

# College of Dentistry

## Dean

Clark M. Stanford

## Executive Associate Dean

Galen B. Schneider

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Sherry R. Timmons

## Associate Dean, Finance and Facilities

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## Associate Dean, Patient Care

Kecia S. Leary

## Assistant Dean of Academic Affairs

Dharini van der Hoeven

## Professional degree: DDS

**Professional certificates:** endodontics; geriatric and special needs dentistry; operative dentistry; oral and maxillofacial surgery; oral and maxillofacial pathology; oral and maxillofacial radiology; orthodontics; pediatric dentistry; periodontics; prosthodontics

## Graduate degrees: MS; PhD

**Website:** <https://dentistry.uiowa.edu/>

The College of Dentistry is an integral part of the University of Iowa and its health sciences campus. Its mission, which embraces the university's academic values as well as the ethical responsibilities implicit in educating future members of a profession, rests on a foundation representing every aspect of collegiate activity: education of students as general practitioners and specialists; research into all aspects of oral and dental disease and the delivery of health care; and service to the community, the state, and the profession.

Faculty members, DDS students, dental specialty residents, and staff provide oral health care to patients at clinics in the Dental Science Building and the Center for Disabilities and Development. Faculty, staff, and students participate in interdisciplinary research and training activities involving the university's five health science colleges as well as other university colleges and departments.

Dentistry at the University of Iowa began in 1882 as a single department. In 1900 the university underwent general reorganization and the Dental Department became the College of Dentistry. Today the college is Iowa's only provider of predoctoral dental education and ranks as a leader in dental education nationwide.

The college and its educational programs are accredited by the Commission on Dental Accreditation of the American Dental Association, an independent tripartite commission authorized and recognized by the Office of Postsecondary Education.

Programs offered by the college cover the full spectrum of dentistry and closely integrated fields. They include the Doctor of Dental Surgery program (DDS), which prepares general dentists. The college has advanced education programs in nine dental disciplines, each of which may lead to certification in a specialized area of dentistry. In

addition, advanced education programs in operative dentistry, geriatrics and special needs dentistry, and post-DDS residency programs in hospital-based dentistry are available. The college has an oral science program, which offers an MS or PhD with or without a specialty certificate. To emphasize commitment to learning, the College of Dentistry has a wide variety of continuing education programs for dental and allied professions.

## Faculty

Iowa's dental faculty are predominantly full-time. In addition, more than 100 part-time adjunct faculty members assist with clinical teaching in the DDS and advanced residency programs. Approximately 88% of the college's faculty members hold DDS or DMD degrees and 12% represent other disciplines. The vast majority of faculty dentists have advanced education past the DDS, generally with master's degrees in specialty areas; about one-fifth hold a PhD.

The College of Dentistry is committed to the principle that diversity is essential to a strong educational environment—one that prepares new generations of dentists to provide high-quality care to patients from many backgrounds. The college's full-time faculty reflects that commitment.

## Programs

### Professional Program of Study (DDS)

The Doctor of Dental Surgery program prepares students to practice general dentistry. It requires a minimum of three years of preprofessional study and four years of study in the College of Dentistry. See Doctor of Dental Surgery in this section of the catalog for a description of the program's curriculum and information about a combined bachelor's degree and a DDS, the dentistry licensure examination, student organizations, expenses, admission, financial support, and academic rules and procedures.

### Post-DDS and Graduate Programs of Study

Several College of Dentistry departments offer professional certificate programs designed to prepare dentists for clinical specialty practice: endodontics; operative dentistry; oral pathology, radiology, and medicine; orthodontics; pediatric dentistry; periodontics; and prosthodontics. Students who complete these programs satisfactorily are awarded a certificate. The Department of Oral and Maxillofacial Surgery offers a four-year residency program that culminates in a certificate. The college also offers a Certificate in Geriatric and Special Needs Dentistry.

The College of Dentistry offers a Doctor of Philosophy and a Master of Science in oral science. The MS is only offered in conjunction with a specialty certificate. Students earning the Certificate in Endodontics or the Certificate in Prosthodontics may earn an MS or a PhD in oral science. Those earning the Certificate in Operative Dentistry, Certificate in Oral and Maxillofacial Pathology, Certificate in Oral and Maxillofacial Radiology (Department of Oral Pathology, Radiology, and Medicine), or the Certificate in Periodontics may earn an MS in oral science.

