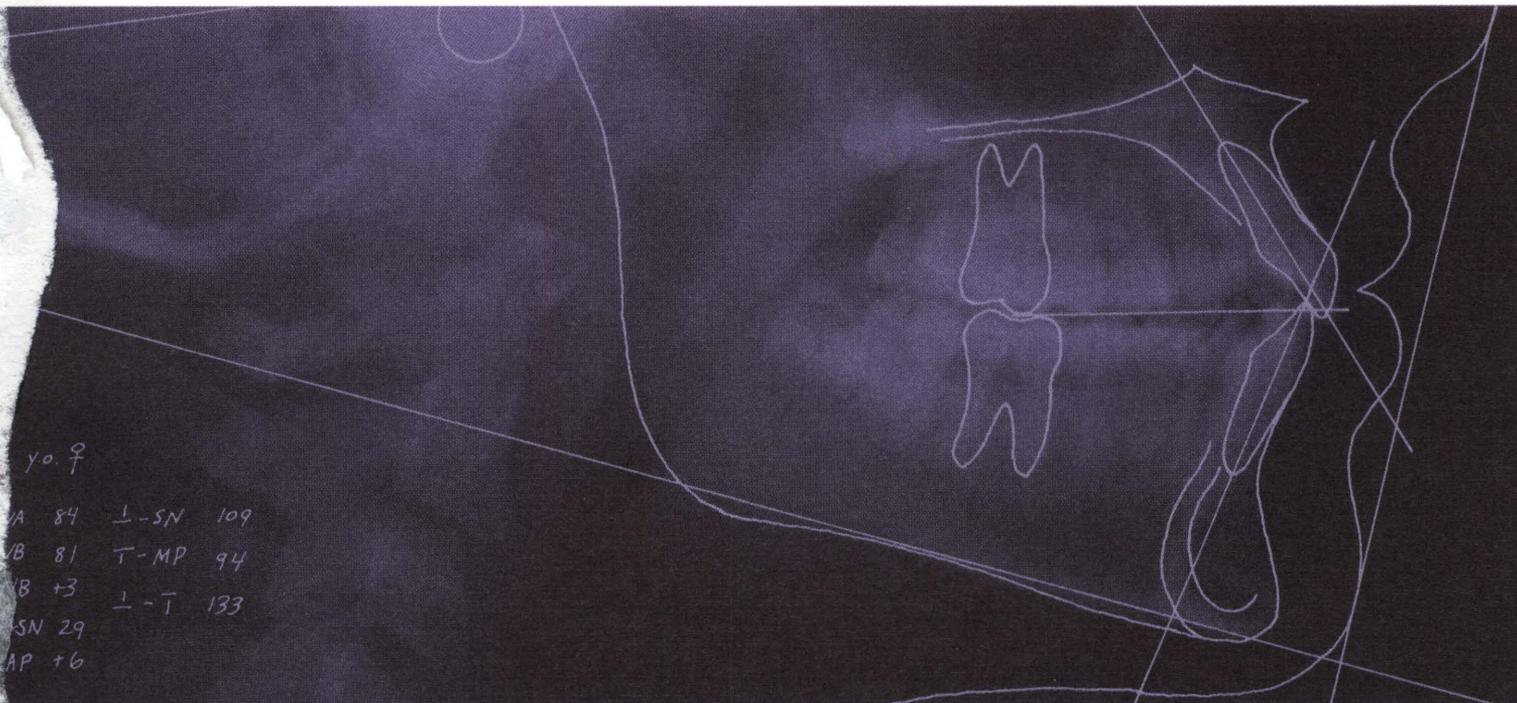


UNIVERSITY OF MINNESOTA

1999 - 2001 CATALOG

SCHOOL OF DENTISTRY



DOCTOR OF DENTAL SURGERY • BACHELOR OF SCIENCE IN DENTAL HYGIENE

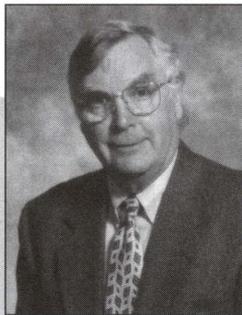
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A L E T T E R F R O M T H E D E A N

On behalf of our faculty, staff, and students, I welcome your interest in the dental profession, and especially in the University of Minnesota. Dentistry is a highly satisfying and rewarding health care profession. For well over 100 years, the University of Minnesota School of Dentistry has prepared dental and dental hygiene students for careers in private practice, teaching, research, and other related dental activities.

As one of the outstanding dental schools in the world, we are committed not only to generating new knowledge and technology for our profession and the



people it serves, but also providing a supportive, nurturing environment in which future dentists and dental hygienists can develop the skills they need to attain their career goals.

All of us wish you well as you consider your future. We are proud of our school and its historic excellence, and invite you to explore more fully the opportunities we offer.

A handwritten signature in black ink that reads "Michael J. Till". The signature is written in a cursive, flowing style.

Michael J. Till
Dean

DENTISTRY IN MINNESOTA

A Brief History

The School of Dentistry celebrated its centennial in 1988. In its long history, the school has developed an international reputation for research, education, and service that includes:

A strong tradition

- Twenty-two students and four faculty members composed the University of Minnesota College of Dentistry when it began in 1888 as a division of the Department of Medicine. The college became the School of Dentistry in 1932.
- Early students used a dental engine driven by a foot pedal and made some of their own laboratory and clinical instruments in class.
- By the 1938-39 academic year, the original three-year program of study had been lengthened to four years, preceded by two years of prescribed undergraduate courses. In 1976, the prerequisites were changed to include three years of undergraduate coursework.
- A two-year dental hygiene program was added in 1920. The two-year program remained until 1989, when it was replaced by a baccalaureate program.
- A dental graduate degree program began in 1937; from 1957 to 1993, several programs were developed to give dental graduates the opportunity to earn a Ph.D. in various disciplines.

Research excellence

- School of Dentistry faculty have earned worldwide reputations for their contributions to the understanding of fluoride and decay prevention, micro-

biology and oral-facial genetic anomalies, periodontal disease prevention, pain control, oral cancer, and effective care delivery.

- The Dental Research Institute, which applies high technology to oral health problems, and the Clinical Research Center for Periodontal Diseases, which collaborates with international corporations, offer specialized research opportunities.
- Undergraduates can participate in research programs, working in areas of interest with faculty mentors.

International exchange

- Since 1969, international student exchange programs have offered undergraduates an opportunity to study with faculty from Guatemala, Denmark, Germany, and Norway.
- Undergraduate students have provided dental care to people in 89 countries. The school has hosted faculty and students from 57 countries for education and research experiences.
- In 1967, the Lasby Visiting Professorship was created to bring American and foreign scientists and clinicians to the School of Dentistry.

A history of the School of Dentistry, written by professor Mellor Holland, is available in the University of Minnesota School of Dentistry Reading Room.

The Dental Profession

New knowledge, concepts, and techniques have made dental and dental hygiene care beneficial for patients and more challenging, interesting, and comprehensive for practitioners. Today's dentist can reorganize crowded

teeth; replace missing teeth with implants; seal enamel defects; and whiten, laminate, or crown discolored or cracked teeth. Tomorrow's dentists, particularly general practitioners, and dental hygienists will be expected to provide an even greater range of dental and personal health services. And more dental professionals will be needed. Current assessments of career opportunities suggest an attractive situation for those considering dentistry. Nationally, income growth for dental professionals continues to outpace that of college graduates generally. Other factors combining to create a solid foundation for the dental workforce and those entering it include population trends, expansion of the health care sector, and changing patterns of dental care needs. Within Minnesota, the central states, and the northern plains, retirements and other losses of dental providers will also contribute to the demand for dentists over the next ten to fifteen years.

More than 155,000 dentists are practicing in the United States today and roughly half of these are over the age of 45. About 90 percent are in private practices (solo or groups), with the rest working in a variety of other settings: city, state, and federal agencies such as public health departments; community and nonprofit agencies; dental educational institutions; research programs sponsored by universities, foundations, and corporations; and armed forces programs. Of those dentists in private practice, about 95 percent have an ownership interest. Fewer dentists are now going into solo practice (about 70 percent); more are forming partnerships and other group practices (30 percent). About 80 percent of all dentists practice general dentistry; the remainder practice a dental specialty.

The Community

With more than 2 million residents, the Twin Cities provide the educational and cultural advantages of a major metropolitan area while offering easy access to abundant natural and wildlife areas. Plentiful parks, lakes, and rivers are close to most metropolitan homes and provide year-round opportunities for outdoor recreation, including skiing, skating, and hiking in the winter; and swimming, sailing, fishing, cycling, golfing, tennis, and jogging in the warmer seasons. Major league sports teams include baseball's Minnesota Twins, football's Vikings, and basketball's Timberwolves.

Cultural opportunities abound. The Minnesota Orchestra, St. Paul Chamber Orchestra, Minneapolis

Institute of Arts, Guthrie Theater, and Walker Art Center set the pace for many vigorous theaters, galleries, dance companies, museums, and musical groups. With such cultural, sporting, and recreational opportunities, it is no surprise to Minnesotans that quality-of-life studies rank us consistently among the top metropolitan areas in the nation.

The University

With four campuses, 4,500 faculty members, and more than 45,000 students, the University of Minnesota is one of the nation's largest, most comprehensive public institutions of higher learning. It is both a land-grant university with a strong tradition of education and public service, and a major research institution with scholars of national and international reputation.

The Twin Cities campus is the largest of the four campuses. Made up of 20 colleges, it offers a full range of undergraduate, graduate, and professional degrees. The Twin Cities campus is actually two close but geographically separate campuses, one in Minneapolis and the other in St. Paul. The Mississippi River divides the Minneapolis campus into the East Bank—where the School of Dentistry and the Academic Health Center are located—and the West Bank. Adjacent campus neighborhoods cater to student interests, while readily accessible downtowns in both Minneapolis and St. Paul offer metropolitan services and activities.

The School of Dentistry

Location The School of Dentistry, including the Division of Dental Hygiene, is headquartered on the East Bank of the University of Minnesota's Twin Cities campus. The school's main Minneapolis administrative office is in 15-209 Malcolm Moos Health Sciences Tower, 515 Delaware Street S.E., MN 55455. Division of Dental Hygiene offices are in 9-436 Malcolm Moos Health Sciences Tower.

Rich Curriculum The professional D.D.S. program features diversified courses in basic sciences, some taken with colleagues from other professions such as medicine; preclinical and clinical sciences; behavioral sciences, professional, interpersonal, and communication skills; practice management and business skills. The curriculum is built on the skills, knowledge, attitudes, and behaviors that a dental professional needs to be-



Outreach opportunities take students, faculty, and staff to locations throughout Minnesota and as far away as Jamaica for the annual Jamaica Volunteer Mission (shown here).

4

come a competent general dentist. Designed to meet student needs, the curriculum emphasizes the scientific, scholarly, interpersonal, and communication skills required of graduates in a continually changing profession. Teaching methodologies range from traditional lectures to small group tutorials and cooperative learning situations; from routine laboratories to advanced simulation; from clinical practice in a large comprehensive care facility to extramural clinical experiences in diverse settings, treating diverse populations with diverse pathologies. In addition, career planning and placement are integrated into the core of the curriculum so students can prepare for the transition to practice or advanced education.

Graduate dentists can receive training in eight clinical specialty or special focus areas, as well as two general dentistry residency programs. In addition, a master's degree (M.S.) degree program is offered for general dentists, specialists, and dental hygienists in collaboration with the University of Minnesota Graduate School to prepare for leadership in dental education, research, and program administration. An M.S. degree program in clinical research is also offered. Both M.S. and Ph.D. degrees are offered in oral biology, as well as a variety of basic biological sciences and public health.

The professional dental hygiene program, established in 1919, has an illustrious record of accomplishment and innovation and is one of the country's premiere programs. Today's graduates complete a baccalaureate degree that blends a solid dental hygiene clinical education with the biological, behavioral, and social sciences, as well as with liberal arts.

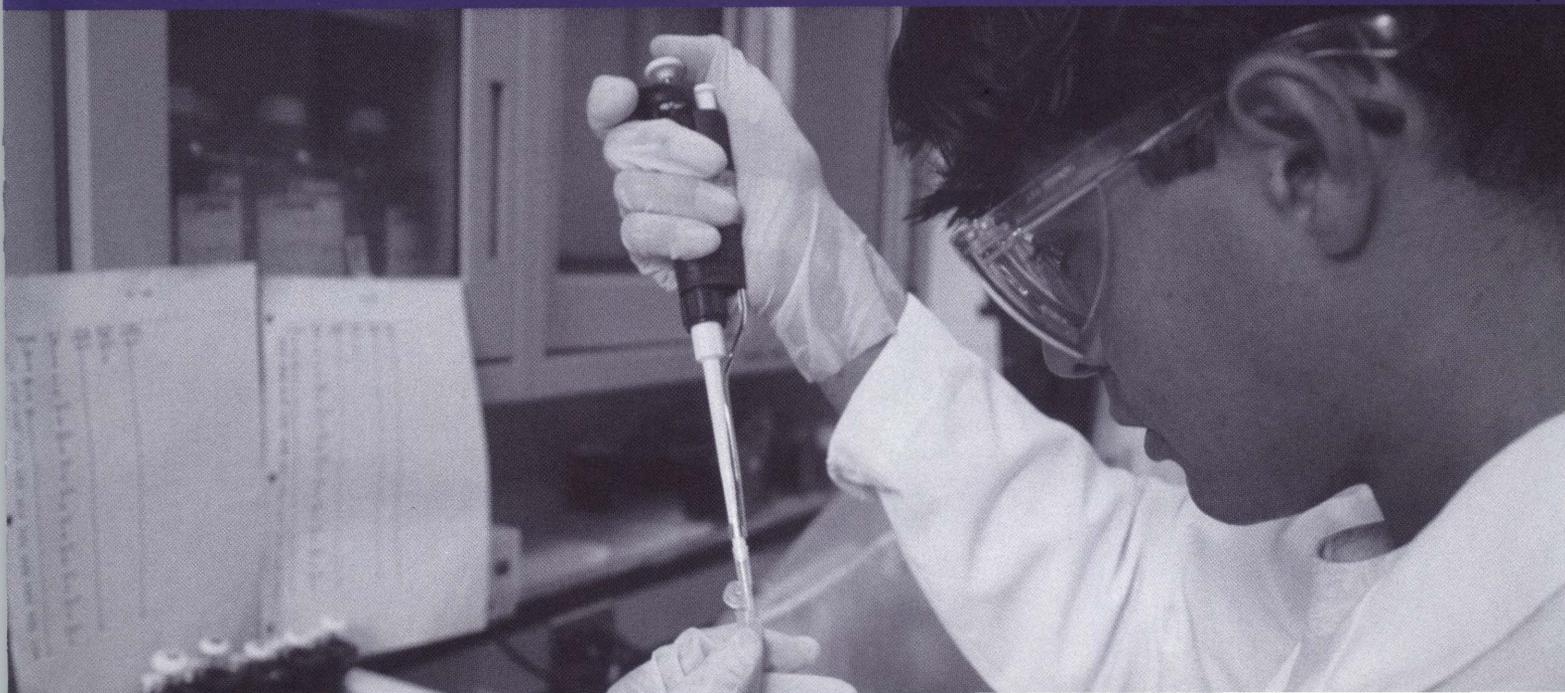
Important Research Vital clinical and basic research, conducted by the faculty in superb research facilities, includes work in areas such as oral microbiology; fluoride chemistry; bone substitutes; genetic study of viruses; dental restorative materials in a simulated, computerized artificial mouth; and microcirculation. Dental and dental hygiene students benefit from this research through new information provided by the faculty, as well as summer research fellowships under the guidance of faculty mentors.

Facilities The School of Dentistry offices are located in the Malcolm Moos Health Sciences Tower, a flexible, innovative environment for teaching and practicing dentistry and dental hygiene and conducting research. All the basic science teaching laboratories are in Moos Tower, except for the adjacent anatomy and histology laboratories. Reference books and periodicals for dental and dental hygiene students are in the Reading Room on the ninth floor, and nonprint materials are in the Learning Resources Center on the eighth floor. The Bio-Medical Library in Diehl Hall, one block south of Moos Tower, features an extensive selection of reference materials in the fundamental and clinical health sciences. The large Twin Cities campus library system is headquartered in Wilson Library on the West Bank.

Dentistry A magazine for University of Minnesota alumni, donors, parents, and friends, *Dentistry* is distributed nationally twice a year. Feature stories on important topics in dentistry, alumni news, and a special message from the dean are included.



G E N E R A L I N F O R M A T I O N



GENERAL INFORMATION

University of Minnesota Mission Statement

The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; to the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation, and the world.

The University's mission, carried out on multiple campuses and throughout the state, is threefold:

Research and Discovery Generate and preserve knowledge, understanding, and creativity by conducting high-quality research, scholarship, and artistic activity that benefit students, scholars, and communities across the state, the nation, and the world.

Teaching and Learning Share that knowledge, understanding, and creativity by providing a broad range of educational programs in a strong and diverse community of learners and teachers, and prepare graduate, professional, and undergraduate students, as well as non-degree-seeking students interested in continuing education and lifelong learning, for active roles in a multiracial and multicultural world.

Outreach and Public Service Extend, apply, and exchange knowledge between the University and society by applying scholarly expertise to community problems, by helping organizations and individuals respond to their changing environments, and by making the knowledge and resources created and preserved at the University accessible to the citizens of the state, the nation, and the world.

In all of its activities, the University strives to sustain an open exchange of ideas in an environment that embodies the values of academic freedom, responsibility, integrity, and cooperation; that provides an atmosphere of mutual respect, free from racism, sexism, and other forms of prejudice and intolerance; that assists individuals, institutions, and communities in responding to a continuously changing world; that is conscious of and responsive to the needs of the many communities it is committed to serving; that creates and supports partnerships within the University, with other educational systems and institutions, and with communities to achieve common goals; and that inspires, sets high expectations for, and empowers the individuals within its community.

Mission

As part of a large metropolitan university with a strong commitment to the health sciences, the School of Dentistry offers a variety of academic and cultural opportunities. It is a member of the American Association of Dental Schools, and the undergraduate programs in dentistry and dental hygiene are approved by the Commission on Dental Accreditation.

The mission of the School of Dentistry is to educate dental professionals; discover new knowledge, technology, and skills; and apply those discoveries to the dental profession and the community it serves.

The goal of the D.D.S. curriculum is to educate dental professionals whose scholarly capabilities, scientific acumen, and interpersonal skills are commensurate with their clinical mastery.

Outstanding Reputation

The School of Dentistry has a proud and productive history. It has gained a national and international reputation for the quality of its educational, clinical, research, service, and patient-care programs. Its faculty have wide-ranging educational and research experience in many institutions throughout the nation and the world.

Special Clinics Special services and teaching clinics include a cleft palate and maxillofacial clinic for patients with congenital or acquired defects; and a head and facial pain clinic, which provides broad evaluation and treatment services for patients with complicated pain

problems. Both clinics have extensive consulting and in-house staffs of dental and medical specialists.

