Farmer and Canadian-American Reciprocity, 1911.
Major Adviser: Prof. L. B. Shippee.
1943. KRAMER, IDA FRIEDA. B.A. cum laude '38, University of Minnesota.
Major: History. Minor: Anthropology.
Thesis: The Economic Significance of the Archaeological Finds of
Greece in the Severan Period.
Major Advisers: Profs. T. B. Jones and J. L. Heller.
1943. SISTER TERESA TOOMEY. B.A. '17, M.A. '22, University of Minnesota.
Major: History. Minor: Philosophy.
Thesis: Florentine Renaissance Paintings as a Source for the Study
of Religious Life in Florence.
Major Adviser: Prof. A. C. Krey.
1945. REID, ROBERT DANIEL. B.A. '35, Talladega College; M.A. '36,
University of Michigan.
Major: History. Minor: Political Science.
Thesis: Slavery in Alabama.
Major Adviser: Prof. G. M. Stephenson.

1946. ANDERSON, GEORGE WALDEMAR. Candidate of Law '16, University of Petrograd.
Major: History. Minor: Political Science.
Thesis: Russia in Middle Asia on the Eve of the First World War.
Major Adviser: Prof. L. D. Steefel.
1946. TURNER, CHARLES WILSON. B.A. '37, University of Richmond;
M.A. '40, University of North Carolina.
Major: History. Minor: Education.
Thesis: Virginia Railroad History—1827-1860.
Major Adviser: Prof. Herbert Heaton.
1947. ATHEARN, ROBERT GREENLEAF. B.S. '36, M.A. '38, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: Thomas Francis Meagher: An Irish Revolutionary in America.
Major Adviser: Prof. E. S. Osgood.
1947. BEATTY, WILLIAM DONALD. B.A. '33, University of Washington.
Major: History. Minor: American Literature.
Thesis: The Post-War Industrialization of Chile (1920-1930).
Major Adviser: Prof. T. B. Jones.
1947. BEYER, ROBERT CARLYLE. B.A. summa cum laude '37, Hamline University; B.A. '39, M.A. '44, Oxford University.
Major: History. Minor: Economics.
Thesis: The Colombian Coffee Industry: Origins and Major Trends, 1740-1940.
Major Adviser: Prof. T. B. Jones.
1947. CRAIG, GERALD MARQUIS. B.A. '39, University of Toronto.
Major: History. Minor: Political Science.
Thesis: The Influence of the American Background on the Struggle for Self-Government in Upper Canada.
Major Adviser: Prof. A. L. Burt.
1947. HELMES, WINIFRED G. B.S. '35, M.A. '39, University of Minnesota.
Major: History. Minor: English.
Thesis: The People's Governor, John A. Johnson: A Political Biography.
Major Adviser: Prof. G. M. Stephenson.
1947. MCINTYRE, RUTH ALLAN. B.A. '36, M.A. '37, Mount Holyoke College.
Major: History. Minor: Political Science.
Thesis: The Role of the English Merchant in the Promotion of Discovery and Colonial Enterprise, 1496-1616.
Major Adviser: Prof. Herbert Heaton.
1947. MERIDETH, DOROTHY MCCLURE. B.S. '30, Northeast Missouri State Teachers College; M.A. '38, University of Missouri.
Major: History. Minor: Education.
Thesis: Social Origins of the Humanist Educational System in Renaissance Italy.
Major Adviser: Prof. A. C. Krey.

1947. SHARP, PAUL FREDERICK. B.A. '39, Phillips University.
Major: History. Minor: Political Science.
Thesis: The American Revolt in Western Canada: A Comparative Study Showing American Parallels.
Major Adviser: Prof. A. L. Burt.
1948. BROWN, GERALD SAXON. B.A. '32, M.A. '37, Acadia University.
Major: History. Minor: Political Science.
Thesis: The Policy of Lord George Germain toward the American Revolution, 1775-1778.
Major Adviser: Prof. A. L. Burt.
1948. KRAEHE, ENNO EDWARD. B.A. with distinction '43, M.A. '44, University of Missouri.
Major: History. Minor: Philosophy.
Thesis: A History of the German Confederation, 1850-1866.
Major Adviser: Prof. L. D. Steefel.
1948. MAYER, GEORGE HILLMAN. B.A. '41, Pomona College; M.A. '43, Claremont Colleges.
Major: History. Minor: Political Science.
Thesis: The Political Career of Floyd B. Olson, Farmer-Labor Governor of Minnesota.
Major Adviser: Prof. G. M. Stephenson.
1949. ALLEN, CYRIL. B.S. with honors '41, Winona State Teachers College; M.A. '46, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Career of Felix Belly in Connection with the Canal Projects in Central America.
Major Adviser: Prof. T. B. Jones.
1949. ENGBERG, GEORGE BARKER. B.S. with distinction '34, M.A. '39, University of Minnesota.
Major: History. Minors: Education and Economics.
Thesis: Labor in the Lake States Lumber Industry—1830-1930.
Major Adviser: Prof. R. C. Loehr.
1949. LINDQUIST, MAUDE LUCILLE. B.A. magna cum laude '26, Lawrence College; M.A. '27, Columbia University.
Major: History. Minor: Sociology.
Thesis: Efforts toward Lutheran Union in the United States to 1860.
Major Adviser: Prof. G. M. Stephenson.
1949. WIK, REYNOLD MILLARD. B.A. '36, Sioux Falls College; M.A. '40, University of Minnesota.
Major: History. Minor: Education.
Thesis: The Application of Steam Power to American Agriculture.
Major Adviser: Prof. E. S. Osgood.

1950. CARLSON, CARL EMANUEL. B.A. '27, University of Alberta; M.A. '32, University of Minnesota.
Major: History and Education.
Thesis: The Adjustment of the Swedish Immigrants to the American Public School System in the Northwest.
Major Adviser: Prof. A. C. Krey.
1950. CARTWRIGHT, WILLIAM HOLMAN, JR. B.S. with high distinction '37, M.A. '42, University of Minnesota.
Major: History. Minor: Education.
Thesis: A History of the Teaching of American History.
Major Adviser: Prof. G. M. Stephenson.
1950. HAUBERG, CLIFFORD ALVIN. B.S. '31, M.A. '40, University of Minnesota.
Major: History. Minor: Education.
Thesis: Economic and Social Development of Panama.
Major Adviser: Prof. T. B. Jones.
1950. REYNOLDS, ARTHUR RAE. B.A. '37, Pennsylvania State Teachers College; M.A. '43, University of Minnesota.
Major: History. Minor: Geography.
Thesis: Wisconsin Lumbering Frontier: The Daniel Shaw Lumber Company.
Major Adviser: Prof. E. S. Osgood.
1951. KRESS, ROBERT ADOLPH. B.A. '42, M.A. '47, University of Minnesota.
Major: History. Minors: Geography and Political Science.
Thesis: Imago Mundi: Some Neglected Aspects of the Early Age of Discovery.
Major Adviser: Prof. A. C. Krey.
1951. RECTOR, WILLIAM GERALD. B.A. '40, Dakota Wesleyan University; M.A. '48, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Development of Log Transportation in the Lake States Lumber Industry, 1840-1918.
Major Adviser: Prof. R. C. Loehr.
1951. ROGERS, BENJAMIN FRANKLIN, JR. B.A. cum laude '40, M.A. '41, Harvard College.
Major: History. Minors: Political Science and Agricultural Economics.
Thesis: The United States Department of Agriculture (1862-1889): A Study in Bureaucracy.
Major Adviser: Prof. E. S. Osgood.
1951. TYLER, GLENN EDWARD. B.S. with distinction '32, M.A. '47, University of Minnesota.
Major: History. Minor: Anthropology.
Thesis: The Influence of Calvinism on the Development of Early Modern Science in England and America.
Major Adviser: Prof. A. C. Krey.