In addition, the Department of Orthodontics offers a Master of Science in orthodontics, and the Department of Preventive

and Community Dentistry offers a Master of Science in dental public health.

For information about post-DDS and graduate programs of study, see the College of Dentistry departmental sections in the catalog.

## Facilities

The College of Dentistry is located in the Dental Science Building on the University of Iowa health sciences campus, in proximity to the Roy J. and Lucille A. Carver College of Medicine, College of Nursing, College of Pharmacy, College of Public Health, and University of Iowa Health Care. The Bowen Science Building and the Hardin Library for the Health Sciences are nearby.

The south wing of the Dental Science Building is devoted to clinical teaching. There are 248 operatories in departmental clinics, student laboratories, clinical research space, and a cafeteria.

The west wing contains two floors of patient treatment areas and one floor of space for students. The clinical spaces include 44 dental operatories in the Geriatric and Special Needs Clinic, the Endodontics Clinic, faculty general practice, and the Craniofacial Clinical Research Center. Student areas include a classroom accommodating 80 people, small-group study rooms, a seminar room, a student lounge, lockers, and showers.

The north wing houses the simulation clinic and technique bench teaching laboratory, the electronic classroom, college administrative offices, technology and media services, the academic Department of Preventive and Community Dentistry, and the research laboratories and faculty offices of the Iowa Institute for Oral Health Research.

## Dental Education and Patient Care

Patient care is integral to dental education. Students and faculty members deliver oral health care in clinics on the health sciences campus and at several off-campus sites, including nursing homes. More than 45,600 people receive oral health care yearly in the college's clinics. Patients from throughout Iowa, western Illinois, and northern Missouri account for most of the 167,300 patient visits each year.

## Interdisciplinary Centers and Research

### Iowa Institute for Oral Health Research

The Iowa Institute for Oral Health Research occupies the first and fourth floors of the Dental Science Building's north wing. Laboratories are equipped to support a wide variety of research projects reflecting the complex nature of modern health care needs. Research at the institute is coordinated by the College of Dentistry.

There are four focus areas of research. The first area includes bioengineering, tissue engineering, stem cells, and biomaterials and materials research. The second area encompasses craniofacial, oral biology, genetics, and dental development. The third area includes public health, epidemiology, and behavioral sciences. The fourth area encompasses immunology, inflammation, microbiology, and caries and microbiome research. All focus areas are supported by the Division of Biostatistics and Computational Biology.

Clinical and translational research involving new innovative methods and products designed in the research laboratories is carried out in the Craniofacial Clinical Research Center.

Although research is concentrated in these program areas, one of the unit's strengths has been the consistent level of interaction and collaboration among individuals and programs across the college and the university.

## Craniofacial Anomalies Research Center

The role of the Craniofacial Anomalies Research Center is to understand the molecular mechanisms of genes and gene interactions that contribute to craniofacial/dental anomalies and birth defects. These genetic defects arise from inherited and somatic gene mutations due to environmental effects. The center researchers use mouse, ferret, and zebrafish models; human genetic material; cell lines; and molecular/biochemistry approaches to understand gene function. With the advent of human genome sequencing and the decreasing costs of genomic analyses, it has become somewhat more efficient to identify genetic defects associated with human genetic defects and diseases. The use of these genetic screening approaches provides invaluable data and resources in the search for new genes involved in human craniofacial development and associated anomalies. The center collaborators reside in the Carver College of Medicine, and the colleges of Dentistry, Pharmacy, and Public Health.

## Craniofacial Clinical Research

For more than two decades, the College of Dentistry has offered outpatient research support for National Institutes of Health (NIH), U.S. Food and Drug Administration (FDA), and related federally supported research grants. Protocol-based studies are performed by faculty scientists and supported by oral health care industries. Scientists also engage in translational research that involves laboratory-to-clinical-research outcomes. College of Dentistry faculty use new technology to improve dental procedures and provide state-of-the-art methods to obtain the best outcomes for patients. A biorepository program helps researchers understand the causes of dental and oral diseases and genetic anomalies. It benefits Iowans by the potential diagnoses of diseases and their effects and provides new, improved patient treatment.