Small-Group Learning Dental and dental hygiene students work in small groups on a number of problems/case studies using paper cases, simulations, and their own patients. This stimulates group discussion of clinical and basic science concepts within a problem-solving framework and a cooperative learning environment.

Excellent External Support The School of Dentistry enjoys strong support from its large, active alumni society, which has the highest percentage of membership of any major school at the University of Minnesota. A large pool of friends, including our alumni, are generous with their monetary support for endowments, current gifts, and educational programs. We are constantly expanding the use of endowments to include private support for research activities among our faculty and students.

Degrees Offered

Doctor of Dental Surgery The professional doctor of dental surgery (D.D.S.) program involves a four-year curriculum. Requirements are explained in the D.D.S. section of this catalog.

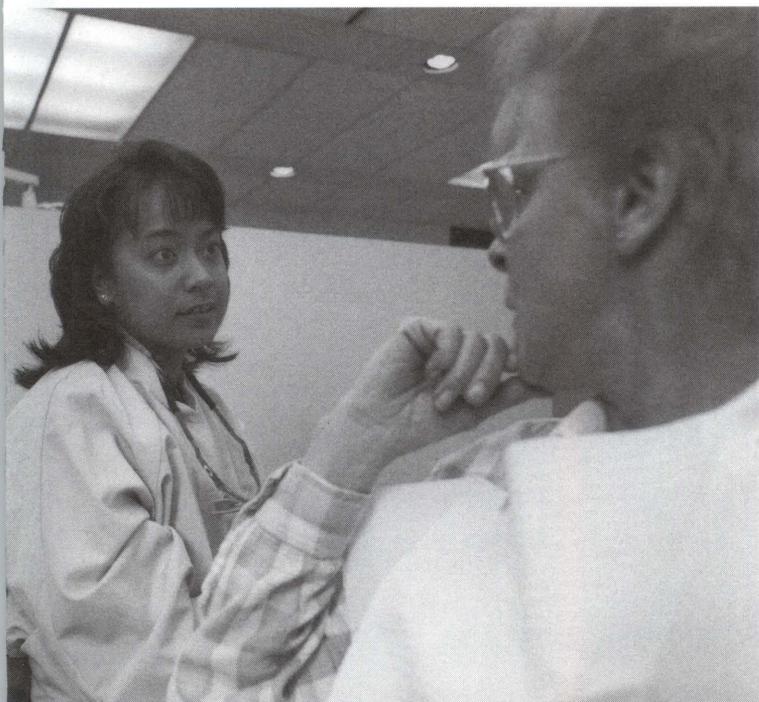
A B.S. degree is not offered through the University of Minnesota School of Dentistry. However, an individual can still earn a B.S. degree while completing the dental curriculum if the institution at which the individual took preprofessional coursework recognizes the basic science coursework taken at the School of Dentistry and awards the degree independently.



Junior and senior dental hygiene students treat patients in the School of Dentistry Hygiene, Pediatric, and Periodontology Clinics.

Bachelor of Science in Dental Hygiene The B.S. degree in dental hygiene is offered through the Division of Dental Hygiene. Requirements are explained in the dental hygiene section of this catalog.

Graduate Programs Graduate programs prepare dental professionals for careers in education, research, and specialty practice. The master of science (M.S.) degree is offered through the Graduate School in a variety of disciplines: endodontics, geriatrics, oral biology, oral pathology, orofacial pain, orthodontics, pediatric dentistry, periodontics, and prosthodontics. The Ph.D. degree in oral biology and the Dentist Scientist Award Program, providing Ph.D. training in basic sciences and advanced education in a clinical dental specialty, are also offered through the Graduate School. The School of Dentistry offers a four-year residency program in oral and maxillofacial surgery, as well as two one-year residencies: a general practice residency and an advanced education in general dentistry. Students can also obtain advanced education degrees (M.S., Ph.D.) in all the basic biological sciences and public health through the Graduate School. For details, consult the *Graduate School Catalog*.



Interpersonal communication skills are continually emphasized throughout the students' dental education.



Small-group experiences enhance education in basic science and clinical concepts.

Continuing Education Short courses are regularly offered to keep members of the dental profession informed of new developments in clinical and research procedures. Special brochures listing courses, dates, and costs are available through the Continuing Dental Education Program, 6-406 Malcolm Moos Health Sciences Tower (612/625-1418).

Dental and dental hygiene students are encouraged to attend selected continuing education courses during their senior year on a space-available basis. These courses expose seniors to a broad scope of information and technology from a variety of local and national speakers. Students gain by selecting their own educational experiences and interacting with practicing dentists and dental hygienists.

Administration

University Regents

Patricia B. Spence, Rice, Chair
 Maureen K. Reed, Stillwater, Vice Chair
 Anthony R. Baraga, Side Lake
 Robert S. Bergland, Roseau
 Dallas Bohnsack, New Prague
 William E. Hogan II, Minnetonka
 Warren C. Larson, Bagley
 David R. Metzen, South St. Paul
 H. Bryan Neel III, Rochester
 Michael O'Keefe, Minneapolis
 William R. Peterson, Eagan
 Jessica J. Phillips, Morris

University Administrators

Mark Yudof, President
 Robert Bruininks, Executive Vice President and Provost
 Frank B. Cerra, Senior Vice President for Health Sciences
 McKinley Boston, Jr., Vice President for
 Student Development & Athletics
 Carol Carrier, Vice President for Human Resources
 Sandra Gardebring, Vice President for Institutional Relations
 Eric Kruse, Vice President for University Services
 Philip Larsen, Interim Vice President for
 Agricultural Policy
 Christine Maziar, Vice President for Research and
 Dean of the Graduate School
 Mark B. Rotenberg, General Counsel

School of Dentistry Administrators

Michael J. Till, D.D.S., Ph.D.,
 Dean, School of Dentistry
 Paul S. Olin, D.D.S., M.S.,
 Associate Dean, Clinical Systems
 Gale L. Shea, B.A., Director of Enrollment Management
 Thomas D. Larson, D.D.S., M.S.D.,
 Associate Dean, Academic Affairs
 Nicholas N. Molitor, M.B.A., M.P.A.,
 Director of Finance and Personnel
 Charles F. Schachtele, M.S., Ph.D.,
 Associate Dean, Research Programs



S T U D E N T L I F E



S T U D E N T L I F E

Organizations

Student and State Organizations Each year undergraduate dental and dental hygiene students elect the School of Dentistry Council of Students, which discusses matters of mutual interest with faculty advisers and promotes many projects and activities. Undergraduates also have representatives with voting privileges on School of Dentistry committees pertaining to student admission, educational policy, student affairs, and clinical systems. The Student Affairs Committee, composed of both dental and dental hygiene students and faculty, is responsible for student concerns such as membership in local and national organizations, ethics, counseling, tutorial assistance, questions on the educational programs, financial aid, publications, housing, and alumni relations. Students have the opportunity to serve as representatives on the board of directors of the School of Dentistry Alumni Society and as members of committees within the Minnesota Dental Association (MDA).

At the state level, dental students comprise the eighth district of the MDA, the Minnesota Student District Dental Society (MSDDS). Minnesota is the only state in the nation that allows students full membership in the state dental association. Two students serve on each of the MDA's committees and voice students' opinions. Students are welcome to attend the sessions of the MDA's House of Delegates and the Star of the North meetings. Dental hygienists have the opportunity to serve on the Minnesota Dental Hygienists Association.

National Organizations Dental and dental hygiene students may join several national organizations that

provide students with an introduction to organized dentistry and a voice in shaping the future of dental professions. Organizations for dental students include the American Association of Dental Students (AADS) and American Student Dental Association (ASDA). ASDA's chapter at the University of Minnesota is a group devoted to voicing student opinion, organizing student functions, and keeping students informed of current events and decisions in the field of dentistry. ASDA leaders and committee members meet once a month to organize and plan events. Two representatives are selected from each class to serve on the board of the local chapter. Students may serve on eight local standing committees or apply for national ASDA positions or externships. Leaders in the local chapter are elected and may attend national and regional meetings. Committee chairs are appointed.

Organizations for dental hygiene students include the American Dental Hygienists' Association and the American Association of Dental Schools. Membership fees for these organizations entitle students to various dental publications and special services.

Fraternities The professional dental fraternity provides all the advantages of fraternal affiliation and also offers the means through which students with a common professional interest develop close ties among themselves and with alumni in the fraternity who are practicing in the community. Chapters generally have strong faculty support because they bridge the gap between the student, the faculty, and the profession.

Each dental fraternity emphasizes the importance of high professional ethics and practices in the selection

and development of its members. The dental fraternities emphasize the importance of professional development, often conducting programs of speakers, tours, and forums. In addition, dental fraternity chapters foster social and athletic functions to promote each member's full personal development.

One of the most important benefits of dental fraternity membership comes after graduation. Each dental fraternity has alumni organizations across the nation providing professional and social contacts of great value to the alumnus. The fraternity offers individuals the opportunity to obtain expert advice and professional guidance from fellow members.

At the University of Minnesota, all four of the professional dental fraternities are represented: Alpha Omega, Delta Sigma Delta, Psi Omega, and Xi Psi Phi. These fraternities have more than 140 undergraduate chapters in this country and more than 150 active alumni chapters scattered throughout the world. Eighty-five percent of the men and women active in the dental profession have fraternity affiliation.

Honor Societies Fourth-year dental students may be elected by the faculty to the Beta Beta Chapter of the national dental honor society, Omicron Kappa Upsilon. Graduating dental hygiene students may be elected to the Eta Chapter of the National Dental Hygiene Honor Society, Sigma Phi Alpha.

Student Volunteer Outreach Activities

Many students at the School of Dentistry are interested in serving the community while they are in dental school. While many opportunities exist, some are specifically related to the delivery of dental care. Examples of some externships include:

The Jamaica Volunteer Mission This program was initiated in 1986 in response to a report that cited Jamaicans as having one of the highest rates of dental caries and periodontal disease in the world due to a diet very high in sugar, an unfluoridated water supply, and a severe shortage of dental personnel.

Each year, students raise funds to cover the expense of sending faculty, fourth-year dental and dental hygiene students, and supplies to the island to treat patients seeking assistance. Initially, treatment of pain and acute infection were the primary concern. However, the program is still evolving to include a wider variety of preventive and restorative procedures.

While conditions are extremely primitive, this ten-day mission provides students with some unique life experiences and real-world dental experiences.

Migradent Each year 20,000 seasonal agricultural workers come to Minnesota during the summer months. Accompanying them are about 5,000 children. The migratory nature of this population makes access to medical care, including dental services, extremely difficult. In 1996, a pilot project (Migradent '96) was initiated to bring dental care to migrant children in western Minnesota. These children have decay rates nearly three times that of mainstream American children. Migradent, which was staffed by the school's dental and dental hygiene students, faculty, and staff, provided diagnostic, preventive, and restorative services for more than 300 children over a 15-day period. Because of the extensive need for care and the support for this program by Migrant Health Services, Inc., Tri-Valley Head Start, the community, and the School of Dentistry, Migradent will become a regular outreach event in coming years.

The Union Gospel Mission Two evenings each week, School of Dentistry students and staff volunteer to meet the dental needs of the lower income and homeless population in the inner city. Many of those seeking dental care are suffering from conditions that require immediate attention. The primary concern is to relieve pain and provide appropriate services to prevent recurrence of the problem.

Special Opportunities

International Exchanges The School of Dentistry has had an active exchange program with a variety of universities over the last 20 years. Currently we have formal exchange agreements with the College of Dentistry in Århus, Denmark; the Universities of Göttingen and Heidelberg, Germany; the University of Bergen, Norway; the University of Nijmegen, The Netherlands; and the University of Melbourne, Australia.

This program provides a cultural and educational exchange and increases awareness of and appreciation for dentistry in a more global context. Students experience a different culture, political system, and lifestyle and return with greater understanding, sensitivity, and acceptance of differences in people, their customs, and culture. Experiences have been extremely positive. Better understanding and mutual respect gained through

these experiences contribute to the personal growth of our future health professionals.

Summer Research Fellowship The School of Dentistry Summer Research Fellowship Program provides research experiences for exceptional dental and dental hygiene students with an interest in research careers and in relating that interest to postgraduate research training. Freshmen, sophomores, and juniors are invited to apply for a research fellowship position in the spring. If selected, they are assigned to a faculty mentor for the summer. During a ten-week period, students collect and analyze data, undertake a structured research project, and prepare a formal report. Research fellows attend a weekly research training seminar where they learn research methods. They also evaluate selected journal articles and review abstracts and oral presentations of former trainees. Stipends of \$2,085 are provided. Each year, 19 to 22 students participate in this program.

Policies

Grading and Transcript Policy The complete University Senate policy can be found on the Web at www.umn.edu/usenate/policies/gradingpolicy.html.

1. This policy is effective fall quarter 1997 for the Crookston, Morris, and Twin Cities campuses, replacing all previous grading policies. It may not be applied retroactively to any grades or symbols awarded before that time.
2. The University has two grading systems, A-B-C-D-F (with pluses and minuses) and S-N. Students may receive grades only from the grading system under which they have registered for a course.
In addition, there are registration symbols that do not carry grade points or credit.
3. Instructors must clearly define for a class, at one of its earliest meetings, the performance necessary to earn each grade or symbol.
4. No student may receive a bachelor's degree unless at least 75 percent of the degree-qualifying residence credits carry grades of A, B, C, or D (with or without pluses or minuses). Each campus, college, and department may choose not to accept academic work receiving a D (with or without a plus or minus).

Each campus, college, and department determines to what extent and under what conditions each grading system is used, may specify what courses or proportion of courses must be on one

system or the other, and may limit a course to either system.

5. When both grading systems are available, students must choose one when registering for a course. The choice may not be changed after the end of the second week of classes (the first week in summer terms).
6. The University's official transcript, the chronological record of the student's enrollment and academic performance, is released by the University only at the student's request or in accord with state or federal statutes; mailed copies have the University's official seal printed on them. Students may obtain an unofficial transcript, except when they have a transcript hold on their record.
7. The University calculates for each student, both at the end of each grading period and cumulatively, a grade point average (GPA), the ratio of grade points earned divided by the number of credits earned with grades of A-F (including pluses and minuses). Both the periodic and cumulative GPA appear on each student's record.
8. When a student repeats a course, all grades for the course appear on the transcript, the course credits may not be counted more than once toward degree and program requirements, and only the last enrollment for the course counts in the student's GPA.
9. Students may petition the college scholastic committee or other appropriate body about this policy.
10. The following grades (with grade points as indicated) and symbols are used on transcripts.

A	4.00	Represents achievement that is outstanding relative to the level necessary to meet course requirements.
A-	3.67	
B+	3.33	
B	3.00	Represents achievement that is significantly above the level necessary to meet course requirements.
B-	2.67	
C+	2.33	
C	2.00	Represents achievement that meets the course requirements in every respect.
C-	1.67	
D+	1.33	
D	1.00	Represents achievement that is worthy of credit even though it fails fully to meet the course requirements.
S		Represents achievement that is satisfactory (equivalent to a C- or higher and meets or exceeds course requirements in every respect). The S does not carry grade points and is not included in GPA calculations, but the credits count toward the student's degree program if allowed by the department.
F or N..		Represents failure or no credit and indicates that coursework was completed but at an achievement level unworthy of credit, or was not completed and there was no agreement between the instructor and student

that the student would be awarded an I. Academic dishonesty is grounds for an F or N for the course. The F carries 0.00 grade points and is included in GPA calculations; the N does not carry grade points and is not included in GPA calculations.

I Incomplete, a temporary grade that indicates coursework has not been completed.

The instructor assigns an I when, due to *extraordinary* circumstances, the student was prevented from completing coursework on time. An I requires a written agreement between the instructor and student specifying the time and manner in which the student will complete the course requirements during the student's next term of enrollment.

For undergraduates and adult special students, work to make up an I must be submitted within 72 hours of the last final examination of the student's next term of enrollment; if not submitted by that time, in the sixth week of the next term the I will automatically change to an F (if A-F registration) or N (if S-N registration).

The instructor is expected to turn in the new grade within four weeks of the date work is submitted.

When an I is changed to another symbol, the I is removed from the record. Once an I has become an F or N, it may be converted to any other grade by petition of the instructor (or department if the instructor is unavailable) to the college.

K Indicates the course is still in progress and a grade cannot be assigned at the present time.

T Transfer, a prefix to the original grade that indicates credits transferred from another institution or from one University college or campus to another.

V Visitor, indicates registration as an auditor or visitor; does not carry credit or grade points.

W Withdrawal, indicates a student has officially withdrawn from a course. If a student withdraws from a course during the first two weeks of classes, that course registration is not recorded on the student's transcript. The W is recorded if the student withdraws from the course during the third through sixth week of class (second or third weeks of summer terms). Withdrawal in the seventh or later week of classes (fourth or later in summer terms) requires college approval.

Each student may, once during his or her undergraduate enrollment, withdraw from a course without college approval, and receive a W, at any time up to and including the last day of class for that course.

X Indicates a student may continue in a sequence course in which a grade cannot be determined until the full sequence of courses is completed. The instructor submits a grade for each X when the student completes the sequence.

The complete University Senate policy can be found on the Web at

www.umn.edu/usenate/policies/gradingpolicy.html.

All final examinations in the School of Dentistry will be given on the assigned date. No examinations will be permitted earlier than that date. Persons failing to take examinations at the appointed time and place may take the examinations at a later date with the course director's permission. The date and place of the makeup examination will be set by the course director. Excuses for missing the regularly scheduled examination must

be acceptable to the course director. Final examinations must be given no less than 48 hours or no more than two weeks following the last formal class meeting.

Confidentiality of Student Grades Under provisions of federal and state legislation, examination scores, course grades, and similar indicators of student academic progress are not public information. Accordingly, such information cannot be released or made public without written student permission, except for normal educational and administrative uses within the University.

Posting lists of examination scores or course grades, or returning test materials to students in ways which make it possible for students to obtain information about other students' scores or grades is inappropriate.

Of course, it is permissible to post grades or return graded materials using an identification number which cannot be associated with an individual student by others who view the materials. It is not permissible to leave blue books or other examination materials with students' names on them in halls or other public places for retrieval.

Catalog Use The information in this catalog and other University catalogs, publications, or announcements is subject to change without notice. University offices can provide current information about possible changes.

This publication is available in alternative formats on request. Contact the Office of Admissions, University of Minnesota, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/625-2008; e-mail admissions@tc.umn.edu).

Equal Opportunity The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

In adhering to this policy, the University abides by the Minnesota Human Rights Act, Minnesota Statute Ch. 363; by the Federal Civil Rights Act, 42 U.S.C. 2000e; by the requirements of Title IX of the Education Amendments of 1972; by Sections 503 and 504 of the Rehabilitation Act of 1973; by the Americans With Disabilities Act of 1990; by Executive Order 11246, as amended; by 38 U.S.C. 2012, the Vietnam Era Veterans Readjustment Assistance Act of 1972, as amended; and by other applicable statutes and regulations relating to equality of opportunity.