1952. DRISCOLL, GLEN R. B.A. '47, University of Louisville; M.A. '49, University of Minnesota.
Major: History. Minors: English and Political Science.
Thesis: Seventeenth Century Science as a Product of European Universities.
Major Adviser: Prof. J. B. Wolf.
1952. KAUTZ, ARTHUR PHILIP. B.A. '47, M.A. '48, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Jacobean Episcopate and Its Legacy: A Study of the Episcopacy in Canterbury and York During the Reign of King James I.
Major Adviser: Prof. D. H. Willson.
1952. KENNEDY, MYRON LEO. B.S. '46, St. Cloud State Teachers College; M.A. '48, University of Minnesota.
Major: History. Minor: Greek.
Thesis: The Reign of Emperor Probus, 276-282 A.D.
Major Adviser: Prof. T. B. Jones.
1952. NAGEL, PAUL CHESTER. B.A. '48, M.A. '49, University of Minnesota.
Major: History. Minor: English.
Thesis: The Era of Good Feeling: Foundation for Disunion.
Major Adviser: Prof. G. M. Stephenson.
1953. DERBY, ROGER DAN. B.A. magna cum laude '40, University of Minnesota; M.A. '42, Cornell University.
Major: History. Minor: Philosophy.
Thesis: Some Medieval Religious and Philosophical Survivals in Seventeenth Century France.
Major Adviser: Prof. J. B. Wolf.
1953. GLUEK, ALVIN CHARLES, JR. B.A. '44, Dartmouth College; M.A. '48, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Struggle for the British Northwest: A Study in Canadian-American Relations.
Major Adviser: Prof. A. L. Burt.
1953. ISSA, MAHMOUD KHAIRI. B.Com. (Hons.) '44, Fouad I University; M.A. '49, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: Trade Between Egypt and the United States.
Major Adviser: Prof. Herbert Heaton.
1953. LIVINGSTON, ELLIS NOEL. B.A. magna cum laude '42, Knox College.
Major: History. Minor: Political Science.
Thesis: Senate Investigating Committees, 1900-1938.
Major Adviser: Prof. W. D. Beatty.

1953. THOMAS, LEWIS HERBERT. B.A. with distinction '39, M.A. '41, University of Saskatchewan.
Major: History. Minor: Political Science.
Thesis: Responsible Government in the Canadian North-West Territories, 1870-1897.
Major Adviser: Prof. A. L. Burt.
1953. WILSON, QUINTUS CHARLES. B.S. '36, M.A. '46, University of Minnesota.
Major: History. Minor: Journalism.
Thesis: Joseph Albert Wheelock--A Study of His Life and of the Impact of His Editorial Direction in St. Paul, Minnesota and the Northwest.
Major Advisers: Profs. T. C. Blegen and R. D. Casey.
1953. WINDELL, GEORGE GORDON. B.A. with honor '40, University of Tulsa; M.A. '41, University of Missouri.
Major: History. Minor: Political Science.
Thesis: Catholic Opposition to the Unification of Germany, 1866-71.
Major Adviser: Prof. L. D. Steefel.
1954. KASLO, HELEN HEDWIG. B.A. cum laude '42, Western College; M.A. '47, University of Minnesota.
Major: History. Minor: English.
Thesis: Christopher C. Andrews.
Major Adviser: Prof. E. S. Osgood.
1954. KOHLMAYER, FREDERICK WILLIAM. B.S. '43, Winona State Teachers College; M.A. '49, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Movement Toward International Cooperation in Food and Agriculture: Background of the FAO of the UN.
Major Adviser: Prof. Herbert Heaton.
1954. KREMPEL, FREDERICH AWALDE. B.E. '36, Superior State Teachers College; M.A. '48, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: Cultural Aspects of the Councils of Constance and Basel.
Major Adviser: Prof. A. C. Krey.
1954. SCHUILLING, WALTER C. B.E. '39, Bemidji State Teachers College; M.A. '47, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: An Economic Survey of Soviet Central Asia 1920-1950.
Major Adviser: Prof. G. W. Anderson.
1954. SNYDER, JOHN WILLIAM. B.A. magna cum laude '50, M.A. '52, University of Minnesota.
Major: History. Minor: Greek.
Thesis: A Catalogue of the Cuneiform Tablets in the Davenport Public Museum.
Major Adviser: Prof. T. B. Jones.

1954. THOMAS, NORMAN FRANCIS. B.A. '40, Yankton College; M.A. '44, University of South Dakota.
Major: History. Minor: Sociology.
Thesis: Minneapolis-Moline; A History of Its Formation and Operations.
Major Adviser: Prof. Herbert Heaton.
1954. WHITE, PATRICK CECIL TELFER. B.A. '46, University of British Columbia; B.A. '48, Cambridge University.
Major: History. Minor: Political Science.
Thesis: Anglo-American Relations from 1803-1815.
Major Adviser: Prof. A. L. Burt.
1955. BLEYHL, NORRIS ARTHUR. B.A. '36, University of Nebraska; M.A. '47, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: A History of the Production and Marketing of Rice in California.
Major Adviser: Prof. C. A. Chambers.
1955. CHRISLOCK, CARL HENRY. B.A. '37, Augsburg College; M.A. '47, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Politics of Protest in Minnesota, 1890-1901, from Populism to Progressivism.
Major Adviser: Prof. P. D. Jordan.
1955. HUGHES, WILLIS BOLDT. B.A. '40, M.A. '48, University of Oregon.
Major: History. Minor: Political Science.
Thesis: The Army and Stephen Watts Kearny in the West, 1819-1846.
Major Adviser: Prof. E. S. Osgood.
1955. MAYES, CHARLES RAY. B.S. '42, Central Missouri State College; M.A. '48, University of Maryland.
Major: History. Minor: Political Science.
Thesis: The Early Stuarts and the English Peerage (1603-1649).
Major Adviser: Prof. D. H. Willson.
1955. MCGREW, RODERICK E. B.A. '50, Ripon College; M.A. '51, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: Nicholas I and the Genesis of Russian Officialism.
Major Adviser: Prof. G. W. Anderson.
1955. SEWREY, CHARLES LOUIS. B.S. with high distinction '41, M.A. '46, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Alleged "Un-Americanism" of the Church as a Factor in Anti-Catholicism in the United States, 1860-1914.
Major Adviser: Prof. A. C. Krey.

1955. SPENCE, CLARK C. B.A. '48, M.A. '51, University of Colorado.
Major: History. Minor: Political Science.
Thesis: British Investments and the American Mining Frontier, 1860-1901.
Major Adviser: Prof. E. S. Osgood.
1956. DORSEY, RHODA MARY. B.A. '49, Smith College; B.A. '51, Cambridge University.
Major: History. Minor: Political Science.
Thesis: The Resumption of Anglo-American Trade in New England, 1783-1794.
Major Adviser: Prof. Herbert Heaton.
1956. HARNSBERGER, JOHN LEWIS. B.A. '48, Hamline University;
M.A. '50, University of Minnesota.
Major: History. Minor: Political Science.
Thesis: The Formative Years of the Northern Pacific Railroad, 1868-1873.
Major Adviser: Prof. E. S. Osgood.

