

UNIVERSITY OF MINNESOTA  
Graduate School

Minutes of the Executive Committee Meeting  
April 28, 1981  
11:30 a.m. 626 Campus Club

Members present: Faculty representatives--Professors James Boen, Vernon Hendrix, Douglas Lewis, Edward Sucoff, Harold Swofford; Duluth representative--Professor Neil Storch; Mayo representative--Mr. Donald Weggen for Professor Franklyn Knox; administrative representatives--Deans Warren Ibele, chair, John Wallace; student representatives--David Pogoff, Maureen Reddy; Civil Service representative--Linda Kleinsasser; guests--Professors James A. Percich, Richard J. Zeyen; staff--Vicki Field, Andrew Hein, Klaus Jankofsky; secretary--Beverly Miller

I. FOR ACTION

A. Minutes of the Meeting of March 17, 1981

The minutes of the meeting of March 17, 1981 were approved without amendment.

B. Proposed Establishment of a Mycology Area Emphasis within the Graduate Program in Plant Pathology

Dean Ibele introduced the proposal pointing out that the introduction of an emphasis would not include specific identification of the emphasis on the degree records of individual students.

Professors James Percich and Richard Zeyen were present to discuss the proposal and described the development of the mycology emphasis within the reorganization of the Plant Pathology program.

The proposal was approved. (Copy of proposal attached with these minutes.)

C. Proposed Restructuring of the Graduate Programs within the Department of Geology and Geophysics, including the Disestablishment of the Majors in Hydrogeology and Mineralogy and Petrology

Dean Ibele explained that the Department of Geology and Geophysics was proposing to recombine its four existing majors for the M.S. and Ph.D. degrees into two majors. The majors in Hydrogeology and in Mineralogy and Petrology would be phased out. These two majors will be subsumed under the major in Geology. The major in Geophysics will continue to exist. The proposal was approved by the Physical Sciences Policy and Review Council earlier.

Dean Ibele said that approval would also constitute approval to change all graduate faculty appointments in Hydrogeology and in Mineralogy and Petrology to equivalent appointments in the field of Geology, if the faculty member does not already hold such an appointment.

The proposal was approved. (Copy of proposal attached with these minutes.)

## II. FOR DISCUSSION

### A. Proposal on Transfer of Credit across Degree Programs

Dean Ibele described the current proposal, which was drafted by the Graduate School staff, which would permit the transfer and/or double-counting of 40 percent of the credits for a master's degree. The proposal constitutes a blending of the existing regulation on the transfer of credits with a liberalized proposal for double-counting credits toward a second degree at the same level.

It was pointed out that no mention had been made of an exclusion from double-counting of Plan B project or Plan A thesis credits. It was mentioned that this exclusion was intended and had been overlooked. It will be written into the proposal.

There was an extended discussion of the amount of double-counting being proposed. Several individuals believed that 40 percent was too generous an allowance. Dean Hein said it constituted a compromise between those who did not believe any limit should exist and those who, while wanting a liberization of the current policy, did not believe that restrictions should be totally abolished. He pointed out that the proposal was permissive not compelling and that, as with the existing transfer rule, individual faculty advisers or programs could place more stringent limitations on double-counting.

The difficulties of describing and administering such a regulation, given the multitude of situations in which it would have to be applied, were discussed at some length.

It was concluded that the proposal would be amended to exclude project and thesis credits and would be brought back for further discussion.

B. Recommendations on Graduate School Student Services and Admissions Procedures from the Social Sciences Policy and Review Council

Dean Ibele reviewed the four recommendations which had come from the Social Sciences Policy and Review Council and pointed out that the first recommendation had been referred to the Directors of Graduate Studies Advisory Committee for consideration since it was essentially of a procedural nature.

Professor Hendrix said that the Education and Psychology Policy and Review Council had not yet reacted to the various recommendations but they believed that the proposals, with the comments of the Graduate School, should be distributed to all the councils for discussion.

Dean Wallace pointed out that the Graduate School had already absorbed a \$25,000 a year budget cut, that at least a potential \$25,000 was impending for next fiscal year with a further \$25,000 reduction in the following year. He said that he believed that these cuts constituted a clear message from central administration that the research function of the Graduate School should be protected and that these other responsibilities should be transferred to the departments.

There was a discussion of the likelihood of budget reductions of this magnitude, of the need to prepare a contingency plan in the event that such cuts do occur, and of the advisability of involving the faculty in such planning. Dean Ibele said that contingency plans were in preparation.

Professor Lewis asked that the proposal for a revised format for the doctoral program, referred to in Graduate School comments on the the recommendations, be referred to the Policy and Review Councils for consideration. It was suggested that the Task Force on Doctoral Programs might appropriately include this matter in their deliberations. Dean Ibele said he would discuss this matter with Professor Burton Shapiro, chair of the Task Force. Professor Lewis also asked that a written statement of Graduate School admissions criteria be drawn up.

Support was expressed by Professor Swofford and Professor Storch for a continuation of the existing arrangement for the conduct of student services, for the processing of applications for admission, and for monitoring compliance with general regulations of the Graduate School.

The proposals will go forward to the individual Policy and Review Councils, together with comments prepared by the staff. (Copy of Graduate School comments, attached.)

III. FOR INFORMATION

A. Graduate Courses Offered at Off-Campus Locations or in Workshop Format

Dean Ibele mentioned that the deliberations of the various Policy and Review Councils on matters addressed in the paper submitted to the Councils in fall 1980 were needed. Once the general sense of the groups has been determined the college deans and curriculum committees will be approached on the matter.