Inquiries regarding compliance may be directed to Julie Sweitzer, Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 419 Morrill Hall, 100 Church Street S.E., Minneapolis, MN 55455 (612/624-9547).

Access to Student Educational Records In accordance with regents' policy on access to student records, information about a student generally may not be released to a third party without the student's permission. (Exceptions under the law include state and federal educational and financial aid institutions.) The policy also permits students to review their educational records and to challenge the contents of those records.

Some student information—name, address, electronic (e-mail) address, telephone number, dates of enrollment and enrollment status (full time, part time, not enrolled, withdrawn and date of withdrawal), college and class, major, adviser, academic awards and honors received, and degrees earned—is considered public or directory information. Students may prevent the release of public information. To do so, they must notify the records office on their campus.

Students have the right to review their educational records and to challenge the contents of those records. The regents' policy is available for review on the Web at <www.umn.edu/tc/students/grades/privacy.html>, at 200 Fraser Hall, Minneapolis, and at records offices on other campuses of the University. Questions may be directed to the Office of the Registrar, 200 Fraser Hall (612/625-5333).

Immunization Students born after 1956 who take more than one University class are required under Minnesota law to submit an Immunization Record form.

The form, which is sent along with the official University admission letter, must be filled out and returned to Boynton Health Service within 45 days of the first term of enrollment in order for students to continue registering for classes at the University. Complete instructions accompany the form.

All dental health-care workers, including students, must provide evidence of a hepatitis vaccination or sign a waiver of vaccination form. Contact the director of Clinical Systems in 8-434 Malcolm Moos Health Sciences Tower for the waiver form.

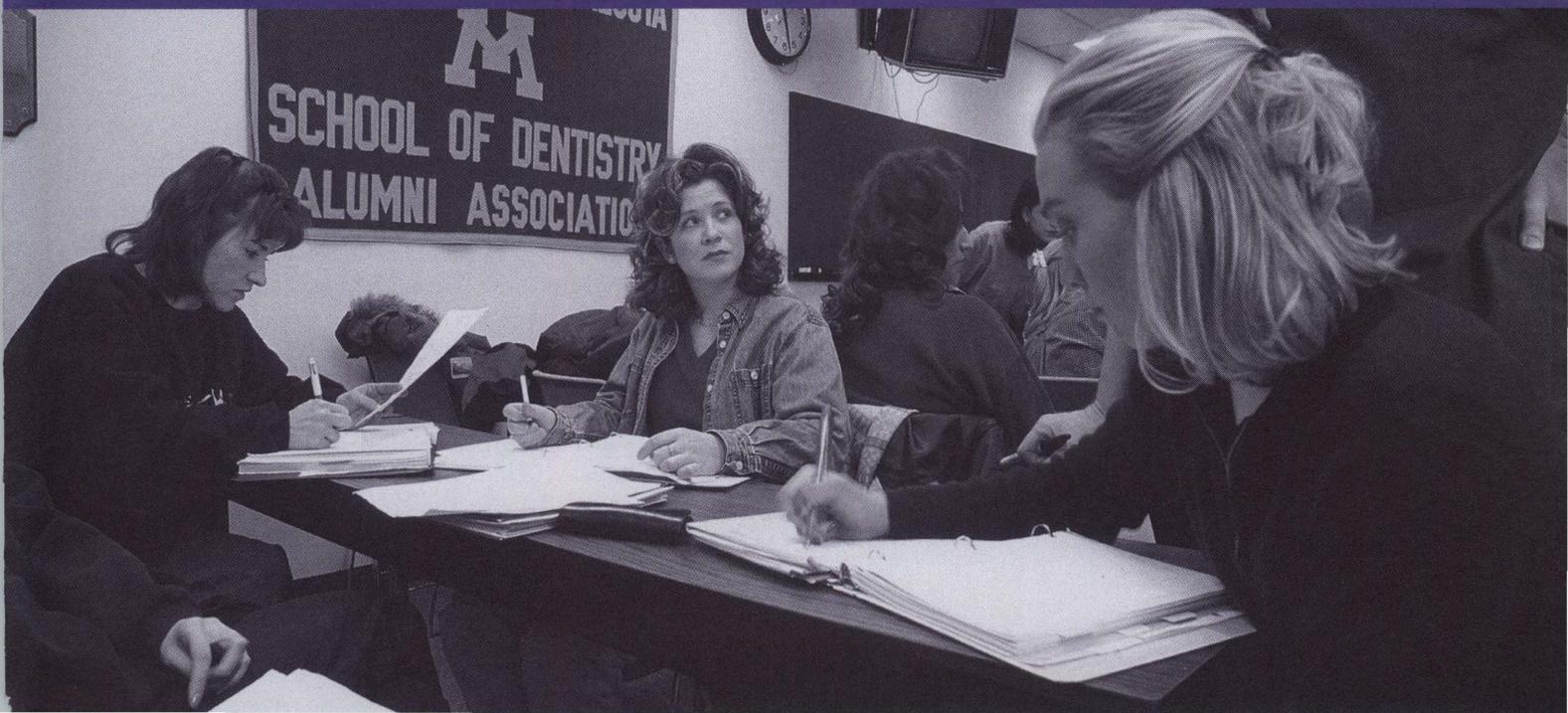
Extracurricular Events No extracurricular events requiring student participation may be scheduled from the beginning of study day to the end of finals week.

Exceptions to this policy may be granted by the Senate Committee on Educational Policy. The Senate advises all faculty that any exemption granted pursuant to this policy shall be honored and that students who are unable to complete course requirements during finals week shall be provided an alternative and timely opportunity to do so.

Smoke-Free Campus Policy Smoking is prohibited in all facilities of the University of Minnesota, Twin Cities campus except for designated private residence hall rooms.



BACHELOR OF SCIENCE
IN DENTAL HYGIENE



BACHELOR OF SCIENCE IN DENTAL HYGIENE

General Information

The School of Dentistry's mission is to educate dental and dental hygiene professionals; discover new knowledge, technology, and skills; and apply those discoveries to the dental and dental hygiene professions and the communities they serve.

The School of Dentistry celebrated its centennial in 1988. In its long history, the school has developed an international reputation for education, research, and service. The School of Dentistry's professional program in dental hygiene, established in 1919, has an illustrious record of achievement and innovation and is one of the country's premiere programs. It is fully accredited by the Commission on Dental Accreditation and is the only dental hygiene program in Minnesota that grants a baccalaureate degree and is affiliated with a school of dentistry.

The dental hygiene curriculum seeks to train students in a variety of dental hygiene roles and health care settings.

Dental hygienists are preventive oral health professionals who have graduated from an accredited dental hygiene program in an institution of higher education and are licensed by states to practice dental hygiene. They provide educational, clinical, research, administrative, consumer advocacy, change agent, and therapeutic services supporting total health through the promotion of optimal oral health.

Dental hygienists practice in settings such as private dental offices and clinics; federal, state, and local health departments or associated institutions; hospitals and long-term care facilities; school districts or departments of education; educational programs for dental, dental hygiene, and dental assisting students; private business or industry; correctional facilities; private and

public centers for pediatric, geriatric, and other groups or individuals with special needs; and health maintenance organizations.

The program emphasizes a strong commitment to community outreach and service, and to intellectual development and critical thinking. Graduates complete a baccalaureate degree that blends a solid dental hygiene education with the biological, behavioral, and social sciences; and the liberal arts.

Two program tracks are available, both leading to a B.S. degree in dental hygiene. The dental hygiene curriculum consists of the preprofessional program in the College of Liberal Arts (CLA), or its equivalent at some other regionally accredited institution, and the professional program in the School of Dentistry Division of Dental Hygiene.

The Division of Dental Hygiene also offers a baccalaureate degree completion program for graduates of accredited associate degree programs in dental hygiene who wish to earn a baccalaureate degree.

Admission Requirements

The Division of Dental Hygiene sets its standards and requirements for admission. A strong interest in the natural sciences, and the social and behavioral sciences is required. The division recommends that applicants have a genuine interest in human services and promoting public health and welfare.

Admission to the preprofessional program requires the student to meet the admissions criteria of individual colleges within the University and is subject to CLA's academic regulations or their equivalent at another institution. Admission to the preprofessional program does not guarantee admission to the professional program.

Admission to the professional program is competitive and occurs once a year for fall semester entry. Applications are accepted from December 1 of the desired year of entry until March 1. Applications received after the deadline are considered for the alternate list only.

Requirements for application include: high school graduation; ACT, PSAT, or SAT scores; transcripts of all high school and college courses; minimum 2.00 GPA (cumulative, preprofessional, and science coursework); and evidence of plans for completion of specified preprofessional coursework before proposed entry. Documentation indicating completion of all required preprofessional courses must be submitted to the Division of Dental Hygiene by August 15 of the year of proposed entry.

Preference is given to applicants who have completed the University of Minnesota's high school preparation requirements. If not completed before admission into the program, these requirements must be completed during the summers and before graduation.

Application Procedures

Students enrolled at the University apply by submitting an *Application for Change of College or Status* form to the University's Office of Admissions. Students attending other regionally accredited colleges and universities apply by submitting the *Application for Undergraduate Admission* at <<http://www.umn.edu/tc>> on the Web or to the Office of Admissions. Application forms and change of college forms are available from the Office of Admissions, University of Minnesota, 240 Williamson Hall, 231 Pillsbury Drive S.E., Minneapolis, MN 55455 (612/625-2006).

English Proficiency The Division of Dental Hygiene requires all applicants who are not native speakers of English to submit written evidence of either a Test of English as a Foreign Language (TOEFL) score or a Michigan English Language Assessment Battery (MELAB) score. A TOEFL score of at least 550 or a MELAB score of at least 80 is required. The TOEFL/MELAB must have been administered within two years before the date of application to the Division of Dental Hygiene. See page 24 of this catalog for information on registering to take either test.

Disability Accommodation Students admitted to the Division of Dental Hygiene and who require accommodation for disability should contact the Office of Disability Services at (612/626-7379) before the beginning of the semester of entry into the program.

Health Students who have been admitted to the program must submit documentation of immunizations required by the University and are strongly encouraged to have completed a physical assessment examination. Students must provide evidence of completion of a Hepatitis B vaccination and tuberculin test or chest X-ray during the first year of the program.

Criminal Background Study Dental hygiene students must undergo a criminal background study (Criminal Background Study Under State Law, Minnesota Vulnerable Adult Act, as amended 1995 and 1996), in order to have direct contact with patients and residents in hospitals, extended care facilities, and other health care facilities licensed by the Minnesota Department of Health. Failure to pass this background study is grounds for dismissal from the program.

Dental Hygiene Office

The Division of Dental Hygiene is located in 9-436 Malcolm Moos Health Sciences Tower, 515 Delaware Street S.E., Minneapolis, MN 55455 (612/625-9121; fax: 612/626-6096).

Student Support Program

The Division of Dental Hygiene provides a student support program to enhance the success of its students. Student performance is monitored and academic assistance is provided through tutoring and consultation. Counseling and advising are available through the division, the School of Dentistry counselor, University Counseling and Consulting Services, and faculty of the student's choosing.

Tuition and Fees

For information on current tuition, fees, and estimated total expenses, consult the *Class Schedule* or the estimated expense information provided by the Division of Dental Hygiene. The School of Dentistry provides virtually all dental instruments and supplies needed by students. This reduces costs for students and allows the school to maintain control over the sterility and maintenance of instruments and supplies used in the clinics. Students pay a usage fee.

Residence and Reciprocity

Residence To establish Minnesota residency for University of Minnesota purposes and thus be eligible

for resident admission standards and resident tuition rates, students must be able to show: 1) that they have resided in Minnesota continuously for at least one calendar year before the first day of the term for which they are seeking admission or resident tuition status and 2) that school attendance is not their primary reason for residing in this state.

For a residency application and more information, contact the University's residency adviser, 240 Williamson Hall, Minneapolis, MN 55455 (612/625-6330).

Reciprocity Qualified residents of Wisconsin, North Dakota, South Dakota, and Manitoba who attend the University of Minnesota-Twin Cities may apply for reciprocity privileges and pay a tuition rate equal or comparable to the Minnesota resident rate. Residents of Kansas, Michigan, Missouri, or Nebraska may be eligible to pay reduced tuition at the University of Minnesota-Twin Cities through the Midwest Student Exchange Program. Students who qualify pay 150 percent of Minnesota resident tuition. Application for reciprocity is separate from application for admission. Students who are nonresidents and have not applied or are not eligible for reciprocity will be charged nonresident tuition rates. For more information about reciprocity, call the University residency adviser at (612/625-6330).

Financial Aid

The Office of Scholarships and Financial Aid offers students financial assistance, including student employment and financial advising. Applications should be filed as soon after January 1 as possible. Students should apply for financial aid at the time they are applying for admission. Most aid is awarded on the basis of financial need and the availability of funds. For more information, contact the Office of Scholarships and Financial Aid, University of Minnesota, 210 Fraser Hall, 106 Pleasant Street S.E., Minneapolis, MN 55455 (612/624-1665 or toll-free, 800-400-UOFM).

The University of Minnesota Job Center posts job opportunities and refers qualified students for a variety of jobs on and off campus. The center is located in 170 Donhowe Building (612/624-8070).

Honors and Awards

The following awards are presented annually by the program faculty to selected dental hygiene students during the Honors Day program.

Louise C. Ball Scholarship—For selected juniors and seniors who are in good academic standing and have established financial need.

Ione M. Jackson Scholarship—Established to honor Ione M. Jackson, former program director; awarded to a qualified senior who wishes to become a dental hygiene educator.

Shirley Burgen Lichtwardt Memorial Scholarship—For selected juniors and seniors who are in good academic standing and have established financial need.

School of Dentistry Alumni Society Scholarship—For selected juniors and seniors who exhibit scholarship and leadership.

Sigma Phi Alpha, Eta Chapter Membership—National Dental Hygiene Honor Society established to recognize and honor excellence in scholarship, service, and character among graduating dental hygiene students. A maximum of 10 percent of each graduating class is selected for membership.

Sigma Phi Alpha Award—Awarded to the sophomore and junior who maintain the highest GPAs.

Procter & Gamble Excellence in Dental Hygiene Award—For a selected junior who exhibits scholarship, leadership, service, and contribution to the dental hygiene profession.

Naomi Rhode Dental Hygienist-Patient Relationship Award—For a selected senior who exhibits the most interest and skill in the dental hygienist-patient relationship.

Student Activities

Students in the professional program are represented by the Student Dental Hygiene Organization. In addition, members from each class are elected to serve on the School of Dentistry Council of Students. Students are also eligible for membership in the Student American Dental Hygienists' Association. Participation in Council for Health Interdisciplinary Participation (CHIP) activities is encouraged. See the Student Life section of this catalog for information on additional opportunities.

Graduation Requirements

The bachelor's degree will be recommended for students who have been formally admitted to the entry-level or the degree-completion program, who earn a minimum GPA of 2.00, and have completed all of the required work and the total number of credits specified for the curriculum.

Students with a minimum GPA of 3.75 in upper division courses are granted their degree "with distinction." Students with a minimum GPA of 3.90 in upper-division courses are granted their degree "with high distinction."

The Division of Dental Hygiene retains the right to revise, add, and/or delete dental hygiene preprofessional and professional courses and requirements. Students will complete requirements in effect at the time they enter/re-enter the program.

Licensure and Placement

Graduates are eligible for licensure after successfully completing a written National Board Dental Hygiene Examination and a clinical examination, both of which are given on the University's Minneapolis campus. The licensed dental hygienist practices in accordance with the requirements of individual state dental practice acts. In many states, a dental hygienist must participate in continuing education courses for license renewal.

The School of Dentistry provides placement assistance to dental hygiene graduates through the Office of Enrollment Management (612/625-7149) and the Dental Hygiene Office (612/625-9121).

Preprofessional Program

Admission Students must complete the preprofessional program in the College of Liberal Arts, or its equivalent at some other regionally accredited institution. For further information on the requirements, see the "Liberal Education Requirements" section of this catalog. Consult the University of Minnesota *Undergraduate Catalog* for complete information.

Admission to the preprofessional program does not ensure admission to the professional program.

Curriculum The following courses or their equivalents must be completed before entering the professional program (semester credits follow in parentheses). All preprofessional courses must be taken A-F. Biology and chemistry must be taken within the past five years.

CBN 3001—Human Anatomy (3)
Biol 1009—General Biology (4)
Chem 1011—General Principles of Chemistry (4)
EngC 1011 or 1013—University Writing and Critical Reading (4)
FScN 1112—Principles of Nutrition (3)
Psy 1001—Introduction to Psychology (4)
Soc 1001—Introduction to Sociology (3)
Spch 1101—Introduction to Public Speaking (3)
Stat 1001—Introduction to the Ideas of Statistics (3)

Liberal education requirements

* *Students are strongly encouraged to complete as many other liberal education requirements as possible before entering the program. Liberal education requirements not completed before entry must be completed during the sophomore and junior years and/or during summers while enrolled in the professional program. For more information on liberal education requirements, see page 37 of this catalog.*

Professional Program

Curriculum Students register in the Division of Dental Hygiene for the professional program. The follow-

ing courses must be completed to satisfy graduation requirements (semester credits follow in parentheses) and must be taken A-F unless otherwise noted. As part of the curriculum, dental hygiene students are required to participate in a number of off-campus Twin Cities and out-state Minnesota daily and week-long community clinics providing dental hygiene care to populations who typically do not have sufficient access to dental care.

Sophomore Year

Fall Semester

DH 2111—Dental Anatomy (2)
DH 2121—The Dental Hygiene Care Process: Clinical Application I (5)
DH 2132—Head and Neck Anatomy (1)
BioC 1001—Elementary Biochemistry (3)
MicB 4001—Microorganisms and Disease (2)

Spring Semester

DH 2211—Oral Histology and Embryology (2)
DH 2212—Dental Hygienist-Patient Relationship (1)
DH 2221—Periodontology (3)
DH 2222—The Dental Hygiene Care Process: Clinical Application II (3)
DH 2231—Cariology (2)
DH 2232—General and Oral Pathology (2)
Phsl 3051—Human Physiology (4)

Inter-Session

DH 2235—Oral and Maxillofacial Radiology (2)

Junior Year

Fall Semester

DH 3111—Biomaterials for the Dental Hygienist (3)
DH 3123—The Dental Hygiene Care Process: Clinical Application III (4)
DH 3126—Oral and Maxillofacial Radiology: Clinic I (0)
DH 3131—Periodontology I Lecture (1)
DH 3132—Applied Nutrition in Dental Hygiene Care (2)
DH 3134—Dental Hygiene Care for Special Needs Patients: I (2)
DH 3135—Oral and Maxillofacial Radiology: Theory, Principles and Radiographic Analysis (2)
Phcl 3001—Dental Therapeutics (2)

Spring Semester

DH 3221—Local Anesthesia and Pain Control (2)
DH 3224—The Dental Hygiene Care Process: Clinical Application IV (4)
DH 3227—Oral and Maxillofacial Radiology: Clinic II (0)
DH 3231—Research Methods in Dental Hygiene (3)
DH 3235—Dental Hygiene Care for Special Needs Patients: II (2)
PubH 3001—Personal and Community Health (2)

Senior Year

Fall Semester

DH 4125—The Dental Hygiene Care Process: Clinical Application V (6)
DH 4128—Oral and Maxillofacial Radiology: Clinic III (0)
DH 4131—Epidemiology, Prevention, Dental Public Health, and Community Outreach (3)
DH 4132—Ethics, Jurisprudence, and Principles of Practice (2)
DH 4137—Patient Management IV (PCG) (1)

Spring Semester

DH 4226—The Dental Hygiene Care Process: Clinical Application VI (5)
DH 4229—Oral and Maxillofacial Radiology: Clinic IV (3)
DH 4231—Periodontology III Lecture (1)
DH 4232—Community Outreach (1)
DH 4233—Legislative, Social, Economic, and Practice Factors in Oral Health (2)
DH 4238—Patient Management IV (PCG) (1)

Dental Hygiene (DH) Courses

DH 2111. Dental Anatomy. (2 cr)

All deciduous and permanent teeth, including tooth form, function, and relationship to oral health; calcification, eruption, and exfoliation patterns; ideal static occlusion, dental terminology, and tooth annotation systems. Lab includes identification and annotation of teeth and restoration, in wax, of portions of a typodont tooth.