JOURNALISM

1956. NELSON, HAROLD LEWIS. B.A. '41, M.A. '50, University of Minnesota.
Major: Journalism. Minor: History.
Thesis: Qualified Privilege in Press Reports of Congressional Investigating Committees, with Special Reference to the House Committee on Un-American Activities.
Major Advisers: Profs. J. E. Gerald and R. C. McClure.

POLITICAL SCIENCE

1938. SIBLEY, MULFORD QUICKERT. B.A. '33, Central State Teachers College (Edmond, Oklahoma); M.A. '34, University of Oklahoma.
Major: Political Science. Minor: History.
Thesis: Cosmopolitanism and Particularist Sovereignty with Special Reference to British Thought.
Major Advisers: Profs. Wm. Anderson and H. S. Quigley.
1939. MASHEK, JOHN ROY. B.A. '25, University of Minnesota; M.A. '33, Columbia University.
Major: Political Science. Minor: Education.
Thesis: The Theory and Practice of Adult Political Education.
Major Adviser: Prof. J. R. Starr.
1939. STAATS, ELMER BOYD. B.A. '35, McPherson College; M.A. '36, University of Kansas.
Major: Political Science. Minors: Economics and Psychology.
Thesis: Personnel Standards in the Social Security Program.
Major Adviser: Prof. L. M. Short.
1940. JONES, WILLIAM CHARLES. B.A. '26, Whittier College; M.B.A. '29, University of Southern California.
Major: Political Science. Minor: Economics.
Thesis: State Administration of Taxation in Oregon with Special Reference to the Taxation of Corporations.
Major Adviser: Prof. L. M. Short.

1940. VERHAGE, WILLIAM. B.A. '28, Lawrence College; M.A. '29, Oberlin College.
Major: Political Science. Minor: History.
Thesis: The Negotiations of the International Public Loans to China, 1895-1920, with Some Reference to the Theory and Practice of International Cooperation.
Major Adviser: Prof. H. S. Quigley.
1941. PENNIMAN, HOWARD RAE. B.A. '36, M.A. '38, Louisiana State University.
Major: Political Science. Minor: History.
Thesis: The Socialist Party in Action: The 1940 National Campaign.
Major Adviser: Prof. B. E. Lippincott.
1942. MONYPENNY, PHILLIP ANTHONY. B.A. '36, M.A. '37, Washington University.
Major: Political Science. Minor: Economics.
Thesis: Personnel Policies in the Administrative Service of the State of Missouri During the Years 1939-1940.
Major Adviser: Prof. L. M. Short.
1942. NIXON, RAYMOND BLALOCK. B.Ph. '25, Emory University; M.A. '34, University of Wisconsin.
Major: Political Science. Minor: Journalism.
Thesis: Henry Woodfin Grady: Journalistic Leader in Public Affairs.
Major Adviser: Prof. William Anderson.
1942. ROSS, GUY WHITTIER CHADBOURN. B.A. '01, University of Chicago; LL.B. '04, Harvard Law School; M.A. '35, University of Minnesota.
Major: Political Science. Minor: Law.
Thesis: The Federal System in the United States and in Australia.
Major Adviser: Prof. William Anderson.
1944. HSU, HOWARD YOUNG-SHUN. B.S. '31, M.A. '35, Yenching University.
Major: Political Science. Minor: Sociology.
Thesis: County Manager Government in the United States.
Major Adviser: Prof. Wm. Anderson.
1944. LEVI, WERNER. Dr. Law magna cum laude '34, University of Fribourg; M.A. '43, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: The "Open Door" Doctrine in the International Relations of China, with Particular Reference to Problems of Postwar Organization in the Far East.
Major Adviser: Prof. H. S. Quigley.
1944. SMITH, ALDUS CLYDE. B.A. '39, Willamette University; M.A. '41, University of Oregon.
Major: Political Science. Minor: History.
Thesis: The Bases of International Organization in the Americas.
Major Adviser: Prof. H. S. Quigley.

1945. TUCKER, WILLIAM PIERCE. B.A. '30, College of Puget Sound; M.A. '31, University of Washington.
Major: Political Science. Minor: History.
Thesis: The Farmers Union: A Study in Social and Political Thought and Action.
Major Adviser: Prof. E. M. Kirkpatrick.
1946. GERALD, JAMES EDWARD, JR. B.A. '27, West Texas State Teachers College; B.J. '28, M.A. '32, University of Missouri.
Major: Political Science. Minor: Journalism.
Thesis: The Press and the Constitution, 1932-1944.
Major Adviser: Prof. E. M. Kirkpatrick.
1946. HAWKINS, CARROLL JAMES. B.A. '34, West Virginia University; M.A. '38, University of Minnesota.
Major: Political Science. Minor: Journalism.
Thesis: The Political Ideas of Harold Joseph Laski.
Major Adviser: Prof. E. M. Kirkpatrick.
1946. HENDERSON, JULIA JUANITA. B.A. '36, M.A. '37, University of Illinois.
Major: Political Science. Minor: Economics.
Thesis: Foreign Labor in the United States, 1942-1945.
Major Adviser: Prof. L. M. Short.
1946. MCCLOSKEY, HERBERT. B.A. cum laude, '40, University of Newark.
Major: Political Science. Minor: History.
Thesis: The Problem of Federalism: A Study in American Political Thought and Practice.
Major Adviser: Prof. E. M. Kirkpatrick.
1946. NEUMANN, ROBERT GERHARD. Candidate in Law '38, University of Vienna; M.A. '40, Amherst College.
Major: Political Science. Minor: History.
Thesis: Extradition and the Political Offender.
Major Adviser: Prof. H. S. Quigley.
1946. WEIDNER, EDWARD WILLIAM. B.A. magna cum laude '42, M.A. '43, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: Some Implications of the Changing Role of County Government.
Major Adviser: Prof. William Anderson.
1948. CASTLEBERRY, DONALD MONTGOMERY. B.A. '35, Oklahoma Central State Teachers College; M.A. '36, University of Oklahoma.
Major: Political Science. Minor: Education.
Thesis: Opium in the International Relations of China.
Major Adviser: Prof. H. S. Quigley.

1948. MILLER, JAMES WILLIAM. B.A. '35, Amherst College; M.A. '38, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Organization and Significance of Women and Young People within the Major British Political Parties.
Major Adviser: Prof. H. S. Quigley.
1948. MITAU, G. THEODORE. B.A. magna cum laude '40, Macalester College; M.A. '42, University of Minnesota.
Major: Political Science. Minors: Philosophy of Education and Philosophy.
Thesis: The Political Thought of James Bryce and Its Reflection in American Political Science: 1888 to 1938.
Major Adviser: Prof. William Anderson.
1948. NAFTALIN, ARTHUR EMANUEL. B.A. '39, M.A. '42, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: A History of the Farmer-Labor Party of Minnesota.
Major Adviser: Prof. E. M. Kirkpatrick.
1948. ROGERS, CHARLES ELKINS. B.A. '14, University of Oklahoma; M.S. '26, Kansas State Agricultural College; M.A. '32, Stanford University.
Major: Political Science. Minor: Journalism.
Thesis: William Rockhill Nelson: Independent Editor and Crusading Liberal.
Major Advisers: Profs. William Anderson and Ralph Casey.
1948. WHITE, HENRY GILBERT. Ph.B. '31, Yale College; LL.B. '40, St. Paul College of Law; M.A. '46, Columbia University.
Major: Political Science. Minor: Forestry.
Thesis: Forest Regulation--A Study of Public Control of Cutting Practices on Private Forest Land in the United States.
Major Adviser: Prof. L. M. Short.
1949. EFIMENGO, NICHOLAS MARBURY. B.A. magna cum laude '37, M.A. '40, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: Imperialism and the League Experiment with the Mandates System.
Major Adviser: Prof. H. S. Quigley.
1949. HINDERAKER, IVAN HENRIK. B.A. cum laude '38, St. Olaf College; M.A. in P.A. '42, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: Harold Stassen and Developments in the Republican Party in Minnesota, 1937-1943.
Major Adviser: Prof. William Anderson.