B. Graduate School Budget Reductions--Update

Dean Ibele reported it would be some weeks before the final cuts would be known. A contingency plan is being developed, part of which will involve the transfer of responsibility for mailing application materials to the individual programs.

C. Report from the General Research Advisory Committee

Dean Wallace said that the committee had completed three days of meetings. He said that funds had been treated conservatively on the assumption that the state special will be at the same level as in the past biennium.

D. Report from the Council of Graduate Students

David Pogoff reported that the Council of Graduate Students (COGS) has hired a student to revise the graduate student handbook; he said that Maureen Reddy, president of COGS had testified before the Senate Subcommittee on Appropriations with respect of graduate student funding; COGS continues to be concerned about representation and will ask for assistance from the Directors of Graduate Studies for the coming year. He reported that elections for officers would be held in May. He also said the final edition of Gradletter for the year would be issued in May and that notices for inclusion should be received by May 28.

E. All-University Policy on Sexual Harassment

Dean Ibele reported that with the approval and implementation of the all-University policy on sexual harassment, approved by the University Senate in April, the Graduate School's interim policy is considered superceded.

F. Publication of the 1981-83 Edition of the Graduate Programs in the Health Sciences Bulletin

It was reported that the 1981-83 edition of the Graduate Programs in the Health Sciences Bulletin had begun.

G. Next Meeting of the Executive Committee

The next meeting of the Executive Committee will be held on May 26, 1981.

The meeting was adjourned.

Respectfully submitted,

Beverly D. Miller  
Assistant to the Dean



UNIVERSITY OF MINNESOTA  
TWIN CITIES

Department of Plant Pathology  
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GRADUATE SCHOOL  
W.I.  
APR 2 1981  
4/5/81  
OFFICE OF THE DEAN

March 26, 1981

TO: Dr. Warren Ibele, Dean  
Graduate School  
321 Johnston Hall  
Minneapolis Campus

FROM: Dr. James A. Percich, Chairman  
Curriculum and Instruction Committee  
Department of Plant Pathology  
304 Stakman Hall  
St. Paul Campus

*JAP*

RE: The establishment of an "Area of Emphasis in Mycology"  
within the major in the Department of Plant Pathology

The Department of Plant Pathology is requesting consideration and ultimate approval for an "Area of Emphasis in Mycology" for its graduate majors in Plant Pathology. The area of emphasis requires that no additional or new courses need be taught; it only represents a mechanism of recognition for graduate majors who choose to emphasize mycology within their M.S. and Ph.D. Plant Pathology majors.

Plant Pathology has recently restructured its M.S. and Ph.D. course-work requirements using a core curriculum approach (see Graduate Bulletin - Dept. of Plant Pathology 1980-82). In the core curriculum design it is now possible for students to "round out" their majors with various internal and external courses, according to their advisors direction and need.

Since the Department has traditionally taught mycology for the entire University since 1918, (see attached - Mycology in the Department of Plant Pathology) many students enroll specifically for this traditional "emphasis." The Department, due to its curriculum planning and reorganization, is now in a position to provide a recognized mycology emphasis. Therefore, we now request permission from the Graduate School to recognize this historical strength in our Plant Pathology majors through the use of an "Area of Emphasis" designation in our curriculum.

Dr. Warren Ibele, Dean  
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We believe, after thorough review of our supporting documentation, it will become obvious why we consider an "Area of Emphasis in Mycology" an important highlight to our existing curriculum strength. We wish only to give Plant Pathology majors choosing this option to receive some recognition for their efforts through this mechanism.

Because of our department's involvement in the teaching of mycology for the University since 1918, the fact that fungi are the major causal agents of plant disease, our resource library and herbarium, our present faculty strength in mycology, and future plans for a new research-teaching building, we believe our request should be granted.

Members of the Curriculum and Instruction Committee would be happy to testify at any discussion concerning our proposal for an "Area of Emphasis in Mycology" within the major in the Department of Plant Pathology.

Title: Mycology in the Department of Plant Pathology

## History and Current Status

### I. History of Mycology within the Department of Plant Pathology

A) St. Paul. Mycology courses have been offered continuously at St. Paul since 1913 when a course in Industrial Mycology was begun and taught by E.C. Stakman. In 1918 the courses P1Pa 105 and 106 were begun, again, being taught by E.C. Stakman and G.R. Bisby. In 1927 the series of courses P1Pa 105, 106, and 107, structured in a way similar to the courses that we have today, introduction, ascomycetes and basidiomycetes, respectively, were formed and taught by E.M. Freeman and L. Dosedall. Also in that year three new courses entitled Research in Mycology P1Pa 207, 208, and 209 were begun and these courses again were taught by E.M. Freeman, L. Dosedall, and E.C. Stakman. In the period from 1927 until 1958, Dr. Dosedall taught Mycology 106 and 107 with some help from C.M. Christensen. During most of that period as well, Dr. Christensen taught P1Pa 105. In 1959, Dr. Neil Anderson assumed responsibility for the Mycology course offerings, although Dr. Clyde Christensen continued to teach Introductory Mycology. From 1975, until present, Dr. Elwin Stewart assumed responsibility for Mycology courses teaching all 3 of the basic Mycology courses, which under the new numbering system became P1Pa 5105, 5106, and 5107. In addition, he taught P1Pa 5102, Field Mycology at Itasca and Topics in Mycology, P1Pa 8110.

In general, the mycology courses have been very important in the education of plant pathology graduate students. Most of the graduate students in plant pathology have taken all or part of the mycology series, so that the enrollment over the years in 5105, 5106, and 5107 have been primarily in plant pathology students.