DH 2121. The Dental Hygiene Care Process Clinical Application I. (5 cr)

Dental hygiene care process, assessment principles related to medical and oral health status, dental hygiene clinical procedures, and development of instrumentation skills.

DH 2132. Head and Neck Anatomy. (1 cr)

Anatomical structures of the head and neck as they relate to the practice of dental hygiene.

DH 2191. Independent Study. (1-4 cr [max 6 cr])

Individually arranged study, instruction, or research with faculty to meet student needs and interests.

DH 2211. Oral Histology and Embryology. (2 cr)

Study of the application of pathophysiology to specific organ systems and more extensively the mouth. Emphasis on the identification and management of selected oral conditions.

DH 2212. Dental Hygienist-Patient Relationship. (1 cr)

Oral hygiene techniques implemented through communication between patient and oral health care provider. Co-therapeutic problem solving.

DH 2221. Periodontology. (3 cr)

Periodontal diseases; etiology, assessment, and treatment options. Clinical experience in debridement, root planing, and placing periodontal dressings.

DH 2222. The Dental Hygiene Care Process Clinical Application II. (1-4 cr)

School of Dentistry clinical systems. Various medical and emergency conditions affecting patient care and preventive strategies for dental diseases. Skill development in fluoride, sealant, and air polishing techniques. Evaluation of products used in the treatment of dental caries and periodontal diseases.

DH 2231. Cariology. (2 cr)

Dental caries; etiology, pathology, and prevention.

DH 2232. General and Oral Pathology. (2 cr)

Circulatory disturbances, inflammation, and tumors with emphasis on diseases affecting the oral cavity, dental caries, periodontal diseases, oral neoplasias, and similar problems.

DH 2235. Oral and Maxillofacial Radiology. (2 cr)

General principles of radiology, radiation physics, dosimetry, biology, radiation protection, regulations and recent concepts of imaging.

DH 3111. Biomaterials for the Dental Hygienist. (3 cr)

Physical, chemical, and mechanical properties; indications and contraindications for use; manipulation techniques; biological considerations of materials used in dentistry; dental specialties.

DH 3123. The Dental Hygiene Care Process Clinical Application III. (1-4 cr)

Dental hygiene treatment planning, alternative instruments and advanced skills related to the implementation of dental hygiene care. Clinical experience in dental hygiene patient care.

DH 3126. Oral and Maxillofacial Radiology Clinic I. (0 cr)

Exposing patient radiographs, interpretation, panoramic and extraoral technique, and quality assurance procedures.

DH 3131. Periodontology I Lecture. (1 cr)

Periodontal anatomy; physiology and etiology of periodontal diseases. Clinical, histopathological, and pathogenesis of gingivitis and periodontitis, as well as the role of genetics, tobacco use, and systemic disorders. Preventive and therapeutic procedures associated with diagnosis, prognosis, treatment planning and initial phase of periodontal therapy.

DH 3132. Applied Nutrition in Dental Hygiene Care. (2 cr)

Principles of diet and nutrition applied to dental hygiene patient care; skills in dental dietary counseling.

DH 3134. Dental Hygiene Care for Special Needs Patients I. (2 cr)

Knowledge, skills, and attitudes required for providing dental hygiene care for pediatric/orthodontic and geriatric patients and individuals with disabilities.

DH 3135. Oral and Maxillofacial Radiology: Theory, Principles, and Radiographic Analysis. (2 cr)

Atomic radiations; characteristics, production, and control of radiographs; radiographic exposures; recent concepts; radiation biology, dosimetry, protection, and regulations. Discrepancies and technical errors in intraoral radiographs; radiographic anatomy; radiographic evidence of deviations from normal anatomic variations.

DH 3221. Local Anesthesia and Pain Management. (2 cr)

Concepts in the administration of local anesthesia, nitrous oxide-oxygen sedation, and other methods of pain management. Anatomy, physiology, pharmacology, patient assessment, indications and contraindications, selection of agents, complications, emergency management, and legal and ethical considerations. Lecture, lab, and clinic.

DH 3224. The Dental Hygiene Care Process Clinical Application IV. (1-4 cr)

Evaluation of dental hygiene patient care and assurance of quality in the dental hygiene profession. Clinical experience in dental hygiene patient care.

DH 3227. Oral and Maxillofacial Radiology Clinic II. (0 cr)

Exposing patient radiographs, interpretation, panoramic and extraoral technique, and quality assurance procedures.

DH 3231. Research Methods in Dental Hygiene. (3 cr)

Develop skills in scientific method and analyzing research findings; emphasis on types of research, problem selection, hypothesis writing, research planning and design, data collection and measuring techniques, analysis and interpretation of data, and writing the research proposal.

DH 3235. Dental Hygiene Care for Special Needs Patients II. (2 cr)

Knowledge, skills, and attitudes required for providing dental hygiene care for pediatric/orthodontic and geriatric patients and individuals with disabilities.

DH 4125. The Dental Hygiene Care Process Clinical Application V. (1-6 cr)

Adapt dental hygiene care process to meet preventive and treatment needs of traditional and special needs patients. Analyze patient preventive and treatment needs through case presentations. Discuss community service, cultural diversity, and family violence issues as well as new products, techniques, and research.

DH 4128. Oral and Maxillofacial Radiology Clinic III. (0 cr)

Exposing patient radiographs, interpretation, panoramic and extraoral technique, and quality assurance procedures.

DH 4131. Epidemiology, Prevention, Dental Public Health, and Community Outreach. (3 cr)

Epidemiological methods of investigation and patterns of oral diseases; scope and content of the specialty of dental public health; public health process as related to community setting.

DH 4132. Ethics, Jurisprudence, and Principles of Practice. (2 cr)

Career planning, team building, employment seeking, jurisprudence, and ethical decision making.

DH 4137. Patient Management IV (PCG). (1 cr)

Small-group, cooperative learning setting integrates dental and dental hygiene students. Apply patient care skills taught in other courses. Focus is on communication skills, patient management, teamwork, collegiality, and practice philosophy.

DH 4226. The Dental Hygiene Care Process Clinical Application VI. (1-5 cr)

Adapt dental hygiene care process to meet preventive and treatment needs of traditional and special needs patients. Analyze patient preventive and treatment needs through case presentations. Discuss community service, cultural diversity, and family violence issues as well as new products, techniques, and research.

DH 4229. Oral and Maxillofacial Radiology Clinic IV. (3 cr)

Exposing patient radiographs, interpretation, panoramic and extraoral technique, and quality assurance procedures.

DH 4231. Periodontology III Lecture. (1 cr)

Clinical procedures associated with surgical phase of periodontal therapy. Emphasis on evaluation of periodontal treatment as well as the maintenance phase and the relationship between periodontics and other dentistry disciplines. Roles of clinical research in periodontics.

DH 4232. Community Outreach. (1 cr)

Dental hygiene education in a variety of community settings.

DH 4233. Legislative, Social, Economic, and Practice Factors in Oral Health. (2 cr)

Current status and trends in dentistry in relation to health care promotion, regulation, and delivery and political and legislative process.

DH 4238. Patient Management IV (PCG). (1 cr)

Small-group, cooperative learning setting integrates dental and dental hygiene students. Apply patient care skills taught in other courses. Focus is on communication skills, patient management, teamwork, collegiality, and practice philosophy.

Faculty

Associate Professor

Kathleen J. Newell, R.D.H., Ph.D., director, Division of Dental Hygiene

Joy B. Osborn, R.D.H., M.A.

Jill L. Stoltenberg, R.D.H., M.A., clinic director

Lynda J. Young, R.D.H., M.A., director, Continuing Dental Education

Assistant Professor

Susan Kyle Dittmar, R.D.H., B.S., associate clinical specialist

Marilyn H. Ellefson, R.D.H., M.A., associate clinical specialist

UNIVERSITY OF MINNESOTA

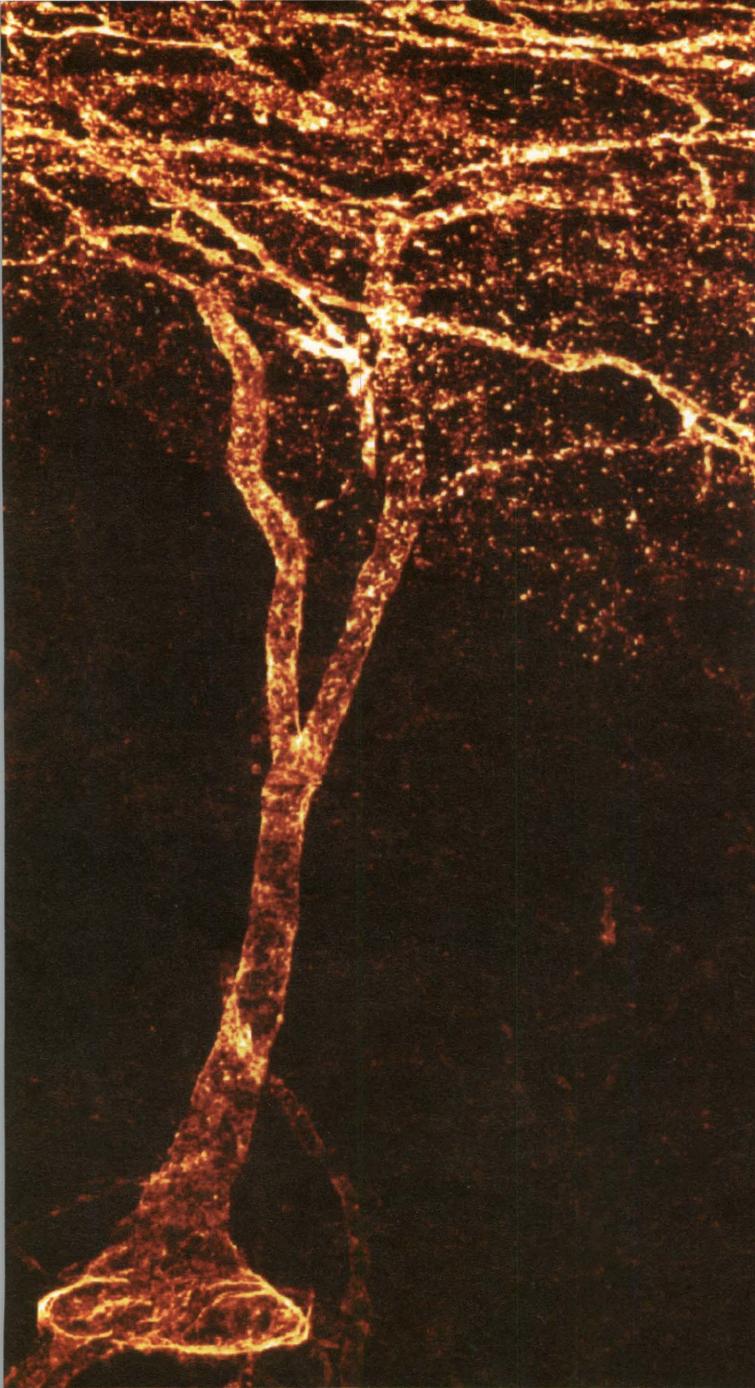
THE ADVANTAGE
OF THE UNIVERSITY
OF MINNESOTA...

...a major research university in the heart of a dynamic metropolitan area, where a large and diverse population base of just over 2 million supports dentistry clinical programs.

...supports the nation's largest health sciences center between the Mississippi River and the West Coast.

...includes the Malcolm Moos Health Sciences Tower, one of the nation's premier dental education facilities.





Dynamic research program...

- provides an opportunity for students to take projects from start to finish under the direction of a faculty mentor.
- furthers career tracks in education and research through the postdoctoral research/clinical program.

Breakthroughs in research now allow scientists to view a fluorescent confocal image of a stimulated neuron exhibiting a neurochemical signature of pain.

SCHOOL OF DENTISTRY



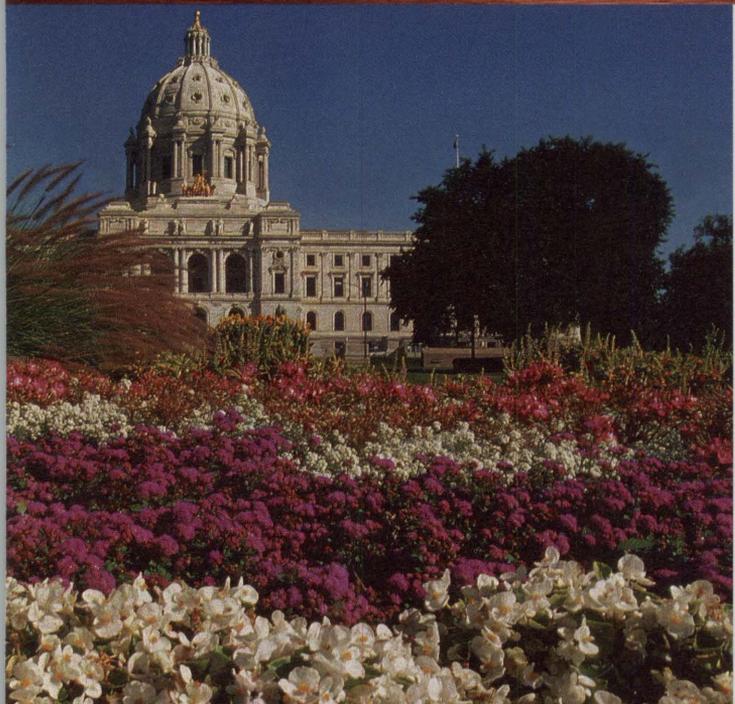
Small group learning...

- integrates basic and clinical sciences with patient care skills.
- develops interpersonal skills required to practice dentistry.
- models and promotes attitudes conducive to life-long learning.



*Comprehensive program
and specialty offerings...*

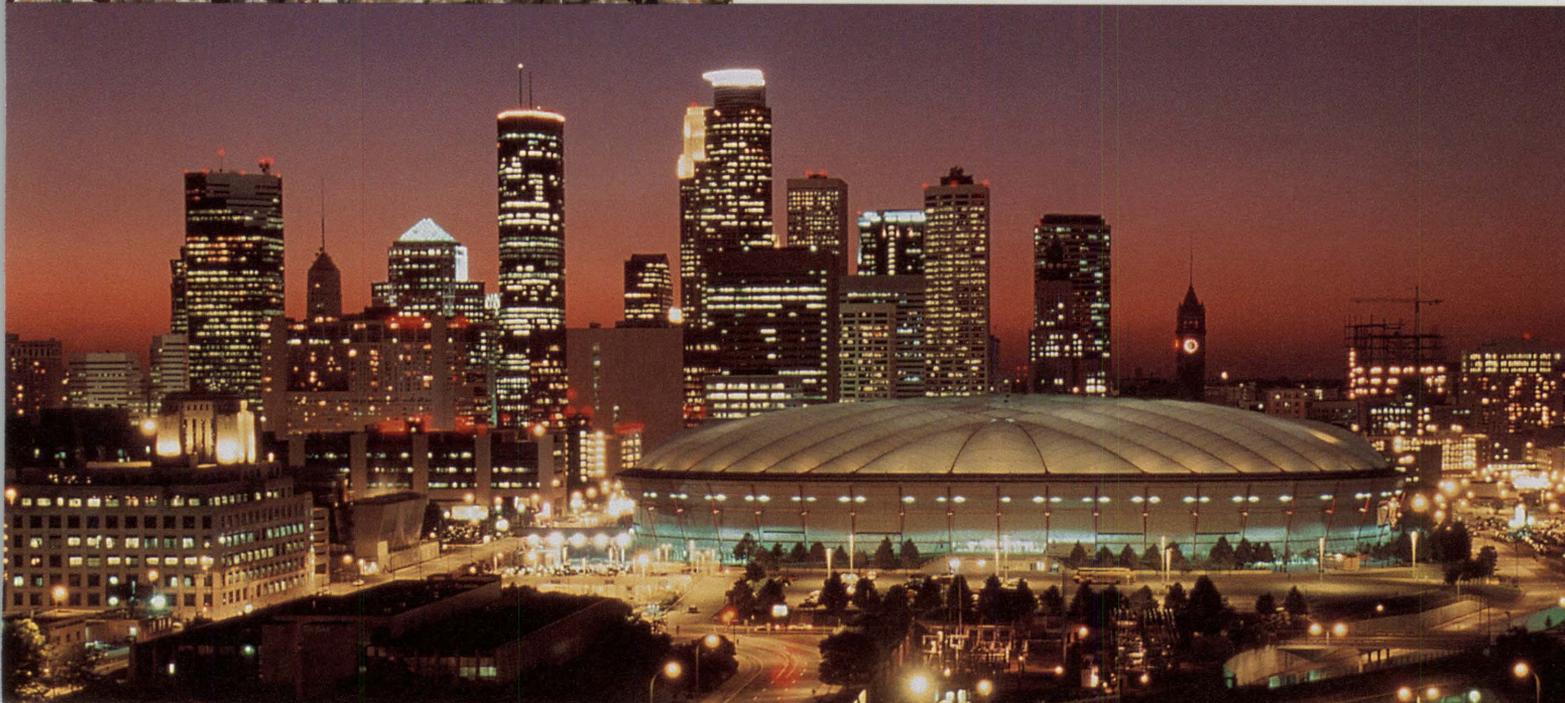
- provide students the opportunity to treat patients' comprehensive dental needs.
- have earned a strong reputation for educating fine clinicians and diagnosticians.
- offer programs including orthodontics, pediatric dentistry, oral and maxillofacial surgery, periodontics, prosthodontics, endodontics, and oral pathology.