1949. KAWAHARA, HATTIE MASUKO. B.A. '43, M.A. '45, Mount Holyoke College.
Major: Political Science. Minor: History.
Thesis: Diplomatic Relations between the United States and Japan from 1931 to 1941.
Major Adviser: Prof. H. S. Quigley.
1949. MORLAN, ROBERT LOREN. B.A. '42, Denison University;
M.A. '47, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Political History of the Nonpartisan League, 1915-1922.
Major Adviser: Prof. A. N. Christensen.
1949. SABINE, GORDON ARTHUR. B.A. '39, M.A. '41, University of Wisconsin.
Major: Political Science. Minor: Journalism.
Thesis: The Voting Pattern of the United States Congress, 1946 and 1947.
Major Adviser: Prof. A. N. Christensen.
1949. SUNG, YAO-TING. B.A. '40, National Northwestern University.
Major: Political Science. Minors: Economics and History.
Thesis: Chinese-Tibetan Relations 1890-1947.
Major Adviser: Prof. H. S. Quigley.
1949. WOLFF, JULIUS FREDERIC, JR. B.A. magna cum laude '40, University of Notre Dame; M.A. '47, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: Minnesota Conservation or Resource Management in Minnesota.
Major Adviser: Prof. L. M. Short.
1950. ADRIAN, CHARLES RAYMOND. B.A. '47, Cornell College;
M.A. '48, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: The Nonpartisan Legislature in Minnesota.
Major Adviser: Prof. L. M. Short.
1950. GOMEZ, ROSENDO ADOLFO. Ph.B. '39, University of Vermont;
M.A. '48, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: Argentine Federalism: Its Theory and Practice.
Major Adviser: Prof. A. N. Christensen.
1950. KIEFFER, JAROLD ALAN. B.A. '47, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: An Analysis of Sectional Voting on Appropriations for the Armed Forces, 1789 to 1815.
Major Adviser: Prof. A. N. Christensen.

1950. TURNER, JOHN ELLIOTT. B.A. magna cum laude '39, Yankton College; M.A. '49, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Kenseikai (Constitutional Party) of Japan, 1913-1927: A Study of Its History, Organization, and Domestic and Foreign Policies.
Major Adviser: Prof. H. S. Quigley.
1951. BORNING, BERNARD CARL. B.A. cum laude '36, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: The Political Ideas of Charles A. Beard.
Major Adviser: Prof. B. E. Lippincott.
1951. KEARL, BRYANT EASTHAM. B.S. '41, Utah State Agricultural College; M.S. '42, University of Wisconsin.
Major: Political Science. Minor: Journalism.
Thesis: Content of Wisconsin Newspapers during Selected Election Periods.
Major Advisers: Prof. A. N. Christensen and R. D. Casey.
1951. PAGE, THOMAS. B.A. '34, University of Kansas; M.A. in Pub. Adm. '48, University of Minnesota.
Major: Political Science. Minor: Economics.
Thesis: Legislative Apportionment in Kansas.
Major Adviser: Prof. L. M. Short.
1952. CHRISTENSEN, JANICE EVELYN. B.A. summa cum laude '44, M.A. '46, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Constitutional Problems of National Control of the Suffrage in the United States.
Major Adviser: Prof. William Anderson.
1952. FLUNO, ROBERT YOUNGER. B.A. '38, Rollins College.
Major: Political Science. Minor: Economics.
Thesis: Parliamentary Control of the British Nationalized Industries.
Major Adviser: Prof. L. M. Short.
1952. JOHNSTON, SCOTT DORAN. B.A. magna cum laude '44, B.S. '45, M.A. '47, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Socialist Party in the Conference for Progressive Political Action.
Major Adviser: Prof. A. N. Christensen.
1952. KAMPFELMAN, MAX M. B.A. '40, LL.B. '45, New York University; M.A. '46, University of Minnesota.
Major: Political Science. Minor: Law.
Thesis: The Communists and the C. I. O.: A Study in Political Power.
Major Adviser: Prof. M. Q. Sibley.

1952. ROURKE, FRANCIS EDWARD. B.A. '47, M.A. '48, Yale University.
Major: Political Science. Minor: Economics.
Thesis: Reorganization of the Labor Department.
Major Adviser: Prof. William Anderson.
1953. MCINTOSH, WILLIAM. B.A. '42, Rust College; M.A. '48,
University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Development of Political Democracy in Puerto Rico.
Major Advisers: Profs. Werner Levi and L. A. Mills.
1953. PRESS, OTTO PAUL CHARLES. B.J. '48, University of Missouri;
M.A. '51, University of Minnesota.
Major: Political Science. Minor: Sociology.
Thesis: Administration Losses in Midterm Elections.
Major Advisers: Profs. A. N. Christensen and Herbert McClosky.
1953. SHEA, DONALD RICHARD. B.A. magna cum laude '47, M.A. '49,
University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Calvo Clause.
Major Adviser: Prof. C. H. McLaughlin.
1953. VINES, KENNETH NELSON. B.A. cum laude '46, Birmingham-Southern
College; M.A. '47, University of Kentucky.
Major: Political Science. Minor: Sociology.
Thesis: The Role of the Federal Council of the Churches of Christ in
America in the Formation of American National Policy.
Major Adviser: Prof. William Anderson.
1953. WALTER, EUGENE VICTOR. B.A. '47, University of Miami; M.A. '49,
Duke University.
Major: Political Science. Minor: Philosophy.
Thesis: The Idea of Justice in Sociological Jurisprudence.
Major Adviser: Prof. M. Q. Sibley.
1954. BRAZIER, GARY PHILIP. B.S. '46, Southern Illinois Normal University.
Major: Political Science. Minor: History.
Thesis: Intergovernmental Relations in the Field of Public Airports
in Minnesota with Special Reference to Relations Between the State
Department of Aeronautics and the Metropolitan Airports Commission.
Major Adviser: Prof. William Anderson.
1954. COOPERMAN, DAVID. B.A. '47, M.A. '52, University of Minnesota.
Major: Political Science. Minor: Psychology.
Thesis: Power, Force, and Violence: An Examination of Traditional
and Revolutionary Aspects of Political Theory in the Light of a
Hypothesis of Limits to Action.
Major Adviser: Prof. M. Q. Sibley.