### B) Mycology at the Itasca Station

Academic work was first begun in Itasca in 1909 by Dr. E.M. Freeman, Chief of the Division of Plant Pathology and Botany on the St. Paul Campus and also by Dr. E.C. Stakman. Both of these individuals were instrumental in expanding the Itasca Campus, the philosophy being to encompass all aspects of biological research and teaching that could not be adequately dealt with on the main campus in St. Paul. This philosophy exists to this day in the department of plant pathology. In short, plant pathology was the department that initiated the mycology research and teaching at Itasca.

There have been a large number of individuals involved in teaching and doing field research in Itasca over the many years that the Itasca Station has been functioning. In chronological order they are:

<u>Period of Activity</u>	<u>Name</u>	<u>(location, if visiting)</u>
1937-1952 16 years	Christensen, C.M.	
1958-1973 16 years	French, D.W.	
1970	Gilbertson, Robert	University of Arizona

<u>Period Of Activity</u>	<u>Name</u>	<u>(location, if visiting)</u>
1971	Bandoni, Robert	University of British Columbia
1972	Lichtwardt, Robert	University of Kansas
1973	Rogers, Jack	Washington State University
1974	Barnett, Horace	West Virginia University
1975	Fergus, Charley	Pennsylvania State University
1976-1979 4 years	Stewart, E.L.	
1980	Pfister, Donald	Harvard University
1981	Stewart, E.L.	

In addition to teaching and conducting research at Itasca, individuals in the department of plant pathology have been very active in administration at the Itasca Station. In particular, Dr. David W. French, who was Associate Director from 1966-1973, has devoted a great deal of his summer time to the Itasca Station and in serving on committees which administer the Station. Presently, Dr. Elwin Stewart and Dr. David French are both on the Advisory Committee at Itasca.

Significant amounts of research for thesis work of students majoring in plant pathology has been done at Itasca. Numerous forest pathology students under Dr. French have done portions of their thesis work at Itasca; Dennis Johnson worked on diseases of wild rice at Itasca, Mary Palm has made extensive use of Itasca area studying the genus Suillus.

C) The Mycological Herbarium, at St. Paul.

The Mycological Herbarium in the department of plant pathology was established in 1908 and 1909. Dr. Freeman, who was in charge of the Herbarium at that time, received the Lugger Herbarium as a gift. To quote Dr. Freeman, "we obtained the use of the room in which the herbarium and cases were located, which gave us the entire 3rd floor of the Horticulture Building". From this substantial beginning, Dr. Dosedall organized and added to the herbarium, building it into the herbarium that exists today, in large part. After the departure of Dr. Dosedall, the herbarium remained stagnant for about 25 years. In 1975, with the arrival of Dr. Stewart, the herbarium was reorganized and upgraded. He performed an inventory on the holdings and once again began adding to the herbarium. In 1978, space for the herbarium was obtained in North Hall (on the St. Paul Campus) where it is presently located. At this time, as well, the Lugger collection was transferred to botany under the charge of Dr. Gerald Owenby. This was done because this collection consisted of vascular plants that more rightfully belonged in the higher plant herbarium that is housed in botany.

D) Mycology in the Plant Pathology Library

The plant pathology library was begun in 1909. From that time

until 1947 when a librarian was hired half time, the library was under the care and charge of the various mycologists who have been on the faculty of plant pathology. From the very beginning, one of the top priorities for the library has been the area of mycology including those areas in plant pathology that impinge strongly on mycology.

The commitment to mycology was strong because the relationship between mycology and plant pathology is strong at Minnesota, since the department has always emphasized work on fungal pathogens. In the early years, great care was given by people, such as E.C. Stakman, E.M. Freeman, and L. Dosdall, to collecting the early serious mycological work. After their time, mycology was still given fairly high priority in the library, since mycological teaching was a major part of the course load of plant pathology. When Dr. Stewart arrived in 1975, he began working with interested faculty and students and the departmental library committee (of which he was chairman for most of these years) in collecting important missing work as well as newly published material. The areas in the broad field of mycology that were given special attention were those of fungal taxonomy, especially in the acquisition of monographs of different groups of fungi, and fungal genetics.

## II. Current Status of Mycology in the Department of Plant Pathology:

### A) Research

Presently mycology continues to be a very important part of the research in the department of plant pathology. Many of the faculty in plant pathology depend on mycology and our mycologists supply important backup resources. In addition, because we elected to hire an individual with interests and training as a mycologist the mycology research program has its own well defined goals and ambitions. The majority of the faculty in plant pathology are engaged in research that involve fungi. In fact, 23 of the members in the department of plant pathology are concerned either with fungus taxonomy, physiology, mycology, genetics, or ecology. Some of the projects directly related to mycology can be highlighted by category.

In the area of fungal genetics, Dr. Neil Anderson has a project on the genetics of incompatibility and pathogenicity in the species of Rhizoctonia. Dr. Alan Roelfs in the USDA Cereal Rust Laboratory deals with the patterns of variation and measurements of diversity in populations of wheat stem rust. Dr. James Groth works on population ecology and genetics of rust fungi of vegetable crops. In the area of fungal physiology and biochemistry, Dr. Robert Brambl has a project on biochemistry and spore germination. Dr. Chester Mirocha has a project on production, characterization and impact of mycotoxins in stored grain. Drs. William Bushnell and Richard Zeyen have projects on the host parasite interactions at the cellular level; Dr. Bushnell in powdery mildews and Dr. Zeyen in several fungal diseases. In the area of fungal ecology, Dr. Paul Teng, an epidemiologist, is working in the area of quantitative population dynamics of fungal pathogens.

