

# UNC ADAMS SCHOOL OF DENTISTRY (GRAD)

## Contact Information

### UNC Adams School of Dentistry

Visit Program Website (<http://www.dentistry.unc.edu>)

### Scott S. De Rossi, Dean and Professor

Graduate instruction in the UNC Adams School of Dentistry is offered in dental hygiene education, endodontics, operative dentistry and biomaterials, oral epidemiology, oral and maxillofacial pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics, pediatric dentistry, periodontology, and prosthodontics, as well as in oral and craniofacial biomedicine.

The specialty practice programs — endodontics, operative dentistry and biomaterials, oral and maxillofacial pathology, oral and maxillofacial radiology, orthodontics, pediatric dentistry, periodontology, and prosthodontics — are dual-specialty certificate and master of science degree programs. The minimum requirements for the certificate are prescribed by the Commission on Dental Accreditation of the American Dental Association (CODA) and the respective specialty boards for the approved CODA specialties. The master of science degree is conferred by the University of North Carolina at Chapel Hill Graduate School and requires the successful completion of required coursework, oral and written comprehensive examinations, a research project, and a thesis. Graduates who possess an appropriate degree and who meet the requirements of The Graduate School are considered for admission. Enrollment for study in these specialty programs requires approximately three years of residency. The curricula have been designed to permit maximum flexibility in preparation for practice, teaching, and/or research, as well as to meet the educational requirements of the specialty boards.

Other advanced education programs available within the UNC Adams School of Dentistry include dental hygiene education, oral and craniofacial biomedicine, oral epidemiology, and oral and maxillofacial surgery. The oral and craniofacial biomedicine and oral epidemiology programs lead to the doctoral degree (Ph.D.) and require four or more years to complete. The dental hygiene education program spans two years and is a master of science program designed to prepare dental hygienists for teaching, research, or corporate employment. The oral and maxillofacial surgery program is a six-year dual-degree (M.D.) program with a certificate in oral and maxillofacial surgery.

Information regarding admission, entrance requirements, and/or curricula of a specific advanced education program may be obtained online (<https://www.dentistry.unc.edu/academicprograms/ade>).

## Tuition and Fees

Tuition and fees for Graduate School programs are subject to change at any meeting of the University of North Carolina at Chapel Hill Board of Trustees, and an increase should be anticipated each year. Tuition and fees apply for all years of study and training. Current tuition and fees for in-state and nonresidents may be obtained online (<http://cashier.unc.edu/tuition-fees>). Required instruments, books, computers, and laboratory fees are determined by each program. Tuition and fees are due at the time of registration.

Student loans are available on the same basis as for undergraduates. Additional information can be obtained online (<http://studentaid.unc.edu/types-of-aid/loans>).

## Oral and Craniofacial Biomedicine

Oral and craniofacial biomedicine is a highly translational, multidisciplinary program of study that focuses on the growth, development, and pathologies of the craniofacial complex and associated physiological structures, as well as the study of disease and healing mechanisms related to these structures.

The discipline of oral and craniofacial biomedicine applies and extends the concepts of immunology, embryology, physiology, cellular and molecular biology, neurobiology, pharmacology, microbiology, and biochemistry to understanding the growth and development and pathologies associated with the craniofacial complex and oral cavity. Expertise and authority in the particular concepts of host-pathogen interactions, neurobiology, skeletal biology and extracellular matrices, and cancer are well represented within the program and training qualifications of program faculty located in numerous UNC—Chapel Hill programs and departments, including the UNC Adams School of Dentistry, School of Medicine, Lineberger Comprehensive Cancer Center, the Neurosciences Center, the Center for Cystic Fibrosis, and the Center for AIDS Research.

Attention in dental research and practice is now focusing on the dynamics of oral disease and prevention and treatment at the earliest stages of development, including research on risk factors for disease as well as the cellular and molecular events in disease pathogenesis. Molecular approaches for oral disease analysis and the complexity of disease elements require advanced training in the discipline of oral and craniofacial biomedicine. Modern biomedical research is also identifying systemic relationships between oral conditions, health status, and diseases such as atherosclerosis, HIV, and cancer. The oral cavity also offers an ideal model to study biological structures and cellular mechanisms important throughout the body and important in immune response.

Curricular requirements are based on training areas, with common core requirements for all students. Research interests and qualifications will also determine course requirements. Research is a key element of the program, and students start laboratory rotations during their first semester to allow maximum time for research involvement.