1954. DAVIS, NORRIS G. B.J. with highest honors '37, M.J. '38, University of Texas.
Major: Political Science. Minor: Journalism.
Thesis: Freedom of the Press in Texas—A Comparative Study of State Legal Controls on Mass News Media.
Major Advisers: Profs. William Anderson and R. D. Casey.
1954. DEMETRIOU, GEORGE JAMES. B.A. cum laude '41, Hobart College.
Major: Political Science. Minor: Philosophy.
Thesis: A Consideration of Some Aspects of the Problem of Legitimacy in Venezuelan Politics, 1830-1953.
Major Advisers: Profs. B. E. Lippincott and A. N. Christensen.
1954. FARMER, DONALD RAYMOND. B.S. '44, University of Minnesota.
Major: Political Science. Minor: Area Studies (Russia).
Thesis: The Theory and Practice of Soviet Nationality Policy.
Major Adviser: Prof. Herbert McClosky.
1954. GIBBON, ROBERT OUTHWAITE. B.A. '44, M.A. '45, University of Kansas.
Major: Political Science. Minor: Sociology.
Thesis: The Relationship of the State to the Economic System in Greek Political Theory: A Study in Greek Political Thought.
Major Adviser: Prof. B. E. Lippincott.
1954. PENNIMAN, CLARA. B.A. '50, M.A. '51, University of Wisconsin.
Major: Political Science. Minor: Economics.
Thesis: Recent Developments in the Administration of the State Income Tax.
Major Adviser: Prof. L. M. Short.
1954. POLLEY, IRA. B.A. '38, Indiana University.
Major: Political Science. Minor: History.
Thesis: Wage Stabilization in Region 8: A Case Study.
Major Adviser: Prof. Lloyd Short.
1954. POTTER, TRUMAN ADDISON. B.A. '47, M.A. '51, University of Minnesota.
Major: Political Science. Minor: Philosophy.
Thesis: Some Recent American Critics of Liberalism.
Major Adviser: Prof. B. E. Lippincott.
1954. SMITH, DONALD GEORGE. B.S. '47, M.S. '49, University of Oregon.
Major: Political Science. Minor: History.
Thesis: The United Nations Trusteeship System: Origin, Principles and Practice, with Special Reference to the Status of the Inhabitants of the Trust Territories.
Major Adviser: Prof. C. H. McLaughlin.

1954. STAUFFER, ROBERT BURTON, JR. B.S. '42, West Chester State Teachers College; M.A. '47, University of Oklahoma.
Major: Political Science. Minor: History.
Thesis: Manchuria as a Political Entity: Government and Politics of a Major Region of China, Including Its Relations to China Proper.
Major Adviser: Prof. H. S. Quigley.
1955. DODGE, DOROTHY RAE. B.A. summa cum laude '49, M.A. '50, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: Recognition of the Central People's Government of the People's Republic of China: Legal and Political Aspects.
Major Advisers: Profs. H. S. Quigley and C. H. McLaughlin.
1955. HEUBEL, EDWARD JOHN. B.A. '49, Yale University; M.A. '51, University of Minnesota.
Major: Political Science. Minor: Sociology.
Thesis: Reorganization and Reform of Congressional Investigations, 1945-1955.
Major Adviser: Prof. William Anderson.
1955. MARTIN, LESLIE JOHN. B.A. '47, American University at Cairo; M.A. '51, University of Minnesota.
Major: Political Science. Minor: Journalism.
Thesis: Legal and Diplomatic Control of International Propaganda.
Major Adviser: Prof. C. H. McLaughlin.
1956. CHRISTOPH, JAMES BERNARD. B.A. '50, University of Wisconsin; M.A. '52, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Political Rights of British Civil Servants.
Major Advisers: Profs. William Anderson and M. Q. Sibley.
1956. COKE, JAMES GUTHRIE. B.A. cum laude '48, Harvard College; M.A. '52, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Southeastern Pennsylvania Regional Planning Commission—A Case Study in Organization for Metropolitan Area Planning.
Major Adviser: Prof. William Anderson.
1956. HEIN, CLARENCE JACOB. B.A. cum laude '41, M.A. '52, University of Minnesota.
Major: Political Science. Minor: History.
Thesis: The Operation of the Direct Primary in Minnesota: Nominations for State-Wide and Congressional Offices.
Major Adviser: Prof. A. N. Christensen.

1950. WRONSKI, STANLEY PAUL. B.S. with distinction '42, M.A. '47, University of Minnesota.
Major: Social Science. Minor: Education.
Thesis: The Use of Government Publications in Social Studies Teaching.
Major Adviser: Prof. E. B. Wesley.
1951. MCLENDON, JONATHON COLLINS, JR. B.A. '40, University of Georgia; M.A. '47, University of Minnesota.
Major: Social Science. Minor: Education.
Thesis: A Technique for Deriving a Social Studies Curriculum from Current Affairs.
Major Adviser: Prof. E. B. Wesley.
1955. BEINHAUER, MYRTLE T. B.A. '30, M.A. '32, Drake University.
Major: Social Science. Minor: Education.
Thesis: State Labor Laws Applicable to Women with Their Effect on Women's Employment Opportunities.
Major Advisers: Profs. A. C. Krey and R. E. Eckert.
1955. SCHUHLE, WILLIAM, JR. B.A. cum laude '35, M.A. '36, Washington and Lee University.
Major: Social Science. Minor: Education.
Thesis: Normative Homogeneity in a Social Group. A Measurement of Agreement and Understanding in a Small College.
Major Advisers: Profs. E. D. Monachesi and H. T. Morse.

SOCIAL WORK

1951. CLIFTON, CHESTER STANLEY. B.A. '32, Trinity University; M.A. '39, Duke University; M.A. '48, University of Minnesota.
Major: Social Work. Minor: Sociology.
Thesis: A Study of the Leisure Time Interests and Activities of Old Age Assistance Recipients in Commercial Rest Homes in Minnesota.
Major Adviser: Prof. J. C. Kidneigh.
1951. STINSON, MALCOLM BEARD. B.A. '29, Wittenberg College; M.A. '37, University of Chicago.
Major: Social Work. Minor: Sociology.
Thesis: Prediction of Medical Care Costs for the Aged: A Problem in Social Work Administration.
Major Adviser: Prof. J. C. Kidneigh.
1953. ANDRIOLA, JOSEPH. B.A. '38, M.S.W. '42, University of Michigan.
Major: Social Work. Minor: Sociology.
Thesis: A Comparative Study of Non-Truant and Truant Children.
Major Adviser: Prof. J. C. Kidneigh.

1953. LEVINE, DAVID LAURENCE. B.S. with honors '41, College of the City of New York; M.S.W. '43, University of Pennsylvania.
Major: Social Work. Minor: Sociology.
Thesis: Prediction of the Adjustment of Children in Guardianship Care: An Application of Statistical Methodology to Social Work Data.
Major Adviser: Prof. J. C. Kidneigh.
1953. ROBINS, ARTHUR JOSEPH. B.S. '43, College of the City of New York; M.S.W. '48, Carnegie Institute of Technology.
Major: Social Work. Minor: Sociology.
Thesis: Prediction of Success or Failure of Patients on Convalescent Leave from a State Mental Hospital.
Major Adviser: Prof. J. C. Kidneigh.
1954. JAMBOR, HELEN M. B.A. '33, University of California at Los Angeles; M.A. '36, University of Oregon; M.A. '39, University of Chicago.
Major: Social Work. Minor: Sociology.
Thesis: Discrepancies in Role Expectations for the Supervisory Position--A Concern of Social Work Administration.
Major Adviser: Prof. J. C. Kidneigh.
1954. LUCK, JUANITA MARIELLA. B.A. '35, The Rice Institute; B.S. '38, University of Houston; M.S.S.A. '44, University of Pittsburgh.
Major: Social Work. Minor: Sociology.
Thesis: A Study of Peer Relationships Which Children in Their Latency Years Are Observed to Form During 25 Group Therapy Sessions.
Major Adviser: Prof. J. C. Kidneigh.
1954. SALOSHIN, HENRIETTE ETTA. Graduate '29, Hellerau-Laxenburg (Austria); M.S.W. '49, Wayne University.
Major: Social Work. Minor: Sociology.
Thesis: Development of an Instrument for the Analysis of the Social Group Work Method in Therapeutic Settings.
Major Adviser: Prof. J. C. Kidneigh.
1955. HARRISON, ETHEL GENEVIEVE. B.A. '33, University of Minnesota.
Major: Social Work. Minor: Sociology.
Thesis: Chronicity in General Assistance Cases in Ramsey County.
Major Adviser: Prof. J. C. Kidneigh.
1955. O'KEEFE, DANIEL EDMUND. B.S. '36, University of Dayton; M.S.S.W. '38, Catholic University of America.
Major: Social Work. Minor: Sociology.
Thesis: A Study of Community Attitudes Toward and Knowledge About Mental Health in an American Community.
Major Adviser: Prof. J. C. Kidneigh.