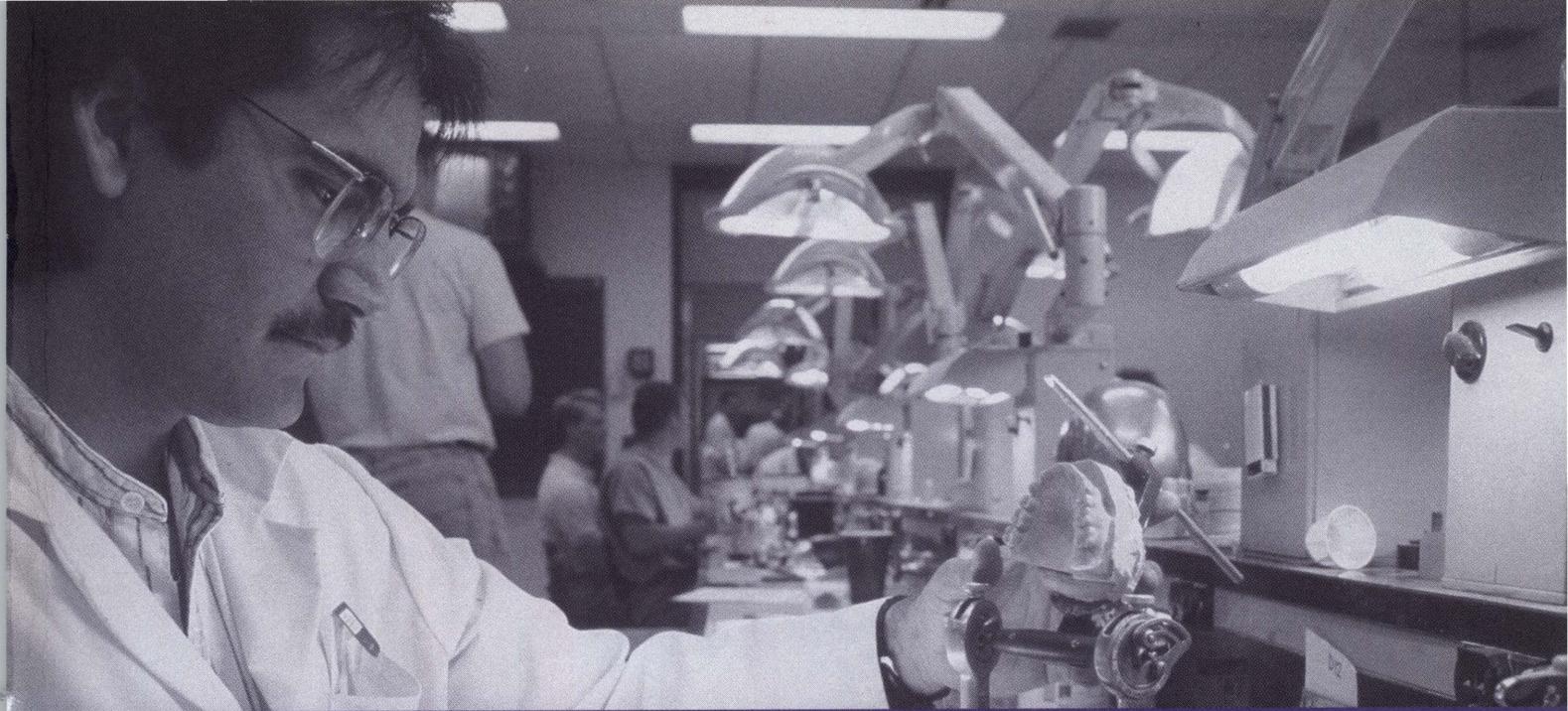


The Twin Cities...

- rank first on *Money* magazine's 1998 list of most desirable Midwestern cities.
- offer a wealth of cultural opportunities including major theatre, two world-class orchestras, and many musical, dance, film, and entertainment activities.
- sponsor several professional and college sports teams.
- feature a wide variety of outdoor recreational opportunities that change with the seasons.

This page: Minnesota Office of Tourism photos





DOCTOR OF DENTAL SURGERY



DOCTOR OF DENTAL SURGERY

Admission

The School of Dentistry is committed to improving educational and professional dental career opportunities for underrepresented minorities. To achieve this goal, the School of Dentistry publicizes dental career opportunities for prospective students, actively recruits qualified individuals, and provides a broad range of support services for currently enrolled minority students.

are encouraged to have a broad liberal education. *Note:* University liberal education requirements are not required for a D.D.S., but are recommended.

To help achieve the goals of a liberal education, the School of Dentistry prefers that all students distribute some part of their pre dental college coursework in areas of study other than those related to the biological and physical sciences. Pre dental students are urged to plan their coursework to satisfy the University's liberal education requirements.

An overall GPA of 2.50 is the minimum required for admission consideration. However, acceptance is on a competitive basis and an average well above this is usually necessary to be admitted.

General Requirements A first-year class is admitted to the dentistry program once a year in the fall, although students planning to enter dental school can begin their pre dental studies at any time.

High school credentials are not examined as part of the admission evaluation, but students anticipating dental careers should take a sound academic program in high school to prepare properly for the pre dental and dental programs. Coursework should include mathematics, chemistry, physics, biology, foreign languages, English, and social studies.

Courses and minimum credits required for admission are listed below. Required courses should be completed by the end of the regular academic year (spring semester) for enrollment the following fall. Completing required courses during the summer before the fall of enrollment is discouraged.

At least 87 semester credits of liberal arts courses from an officially accredited U.S. or Canadian college or university are required. A maximum of 64 semester credits from community or junior colleges will be applied to the 90 semester credits that are considered equivalent to 3 full years of college education, or to the 120 semester credits considered equivalent to a 4-year college program. A minimum of 113 semester credits is accepted for a 4-year classification. (One semester credit is equivalent to 1½ quarter credits.) While acceptance is based primarily on performance quality, applicants

Science coursework must include both lecture and lab instruction. Exemptions and advanced courses with fewer credits will be recognized, but transcripts or other academic records must clearly identify them and individual evaluations will be made. Courses in biology, chemistry, and physics may be considered outdated if taken more than five years before the time of application. Only under unusual circumstances will credits graded on a satisfactory-no credit evaluation system be accepted for required courses. Applicants may submit a maximum of the following percentage of S credits in elective courses: 10 percent of the minimum total credits for third-year students, and 15 percent of the mini-

imum total credits for fourth-year students. Incomplete grades are looked upon with disfavor by the Admissions Committee. Any incomplete and withdrawal grades in excess of one per academic year must be explained in the application.

Required Courses

1. *English*—8 semester credits. Two composition and one speech course preferred; or one composition course, one speech course, and one additional course in either literature or humanities that has a composition component.
2. *General Biology or Zoology*—8 semester credits. General zoology alone is acceptable, but not preferred.
3. *Physics*—8 semester credits. Complete basic course series required.
4. *General Principles of Chemistry*—8 semester credits. Complete basic course series required.
5. *Organic Chemistry*—8-9 semester credits. Course content must include study of both the aliphatic and aromatic series. One-semester courses generally do not have sufficient credits or depth to be acceptable.
6. *Biochemistry*—3 semester credits. Course should emphasize chemical structures and their reactions. Course must have organic chemistry as prerequisite.
7. *Mathematics*—A minimum of 3 semester credits in one of the following courses: college algebra or pre-calculus by college credit or college validation, computer science, or statistics.
8. *Applied Human Psychology*—At least 3 semester credits in general human psychology, child and adolescent human psychology, or business psychology.

Recommended Elective Courses Elective courses should be selected to achieve as broad and liberal an education as possible. However, students are encouraged to take the following preferred electives: art, biochemistry, cell biology, histology, human anatomy, microbiology, and physiology. These electives are especially important for persons who have completed only the minimum credits required (87 semester) to enter dental school. Additional electives can be chosen from among the following subjects: accounting, analytical chemistry, anthropology, biochemistry, business (practical courses), classics, comparative anatomy, economics, etymology, genetics, history, humanities, immunology, higher mathematics, logic, microscopic anatomy, political science, sociology, and a foreign language.

Individuals considering dental careers are expected to learn about dentistry through discussions with professionals in the field and through observation of, or participation in patient care and lab procedures in dental offices, dental labs, and dental school clinics and labs. Other expected orientations to dentistry include experiences involving fine manual dexterity, knowledge of health fields, and direct personal services to people on a one-to-one basis.

Early Admission To be considered for early admission, qualified applicants must complete at least one year of college, including science coursework. Applicants then meet with School of Dentistry Enrollment Management staff during or after their sophomore year to evaluate their qualifications. At that time, provisional acceptance may be granted to qualified applicants for the appropriate entering first-year class. Those participating in this program must meet the criteria listed below. For more information, contact the Office of Enrollment Management (612/625-7149).

Applicants must:

1. Maintain an overall GPA of 3.20 and complete 100 semester/150 quarter credits before enrollment.
2. Maintain a science GPA of 3.00.
3. Maintain at least a 3.00 GPA in any semester/quarter.
4. Earn satisfactory grades in three of the following electives: anatomy, biochemistry, cell biology, histology, microbiology, and physiology. Applicants are also strongly encouraged to take "Becoming a Master Student" or other courses offered by the Learning and Academic Skills Center.
5. Tour the School of Dentistry before matriculation on specified tour days or the school's Careers Day.
6. Have all application materials submitted to the School of Dentistry by October 1 of the year preceding matriculation.
7. Take the Dental Admission Test (DAT) and submit scores to the School of Dentistry no later than December 1 of the year preceding matriculation.

Required Entrance Tests All applicants must take the DAT prepared by the American Dental Association. The DAT is administered on computer at many testing centers throughout the United States and in several foreign countries. Many applicants take the test as soon as they have completed the required courses in biology, general chemistry, and organic chemistry.

Candidates must take the test and submit scores to the School of Dentistry by December 1 of the year before matriculation. Although the test generally measures aptitude rather than special knowledge, some specific questions are asked in biology, general chemistry, and organic chemistry; thus, a review of these subjects before taking the test is necessary. Applicants are encouraged to study test preparation materials such as those provided free of charge by the American Dental Association's Division of Educational Measurements. Application booklets describing the test, testing centers, and registration procedures are available from the School of Dentistry. These materials can also be obtained by writing to the Division of Educational Measurements, American Dental Association, 211 East Chicago Avenue, Chicago, IL 60611 (1-800-621-8099).

English Proficiency The School of Dentistry requires all applicants who are not native speakers of English to submit written evidence of either a Test of English as a Foreign Language (TOEFL) score or a Michigan English Language Assessment Battery (MELAB). Before July 1998, the TOEFL exam was offered in writing; as of July 1998, this exam is now available only in a computerized version and as a revised scoring format. The MELAB is only available in a written format. Required scores are as follows:

TOEFL		MELAB	
Previous Format (before July 1998):			
Total Score	587	Total Score	85
Pt. I (Oral Comprehension)	55	Part II (Listening)	85
Test of Written English (TWE)	5		
New Format (as of July 1998):			
Total Score	240		
Pt. I (Oral Comprehension)	21		
Test of Written English (TWE)	5		

To register for the TOEFL, contact the agency that handles TOEFL registration in your country or write to the Education Testing Service (Box 899, Princeton, NJ 08540 USA) at least 10 weeks before any scheduled test date. Students who are already in the Twin Cities area may register for the MELAB with the Minnesota English Center, University of Minnesota, 320 16th Avenue S.E., Minneapolis, MN 55455 (612/624-1503). To register for the MELAB outside the Twin Cities area, contact the English Language Institute, Testing and Certification Division, University of Michigan, Ann Arbor, MI 48109 USA, or call (313) 764-2416.

Residence Requirements First priority for admission is given to Minnesota residents, second to residents of neighboring states and provinces with which the University of Minnesota has special admission arrangements, and third to other nonresidents who have acceptable reasons for attending the University of Minnesota School of Dentistry.

Personal Interview Although candidates are not required to appear for an interview as part of the admission process, competitive applicants are interviewed and strongly encouraged to make a personal visit to the School of Dentistry to tour our state-of-the-art facilities and meet with our Office of Enrollment Management professionals during the application process. The address is Office of Enrollment Management, University of Minnesota, 15-106 Malcolm Moos Health Sciences Tower, 515 Delaware Street S.E., Minneapolis, MN 55455 (612/625-7149; fax: 612/626-2654).

Technical Standards

The University of Minnesota School of Dentistry is committed to the policy that all persons shall have equal access to its programs, facilities and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status or sexual orientation.

In adhering to this policy, the University abides by the Americans with Disabilities Act, Section 504 of the Rehabilitation Act of 1973, the Minnesota Human Rights Act and other applicable statutes and regulations relating to equality of opportunity. In this venue, the School of Dentistry encourages all qualified individuals to apply for admission to the Doctor of Dental Surgery (D.D.S.) program.

The University of Minnesota School of Dentistry recognizes the award of a Doctor of Dental Surgery degree carries with it the full authority of the institution and communicates to those who might seek the services of the bearer that he or she is competent to practice dentistry. The D.D.S. degree is a broad degree unique in that the graduate is prepared and upon licensure is allowed to practice all disciplines of the dental profession. This requires that the student in the curriculum acquire didactic knowledge as well as learning skills and attitudes essential to the profession and agreed upon by the faculty as requisite for the practice of dentistry. The student requires both cognitive and technical skills to negotiate this curriculum.

The School of Dentistry is mindful of the unique nature of the dental curriculum. Applicants must possess the skills and abilities that will allow them to successfully complete the course of study and receive the full benefit of the education. In the process, the student is required to direct or perform treatment on the patients of the University of Minnesota Dental Clinics and its affiliates. This includes the completion of treatment safely and within an acceptable amount of time. With this in mind, the student must be able to meet the following technical standards with or without reasonable accommodation.

Motor Skills

General: Candidates and students should have sufficient motor functions such that they are able to execute movements reasonably required to provide general care and treatment to patients within an acceptable amount of time.

Specific: It is required that a candidate possess the motor skills necessary to directly perform palpation, percussion, auscultation and other diagnostic maneuvers, basic laboratory tests, and diagnostic procedures. Such actions require coordination of both gross and fine muscular movements, equilibrium, and functional uses of the senses of touch and vision.

Specific: A candidate must be able to perform basic life support (including CPR), transfer and position disabled patients, physically restrain adults who lack motor control, and position and reposition self around patients. The candidate must be able to operate controls utilizing fine movements, operate high or low speed dental instruments within less than one millimeter, and utilize hand instrumentation (including scalpels for surgical procedures).

Sensory/Observation

General: A candidate must be able to acquire a defined level of required information as presented through demonstrations and experiences in the basic and dental sciences.

Specific: This includes, but is not limited to, information conveyed through physiologic and pharmacological demonstrations in animals; and microbiological cultures and microscopic images of microorganisms and tissues in normal and pathologic states. A candidate must be able to acquire information from written documents and to visualize information presented in images from paper, films, slides, video and computer. A candidate must be able to interpret radiographs (X-rays) and other graphic images, with or without the use of assistive devices. A candidate must have functional use of visual, auditory, and somatic sensation while being enhanced by the functional use of sensory modalities.

General: A candidate must be able to observe a patient accurately, at a distance and close at hand, and observe and appreciate non-verbal communications when performing dental operations or administering medications.

Specific: A candidate must be able to perform visual and tactile dental examinations and treatment including use of visual acuity, accommodation, and vision to discern differences and variations in color, shape, and general appearance between normal and abnormal, soft and hard

tissues. Use of tactile senses may be either direct palpation or indirect through instrumentation. A candidate must also possess the visual acuity to read charts, records, small print and handwritten notation, and distinguish variations in colors intra and extra orally.

Communication

General: A candidate must be able to communicate effectively and sensitively with patients and/or guardian; convey or exchange information at a level allowing development of a health history; identify problems presented; explain alternative solutions; and give directions during treatment and post-treatment. For effective patient treatment, the candidate must be able to communicate effectively and efficiently with all members of the health care team. Communication includes oral and written.

Specific: A candidate must have sufficient facility with English to: retrieve information from literature, computerized data bases and lectures and to communicate concepts on written exams and patient charts; elicit patient backgrounds; describe patient changes in moods, activity and posture; and coordinate patient care with all members of the health care team.

Cognitive

General: A candidate must be able to measure, calculate, reason, analyze, integrate, and synthesize.

Specific: A candidate must be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures. Problem solving, a critical skill demanded of a dentist, requires all of these intellectual abilities. A candidate must be able to perform these problem-solving skills in a timely fashion for effective patient treatment.

Behavioral

General: A candidate must possess the emotional health required for full utilization of his or her intellectual abilities, the exercise of good judgment, maintenance of patient confidentiality, the prompt completion of all responsibilities attendant to the diagnosis and care of patients, and the development of mature, sensitive, and effective relationships with patients.

Specific: A candidate recognizes the curriculum is physically, mentally and emotionally taxing. He or she must be able to tolerate demanding workloads, to include functioning effectively under stress, adapting to changing environments, displaying flexibility and learning to function in the face of uncertainties inherent in the clinical problems of patients. Compassion, integrity, concern for others, interpersonal skills, interest, and motivation are all personal qualities that will be assessed during the admission and educational processes. Further, a candidate must be able to manage apprehensive patients with a range of moods and behaviors in a tactful, congenial, personal matter so as not to alienate or antagonize them. A candidate must reasonably be expected to accept criticism and respond by appropriate modification of behavior.

The School of Dentistry's Technical Standards are required to successfully complete the School's competencies needed for graduation. These competencies are available upon request through the Associate Dean of Academic Affairs, University of Minnesota School of Dentistry, 15-238 Moos Tower, 515 Delaware Street SE, Minneapolis, MN 55455.

Criteria for D.D.S. Admissions Selections

1. **Quality of College Performance:** Grade point average (overall and science) is viewed in terms of consistency and improvement. But the quality of coursework and challenge per term is also considered. An overall GPA of 2.50 is the required minimum; however, much higher overall and science GPAs are usually needed to be considered competitive.
2. **Completion of Required Courses:** Official transcripts, sent directly to the School of Dentistry from the undergraduate institution, must verify sufficient credits and correct courses.
3. **Preferred Elective Coursework:** Students are encouraged to take the following preferred electives: art, cell biology, histology, human anatomy, microbiology, physiology, and statistics.
4. **Dental Admission Test (DAT):** This standardized exam consists of subtests in Biology, General Chemistry, Organic Chemistry, Reading Comprehension, Quantitative Reasoning and Perceptual Ability. Applicants must take the DAT by the fall before the year of matriculation. Students should score at or above the national average. Applicants must submit official score reports by December 1.
5. **Residency Status:** Preference is granted to Minnesota residents and residents of Manitoba, Montana, North Dakota, South Dakota, and Wisconsin, with whom the School of Dentistry has special admission arrangements. Consideration is also given to applicants from states other than those named above.
6. **Personal Statement in Application:** Why interested in dentistry? Other interests and special achievements.
7. **Recommendation Forms:** Students must provide three strong recommendations from employers, peers, college teachers, and/or friends.
8. **Orientation to Dentistry:** Students must document observation and participation in patient care.
9. **Demonstrated Interest in the University of Minnesota School of Dentistry:** Students must demonstrate their interest in the School of Dentistry through a personal visit or phone contact. Invitations for visits are extended to students based on the competitive nature of their applications.
10. **Personal Service to People on a One-to-One Basis:** Examples include involvement as a youth counselor, Big Brother/Sister, chairside dental assisting, hospital orderly, nurses aide, youth worker.
11. **Fine Dexterity Experiences:** Sculpture, drawing, painting.
12. **English Proficiency:** The School of Dentistry requires all applicants who are not native speakers of English

to submit written evidence of either a Test of English as a Foreign Language (TOEFL) score or a Michigan English Language Assessment Battery (MELAB) score.