Dr. Thomas Nicholls and Dr. Darroll Skilling in the North Central Forestry Experiment Station have projects that deal with the ecology of foliar and stem forest pathogens, and Dr. Thor Kommedahl had a project on the ecology and the control of soilborne plant pathogenic fungi. In the area of taxonomy, several people are involved in identifying and characterizing newly discovered diseases. This is being done by Dr. James Percich with fungal pathogens of wild rice and by Dr. James Baumer with fungal pathogens of sunflowers. Dr. Erik Stromberg, (USDA/APHIS) is working on a survey for new and potentially dangerous diseases of major field crops. Dr. Elwin Stewart is working on the taxonomy and systematics of Deuteromycetes and Basidiomycetes.

B) Teaching

In addition to the research that impinges on the area of mycology, several of the faculty in the department of plant pathology have been involved in the instruction of courses which are in the area of mycology, such as, Plant Pathology 8111, Genetics of Plant Pathogenic Fungi; Plant Pathology 8114, Host Parasitic Population Genetics; Plant Pathology 8610, Physiology of Host Parasitic Relationships; and Plant Pathology 5109, Biochemistry and Physiology of Fungi. These courses have been taught by four different individuals and are additional to the traditional mycology courses taught by Dr. Stewart.

C) Current Status of Mycology at Itasca Station

Currently, some individuals in the department of plant pathology continue to have an interest in the Itasca Station; both from the teaching and research standpoint. Dr. Stewart will continue to be involved in teaching at Itasca and both Dr. Stewart and Dr. Blanchette in forest pathology will continue to have graduate students perform some of their research at Itasca; Dr. Stewart in field collections of fungi and Dr. Blanchette on problems in forest pathology caused by fungal pathogens. The numbers of individuals either in the field mycology course or doing research at Itasca each summer will be small but steady from the Department of Plant Pathology.

D) The Mycological Herbarium

The herbarium presently consists of about 50,000 specimens of fungi. It has been growing at a rate of about 500 acquisitions per year obtained either as portions of existing collections from elsewhere or more importantly as new collections from the field. The herbarium is housed in North Hall and it is being directed and curated by Dr. Elwin Stewart. It is a functioning herbarium in every sense of the word. Active reciprocal exchanges with other herbaria around the country are presently occurring. Several individuals in the department have been making effective use of herbarium holdings, especially in extension and disease surveys in recent years.

E) The Plant Pathology Library

Presently, the library in the department of plant pathology has holdings of about 6,000 cataloged volumes. Of these 6,000 volumes, 1/3 or approximately 2,000 can be categorized as mycological references.

F) Future Physical Facilities

The department of plant pathology is one of three departments that will, if approval is made by the State Legislature, move into a new proposed plant science building. In the documentation and detailed planning for this building, we have made commitments to the library and to the herbarium. The library, which is presently housed in an approximately 600 sq. ft. room will be housed in a centrally located, 2500 sq. ft. room in the new building. The mycological herbarium will then be moved to the old library room which will be entirely devoted to the herbarium. In our proposed new facility we have also made a commitment to mycological teaching in the form of an 800 sq. ft. laboratory that will be devoted only to mycology courses. This is in addition to several new laboratories and other rooms that will be used for teaching other plant pathology courses.

## GRADUATE BULLETIN - DEPARTMENT OF PLANT PATHOLOGY 1980-82

Plant Pathology is a scientific discipline engaged in the diagnosis, forecasting, prevention, and control of plant disease. It is a comprehensive discipline covering all levels of biological organization from the molecular to the ecosystem. Plant Pathology interfaces with all applied plant science disciplines and with fundamental botany. The study of plant pathology covers all factors that cause plant disease, including biotic and abiotic agents, and environmental conditions. The Department of Plant Pathology offers graduate majors in plant pathology and pathology majors with an "Area of Emphasis in Mycology". The Department also has several faculty members with joint appointments in cell and developmental biology, forestry, genetics, and plant physiology; thus, these majors can be facilitated through plant pathology faculty.

DEGREES OFFERED - Master of Science (Plan A or B) and Ph.D. degrees in plant pathology are offered. Information on programs and the availability of assistantships and fellowships can be had by contacting the Director of Graduate Studies, Department of Plant Pathology, 304 Stakman Hall of Plant Pathology, 1519 Gortner Avenue, University of Minnesota, St. Paul, MN 55108.

PRE-REQUISITES - A sound background in basic biological and physical sciences and in mathematics is required for all Masters and Ph.D. students. For incoming Masters students at least 35 quarter credits in biology or equivalent, including at least one course in each of the following are necessary; botany, zoology, genetics, plant physiology, and microbiology or bacteriology. In addition, Masters' students must have at least one course in inorganic chemistry, organic chemistry, biochemistry, physics, and college mathematics. Ph.D. applicants are required to have all Masters' prerequisites in addition to having at least an introductory course in calculus, although statistics may be substituted for calculus under certain circumstances. If a deficiency exists, it is expected that the deficiency will be corrected within the first year of the graduate program.

### APPLICATION

Applicants wishing to pursue graduate degrees in plant pathology must provide a written statement of their career objectives and interests in plant pathology and are required to submit official academic transcripts, Graduate Record Examination scores, and have three letters of recommendation from instructors or professional associates who can provide an assessment of the applicant's potential for graduate work. Foreign students, whose country's first language is not English must have a TOEFL score of at least 500 and will have to take remedial English if their TOEFL score is under 525. Foreign students should also submit Graduate Record Examinations whenever possible, and document their ability to understand technical instruction and ability to write clearly and concisely in English. All applications, foreign and domestic, should be sent to the Director of Graduate Studies, 304 Stakman Hall of Plant Pathology, 1519 Gortner Avenue, University of Minnesota, St. Paul, MN 55108.