1955. REICHERT, KURT. B.A. '40, Carleton College; M.A. '46, University of Chicago.
Major: Social Work. Minor: Public Health.
Thesis: Some Aspects of the Relationship Between Private Physicians and Social Agencies.
Major Adviser: Prof. J. C. Kidneigh.
1955. WHEELER, MARY ELLA. B.A. '46, M.S.W. '48, University of Pittsburgh.
Major: Social Work. Minor: Sociology.
Thesis: Preliminary Standardization of Parent-Child Relationship Scale.
Major Adviser: Prof. J. C. Kidneigh.

SOCIOLOGY

1938. WILLIAMS, BARNETT OSBORNE. B.S. '18, Clemson Agricultural College; M.S. '29, University of Virginia.
Major: Sociology. Minor: Economics.
Thesis: Mobility among Farmers in Pickens County, South Carolina.
Major Adviser: Prof. F. S. Chapin.
1939. CONWAY, MARGARET IRENE. B.A. '22, University of Wisconsin; M.A. '30, University of Minnesota.
Major: Sociology. Minor: Psychology.
Thesis: The Significance of Personal-Social History Factors in the Prediction of Achievement.
Major Adviser: Prof. F. S. Chapin.
1939. SEWELL, WILLIAM HAMILTON. B.A. '33, M.A. '34, Michigan State College.
Major: Sociology. Minor: Economics.
Thesis: The Construction and Standardization of a Scale for the Measurement of Oklahoma Farm Family Socio-Economic Status.
Major Adviser: Prof. F. S. Chapin.
1940. FORSYTH, FRANK HOWARD. B.A. '35, Brigham Young University; M.S. '36, Iowa State College.
Major: Sociology. Minor: Journalism.
Thesis: The Construction of a Scale To Measure Attitude toward Relief.
Major Adviser: Prof. Lowry Nelson.
1940. MILLER, DELBERT CHARLES. B.S. '34, M.A. '37, Miami University.
Major: Sociology. Minors: History and Economics.
Thesis: The Morale of Adults: An Investigation of the Psycho-social Factors in the Morale of 951 College Trained Adults.
Major Adviser: Prof. F. S. Chapin.
1941. MEVOY, EDGAR CORNELIUS. B.A. with honors '34, M.A. '37, University of Florida.
Major: Sociology. Minor: Psychology.
Thesis: A Study of Wants and Their Satisfaction Among a Sample of Rural People in Minnesota.
Major Adviser: Prof. Clifford Kirkpatrick.

1942. GUTTMAN, LOUIS. B.A. '36, M.A. '39, University of Minnesota.
Major: Sociology. Minors: Mathematics and Biometry.
Thesis: The Prediction of Quantitative Variates by Factor Analysis.
Major Adviser: Prof. F. S. Chapin.
1944. DAVIES, VERNON. B.S. '36, Brigham Young University; M.S. '38,
University of Utah.
Major: Sociology. Minor: Anthropology.
Thesis: The Construction and Partial Standardization of a Scale to
Measure Rural Community Satisfaction.
Major Adviser: Prof. Lowry Nelson.
1946. CAPLOW, THEODORE. B.A. '39, University of Chicago; M.A. '41,
University of Minnesota.
Major: Sociology. Minor: Economics.
Thesis: A Critical Study of American Marriage Rates.
Major Adviser: Prof. Clifford Kirkpatrick.
1947. GROSS, LLEWELLYN ZWICKER. B.A. '36, M.A. '39, University
of Minnesota.
Major: Sociology. Minor: Psychology.
Thesis: The Construction and Partial Standardization of a Scale
for Measuring Self-Insight.
Major Adviser: Prof. F. S. Chapin.
1947. HAY, DONALD GORDON. B.S. '26, M.S. '27, North Dakota
Agricultural College.
Major: Sociology. Minor: Agricultural Economics.
Thesis: Measurement of the Social Participation of Rural Households
in a Central New York Dairy Community.
Major Adviser: Prof. Lowry Nelson.
1950. KYLLONEN, TOIMI ENOCH. B.A. magna cum laude '35, M.A. '36,
Bucknell University.
Major: Sociology. Minor: Psychology.
Thesis: The Bad Credit-Risk as a Phase of Personal Disorganization.
Major Adviser: Prof. G. B. Vold.
1951. BUCK, ROY CLAIR. B.S. '42, M.S. '47, Pennsylvania State College.
Major: Sociology. Minor: Agricultural Economics.
Thesis: An Approach to the Measurement of Locality Group Identification
in a Rural Trade Area.
Major Adviser: Prof. Lowry Nelson.
1952. BROWN, JAMES COOKE. B.A. cum laude '46, University of Minnesota.
Major: Sociology. Minors: Philosophy and Statistics.
Thesis: Cooperative Group Formation: A Problem in Social Engineering.
Major Adviser: Prof. F. S. Chapin.

1952. MOBERG, DAVID OSCAR. B.A. '47, Seattle Pacific College;
M.A. '49, University of Washington.
Major: Sociology. Minor: History.
Thesis: Religion and Personal Adjustment in Old Age—A Study of Some
Aspects of the Christian Religion in Relation to Personal Adjust-
ment of the Aged in Institutions.
Major Adviser: Prof. F. S. Chapin.
1952. ROBSON, REGINALD ARTHUR HENRY. B.Sc. '49, University of London;
M.A. '51, University of Minnesota.
Major: Sociology. Minor: Psychology.
Thesis: An Experimental Study of the Effects of Different Types of
Communication on Morale in Small Groups.
Major Adviser: Prof. F. S. Chapin.
1953. HALL, ROBERT LATANE. B.A. '47, Yale University; M.A. '50,
University of Minnesota.
Major: Sociology. Minor: Area Studies: Scandinavia.
Thesis: Social Influence on the Role Behavior of a Designated Leader:
A Study of Aircraft Commanders and Bomber Crews.
Major Adviser: Prof. A. M. Rose.
1953. JOHNSON, ARTHUR LAVERNE. B.A. cum laude '41, Gustavus Adolphus
College.
Major: Sociology. Minor: Economics.
Thesis: A Study of the Applicability of Selected Marital Success
Criteria in Certain Population Groups.
Major Adviser: Prof. F. S. Chapin.
1953. MARTINSON, FLOYD M. B.A. '42, Concordia College; M.A. '47,
University of Minnesota.
Major: Sociology. Minor: Anthropology.
Thesis: Some Personality Adjustment Differences of Rural Nonmigrants
and Migrants.
Major Adviser: Prof. Lowry Nelson.
1953. TSOUDEROS, JOHN EMMANUEL. B.A. '48, M.A. '50, University of
Minnesota.
Major: Sociology. Minor: Economics.
Thesis: The Formalization Process of the Social Structure in Voluntary
Associations.
Major Adviser: Prof. F. S. Chapin.
1954. FARDEN, RAYMOND OSCAR. B.A. summa cum laude '47, Concordia College.
Major: Sociology. Minor: Psychology.
Thesis: An Exploratory Study of the Prediction of Occupational Adjustment.
Major Advisers: Profs. Theodore Caplow and A. M. Rose.