Before July 1998, the TOEFL exam was offered in writing; as of July 1998, this exam is now available only in a computerized version and as a revised scoring format. The MELAB is only available in a written format. Required scores are as follows:

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New Format (as of July 1998):			
Total Score	240		
Pt. 1 (Oral Comprehension)	21		
Test of Written English (TWE)	5		

The TOEFL/MELAB must have been administered within 2 years preceding the date of application to the School of Dentistry. For more information, see the "English Proficiency" section of this catalog.

13. **English Proficiency:** The School of Dentistry requires all applicants who are not native speakers of English to submit written evidence of either a Test of English as a Foreign Language (TOEFL) score or a Michigan English Language Assessment Battery (MELAB) score.
14. **Foreign Applicants:** Foreign applicants who have been accepted must also guarantee sufficient funds to meet all their educational and personal expenses for the duration of their F-1 status at the University of Minnesota.
15. **Evaluation of Foreign Coursework:** A minimum of 87 semester credits or 130 quarter credits of liberal arts courses from an officially accredited U.S. or Canadian college or university is required. However, the School of Dentistry will consider foreign coursework from an accredited college or university, if supplied with official or certified transcripts, mark sheets, and degree statements from all institutions attended. Applicants must complete a minimum of 30 semester or 45 quarter credits from an accredited U.S. or Canadian college or university, which must include required prerequisite courses and/or upper division science courses. English courses taken from a foreign college or university do not fulfill the School of Dentistry English requirement for admission.

Note: These criteria are not necessarily ranked in order of importance.

Application Procedures

The School of Dentistry participates in the American Association of Dental Schools Application Service (AADSAS), a national agency that coordinates dental application services. All students seeking admission to the school must apply through this service, whether they are new applicants or reapplicants. AADSAS application materials may be obtained from AADSAS through an application request card, which is available from the Office of Enrollment Management. The AADSAS application materials can also be obtained directly from the School of Dentistry while supplies last. After the application materials are completed, they should be mailed to AADSAS, 1625 Massachusetts Avenue N.W., Suite 600, Washington, DC 20036-2212.

After the University of Minnesota has received the AADSAS application, each applicant will be sent a University of Minnesota School of Dentistry supplemental application to complete and a request for the following additional materials:

1. Official Transcripts: The School of Dentistry Admissions Committee will accept copies of all official transcripts submitted to AADSAS for initial screening and review of the candidate's application and subsequent selection. However, if admitted to the School of Dentistry, accepted applicants must submit an official copy of their transcripts from each college, university, or institution attended. Applicants with foreign coursework must submit an official transcript, along with a certified translation, prior to further consideration.
2. Recommendations: Candidates must submit three letters of reference directly to AADSAS. These recommendations should come from persons who have been very familiar with the applicant and the applicant's work within the last four years. Refer to the AADSAS booklet for additional details. Applicants are asked to limit the number of recommendations to three.
3. A \$55 application processing fee.
4. Test results: DAT scores, and TOEFL or MELAB scores (as required).

Applications should be filed between June 1 and January 1 of the academic year preceding the year of desired entry. The AADSAS application must be received by AADSAS before January 1; filing by October 1 is strongly recommended. The School of Dentistry

Admissions Committee reviews applications as they are received, giving highest priority to the most qualified applicants. Acceptance letters are sent between December 1 and March 1, or until the class is filled.

Tuition and Fees

The figures below are for the 1999-2000 academic year. These figures represent fee estimates for one academic year. Future increases are possible.

Tuition

Full-time students (per semester):

Residents	\$5,000.00
Nonresidents	8,630.00

Student Services Fee (per semester) 249.70

Instrument Usage Fee (per semester) 772.00

Precious Metals

First year	\$600.00
Second year	\$600.00

Books

First year	2,245.53
Second year	1,270.50
Third year	1,876.88
Fourth year	210.00

Other Fees See the current *Class Schedule* or contact the Office of Enrollment Management for information on late registration, late payment, installment payment, or other miscellaneous fees, and current information on the fees listed above.

Instrument Usage Fee (listed above) The School of Dentistry provides virtually all dental instruments and supplies needed by students. This reduces costs for students and allows the school to maintain control over the sterility and maintenance of the instruments and supplies used in the clinics. Students pay this usage fee. The fee per semester for the 1999-2000 academic year is \$772.00. First- and second-year students also are required to purchase a gold kit for \$600.00 during fall semester.

Financial Aid

Special loans, scholarships, fellowships, awards, and honors for qualified School of Dentistry students are sponsored by a variety of individuals, graduating classes, foundations, philanthropic groups, societies, and commercial firms. For more information, contact the Office

of Enrollment Management (612/625-7149) or the University's Office of Scholarships and Financial Aid (612/624-1665 or, toll-free, 1-800-400-UOFM).

The University of Minnesota Job Center, 170 Donhowe Building (612/624-8070), posts part-time and summer job openings, but the demands of the dentistry program make it difficult for students to devote much time to outside employment. A number of research fellowships are also available to School of Dentistry students.

Disability Services

Disability Services (DS) works to ensure access to courses, services, activities, employment and facilities for all students, faculty and staff with disabilities. Any student with a documented disability (e.g., physical, learning, psychiatric, vision, or hearing) who needs to arrange reasonable accommodations must contact Disability Services to be eligible for services.

The DS Health Science Liaison, Barbara Blacklock, will assist eligible students with: documentation of disability conditions, determination and implementation of reasonable accommodations, information, referral, consultation and training. All services are confidential. The Health Science Liaison is located in 30 Nicholson Hall and will move to the University of Minnesota Gateway Alumni Center in fall 1999 (612/626-1333—voice or TDD).

Criminal Background Check

Minnesota law requires that any person who provides services that involve direct contact with patients in health-care facilities licensed by the Minnesota Department of Health has a background study conducted by the state. The background study covers a wide range of criminal offenses, and agency findings related to maltreatments of children or vulnerable adults. An individual who is disqualified from having direct patient contact as a result of the background study, and whose disqualification is not set aside by the Commissioner of Health, will not be permitted to participate in a clinical placement in licensed care facilities. Failure to participate in a clinical placement program required by the academic program could result in ineligibility to qualify for a degree in these programs.

Student Affairs Support Program

The School of Dentistry provides a student support program that enhances the success of its students. Students' performance is monitored test-by-test and additional academic assistance through tutoring, seminars, and consultation is encouraged and provided for those in need. Third- and fourth-year dental students serve as individual and group tutors for students who need extra help. The Director of Enrollment Management, in conjunction with faculty, coordinates this aspect of the program. This tutoring program for students has met with much success.

In addition to specialized assistance for those in academic need, the Student Affairs Support Program encourages and promotes student study groups, a student mentorship program, and consultation and resources development with faculty. Individual counseling for psychological, family, financial, and social issues is also coordinated by the Director. Referrals for students to University resources and outside agencies are made on a case-by-case basis.

Special Opportunities

The University of Minnesota may offer resident tuition to higher ability, nonresident, nonreciprocity students. For more information, contact the Office of Enrollment Management (612/625-7149).

Oral and Maxillofacial Surgery Externships

The School of Dentistry provides assistance to students interested in off-site oral and maxillofacial surgery externships. Contact the Division of Oral and Maxillofacial Surgery (612/624-9959).

Scholarships and Awards

The School of Dentistry awards more than \$40,000 annually in high-ability incentive scholarships to qualified first-year dental students. All applicants' qualifications are reviewed by the School of Dentistry Admissions Committee and scholarships are awarded upon matriculation.

The school also offers many scholarships and awards to current dental students at its annual Honors Day programs. For more information about scholarships and awards, contact the School of Dentistry's Office of Enrollment Management (612/625-7149).

Retention and Promotion in the D.D.S. Curriculum

For purposes of retention and promotion in the School of Dentistry, the grades A, A-, B+, B, B-, C+, C, C-, D+, D, and S are passing grades. The grades F, N, and I are not passing grades. Students who receive I grades are expected to meet with the faculty immediately and make arrangements to complete the incomplete coursework. I grades that remain unresolved for more than one quarter may be changed to F at the discretion of the faculty.

To be promoted from one year to the next or to graduate, a student must have received passing grades in all required courses and earned a GPA of at least 2.00.

Any student with a grade point deficiency of 16 or more honor points at the end of any term will be dismissed from the School of Dentistry, but will be given the option of withdrawing. Honor points equal credits multiplied by grade value summed over all courses. An honor point deficiency exists when the total honor points are less than the sum of credits taken, multiplied by two. Students with grades of F or N or GPAs below 2.00 are placed on academic probation until the deficiencies are resolved.

The Office of Academic Affairs notifies students of academic deficiencies following scholastic standing committee meetings. Each scholastic standing committee makes decisions regarding retention and promotion of students in their classes. The chairs of the scholastic standing committees meet at the conclusion of each academic term to discuss students' academic progress.

Students repeating parts of the curriculum for whatever reason will have all grades calculated into their GPA.

Students dropped for low scholarship who have applied for readmission and have been accepted to repeat the entire curriculum of the first year will not have their previous grades calculated in their School of Dentistry GPA. However, these grades will remain on the official University of Minnesota transcript.

Students must receive passing grades in all clinically related courses before they may engage in primary patient care. For a third-year student to participate in any patient care/clinical activities, all first- and second-year courses must be satisfactorily completed with a minimum combined 2.00 GPA. No student can enter the third year without completing these requirements.

Students who have not completed clinical requirements by June of the fourth academic year must regis-

ter for and attend classes (clinical or otherwise) beginning with the summer session, until such requirements have been completed.

Leave of Absence A leave of absence from the School of Dentistry, not to exceed one year, may be granted to a student in good standing (not on scholastic probation and with no pending unsatisfactory grades). Application for a leave of absence is made at the Office of Academic Affairs, University of Minnesota, 15-234 Malcolm Moos Health Sciences Tower, 515 Delaware Street S.E., Minneapolis, MN 55455 (612/625-9945).

Extramural Clinical Experiences The School of Dentistry operates extramural clinics in Minnesota and elsewhere, for the purpose of exposing students to a diversity of populations, pathologies, and delivery systems. The Educational Policy Committee has approved a variety of elective extramural clinical experiences of from two to four weeks in length, as a formal part of the clinical training program in the dental curriculum. While this is not now a graduation requirement, it is anticipated that such a requirement will be approved as future opportunities for extramural clinical experiences are developed.

Graduation Requirements

Candidates for the doctor of dental surgery (D.D.S.) degree must have:

1. Complied with the rules and regulations of the School of Dentistry and the University of Minnesota.
2. Demonstrated sound moral character.
3. Received a passing grade in all required courses.
4. Completed all department clinical requirements.
5. Completed treatment of all clinical patients.
6. Completed full-time clinic attendance for a minimum of five semesters.
7. Returned all equipment and supplies assigned for their use.
8. Earned a minimum GPA of 2.00 (C).
9. Discharged all financial obligations to the University.
10. Been recommended by School of Dentistry faculty for the degree.

Dental Board Examinations

National Board Dental Examinations The National Board Dental Examinations are offered on the Minne-

apolis campus. Virtually all students elect to take these written examinations, which are recognized by all 53 licensing jurisdictions in the United States.

Clinical Board Examinations In addition to the national board written examinations, and before licensure, students must also pass clinical board examinations. These are predominantly regional examinations but some states do offer their own clinical examinations. At the University of Minnesota School of Dentistry, the Central Regional Dental Testing Service (CRDTS) offers a clinical board examination each June and December. Graduates wishing licensure in the 11 states that accept this examination take this board. Students also have the option of taking any other regional or state licensure examinations appropriate to the location in which they plan to practice.

A graduate of an undergraduate dental program in Canada or the United States will be granted the National Dental Examining Board of Canada certificate upon fulfillment of the following conditions:

1. Approval through accreditation of the undergraduate dental program by the Commission on Dental Accreditation of Canada or the ADA Commission on Dental Accreditation ("accredited program");
2. Proper application to the board; and
3. Successful completion of the Written and OSCE Examinations within one year of their graduation from an accredited program.
4. Graduates who do not successfully complete the NDEB Written and OSCE Examinations within one year of their graduation from an accredited program must successfully complete the Certification Process for Graduates of Non-Accredited Programs, which at present consists of the Written, Clinical I, II, and III Examinations.

For more information on the National Dental Examining Board of Canada examinations and to receive an application, contact the NDEB directly.

Placement

The School of Dentistry has provided placement assistance to graduates and Minnesota dentists since the early 1970s, and to Minnesota dental hygienists since the early 1980s. The program extends to those wishing to recruit associates or hygienists, or buy or sell a dental practice. Dentists, hygienists, and others interested in posting positions or in reviewing available positions may do so through the Office of Enrollment Management (612/626-0171).

Evaluation of Student Performance

Student progress and achievement are evaluated through written and oral examinations, practical examinations, observation of clinical performance, and course assignments. Students must attain a minimum GPA of 2.00 before graduation and also must complete many experiential requirements in a variety of disciplines. The University's grading systems of A-B-C-D-F (with pluses and minuses) and S-N are used. Refer to this catalog's section on grading policies for more information.

Faculty scholastic standing committees review grades and course progress at the end of each semester and make evaluations of each student's achievement and personal conduct. Recommendations on a student's status and promotion are made by these committees and are given to the Office of Academic Affairs. In general, a 2.00 GPA is required for promotion between academic years and required prerequisite coursework must be completed with a passing grade before students are permitted to begin patient care.

In addition to achieving academically, students are expected to learn professional behaviors, outlined in a student conduct code (see the *School of Dentistry Student Handbook*). Students can be dismissed from school for disciplinary as well as scholastic reasons.

Students must exercise their clinical responsibilities with discretion and display concern for the dignity and importance of patients.

Special Programs

Guarantee of Quality This program allows new graduates to enhance their knowledge of the practice of general dentistry as inexpensively as possible.

Up to 18 months after graduation, dentists may participate in this program in two ways. First, upon graduation new dentists receive vouchers that can be redeemed for applicable continuing dental education courses. To find out which courses are available or to register, call Continuing Dental Education (612/625-1418).

Second, new dentists may apply for admission as full-time adult special students for a maximum of one academic year of study. To sign up to audit any didactic or preclinical course listed in this catalog, call the Office of Enrollment Management (612/625-7149).

Reentry Program for Dentists Some dentists take time out from their professional careers. Before returning to dental practice, they may want to upgrade their knowledge and clinical or technological skills.

Dentists may enroll in more than 100 continuing dental education programs offered through the school each year. To find out which courses are available or to register, call Continuing Dental Education at (612/625-1418).

Dentists may enroll as adult special students in selected general dental practice courses. Special general dentistry clinical mentorships can also be arranged as needed. For more information about this program, call the Office of Enrollment Management (612/625-7149).

Program in Dentistry (D.D.S.)

First Year Coursework includes basic science courses on normal human tissues, including the molecular, cellular, and organ systems. Technical dental courses, analysis of dental literature, and ethical training applicable to the profession begin during the first year.

Fall Semester

CBN 6103—Human Histology	5
CBN 7501—General Gross Anatomy	3
CBN 7502—General Gross Anatomy	3
CBN 7508—General Gross Anatomy	3
Dent 5401—Dental Care Delivery, Epidemiology and Prevention ..	5
Dent 5411—Professional Problem Solving	0
Dent 5901—Oral Anatomy I	4
BioC 6011—Biochemistry for Dental Students I	3
<hr/>	26

Spring Semester

Dent 5301—Introduction to Oral Biology	2
Dent 5321—Introduction to Dental Biomaterials	2
Dent 5412—Professional Problem Solving	1
Dent 5601—Introduction to Clinical Preventive Dentistry	2
Dent 5902—Preclinical Prosthodontics Technique Lecture I	2
Dent 5903—Preclinical Prosthodontics Technique Lab I	3
BioC 6012—Biochemistry for Dental Students II	2
Phsl 6051—Systems Physiology	4
CBN 6110—Neuroscience for Dental Students	1
<hr/>	19

Summer Semester

Dent 5121—Physical Evaluation I	2
Dent 5904—Preclinical Prosthodontic Technique Lecture/Lab II	3
Dent 5315—Oral Histology and Embryology and Medical Genetics ..	3
<hr/>	5

Second Year Basic science courses focus on pathology. Technical dental courses culminate in treating patients.

Fall Semester

Dent 5101—Oral and Maxillofacial Radiology	3
Dent 5302—Topics in Dental Biochemistry	2
Dent 5303—Microbiology for Dental Students	6

Dent 5611—Periodontology I Lecture	1
Dent 5801—Operative Dentistry I	2
Dent 5802—Operative Dentistry I Lab	3
Dent 5905—Preclinical Prosthodontics Technique Lecture III	3
Dent 5906—Preclinical Prosthodontics Technique Lab III	6
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Spring Semester

Dent 5102—Patient Management and Radiographic Interpretation ..	2
Dent 5103—Oral Radiology Preclinical Lab I	0
Dent 5612—Periodontology Technique	1
Dent 5803—Operative Dentistry II	2
Dent 5804—Operative Dentistry II Lab	3
Dent 5907—Preclinical Prosthodontics Technique Lecture IV	3
Dent 5908—Preclinical Prosthodontics Technique Lab IV	6
LaMP 5100—General and Systemic Pathology for Dental Students ..	4
Phcl 5103—Pharmacology for Dental Students	4
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Summer Semester

Dent 5104—Oral Radiology Preclinical Lab II	1
Dent 5201—Pain and Anxiety Control	2
Dent 5322—Applied Dental Biomaterials	4
Dent 5441—Periodontology II/Patient Management II	3
Dent 5501—Pediatric Dentistry Pre-Clinic	2
Dent 5701—Intro to Endodontics Lecture and Laboratory	4
Dent 5805—Operative Dentistry III	2
Dent 5909—Preclinical Prosthodontics Technique Lecture V	2
Dent 5910—Preclinical Prosthodontics Technique Lab V	2
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Third Year Clinical science courses occupy much of the student's time. Correlations among basic, behavioral, and clinical sciences are established in the clinical setting.