MASTER OF SCIENCE DEGREE - OFFERED UNDER PLAN A OR PLAN B. The Plan A Program must include all three of the following core courses, P1Pa 5005,

Viruses and Bacteria in Plant Disease; PlPa 5006, Fungi, Algae and Parasitic Seed Plants in Plant Disease; PlPa 5007, Nematodes and Abiotic Agents in Plant Disease; and 1 cr. or Colloquium of Seminar. The remainder of the Plan A Program coursework will be determined by the student's advisor and committee with the approval of the Director of Graduate Studies of the Department according to the general Graduate School requirements (see Graduate School Plan A requirements). Plan A theses are presented publicly in front of the student's examining committee, the faculty, and departmental student body.

The Plan B includes the core coursework for the Plan A, 2 seminar or colloquium credits, and 6 undesignated plant pathology credits as part of the general graduate school requirements for Plan B (see Graduate School Plan B requirements).

Both Plan A and Plan B students are required to take a written comprehensive examination in the third week of June immediately following completion of the Master's core course series in order to qualify for full candidacy for the MS degree.

MASTER OF SCIENCE DEGREE MINORS. Master of Science Degree minors in Plant Pathology require at least 2 of 3 of the following courses; PlPa 5005, 5006, 5007. Students taking only 2 of 3 of the above mentioned courses are also required to take at least one additional credit in plant pathology for a minimum of 9 credit hours. Master of Science minor students are not required to pass a core comprehensive examination.

DOCTOR OF PHILOSOPHY DEGREE - The Doctor of Philosophy Degree in Plant Pathology is a research oriented degree that demands an advanced understanding of plant pathology as well as special competence in other areas. Admission to a Ph.D. program requires an MS degree in plant pathology; should a student hold a master's degree in an area other than plant pathology the student will be required to take PlPa 5005, 5006 and 5007 and the MS written comprehensive examination before taking the 8000 level Ph.D. core program sequence. Under special circumstances a "First Class Honors" Baccalaureate degree with an Honor's Thesis and/or publication of personal research may substitute for the MS degree requirement. In the unusual case of a baccalaureate entering a Ph.D program the student must take PlPa 5005, 5006, and 5007 and pass the MS written comprehensive examination before taking the 8000 level Ph.D core program sequence.

All students admitted to the Ph.D program are required to take, in sequence, the following core courses: PlPa 8001, Plant Disease Theory I; PlPa 8002, Plant Disease Theory II; PlPa 8003, Plant Disease Theory III; and 2 credits of colloquium and/or seminar. Written comprehensive examinations will be administered and taken in the third week of January in the year following completion of PlPa 8003. The 8000 level Ph.D core and colloquium/seminar requirement is the minimal coursework requirement of all Ph.D students. Any further coursework in plant pathology will be determined by the student's advisor and his/her committee with the approval of the Director of Graduate Studies of the Department. For coursework requirements concerning the minor program or supporting field see the general Graduate School requirements for Ph.D. programs. An oral examination is required by

the Graduate School following completion of all coursework in any Ph.D. program. All Ph.D. theses will be presented in public before the student's examining committee, faculty and departmental student body.

DOCTOR OF PHILOSOPHY, MINOR IN PLANT PATHOLOGY - A Ph.D. minor in plant pathology requires 20 credit hours of plant pathology. Within these 20 credit hours, PlPa 5005, 5006, and 5007 are mandatory. The remainder of the credit requirement for the Ph.D. minor can be fulfilled through a variety of other Plant Pathology courses, although Ph.D. minors are urged to consider PlPa 8001, 8002, and 8003 when arranging a Ph.D. minor. Ph.D. minors in plant pathology should consult the Director of Graduate Studies in Plant Pathology before enrolling.

#### MAJORS IN PLANT PATHOLOGY - EMPHASIS MYCOLOGY

The Department has a long history of instruction in various areas of mycology and in addition has the only nationally recognized mycological herbarium in the State of Minnesota. The Department offers an "Area of Emphasis" program in mycology for graduate majors, both MS and Ph.D, within prescribed plant pathology majors.

#### Master of Science in Plant Pathology - Emphasis Mycology.

Only the Plan A program is offered for Master of Science Degrees in Plant Pathology with an "Emphasis in Mycology". Admission standards for MS students with an emphasis in mycology are the same as for MS students in Plant Pathology. Master of Science students with a Plant Pathology Major, "Emphasis in Mycology" are required to take Plant Pathology 5005, 5006, 5007, 5105, 5106, and 5107. All other MS requirements for students having a major in Plant Pathology, with an "Emphasis in Mycology" are the same as for students with a MS major in Plant Pathology.

#### Doctor of Philosophy Major in Plant Pathology - Emphasis Mycology

Doctor of Philosophy Degree with a major in Plant Pathology - "Emphasis in Mycology", requires a student to have an equivalent of a Master of Science Degree in Plant Pathology and at least 12 quarter hours of mycology. All students admitted to the Doctor of Philosophy Major in Plant Pathology - "Emphasis Mycology", are required to take Plant Pathology 8001, 8002, 8003, 5102, 5109, and 8111. All other graduate requirements are identical to the Doctor of Philosophy Degree Major in Plant Pathology without the Mycology emphasis.

LANGUAGE REQUIREMENTS - No foreign language requirements are demanded by the department, however, reading proficiency in at least one foreign language is strongly encouraged.