1954. TAVES, MARVIN JACOB. B.A. summa cum laude '45, Hamline University; B.D. '47, Bethel Theological Seminary; M.A. '52, University of Minnesota. Major: Sociology. Minor: Psychology. Thesis: A Study of Social Factors Associated with Religiosity Among a Sample of College Employees. Major Adviser: Prof. Lowry Nelson.
1955. CUZZORT, RAY PAUL. B.A. '51, M.A. '51, University of Cincinnati. Major: Sociology. Minor: Psychology. Thesis: The Suburbanization of Service Trade Activities in Standard Metropolitan Areas of the United States from 1939 to 1948. Major Adviser: Prof. R. G. Francis.
1955. EMERSON, RICHARD MARC. B.S. '50, University of Utah; M.A. '52, University of Minnesota. Major: Sociology. Minor: Psychology. Thesis: Submission to Social Influence in Face-to-Face Groups. Major Adviser: Prof. D. A. Martindale.
1955. OLMSTED, DONALD WARREN. B.A. '42, M.A. '49, University of Wisconsin. Major: Sociology. Minor: Psychology. Thesis: Assessment of Leader Adequacy from Structured Questionnaire Responses of Voluntary Group Members. Major Advisers: Profs. R. G. Francis and E. D. Monachesi.
1955. OLMSTED, WINIFRED ANN GARVER. B.A. '45, Iowa State Teachers College. Major: Sociology. Minor: Agricultural Economics. Thesis: A Critical Review of the Research in Rural Sociology. Major Adviser: Prof. Lowry Nelson.
1955. STRYKER, SHELDON. B.A. summa cum laude '48, M.A. '50, University of Minnesota. Major: Sociology. Minor: Psychology. Thesis: Attitude Ascription in Adult Married Offspring-Parent Relationships: A Study of Implications of the Social Psychological Theory of G. H. Mead. Major Adviser: Prof. A. M. Rose.
1956. BALL, HARRY VERNON, JR. B.A. cum laude '49, M.A. '50, Washington University. Major: Sociology. Minor: Psychology. Thesis: A Sociological Study of Rent Control and Rent Control Violations. Major Adviser: Prof. A. M. Rose.
1956. HASSINGER, EDWARD WESLEY. B.S. with distinction '48, M.A. '51, University of Minnesota. Major: Sociology. Minor: Education. Thesis: Factors Associated with Population Changes in Agricultural Trade Centers of Southern Minnesota, 1940-50. Major Adviser: Prof. Lowry Nelson.

INTERDISCIPLINARY DOCTORAL PROGRAMS

AMERICAN STUDIES

1950. KWIAT, JOSEPH JACK. Ph.B. '35, University of Chicago; M.A. '40, Northwestern University.
Major: American Studies.
Thesis: The Revolt in American Painting and Literature, 1890-1915: A Study in Cultural and Intellectual Origins and Interrelationships.
Major Adviser: Prof. Tremaine McDowell.
1951. IREY, EUGENE FLOYD. B.A. '34, M.Ed. '40, M.A. '46, University of Colorado.
Major: American Studies.
Thesis: A Social History of Leadville, Colorado, during the Boom Days, 1877-1881.
Major Adviser: Prof. Tremaine McDowell.
1953. CRONIN, MORTON JOHN. B.A. with distinction '44, M.A. '45, Wayne University.
Major: American Studies.
Thesis: Four American Columnists—A Study in the Partisan Anatomy of David Lawrence, Walter Lippmann, Drew Pearson, George Sokolsky.
Major Adviser: Prof. M. Q. Sibley.
1953. GOSSETT, THOMAS FRANK. B.A. '46, M.A. '48, Southern Methodist University.
Major: American Studies.
Thesis: The Idea of Anglo-Saxon Superiority in American Thought, 1865-1915.
Major Adviser: Prof. M. Q. Sibley.
1953. HEFLEY, JOHN THEODORE. B.S. '39, M.A. '40, University of Oklahoma.
Major: American Studies.
Thesis: The Christian Century in American Culture, 1920-1941.
Major Adviser: Prof. M. Q. Sibley.
1953. NELSON, ARNOLD GERHARD. B.A. '41, Hamline University; M.A. '48, University of Minnesota.
Major: American Studies.
Thesis: Class and Status in the American Novel, 1789-1850.
Major Adviser: Prof. Tremaine McDowell.
1953. TOZER, LOWELL R. B.A. '47, University of Chicago; M.A. '49, DePaul University.
Major: American Studies.
Thesis: American Attitudes Toward Machine Technology, 1893-1933.
Major Adviser: Prof. Leo Marx.
1953. WARD, JOHN WILLIAM. B.A. cum laude '45, Harvard College; M.A. '50, University of Minnesota.
Major: American Studies.
Thesis: Andrew Jackson: Symbol for an Age (1815-1845).
Major Adviser: Prof. H. N. Smith.

1953. WILHELM, JOHN FERDINAND. B.S. '43, M.A. '44, Northwestern University.
Major: American Studies.
Thesis: The Cultural Image of the Salesman in Four Leading American Periodicals: 1898-1914.
Major Adviser: Prof. H. N. Smith.
1954. KEELER, CLINTON CLARENCE. B.A. with high distinction '40, Oklahoma Agricultural and Mechanical College.
Major: American Studies.
Thesis: The Grass Roots of Utopia: A Study of the Literature of the Agrarian Revolt in America, 1880-1902.
Major Adviser: Prof. Tremaine McDowell.
1954. LABUDDÉ, KENNETH JAMES. B.A. with high honors '41, B.L.S. with high distinction '42, University of Wisconsin; M.A. '48, University of Minnesota.
Major: American Studies.
Thesis: The Mind of Thomas Cole.
Major Adviser: Prof. Theodore Hornberger.
1954. MODISETTE, ELDON LEON. B.A. '47, Iowa State Teachers College; M.A. '49, University of Minnesota.
Major: American Studies.
Thesis: Changing Political Thought in the American Drama, 1919-1951.
Major Adviser: Prof. Theodore Hornberger.
1954. OLSON, WARREN EUGENE. B.A. '48, University of Denver; M.A. '50, University of Washington.
Major: American Studies.
Thesis: The American Advertising Man: A Study of His Attitudes and Values.
Major Adviser: Prof. M. Q. Sibley.
1954. ROSS, DANFORTH RAYNOLDS. B.A. '33, Southwestern College; M.A. '37, Vanderbilt University.
Major: American Studies.
Thesis: The Genteel Tradition: Its Characteristics and Its Origins.
Major Adviser: Prof. Theodore Hornberger.
1954. SADLER, DAVID FRANCIS. B.A. '46, Antioch College; M.A. '48, University of Minnesota.
Major: American Studies.
Thesis: Theodore Roosevelt: A Symbol to Americans, 1898-1912.
Major Adviser: Prof. Tremaine McDowell.
1954. WEIMER, DAVID RHOADS. B.A. '49, Oberlin College; M.A. '50, Johns Hopkins University.
Major: American Studies.
Thesis: Myth in the American Federation of Labor, 1881-1914.
Major Adviser: Prof. Bernard Bowron, Jr.