Fall Semester

Dent 6111—Oral Radiology Clinic I	0
Dent 6122—Physical Evaluation II	3
Dent 6131—Oral Medicine/Diagnosis Clinic I	1
Dent 6202—Oral Surgery I	1
Dent 6316—Oral and Maxillofacial Pathology	2
Dent 6413—Professional Problem Solving	0
Dent 6431—Patient Management III (PCG)	1
Dent 6442—Treatment Planning Clinic I	1
Dent 6511—Pediatric Dentistry Clinic	0
Dent 6521—Orthodontics I	2
Dent 6621—Periodontology Clinic	2
Dent 6806—Operative Dentistry IV	2
Dent 6811—Operative Dentistry Clinic I	4
Dent 6911—Prosthodontics I	2
Dent 6912—Fixed Prosthodontics Clinic I	5
Dent 6921—Removable Prosthodontics Clinic I	5
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Spring Semester

Dent 6112—Oral Radiology Clinic II	0
Dent 6132—Oral Medicine/Diagnosis Clinic II	1
Dent 6203—Oral Surgery II	1
Dent 6317—Oral and Maxillofacial Pathology	2
Dent 6414—Professional Problem Solving	0
Dent 6421—The Management and Supervision of a Dental Practice ..	3
Dent 6432—Patient Management III (PCG)	1
Dent 6443—Treatment Planning Clinic II	1
Dent 6512—Pediatric Dentistry Clinic	0
Dent 6522—Orthodontics II	2
Dent 6613—Periodontology III Lecture	1

Dent 6622—Periodontology Clinic	2
Dent 6812—Operative Dentistry Clinic II	4
Dent 6913—Fixed Prosthodontics Clinic II	5
Dent 6922—Removable Prosthodontics Clinic II	5
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Summer Semester

Dent 6113—Oral Radiology Clinic III	2
Dent 6133—Oral Medicine/Diagnosis Clinic III	1
Dent 6205—Role of Dentistry in the Hospital Setting	1
Dent 6221—Oral and Maxillofacial Surgery Clinic Rotation	2
Dent 6323—Oral Biology: Fundamental and Applied	2
Dent 6401—Patient Care: Special Issues	2
Dent 6422—Current Legal Issues for the New Dentist	2
Dent 6433—Patient Management III (PCG)	1
Dent 6444—Treatment Planning Clinic III	1
Dent 6451—Dental Auxiliary Utilization (DAU) Clinic	0
Dent 6463—Emergency Clinic	0
Dent 6513—Pediatric Dentistry Clinic	0
Dent 6623—Periodontology Clinic	2
Dent 6813—Operative Dentistry Clinic III	3
Dent 6919—TMJ Disorders	1
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Fourth Year Clinical science training is completed and the transition from school to practice begins.

Fall Semester

Dent 6222—Oral and Maxillofacial Surgery Clinic Rotation	1
Dent 6231—Hospital Dentistry Clinic Rotation	1
Dent 6415—Professional Problem Solving	0
Dent 6434—Patient Management IV (PCG)	1
Dent 6452—Dentistry Auxiliary Utilization (DAU) Clinic	2
Dent 6464—Emergency Clinic	0
Dent 6514—Pediatric Dentistry Clinic	0
Dent 6445—Treatment Planning Clinic IV	1
Dent 6523—Orthodontic Clinic Rotation	0
Dent 6624—Periodontology Clinic	2
Dent 6711—Endodontics Clinic	2
Dent 6814—Operative Dentistry Clinic IV	4
Dent 6914—Fixed Prosthodontics Clinic III	5
Dent 6923—Removable Prosthodontics Clinic III	3
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Spring Semester

Dent 6223—Oral and Maxillofacial Surgery Clinic Rotation	1
Dent 6232—Hospital Dentistry Clinic Rotation	1
Dent 6416—Professional Problem Solving	1
Dent 6435—Patient Management IV (PCG)	1
Dent 6465—Emergency Clinic	2
Dent 6515—Pediatric Dentistry Clinic	5
Dent 6524—Orthodontic Clinic Rotation	1
Dent 6625—Periodontology Clinic	2
Dent 6712—Endodontic Clinic	2
Dent 6815—Operative Dentistry Clinic V	4
Dent 6915—Fixed Prosthodontics Clinic IV	5
Dent 6924—Removable Prosthodontics Clinic IV	3
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Dentistry Courses (Dent)

Department of Diagnostic/Surgical Sciences

Gary C. Anderson, D.D.S., M.S., chair

Division of Oral Medicine and Diagnosis

Professor Emeritus

James W. Little, D.M.D., M.S.D.

Associate Professor Emeritus

Gene P. Nystrom, D.D.S., M.P.H., M.S.Ed.

Associate Professor

Ramesh K. Kuba, B.D.S., M.S.D., oral and maxillofacial radiology, director

Nelson L. Rhodus, D.M.D., M.P.H., director

Dent 5101. Oral and Maxillofacial Radiology. (3 cr)

General principles of radiology, radiation physics, dosimetry, biology, radiation protection, regulations and recent concepts of imaging.

Dent 5102. Patient Management and Radiographic Interpretation. (2 cr)

Dental record keeping; documentation and analysis of medical and clinical findings; patient's rights and informed consent; radiographic interpretation techniques and documentation.

Dent 5103-5104. Oral Radiology Preclinical Lab I, II. (0 cr; 1 cr)

Preclinical demonstration-participation phases in radiographic technique using mounted human skulls.

Dent 5121. Physical Evaluation I. (2 cr)

General concepts of diagnosis and patient evaluation for use during the examination of patients in the various adult clinical programs in the School of Dentistry. Lectures and clinic rotations, assigned readings, lectures, seminars, and clinic rotations.

Dent 6111-6112-6113. Oral Radiology Clinic I-II-III. (0 cr; 0 cr; 2 cr)

Radiographing dental school patients, radiographic interpretations, panoramic and extraoral technique seminars and quality assurance procedures.

Dent 6122. Physical Evaluation II. (3 cr)

Lecture and case-based series designed to review physical evaluation of common medical-systemic problems of patient management and care based on principles of medical management, thorough evaluation, and recognition of the medically compromised patient. Includes acute management of medical emergencies in dental practice.

Dent 6131-6132-6133. Oral Medicine/Diagnosis Clinic I-II-III. (1 cr ea)

Comprehensive patient evaluation, including medical history and interview, general physical exam and evaluation, head and neck exam, intraoral exam, occlusion-TMJ exam, and periodontal, dental, and radiological exams to ensure proper diagnosis and treatment plan.

Division of Oral and Maxillofacial Surgery

Professor Emeritus

Mellor R. Holland, D.D.S., M.S.D.

Norman O. Holte, D.D.S., M.S.D.

Associate Professor

James Q. Swift, D.D.S., director

Assistant Professor

Noah A. Sandler, D.M.D., M.D.

Associate Clinical Dental Specialist

Christopher Bacsik, D.M.D.

Assistant Clinical Dental Specialist

Karl H. Andreasen, D.D.S.

Dent 5201. Pain and Anxiety Control. (2 cr)

An introduction to the didactic and clinical aspects of pain and anxiety control as pertains to the current practice of dentistry. Emphasis is placed on the use of local anesthetics and conscious sedation (nitrous oxide inhalation). Discussions will include patient evaluation, principles of conscious sedation and general anesthesia, special patient considerations, post-operative pain control, psychological aspects of pain, and chronic pain.

Dent 6202-6203. Oral and Maxillofacial Surgery I-II. (1 cr ea)

History and scope of oral and maxillofacial surgery. Basic medical assessment, management of the OMFS patient, and basic surgical principles.

Dent 6205. Role of Dentistry in the Hospital Setting. (1 cr)
Providing dental care in a hospital setting. Hospital organization, privileges, credentialing, chart entries, and records requirements, and operating room procedure and protocol.

Dent 6221-6222-6223. Oral and Maxillofacial Surgery Clinic Rotation. (2 cr; 2 cr; 1 cr)
Oral Surgery Clinic experience.

Division of Orthodontics

Professor

T. Michael Speidel, D.D.S., M.S.D., J.D.,
director and graduate program director

Assistant Professor

John P. Beyer, D.D.S.

Clinical Dental Specialist

Douglas Vayda, D.D.S., D.M.Sc.

Associate Clinical Dental Specialist

Patricia A. Vayda, D.M.D.

Dent 6521. Orthodontics I. (2 cr)
Factors contributing to normal and abnormal development of the deciduous, mixed, and permanent dentitions; craniofacial growth and development; biomechanics and construction of fixed and removable orthodontic appliances; examination and analysis of orthodontic patients.

Dent 6522. Orthodontics II. (2 cr)
Lectures examine clinical management of specific orthodontic problems; and principles and procedures in preventative, interceptive, and corrective orthodontics examined through case analysis and treatment planning. Lab covers practical applications of developing occlusion analysis; and fundamentals of orthodontic appliances.

Dent 6523-6524. Orthodontic Clinic Rotation. (1 cr total)
Diagnosis, treatment timing, and treatment objectives; skills required to perform orthodontic procedures.

TMJ/Orofacial Pain Program

Professor

James R. Friction, D.D.S., M.S., director

Associate Professor

Eric L. Schiffman, D.D.S., M.S.

Dent 6919. TMJ Disorders. (1 cr)
Diagnosis of TMJ and orofacial pain disorders. Treatment strategies for the most common TMJ disorders.

Department of Oral Sciences

William H. Douglas, B.D.S., M.S., Ph.D., interim chair

Professor Emeritus

Maurice W. Meyer, D.D.S., M.S.D., Ph.D.
Kathleen M. Keenan, M.S., Ph.D.
Bernard E. Reilly, Ph.D.

Professor

Dwight L. Anderson, M.S., Ph.D.
Jaroslav Cervenka, M.D., C.Sc.
Gregory R. Germaine, M.S., Ph.D.
Charles F. Schachtele, M.S., Ph.D.
Burton L. Shapiro, D.D.S., M.S.D., Ph.D.

Associate Professor

Robert H. Ophaug, Ph.D., graduate program director
Joel D. Rudney, M.A., M.S., Ph.D.
Keith Kajander, D.D.S., Ph.D.

Adjunct Associate Professor

Ambika Mathur, M.S., Ph.D.

Dent 5301. Introduction to Oral Biology. (2 cr)
Introduce the scientific foundation of dentistry. Oral microbiology, biochemistry, tissues, diseases, and pain will be related to clinical practice through lectures and discussions of current literature.

Dent 5302. Topics in Dental Biochemistry. (2 cr)
Biological, chemical, and biochemical phenomenon occurring in the oral cavity and the interrelationships between these phenomenon. Biological and chemical basis of dental caries and how saliva, dental plaque, and plaque fluid interact and impact on the caries process. Metabolic handling and anticaries mechanisms of fluoride.

Dent 5303. Microbiology for Dental Students. (6 cr)
General microbiology, bacterial pathogenesis, virology with specific emphasis on oral microbial ecology, dental caries and periodontal diseases. Evaluation of current literature will be done by student essays. Discussions are based on assigned literature and focus on methodology.

Dent 6323. Oral Biology: Fundamental and Applied. (2 cr)
Clinical topics from diverse dental specialties, with a strong basic scientific approach, using Internet and traditional audiovisual teaching resources.

Biomaterials Research Center

Professor Emeritus

Anna T. Hampel, D.D.S., M.S.D.

Professor

William H. Douglas, B.D.S., M.S., Ph.D., director
Edward C. Combe, Ph.D., D.Sc.

Associate Professor

Ralph DeLong, D.D.S., M.S.D., Ph.D.
Maria R. Pintado, M.P.H.

Assistant Professor

Tom W. Koriath, B.O.D., Cir. Dent., Ph.D.
Ching-Chang Ko, D.D.S., M.S., Ph.D.
Anthenunis Versluis, M.Sc., Ph.D.

Dent 5321. Introduction to Dental Biomaterials. (2 cr)
This introductory course includes ten laboratory sessions and ten lectures. In the laboratory class, students practice handling materials used in restorative dentistry and prosthodontics. Accompanying lectures provide a scientific foundation for selection and use of dentistry materials.

Dent 5322. Applied Dental Biomaterials. (4 cr)
Lectures on applications of dental materials, including areas of restorative dentistry, prosthodontics, orthodontics, and endodontics. Instruction in the scientific basis for selection and utilization of materials. Areas of current controversy, including replacement of traditional materials with new materials. Literature review seminars cover the evaluation principles for information sources on dental materials.

Division of Oral Pathology

Regents' Professor Emeritus

Robert J. Gorlin, D.D.S., M.S., D.Sc. (Hon) (Athens, Thessalonika)

Dean and Professor Emeritus

Richard P. Elzay, D.D.S., M.S.D.

Professor Emeritus

Heddie O. Sedano, D.D.S., Dr. Odont.

Professor

Robert A. Vickers, D.D.S., M.S.D., director

Assistant Professor

Ioannis G. Koutlas, D.D.S., M.S.
Sandra Meyers, D.M.D.

Dent 5315. Oral Histology and Embryology and Medical Genetics. (3 cr)
Embryologic development and histologic structure of tissues in the head, face, and mouth with emphasis on clinical correlations, principles of medical genetics, complex traits of the orofacial region, and genetic contributions to oral diseases.

Dent 6316-6317. Oral and Maxillofacial Pathology. (2 cr ea)
Recognizing, diagnosing, and managing non-neoplastic diseases with maxillofacial, oral, or dental manifestations. Clinical aspects of oral neoplasms and tumorous conditions.

Department of Preventive Sciences

Leslie V. Martens, D.D.S., M.P.H., chair

Division of Dental Hygiene

See Bachelor of Science in Dental Hygiene section of this catalog.

Division of Health Ecology

Professor

Muriel J. Bebeau, Ph.D.

David O. Born, Ph.D., director

Anthony J. DiAngelis, D.M.D., M.P.H.

Leslie V. Martens, D.D.S., M.P.H.

Associate Professor

Lester E. Block, D.D.S., M.P.H.

James R. Gambucci, D.D.S., M.P.H., program director for Advanced Education in General Dentistry and General Practice Residency Programs

Stephen K. Shuman, D.D.S., M.S., director of graduate studies and graduate program director for Oral Health Services for Older Adults

Michael A. Johnson, J.D.

Assistant Professor

Judith L. Marshall, D.D.S.

Clinical Dental Specialist

Kevin N. Nakagaki, D.D.S., General Practice Residency Program

Mary K. Owen, D.D.S., M.S.

Daniel E. Rose, D.D.S., director of dental extramural programs

Students are introduced to the basic principles of epidemiology and health assessment, role and practice of dentistry as a health care delivery system, and factors influencing the availability and use of health services and preventive oral health procedures and methods.

Dent 5401. Dental Care Delivery, Epidemiology and Prevention. (5 cr)

Introduction to epidemiology and scientific method to study and prevent disease. Public need and demand for dental services, variety of practices and personnel nationally and internationally.

Dent 5411-5412. Professional Problem Solving. (1 cr total)

Issues, rights, responsibilities, codes, and consequences in resolving recurrent ethical dilemmas of the student dentist.

Dent 5601. Introduction to Clinical Preventive Dentistry. (2 cr)

Clinical protocols, observation of patient care, assisting and preventive care.

Dent 6401. Patient Care: Special Issues. (2 cr)

Special care issues associated with particular types of patients. Recognition and management of patients in all age groups who are medically or mentally compromised or with other problems affecting dental care access and delivery.

Dent 6413-6414-6415-6416. Professional Problem Solving. (2 cr total)

Issues, rights, responsibilities, codes, and consequences in resolving recurrent ethical dilemmas of the student dentist.

Dent 6421. The Management and Supervision of a Dental Practice. (3 cr)

Skills in planning, organizing, leading, and controlling the clinical, business, and human aspects of dental practice.

Dent 6422. Current Legal Issues for the New Dentist. (2 cr)

Legal issues of professional regulation, associateships, purchasing and starting a dental practice, dental risk management, and contract law considerations.

Dent 6451-6452. Dental Auxiliary Utilization (DAU) Clinic. (2 cr total)

Skills in four-handed dentistry, emphasizing efficient use of chair-side dental assistants.

Dent 6463-6464-6465. Emergency Clinic. (2 cr total)

Treatment planning and providing emergency dental care.

Electives

Dent 6470. Health Ecology Elective. (1-10 cr)

Highly motivated students earn academic credit for activities in special-interest areas.

Dent 6480. Advanced General Dentistry Elective. (1-10 cr)

Block rotations of 2 to 10 weeks in selected special clinics and programs such as prisons, regional treatment centers, and migrant worker health-care programs.

Dent 6490. Health Ecology: Independent Study. (1-10 cr)

Program arranged with any health ecology faculty member.

Division of Pediatric Dentistry

Professor

John W. Brownbill, M.D.Sc., L.D.S., acting director

Karling T. Moller, M.A., Ph.D., director, Cleft Palate Program

Michael J. Till, D.D.S., M.S.D., Ph.D., dean

Associate Professor

John P. Conry, B.Dent.Sc., M.S. (LOA)

Thomas Beckman, D.D.S., M.S., M.S.D., interim graduate director

Clinical Dental Specialist

Gayathri Sambasivan, B.D.S., M.S.

Dent 5501. Pediatric Dentistry Pre-Clinic. (2 cr)

Physical, emotional, dental, and language development; diagnosis, prevention, and management of oral diseases in children.

Dent 6511-6512-6513-6514-6515. Pediatric Dentistry Clinic. (5 cr total)

Clinic-seminar program reviewing preventive and clinical topics and techniques. Survey of diagnosis, treatment planning, and clinical treatment of pediatric patients.

Electives

Dent 6591. Pediatric Dentistry Independent Study. (2 cr)

Independent projects or additional clinical experiences in pediatric dentistry.

Division of Periodontology

Dean and Professor Emeritus

Richard C. Oliver, D.D.S., M.S.

Erwin M. Schaffer, D.D.S., M.S.D.

Professor Emeritus

Carl L. Bandt, D.D.S., M.S.D., M.S.

Professor

Bashar Bakdash, D.D.S., M.P.H., M.S.D., director

Mark C. Herzberg, M.S., D.D.S., Ph.D.

Bruce L. Pihlstrom, D.D.S., M.S.

Larry F. Wolff, M.A., Ph.D., D.D.S.

Associate Professor

James E. Hinrichs, D.D.S., M.S., graduate program director

Bryan S. Michalowicz, D.D.S., M.S.

Assistant Professor

Georgia Majerus, B.S., R.D.H.

Clinical Dental Specialist

Jeffrey F. Carlson, D.D.S., M.S.

Eric E. Stafne, D.D.S., M.S.D.

Dent 5441. Periodontology II/Patient Management II. (3 cr)

Management of dental patients and development of comprehensive treatment plans. Case presentations focus on facilitating treatment planning within the dental school and exposing students to treatment planning in the private-practice setting.

Dent 5611. Periodontology I Lecture. (1 cr)

Periodontal anatomy; physiology and etiology of periodontal diseases. Clinical, histopathological, and pathogenesis of gingivitis and periodontitis, and the role of genetics, tobacco use, and systemic disorders. Preventive and therapeutic procedures of diagnosis, prognosis, treatment planning and initial phase of periodontal therapy.

Dent 5612. Periodontology Technique. (1 cr)

Presurgical procedures in Periodontics including the development of clinical skills need to examine, diagnose, prevent and treat the periodontal patient.