COURSES IN PLANT PATHOLOGY

- 5002 Introductory Plant Pathology for Advanced Students (5 cr; no credit PlPa 1001 or 5050 taken; prereq. 14 cr. plant science, recommended microbiology). Introductory course in plant diseases. Lectures, laboratory, and special problems. MacDonald.
- 5005 Viruses and Bacteria in Plant Disease (4 cr; prereq. 20 credit hours in biology; including botany, biochemistry and plant physiology; offered fall quarter, yearly). Diseases of plants caused by bacteria and viruses, with emphasis on effects, symptoms, pathogen identification, and control. Banttari, Kennedy.
- 5006 Fungi, Algae and Parasitic Seed Plants in Plant Disease (4 cr; prereq. 20 credit hours in biology; including botany, biochemistry, plant physiology and mycology, PlPa 5105; winter quarter, yearly). Fungi algae, and parasitic seed plants as plant pathogens, representative types with particular reference to the techniques used in their identification and control. Kommedahl, Wilcoxson.
- 5007 Nematodes and Abiotic Agents in Plant Disease (4 cr; prereq. 20 credit hours in biology, including biochemistry and plant physiology,; offered spring quarter, yearly). Nematodes and abiotic agents as plant pathogens with special emphasis on diagnosis, identification and methodology of control. Krupa, MacDonald.
- 5050 Forest Pathology (4 cr; prereq. 10 credits plant science or forestry). Diseases of forest and shade trees; wood decay. Symptoms, etiology, and control. Lectures, laboratory and field work. Blanchette.
- 5102 Field Mycology (5 cr; prereq. 9 cr. botany or #; offered at Lake Itasca Biology Session, summers). General characteristics of fungi, especially those used in identification; cultural and taxonomic procedures and practices. Staff.
- 5105 Introduction to the Study of Fungi (4 cr; no credit given if 5106 and 5107 taken; prereq. 9 cr. biology or microbiology, botany; offered fall quarter, yearly). Structure, habits, classification, and identification of fungi. Baumer (1981), Groth (1982), Stewart (1983).
- 5106 Mycology: Ascomycetes - Fungi Imperfecti (4 cr; prereq. PlPa 5105 or equiv., offered 1981-82 and alt. years). Lectures and laboratory exercises in taxonomy, identification, life histories, genetics, and ecology of fungi. Stewart.

- 5107 Mycology: Basidiomycetes (4 cr; prereq. PlPa 5105 or # offered on alt. year schedule). Lecture and laboratory exercises in taxonomy, identification, life histories, genetics, and ecology of fungi. Stewart.
- 5109 Biochemistry and Physiology of Fungi (4 cr; prereq. 8 cr. biochemistry or #; offered 1980-81 and alt. years). Brambl. Lectures, assigned readings, and discussions of the chemical structure and biochemical activities of the fungus cell, including growth, development and morphogenesis, regulation of intermediary metabolism, protein and nucleic acid synthesis, respiration, cytoplasmic inheritance and mitochondrial biogenesis, reproduction and spore germination, viruses and plasmids, toxins and antibiotics, and photobiology. Brambl.
- 5215 Insects in Relation to Plant Diseases (4 cr; prereq. 5 cr. entomology or #, and 5 cr. plant pathology). Insect transmission and dissemination of plant pathogens; plant insect relationships; habits of principal insect vectors - practical control methods. Staff.
- 5200 Poisonous Plants (2 cr; prereq. #). Systematic study of important plants poisonous to animals. Lecture and field trips in identification. Kommedahl.
- 5650 Clinical and Field Plant Pathology (6 cr; prereq. PlPa 1001 and 8 cr. plant pathology). Clinic, laboratory and field experience in diagnosis, treatment, and control of plant diseases of field crops, vegetables, ornamentals, trees and turf. Staff.
- 5700 Contemporary Chemical Control of Plant Diseases (4 cr; prereq. PlPa 1001, 5005, 5006, Biochemistry 1301). Control of plant diseases utilizing biological, cultural practices, disease resistance, and chemicals in an integrated manner. Special emphasis on the use and mode of action of fungicides. Percich.
- 8001 Plant Disease Theory I, Molecular to Cellular (3 cr; prereq. PlPa 5005, 5006, 5007 or #; fall quarter, yearly). A lecture-reading-writing course dealing with plant disease at the molecular, organelle, and cellular levels. The course includes elements of parasite specificity, and generalized disease phenomena found or associated with subcellular and cellular levels of plant organization. Brambl, Mirocha, Zeyen.
- 8002 Plant Disease Theory II, Tissues to Whole Plants (3 cr; prereq. PlPa 5005, 5006, 5007 or #, and 8001; winter quarter yearly). Plant disease as it affects plant tissues, organs, and the

interaction of tissues and organs that form the whole plant. The essential elements are disease situations in roots, vascular systems, photosynthetic systems, and reproductive systems of plants. Kommedahl, Zeyen, Staff.

- 8003 Plant Disease Theory III, Populations (3 cr; prereq. PlPa 5005, 5006, 5007 or #, and 8001, 8002; spring quarter, yearly). Plant disease in populations of plants; agroecosystems, natural ecosystems, and interrelatedness of plant disease over large geographic areas. This course introduces elements of population genetics, epidemiology, and geopathology. Groth, Teng, Staff.
- 8090 Advanced Procedures and Research in Plant Pathology (cr. arranged) staff. Special assignment of work in laboratory and field problems in plant pathological research and technique. Staff.
- 8111 Genetics of Fungi (3 cr; prereq. PlPa 5006, genetics, offered 1980-81 and alt. years). Incompatibility systems, sexual and somatic recombination mechanisms in plant pathogens. Genetic aspects of host-pathogen interaction, gene-to-gene concept; generalized resistance; genetics of epidemics, nature of host genes for resistance and pathogen genes for virulence. Strategies for developing disease resistant plants. Anderson.
- 8200 Plant Pathology Colloquium (cr. ar.; offered fall quarter, yearly). Invited, specialists, faculty members, and graduate students presenting various colloquium topics, concerning the field of plant pathology. staff.
- 8201 Seminar (1 cr; offered winter quarter yearly). staff. Critical review and presentation of current problems and progress in plant pathology. A selected topic (differing from PlPa 8202) and seminar instructors will be announced two quarters in advance. staff.
- 8202 Seminar (1 cr; offered winter, yearly) staff. Critical review and presentation of current progress and problems in plant pathology. A selected topic (differing from PlPa 8201) and seminar instructors will be announced two quarters in advance. staff.