1955. AGEE, WARREN KENDALL. B.A. with distinction '37, Texas Christian University; M.A. '49, University of Minnesota.
Major: American Studies.
Thesis: A Study of Small-Town Life in the Texas Cattle Country, 1880-1890, as Reflected in the Press of the Area and Period.
Major Adviser: Prof. R. D. Casey.
1955. DUROCHER, AURELE ADELARD. B.A. with distinction '40, Northern Michigan College of Education; M.A. '45, University of Michigan.
Major: American Studies.
Thesis: Verbal Opposition to Industrialism in American Magazines, 1830-1860.
Major Adviser: Prof. Leo Marx.
1955. HARKNESS, DONALD RAY. B.A. summa cum laude '42, Hamline University; M.A. '47, University of Minnesota.
Major: American Studies.
Thesis: Crosscurrents: American Anti-Democracy from Jackson to the Civil War (1829-1860).
Major Adviser: Prof. M. Q. Sibley.
1955. HOUGHTON, DONALD EUGENE. B.A. '41, University of Washington; M.A. '47, Columbia University.
Major: American Studies.
Thesis: Exponent of a Cosmopolitan Elite.
Major Adviser: Prof. Leo Marx.
1956. DRUCKER, DARRELL IRVING, JR. B.S. '47, Antioch College; M.A. '48, University of Minnesota.
Major: American Studies.
Thesis: The Genteel Rebellion: A Study of American Journalistic Impressionism in Terms of Its Audience, 1880-1920.
Major Adviser: Prof. Bernard Bowron.

BIOPHYSICS

1943. WANG, JUN-CH'UAN. B.S. '34, M.S. '37, Yenching University.
Major: Biophysics. Minor: Physiology.
Thesis: The Use of Radioactive Isotopes in Measuring Ionic Diffusion Rates Across Biological Membranes.
Major Adviser: Prof. K. W. Stenstrom.
1950. MARVIN, JAMES FRANCIS. B.A. '36, University of Nebraska; M.S. '39, University of Minnesota.
Major: Biophysics. Minor: Physics.
Thesis: Studies of the Structure of Collodion and Collodion-Protamine Membranes Utilizing the Electron Microscope and the High Speed Microtone.
Major Adviser: Prof. K. W. Stenstrom.

1951. LEVINE, RAPHAEL BERG. B.A. cum laude '41, M.A. '50, University of Minnesota.
Major: Biophysics. Minor: Physiology.
Thesis: Early Stage Development of Stereovectorelectrocardiography.
Major Adviser: Prof. O. H. Schmitt.
1951. STEWART, PETER ARTHUR ROBERT. B.Sc. with honours '43, University of Manitoba; M.S. '49, University of Minnesota.
Major: Biophysics.
Thesis: Some Effects of Altered Ion Environment on the Low-Frequency Admittance Pattern of Nerve Membrane.
Major Adviser: Prof. O. H. Schmitt.
1952. GASTEIGER, EDGAR LIONEL, JR. B.A. '42, Allegheny College; M.S. '43, University of Illinois.
Major: Biophysics. Minor: Physiology.
Thesis: The Effects of Beta Rays on the Conducted Action Potentials of Nerves.
Major Adviser: Prof. Berry Campbell.
1953. STOW, RICHARD W. B.S. '37, Michigan State College; M.S. '40, Pennsylvania State College.
Major: Biophysics. Minors: Physiology and Biochemistry.
Thesis: An Infrared Analyzer for Carbon Dioxide and Its Application to Certain Problems in Respiratory Physiology.
Major Adviser: Dr. E. J. Baldes.
1945. BALL, ZELDA BLANCHE. B.S. '39, M.S. '42, University of Minnesota.
Major: Cancer Biology. Minor: Physiology.
Thesis: The Influence of Caloric Restriction on Growth, Longevity, Ovarian Function and Spontaneous Mammary Carcinoma in Mice.
Major Advisers: Profs. J. J. Bittner and M. B. Visscher.
1945. HUSEBY, ROBERT ARTHUR. B.S. with distinction '40, M.A. '41, M.D. '43, University of Minnesota.
Major: Cancer Biology. Minor: Anatomy.
Thesis: A Comparative Morphological Study of the Mammary Glands with Reference to the Known Factors Influencing the Development of Mammary Cancer in Mice.
Major Advisers: Drs. M. B. Visscher and J. S. McCartney.
1953. NEWBERRY, TRUMAN ALBERT. B.S. '45, M.D. '48, University of Minnesota.
Major: Cancer Biology. Minors: Physiology and Physiological Chemistry.
Thesis: The Effects of Graded Caloric Restriction upon Certain Endocrine and Target Organs in Relation to Mouse Mammary Carcinoma.
Major Advisers: Drs. M. B. Visscher and J. J. Bittner.

1945. TSAO, FEI. B.A. '33, National Central University (China); M.A. '41, Ph.D. '42, University of Toronto.
Major: Statistics. Minor: Educational Psychology.
Thesis: General Solution of the Analysis of Variance and Covariance in the Case of Unequal or Disproportionate Numbers of Observations in the Subclasses.
Major Adviser: Prof. P. O. Johnson.
1951. SARTORIUS, LESTER CLAYTON. B.B.A. with distinction '41, M.A. '49, University of Minnesota.
Major: Statistics. Minor: Economics.
Thesis: A Statistical Analysis of Eating Places as Marketers of Food Products in Minneapolis and Fairmont, Minnesota, and in the United States.
Major Advisers: Profs. B. D. Mudgett and O. B. Jesness.
1951. SUZUKI, GEORGE. B.S. '44, University of Denver; M.A. '47, University of Minnesota.
Major: Statistics. Minor: Mathematics.
Thesis: Estimation of Demand for Automotive Replacement Parts.
Major Adviser: Prof. B. D. Mudgett.
1952. MOONAN, WILLIAM JEANE. B.S. '48, M.A. '50, University of Minnesota.
Major: Statistics. Minor: Educational Psychology.
Thesis: The Generalization of the Principles of Some Modern Experimental Designs for Educational and Psychological Research.
Major Adviser: Prof. P. O. Johnson.
1954. HASTINGS, DELBERT CURTIS. B.S. '47, M.A. '49, University of Minnesota.
Major: Statistics. Minor: Economics.
Thesis: A Monthly Index of Regional Business Activity Based on Net Product Measurement.
Major Adviser: Prof. R. L. Kozelka.
1954. MCHUGH, RICHARD BURTON. B.A. magna cum laude '44, M.A. '49, University of Minnesota.
Major: Statistics. Minor: Mathematics.
Thesis: On the Scaling of Psychological Data by Latent Structure Analysis.
Major Advisers: Profs. Leonid Hurwicz and Jacob Bearman.
1955. ELVEBACK, LILLIAN ROSE. B.A. cum laude '41, University of Minnesota; M.A. '48, Columbia University.
Major: Statistics. Minor: Biostatistics.
Thesis: Some Aspects of Estimation Problems in Follow-Up Studies in Chronic Disease.
Major Adviser: Dr. J. R. Berkson.

1955. RANDOLPH, PAUL HERBERT. B.A. '48, M.A. '49, University of Minnesota.
Major: Statistics. Minor: Industrial Engineering.
Thesis: Multivariate Acceptance Sampling.
Major Adviser: Prof. P. O. Johnson.
1955. WHITE, JOHN SPENCER. B.A. '47, M.A. '51, University of Minnesota.
Major: Statistics. Minor: Mathematics.
Thesis: Some Problems of Point Estimation in Stochastic Difference Equations.
Major Adviser: Prof. Leonid Hurwicz.
1956. COLLIER, RAYMOND OLIVER, JR. B.A. '47, Southern Methodist University; M.Ed. '50, Oklahoma University.
Major: Statistics. Minor: Educational Psychology.
Thesis: Experimental Designs in Which the Observations Are Assumed to be Correlated.
Major Adviser: Prof. P. O. Johnson.

TABLE I

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