Dent 6613. Periodontology III Lecture. (1 cr)

Clinical procedures associated with surgical phase of periodontal therapy. Emphasis on evaluation of periodontal treatment and the maintenance phase, and the relationship between periodontics and other dentistry disciplines. Role of clinical research in periodontics.

Dent 6621-6622-6623-6624-6625. Periodontology Clinic. (10 cr total)

Nonsurgical and surgical treatment of periodontal diseases, evaluation of periodontal therapy, implementation of maintenance programs.

Department of Restorative Sciences

James R. Holtan, D.D.S., chair

Division of Endodontics

Professor Emeritus

James R. Jensen, D.D.S., M.S.D.

Assistant Professor

Walter Bowles, D.D.S., M.S., acting graduate program director

Assistant Clinical Dental Specialist

Donna M. Mattscheck, D.M.D.

Dent 5701. Introduction to Endodontics Lecture and Laboratory. (4 cr)

Study of morphology, physiology, and pathology of the human dental pulp and periradicular tissues.

Dent 6711-6712. Endodontic Clinic. (2 cr ea)

Clinical practice for endodontics.

Division of Operative Dentistry

Associate Professor

Gary L. Hill, D.D.S., M.S., director (LOA)

Thomas D. Larson, D.D.S., M.S.D.

Craig B. Phair, D.D.S., M.S.

Omar A. Zidan, B.D.S., H.D.D., M.S.D., Ph.D.

Assistant Professor

Gary H. Hildebrandt, D.D.S., M.S.

Clinical Dental Specialist

Chester J. Schultz, D.D.S., M.S.D., M.A., interim director

Edgar F. Ziegler, D.D.S.

Coordinator of Undergraduate Hospital Education

Charles F. Bungum, D.D.S.

Dent 5801. Operative Dentistry I. (2 cr)

Clinical cariology/risk assessment, control measures for the subclinical phase of dental caries. Treatment planning and methods of the mild to moderate phase of dental caries.

Dent 5802. Operative Dentistry I Lab. (3 cr)

Clinical cariology/risk assessment, control measures for the subclinical phase of dental caries. Treatment planning and methods of the mild to moderate phase of dental caries.

Dent 5803. Operative Dentistry II. (2 cr)

Diagnosis, treatment planning, and treatment of the moderate to severe phase of dental caries. Evaluation and rehabilitation of existing restorations, treatment of non-carious tooth structure loss, and esthetic alterations of teeth.

Dent 5804. Operative Dentistry II Lab. (3 cr)

Laboratory and clinical exercises in diagnosis, treatment planning, and treatment of the moderate to severe phase of dental caries. Evaluation and rehabilitation of existing restorations, treatment of non-carious tooth structure loss, and esthetic alterations of teeth.

Dent 5805. Operative Dentistry III. (3 cr)

Integration and application of skills and knowledge in areas of diagnosis, treatment planning, treatment planning, and treatment in a clinical setting.

Dent 6231-6232. Hospital Dentistry Clinic Rotation. (1 cr total)

Managing hospitalized patients, operating room protocol, patient admission and discharge, and ambulatory patients.

Dent 6806. Operative Dentistry IV. (2 cr)

Current concepts in data collection, design making, and treatment modalities in operative dentistry.

Dent 6811-6812-6813-6814-6815. Operative Dentistry Clinic. (19 cr total)

Clinical application of operative dentistry diagnosis, treatment planning, clinical judgment, and technical skills.

Division of Prosthodontics

Professor Emeritus

Harvey L. Colman, D.D.S., M.S.D.

James L. Donahue, D.D.S.

Richard J. Goodkind, D.M.D., M.S.D.

Robert Jeronimus, D.D.S.

Andrew T. Morstad, D.D.S., M.S.D.

Frederick W. Noble, D.D.S.

Hubert Serr, D.D.S.

Professor

Gary C. Anderson, D.D.S., M.S.,

chair, department of diagnostics/surgical sciences

James L. Baker, D.D.S., M.S.D., division director

James R. Holtan, D.D.S., chair, department of restorative sciences, and director, graduate prosthodontics

Paul S. Olin, D.D.S., M.S., associate dean for clinical systems

John K. Schulte, D.D.S., M.S.D., codirector, graduate prosthodontics

Assistant Professor

Mary Elizabeth Brosky, D.M.D.

Igor Pesun, D.D.S., M.S.

Clinical Dental Specialist

David J. Clay, D.D.S., M.S.D.

Associate Clinical Dental Specialist

Gary Cook, D.D.S., M.S.D.

Donna M. Hecker, D.D.S.,

director, maxillofacial prosthodontics/prosthetics

Marie Joycelyn Lua, M.S., D.M.D.

Assistant Clinical Dental Specialist

William Larson, D.D.S., M.S.

Dent 5901. Oral Anatomy I. (4 cr [max 4 cr])

Tooth morphology, nomenclature, classification, charting, calcification, and eruption sequences; mouth growth and development.

Dent 5902. Preclinical Prosthodontics Technique Lecture I. (2 cr)

Lecture topics on oral anatomy and fixed prosthodontic lab techniques and fundamentals of tooth preparation.

Dent 5903. Preclinical Prosthodontics Technique Lab I. (3 cr)

Demo of clinical and lab procedures.

Dent 5904. Preclinical Prosthodontic Technique Lecture/Laboratory II. (3 cr)

Lab techniques and fundamentals of tooth preparation.

Dent 5905-5907-5909. Preclinical Prosthodontic Technique Lecture III-IV-V.

(3 cr; 3 cr; 2 cr)

Second-year preclinical courses to include fixed, removable, and occlusion topics.

Dent 5906-5908-5910. Preclinical Prosthodontics Technique Lab III-IV-V. (6 cr; 6 cr; 2 cr)

Second-year preclinical courses include fixed, removable and occlusion topics.

Dent 6911. Prosthodontics I. (2 cr [max 2 cr])

Treatment planning for abutments, retainers, and pontics. Design principles for porcelain fused to metal restorations, pontic designs, occlusion.

Dent 6912-6913-6914-6915. Fixed Prosthodontics Clinic I-II-III-IV. (20 cr total)

Diagnosis, design, and construction of fixed prosthodontic cases.

Dent 6921-6922-6923-6924. Removable Prosthodontics Clinic I-II-III-IV. (16 cr total)

Clinical practice in complete and partial removable denture prosthodontics.

Program of Patient Management

Professor Emeritus

Ronald E. Geistfeld, D.D.S.

Clinical Dental Specialist

Richard T. Ford, D.D.S., M.A.

Clinical Assistant Dental Specialist

Richard D. Nadeau, D.D.S.

Dent 5441. Periodontology II/Patient Management II. (3 cr)

Management of dental patients and development of comprehensive treatment plans. Case presentations focus on facilitating treatment planning within the dental school and exposing students to treatment planning in the private-practice setting.

Dent 6431-6432-6433-6434-6435. Patient Management I, II, III, IV, V (PCG). (5 cr total)

Small group, cooperative learning setting that integrates dental and dental hygiene programs with patient-care skills taught in other courses. Emphasis on communication skills, patient management, teamwork, collegiality, and practice philosophy.

Dent 6442-6443-6444-6445. Treatment Planning Clinic I-II-III-IV. (4 cr total)

Develop initial plan from established database; make case presentation; develop final treatment plan, informed consent and appointment plan; make financial arrangements.

Contributing Departments

Biochemistry (BioC)

BioC 6011. Biochemistry for Dental Students. (3 cr)

Chemical properties, biosynthesis, catabolism, structure and function of biomolecules. Fundamental aspects of molecular biology and metabolic regulation.

BioC 6012. Biochemistry for Dental Students. (2 cr)

Survey of physiological biochemistry emphasizing processes that occur in humans, especially related to dentistry.

Cell Biology and Neuroanatomy (CBN)

CBN 6103. Human Histology. (3 cr)

Light and electron microscopic anatomy of tissues; study of organization of human organs with emphasis integrating structure and its functional relationship from the molecular level to organs.

CBN 6110. Neuroscience for Dental Students. (1 cr)

Structure and function of the central nervous system. Correlation between morphology and physiology.

CBN 7501. General Gross Anatomy. (3 cr)

A complete, detailed dissection of both extremities is required. Lab exams held at predetermined intervals.

CBN 7502. General Gross Anatomy. (3 cr)

A complete, detailed dissection of both head and neck is required. Lab exams held at predetermined intervals.

CBN 7508. General Gross Anatomy. (3 cr)

A complete, detailed dissection of the thorax is required. Lab exams held at predetermined intervals.

Laboratory Medicine and Pathology (LaMP)

LaMP 5100. Laboratory Medicine and Pathology. (4 cr)

Causes, courses, mechanisms and outcomes of disease. Required as preparation for clinical dental practice and oral pathology.

Pharmacology (Phcl)

Phcl 5103. Pharmacology. (3 cr)

Pharmacologic principles and actions of drugs.

Physiology (Phsl)

Phsl 6051. Systems Physiology. (4 cr)

Subject material is at the molecular, cellular, and organ level. General physiology, endocrine, circulatory, respiratory, digestive, energy metabolism, and renal physiology. Topics emphasize homeostasis and basic regulatory aspects of the physiological processes of the organ systems.

The school's Dental Research Center for Biomaterials and Biomechanics is on the leading edge of technology. Many students take advantage of opportunities to work with researchers here.



Liberal Education Requirements

The following requirements apply to undergraduate students enrolling at the Twin Cities campus fall 1999 or later.

A liberal education introduces students to the modes of inquiry and subject matter of the major branches of knowledge, including the factual information and theoretical or artistic constructs that form their foundations; the “ways of knowing” (i.e., the kinds of questions asked and ways in which insight, knowledge, and data are acquired and used); the changes over time of their central ideas or expressive forms; and the interrelationships among them and human society in general. To these ends, study by all undergraduate students on the Twin Cities campus is guided by a common framework.

The Diversified Core Curriculum

Physical and Biological Sciences—A minimum of two courses totaling at least 8 credits, including one course in physical science with a laboratory or field experience, and one course in biological science with a laboratory or field experience.

Social Sciences and Humanities—A minimum of 15 credits, distributed as follows:

Social Science—At least 6 credits.

Humanities—At least 6 credits, including one course in literature and one course in “other humanities.” (The new “other humanities” category includes all courses in the former categories of philosophy, visual or performing arts, and other humanities or arts).

Historical Perspective—At least 3 credits. A course fulfilling the historical perspective requirement will also apply toward the social science core requirement or the humanities core requirement, but the course may not also fulfill a designated theme.

Mathematical Thinking—One course of at least 3 credits.

The Designated Themes of Liberal Education

The designated themes of liberal education offer a dimension to liberal learning that complements the diversified core curriculum. Each of the themes focuses on an issue of compelling importance to the nation and the world, the understanding of which is informed by many disciplines and interdisciplinary fields of knowledge.

Requirement: One course of at least 3 credits in each of the following:

- Environment
- International perspectives
- Cultural diversity
- Citizenship and public ethics

Guidelines for courses that fulfill multiple requirements:

A course in the physical and biological sciences core or mathematical thinking core may fulfill at most one core requirement and one designated theme.

A course in the social sciences core or the humanities core that does not carry the historical perspective designation may fulfill at most one core requirement and one designated theme. A course that fulfills the historical perspective requirement may not fulfill a designated theme.

A course that does not fulfill any core requirement may fulfill no more than two designated themes simultaneously.

Each semester, the *Class Schedule* will publish the requirements and list all courses that satisfy them. In addition, the *Class Schedule* will list which of these courses are offered that semester and which are tentatively scheduled for the subsequent terms during the academic year.

Writing Requirement

This requirement is effective fall 1999 for freshmen, fall 2001 for transfers. One or two first year writing courses are required, depending on the student’s college of enrollment. Four writing intensive courses are required, one of which must be an upper division writing intensive course in the major.

Minnesota Transfer Curriculum

If students complete the Minnesota Transfer Curriculum at any participating Minnesota college or university, they fulfill the University’s Twin Cities campus liberal education requirements. However, students will still need to complete a portion of the writing requirements. College advising offices have information about these requirements. For more information on using transfer credits for the liberal education requirements, contact the Office of Admissions (612/625-2008).

RESOURCE GUIDE

School of Dentistry and Division of Dental Hygiene Offices

School of Dentistry Home page
<<http://www.umn.edu/dental>>

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Recruitment coordinator
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Dr. Les Martens
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Restorative Sciences
Dr. James Holtan
Chair
9-176 Moos Tower
612/565-5650
holta001@tc.umn.edu

School of Dentistry Resources

Equal Opportunity/Affirmative Action
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15-106 Moos Tower
612/626-0627
johns016@tc.umn.edu

Office of Student Financial Aid
Mr. Rockne Bergman
2-693 Moos Tower
612/624-1665
r-berg@maroon.tc.umn.edu

Student Affairs Support Program
Ms. Gale Shea
Learning and
academic skills assistance
115-106 Moos Tower
612/625-0612
sheax001@maroon.tc.umn.edu

*Multicultural Institute of the Academic
Health Center*
Ms. Jaki Cottingham-Zierdt
Director
1-125 Moos Tower
612/624-9400
cotti001@maroon.tc.umn.edu

University Resources

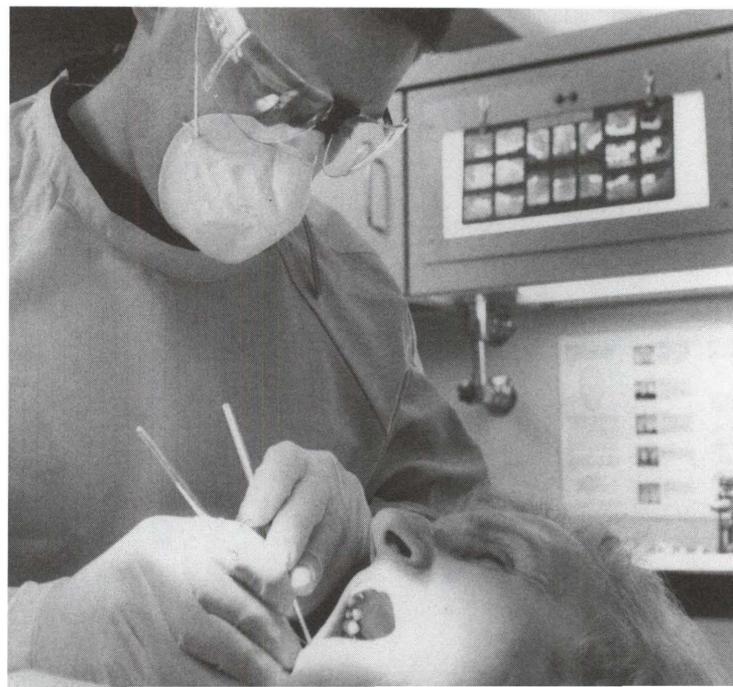
Boynnton Health Service
410 Church St. S.E., Minneapolis
612/625-8400

Disability Services
30 Nicholson Hall
612/626-1333, voice or TTY

Housing & Residential Life
Comstock Hall-East
612/624-2994

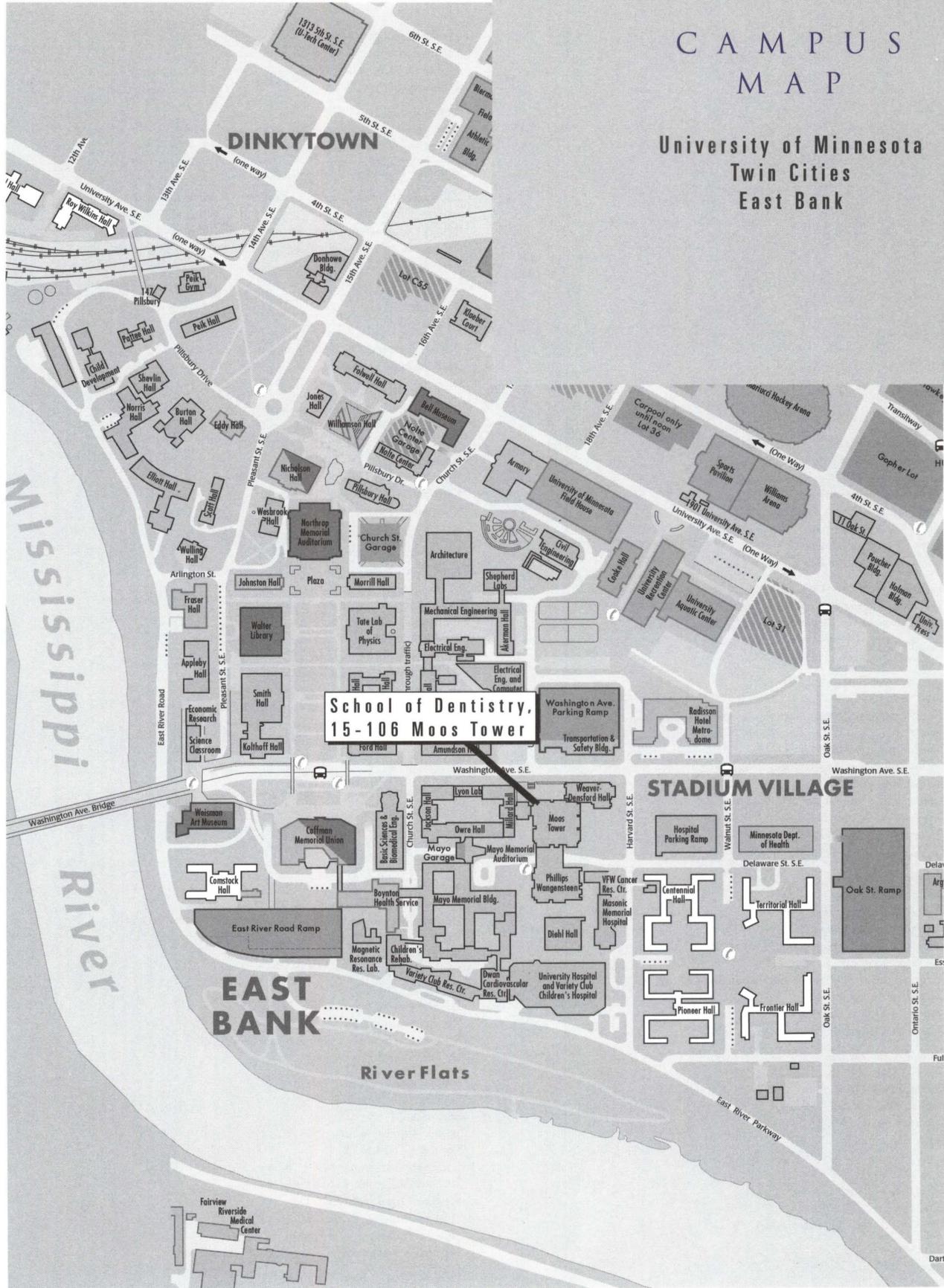
Parking and Transportation Services
300 Transportation
and Safety Building
612/626-PARK

*The School of Dentistry has established a strong reputation
for producing excellent clinicians and diagnosticians.*



CAMPUS MAP

University of Minnesota
Twin Cities
East Bank



School of Dentistry,
15-106 Moos Tower

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