GRADUATE SCHOOL  
W.I.  
APR 13 1981  
4/15/81  
OFFICE OF THE DEAN

April 9, 1981

TO: Dean Warren Ibele

FROM: Professor Harold Mooney

SUBJECT: Proposed minor restructuring of programs within the Department of Geology and Geophysics

Four programs exist at present within the Department of Geology and Geophysics: General Geology, Mineralogy and Petrology, Hydrogeology, and Geophysics. We propose to incorporate the first three under a single title, Geology. The result would be to leave two separate programs within the Department: Geology, and Geophysics.

The original separation was made for reasons which were considered valid at the time. The research and teaching interests of the faculty could be fairly easily defined in terms of the three categories above (omitting Geophysics, for which no change is proposed). The graduate students also could be separated in terms of their main interests.

The progress of geology in recent years has led to greater overlap of these fields. Faculty interests, student research, and employment opportunities all cross over from one to another. In consequence, the distinctions have lost much of their meaning. In some cases they have proved awkward, when too narrow a range of interest or competence could be inferred. The distinctions have also worked at times against the best interests of the students, when they were prevented from taking the breadth of geology courses which they needed.

The following discussion refers only to the first three programs above, namely General Geology, Mineralogy and Petrology, and Hydrogeology. Geophysics is excluded from the discussion because no changes are proposed. The specific changes which we request are as follows:

- 1) We wish all students to register in a single major (or minor), Geology.
- 2) We wish all appointments to the Graduate Faculty to be designated simply Geology.

We wish also to make clear certain changes which we do not propose:

- 1) No changes in the title or subject matter of courses will be needed.
- 2) No major changes in the text of the Graduate School Bulletin appear needed. The text simply refers to "emphases" and "broad areas of study." The distinctions can largely be retained at this level of generality. The grouping of courses can also be retained since it conveys useful information to the reader without necessarily implying a formal division.

- 3) The proposal does not involve any change in funding, number of faculty, faculty load, standards, admission procedures, or accreditation. Administrative changes within the Department will be minimal.

The principal practical effect of our proposed change will be to prevent students from taking a major in one program of geology and a minor in another, as for example, a major in Hydrogeology and a minor in General Geology. We do not usually permit this in any case, since we prefer to have most minors taken outside the Department, but our proposed change would prevent it entirely.

Another practical effect would be to avoid occasional conflicts where a student wishes to major in one program but his advisor is on the Graduate Faculty in another program. This can happen because of the increasing overlap of faculty interests noted earlier.

If the proposal is approved, we would propose to implement it immediately.

Appendix

The proposed Graduate Faculty listing would appear as follows for the Department of Geology and Geophysics:

GEOLOGY, Full Membership

Alexander, Emmit C., Jr.  
Bright, Robert C.  
Chase, Clement G.  
Hooke, Roger L.  
Hudleston, Peter J.  
Johnson, Thomas C.  
Murthy, V. Rama  
Pfannkuch, Hans-Olaf  
Sawkins, Frederick J.  
Seyfried, William E.  
Shapiro, Joseph  
Shaw, George H.  
Sloan, Robert E.  
Stout, James H.  
Wright, Herbert E.  
Zoltai, Tibor Z.

GEOLOGY, Associate Membership

Banerjee, Subir K.  
Crews, Anita L.  
Morey, Glenn B.

GEOPHYSICS, Full Membership

Banerjee, Subir K.  
Chase, Clement G.  
Mooney, Harold M.  
Murthy, V. Rama  
Pepin, Robert O.  
Shaw, George H.

GRADUATE SCHOOL STAFF COMMENTS ON THE SOCIAL SCIENCES POLICY AND REVIEW  
COUNCIL PROPOSAL ON STUDENT SERVICES REVIEW

GENERAL

We believe that any discussion and proposals for alteration in the student services provided by the Graduate School must take account of all of the documents prepared for and associated with the student services review which was completed in 1979: the self-survey document prepared by the Graduate School, the report of the <sup>\*</sup>Internal Review Committee, the report of the <sup>\*</sup>External Review Committee, the results of the questionnaires sent to Directors of Graduate Studies and to graduate students, and the report of the <sup>\*</sup>Staff Response Committee. Many of the comments in the latter document in particular point to interactions with other University units such as Admissions and Records and Administrative Data Processing which might not be immediately apparent to those not working closely with the current system and the information needs of other University departments.

COMMENTS RELATING TO THE SPECIFIC PROPOSAL FROM THE SOCIAL SCIENCES POLICY AND REVIEW COUNCIL

Recommendation I: Elimination of thesis registration requirement

Thesis registration serves four functions: 1) provides the faculty the time to read and evaluate the thesis prior to the final oral; 2) provides the Graduate School the opportunity to check the thesis for completeness and form before submission to the adviser and other readers; 3) enables the Graduate School to obtain the accurate thesis title (often changed from the time of thesis proposal approval) to be recorded on the transcript; 4) allows the distribution to the student of documents required for graduation. Functions 3 and 4 are essential to the Graduate School's responsibility for maintaining accurate student records. The wording of the thesis title must be updated to agree with the final typed copy as this title is recorded on the official student transcript. Other graduation materials must be given to the student close to graduation so that they are not lost or misplaced and so that the forms themselves are not obsolete.

