Oral Science

Director
- Christopher Squier (Oral Pathology, Radiology, and Medicine/International Programs)

Graduate degrees: M.S. in oral science; Ph.D. in oral science
Web site: http://www.dentistry.uiowa.edu/

Graduate Programs of Study
- Master of Science in oral science
- Doctor of Philosophy in oral science

Graduate programs in oral science require that students complete courses from a core curriculum and conduct independent research leading to a thesis. The programs prepare graduates for careers in teaching and research. Students must enroll in a professional certificate program offered by a College of Dentistry department in order to enroll in the Master of Science program in oral science. The following departments offer their certificate students the opportunity to earn M.S. degrees in oral science: Endodontics, Prosthodontics, Operative Dentistry, Periodontics, and Oral Pathology, Radiology, and Medicine.

Master of Science
The Master of Science program in oral science requires a minimum of 30 s.h. of graduate credit, including 21 s.h. of course work, 9 s.h. of independent research leading to a thesis, and a final examination. M.S. students must spend at least two years in full-time residence at the University of Iowa.

Students pursuing the M.S. normally must be enrolled in a clinical specialty training program offered by a College of Dentistry department. Students should complete the M.S. and the clinical specialty training program in three years of study.

Doctor of Philosophy
The Doctor of Philosophy program in oral science requires a minimum of 72 s.h. of graduate credit, including advanced course work and original research that culminates in the successful defense of a dissertation. Students must pass a comprehensive examination, prepare and gain approval of a research project, and complete and successfully defend a dissertation that describes the results of their research. Completion of the program usually requires at least four years of full-time study.

Admission
Applicants to the M.S. and Ph.D. programs must meet the admission requirements of the Graduate College. Applicants whose first language is not English must score at least 550 (paper-based) or at least 81 (Internet-based) on the Test of English as a Foreign Language (TOEFL); they also may be asked to take the Test of Spoken English.

Programs normally begin July 1 each year.

Applicants to the Ph.D. program are asked to submit a statement describing past research experience and current research interests, and stating how completion of the Ph.D. program fits their career goals.

A personal interview may be requested for either program.

Courses

**ORSC:5200 Seminars in Dental Research** 0-1 s.h.

**ORSC:5210 Dental Sciences Research Methodology** 0-2 s.h.
Practical, experimental procedures in dental research; literature and design; writing of research protocols. Offered summer session.

**ORSC:5212 Statistical Methods for Dental Research** 0-3 s.h.
Descriptive methods, elementary probability, distributions, populations and samples, methods for analyzing percentage data and paired and unpaired measurement data, regression, correlation, and analysis of variance.

**ORSC:5215 Research Design in Dentistry** 0-2 s.h.
Types of studies used in dentistry; design validity; sampling methodologies; major descriptive and experimental designs used in dental research; application of statistical tests to these designs. Offered spring semester.

**ORSC:5220 Pathophysiology of Skin and Oral Mucosa** 0-2 s.h.
Biology of skin, oral mucosa; changes in behavior of the tissues in varied physiological, pathological conditions. Offered spring semesters of even years. Prerequisites: ORSC:5210.

**ORSC:5240 Pathophysiology of the Pulp-Dentin Complex** 0-3 s.h.
Biology of tissue; emphasis on pathological changes. Offered spring semesters of even years. Prerequisites: ORSC:5210.

**ORSC:5250 Current Concepts of Cariology** 0-2 s.h.
Etiology of dental caries; pathogenesis, development of preventive measures. Offered spring semesters of odd years. Prerequisites: ORSC:5210.

**ORSC:5260 Bone and Tooth Support Structure and Implants** 0-2 s.h.
Biology of bone and periodontal structures; biologic basis for therapeutic use of dental implants. Offered fall semesters of odd years.

**ORSC:5275 Oral Microbiology and Immunology** 0-2 s.h.
Principles of microbiology and immunology, aspects of microbial community development in the oral cavity, basic concepts of host/parasite interactions related to development of oral diseases; biological, immunological, and clinical manifestations induced by major oral pathogens. Offered spring semesters of odd years. Requirements: microbiology, biochemistry, and biology. Recommendations: immunology.
ORSC:5280 Advanced Dental Therapeutics  0-1 s.h.
Antimicrobial, analgesic, related therapies; emphasis
on drug/drug interactions, dental implications of chronic
cardiovascular and central nervous system medications.
Offered fall semesters.

ORSC:5600 Research in Oral Science  arr.
Thesis research. Requirements: oral science M.S. or Ph.D.
candidacy.

ORSC:5610 Independent Study  0-3 s.h.
Opportunity to pursue in-depth study in a particular area
of interest; students meet with faculty member to design
plan of study.