Through integrated research, education, and clinical programs, craniofacial clinical research facilitates the development of implants and their use as a therapeutic modality in dentistry. The program also integrates basic and clinical research with technology transfer to the clinical setting, enhancing predoctoral, postgraduate, and continuing education and expanding treatment options available to patients served by the college. Craniofacial clinical research also provides vital coordination of dental specialties that participate in this treatment modality.

## Courses

## College of Dentistry Courses

Most College of Dentistry courses are offered by the college's departments and programs. They are listed and described in the corresponding General Catalog sections. The college also offers the following nondepartmental courses.

**DENT:4000 Pre-Dental Academy 0 s.h.**

Hands-on experience for undergraduate students interested in dentistry; interaction with faculty, residents, and current students in simulation clinic; didactic sessions; admissions information; changing health care environment, digital dentistry, dental esthetics, introduction to dental specialties, drilling and filling. Offered summer session.

**DENT:8100 First-Year Continuing Session arr.****DENT:8110 Patient Management: Interprofessional Education II 0 s.h.**

Application of previously learned concepts to relevant health care experiences using interprofessional skills and team-based health care concepts; development of skills related to leadership in health care teams, pain management from an interprofessional team, and application of ethics and professionalism concepts; online modules and group activities.

**DENT:8120 Foundations in Microbiology and Immunology 3 s.h.**

Essential knowledge of microorganisms, their role in oral and systemic health, and the body's immune response. Students explore the diversity of bacteria, viruses, fungi, and parasites, focusing on those relevant to dental practice and the role of the oral microbiome and other key microbiomes of the human body in relation to overall health. Integrates theoretical concepts with clinical relevance, preparing students to understand and manage infectious diseases in dental settings and to apply immunological principles in patient care and treatment planning. Requirements: DDS enrollment.

**DENT:8200 Second-Year Continuing Session arr.****DENT:8210 Patient Management: Interprofessional Education III 0 s.h.**

Application of previously learned concepts to relevant health care experiences using interprofessional skills and team-based health care concepts; development of skills related to leadership in health care teams, pain management from an interprofessional team, and application of ethics and professionalism concepts; online modules and group activities.

**DENT:8220 Dental Independent Study arr.**

Introduction to dental topics on the basic principles of dentistry in preparation for seminars, discussion sessions, and patient care. The Iowa Dental Advanced Standing Program offers dentists trained outside the United States the opportunity to earn a CODA (Commission on Dental Accreditation) accredited DDS degree. Recommendations: enrollment in the Iowa Dental Advanced Standing Program.

**DENT:8230 Biomedical Sciences in Clinical Practice 2 s.h.**

Topics in medicine and dentistry related to biochemistry, physiology, microbiology, anatomy, histology, pharmacology, and pathology. Expand foundational science knowledge to understand real-life clinical circumstances.

**DENT:8300 Third-Year Continuing Session arr.****DENT:8360 Introduction to Clinical Orofacial Pain 1 s.h.**

Major sources and types of orofacial pain; students build knowledge and skills to recognize temporomandibular disorders and other common orofacial pain conditions, differentiate odontogenic from nonodontogenic orofacial pain, and apply interdisciplinary pain management concept in developing appropriate patient management plan.

**DENT:8371 Quality Assurance I 1 s.h.**

Patient management, record writing skills, and quality assurance concepts; students coordinate treatment, patient relations, and issues of quality assurance for a group of patients.

**DENT:8372 Quality Assurance II 1 s.h.**

Continuation of DENT:8371; patient management, record writing skills, and quality assurance concepts; students coordinate treatment, patient relations, and issues of quality assurance for a group of patients; ethical and moral dilemmas in relation to dental practice.

**DENT:8400 Fourth-Year Lectures and Clinics arr.****DENT:8485 Clinical Admissions Emergency 2 s.h.**

Clinical evaluation, diagnosis, and treatment of patients with dental emergencies; patient assessment and referral to appropriate department for treatment.

**DENT:8489 Clinical Practice and Professionalism V1 s.h.**

Dental quality assurance from the viewpoints of patients, practicing dentists, dental educators, legal, insurers, and social workers. Evaluating dental practice in relation to quality assurance.

**DENT:9000 Advanced Clinical Comprehensive Dentistry 0 s.h.**

Clinical experience for professional improvement. Requirements: dental degree.