\*Distributed to the Councils earlier.

Functions 1 and 2 have been referred for study and recommendation to the Director of Graduate Studies Advisory Committee. It would be premature to attempt to alter the present system of achieving functions 3 and 4 prior to receiving the recommendations of the DGS Advisory Committee relative to functions 1 and 2.

According to the survey done in preparation for the Graduate School review, 89% of students and 93% of Directors of Graduate Studies felt that the Graduate School's procedures for graduation were adequate. Thesis registration is part of the graduation procedure.

### Recommendation II: Alternative procedure for filing approved programs

The present system is flexible. For master's programs, when students are required to submit the program varies by numbers of credits completed, ordinarily not more than 15. For doctoral programs quarters of registration are counted, and ordinarily do not exceed 7. The student receives a "warning" the quarter following that in which the above criteria are met, and a "hold" on registration in the second quarter if he has not responded. Exceptions are granted on an individual basis. A one quarter exception is usually possible unless graduation is imminent.

LEWIS  
LIKED THIS.

A proposal has been prepared in the Graduate School for the development of a simplified doctoral program which is a general plan, rather than a contract which must be fulfilled in all respects. It is expected that such a simplified plan would greatly reduce the necessity for petitions, and is based on the recognition that the doctoral program is an examination and dissertation, rather than a coursework, degree. If believed desirable, this plan can be brought forward for consideration.

It must be kept in mind that monitoring the content of student degree programs for general Graduate School requirements is a time-consuming process and if the responsibility is transferred to the departments will involve a greater commitment of faculty time than is presently the case. A significant

number of student programs are received in the Graduate School which do not meet general requirements, and it is clear that this level of effort is not presently being invested.

What is now being accomplished in the Graduate School's programs and commencement area appears to be what is suggested in the Social Sciences Policy and Review Council recommendation that the Graduate School maintain an office which can review programs for general Graduate School requirements. The maintenance of deadlines for submitting programs is intended as a way of identifying program errors early so that they can be corrected in such a way that the student's program time is not extended or that Graduate School requirements need not be compromised. The present system was introduced 12 years ago to correct the reverse situation in which students submitted programs at the last moment which frequently did not meet general requirements.

### Recommendation III: Change in Procedures for Admitting Students to Graduate School

The present admissions system was one endorsed by the Martin Committee based on a faculty survey conducted in 1971. The 1978 survey of DGS's as part of the Graduate School student services review indicated continued support. The Graduate School staff has considered alternative systems and have evaluated them in terms of two critical characteristics -- assurance of equity and timeliness of action. When considering a post-audit admissions system it was concluded that without incentives established by significant financial controls, the system would not be effective in insuring equity. The staff agrees with the Social Sciences Policy and Review Council that programs should establish admissions standards and review them periodically to be sure that the review process results in selecting good graduate students. We also agree that the standards applied by the Graduate School in reviewing applications should be articulated.

LEWIS  
URBES  
THE G.S.  
DO.

### Recommendation IV: Change in Procedure for Collecting Application Materials

The Graduate School staff believe that the collection of applications for admission and all supporting documentation should be retained centrally in the Graduate School. Even though our application instructions are complete, simple, and specific, the materials which are misdirected represent a significant volume.

If the materials were to be directed to the various programs, it would be impossible for the Graduate School to redirect transcripts, test data, etc. which it would receive. There would be no basic document against which one could check to determine where the student was applying. Aside from these mechanical problems which would have significant implications for the timely handling of admission requests, there are major policy questions which would have to be resolved. How would the credentials examination fee be collected? The Bursar's Office and the Auditor would, we are sure, have opinions. There is a question of law involved in the manner in which we receive and record the information collected on the matriculation information form. This involves a question of State law and would likely involve a decision from the Attorney General. A centralized system is the most economical and this is of considerable importance in our view, particularly during a time of reduced budgets.

The experiment currently under way with respect to decentralization of the MBA admission process still requires involvement of the Graduate School in the areas of fee collection and matriculation information input. The work load in the prospective student files area was not decreased in proportion to the number of MBA applications which are received. A file to identify MBA applicants must be maintained as well as a system of timely notification of the director of the program as to when the credentials examination fee has been paid. The files are checked for completion when they are forwarded to us. A separate system for handling foreign applications must be maintained. The number of telephone inquiries between the prospective student files office and the MBA admissions office has increased significantly. While we are sure that we have realized savings in filing transcripts, the maintenance of separate subsystems for needed control minimizes the savings in personnel time to the Graduate School. In terms of the new duties which it has assumed, it is our understanding that the MBA office has had to expand its staff in the area comparable to the student services area of the Graduate School.

The Graduate School admissions staff is knowledgeable about official credentials from both domestic and foreign institutions and about test information; and they can readily answer questions from applicants consistently about materials required. Much information available to the Graduate School would have to be duplicated in the programs (e.g. information on testing, accredited U.S. institutions, foreign institutions, etc.).

In the present system, the Dean of the Graduate School can be assured that all students were considered on an equitable basis and in the case of an appeal that all applicants were required to submit the same basic information. Having the Graduate School check applications for completeness after the program has made a decision does not address the question of equity.

There are significant budgetary implications in decentralizing the collection and routing of applications for admission to the Graduate School. Programs would have to plan for an allocation of a substantial amount of staff time to receive credentials, track misdirected materials, and carry on the necessary correspondence with applicants regarding materials lacking and additional information needed.

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