For additional information, consult the UNC Adams School of Dentistry's Web site (<http://www.dentistry.unc.edu>) or write to the Graduate Program Manager, Oral and Craniofacial Biomedicine Ph.D. Program, UNC Adams School of Dentistry, 3110 First Dental Building, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7455. Telephone: (919) 537-3230; Fax: (919) 966-3683.

## Dual Clinical Specialty / Ph.D. Degree Program in Oral and Craniofacial Biomedicine

There is an opportunity for students who have an interest in pursuing a Ph.D. degree in oral and craniofacial biomedicine with The Graduate School to simultaneously pursue a clinical specialty certificate in one of the ADA-recognized specialty programs in the Adams School of Dentistry. This special program is a five-/six-year program that allows the pursuit of the Ph.D. and clinical certificate simultaneously, and results in awarding

of both the Ph.D. and the clinical specialty certificate upon completion of the requirements for both programs.

Applying for this dual program is an option when applying for either the oral and craniofacial biomedicine graduate program or a clinical specialty program in the Adams School of Dentistry. The applicant must indicate an interest in pursuing the dual program at the time of application to the clinical specialty program. Students applying for the dual program must take either the Graduate Record Examination (GRE) OR the Dental Aptitude Test (DAT), but are not required to take both exams.

Students accepted into the dual program will follow a specialized curriculum, which combines scientific and clinical training with research activities designed to promote a career in academic dentistry. Students who successfully complete the program will then be awarded both the Ph.D. and the clinical specialty certificate at the completion of the requirements for both programs.

## Research Facilities

The oral and craniofacial biomedicine graduate program is located in the UNC Adams School of Dentistry. The central base for much of the basic science research in the curriculum is in the Koury Oral Health Sciences Building, with its access to SEM/TEM microscopy, tissue culture facilities, anaerobic microbiology support, ALAC-accredited animal facilities, computers and software for image analyses/enhancement and finite element analyses, and a clinical research unit that includes an eight-patient operatory. Biostatistical assistance is readily available as well as medical illustration, photography, radiology, and grants management.

## Financial Aid

Graduate research assistantships are awarded competitively for students accepted into the oral and craniofacial biomedicine Ph.D. program. These competitive assistantships with health insurance provide support through program resources during the first year and may include a special tuition rate for out-of-state students. Support for dissertation research, beginning in the student's second year, is generally made available by faculty mentors. Students are eligible for financial aid through the UNC Office of Scholarships and Student Aid. International students are encouraged to contact International Student and Scholar Services for resource contacts if financial aid is needed.

## Oral Epidemiology

The University of North Carolina at Chapel Hill offers a program leading to a Ph.D. degree in epidemiology under the cooperative auspices of the Adams School of Dentistry's Department of Dental Ecology and the Gillings School of Global Public Health's Department of Epidemiology and Department of Health Policy and Management. The strong, nationally recognized Department of Epidemiology at the Gillings School of Global Public Health has a well-established doctoral program, and oral epidemiology has been taught as part of the program in dental public health for many years. The integration of the wealth of resources in these three departments makes this program unique.

The goal of the oral epidemiology program is to teach students to identify, analyze, and predict changes in oral diseases and conditions. These conditions include dental caries, oral cancer, oral mucosal lesions, periodontal diseases, craniofacial and dentofacial anomalies, and systemic diseases that affect and are affected by oral health. Degree recipients have the academic foundation, advanced knowledge, and skills needed to conduct, interpret, and evaluate sophisticated epidemiologic investigations and clinical research projects.

Information, including advice regarding applying, can be found at the program's Web site (<http://www.sph.unc.edu/epid>).

## Endodontics

The Department of Endodontics offers a three-year program leading to a certificate in endodontics and a master of science degree. The program is designed to prepare candidates for careers in academics, research, or the clinical practice of endodontics, and for certification by the American Board of Endodontics.

The endodontics graduate program involves an integrated study of biological sciences as they pertain to endodontics, development of the clinical skills required in the broad area of the endodontic specialty, review of classic and current literature in endodontics, teaching experience, research design and methodology, and the development and completion of a research project.

## Oral and Maxillofacial Pathology

The oral and maxillofacial pathology program is a three-year program that awards a certificate in oral and maxillofacial pathology and a master of science degree. The program prepares qualified oral and maxillofacial pathology specialists for positions of responsibility in institutions of higher dental education or research or in private practice. Students develop competence in surgical oral pathology, acquire skills in the clinical management of patients with disorders of the head and neck, gain experience in pathology laboratory management, and develop teaching and research skills for enhancement of an academic career. Upon completion of the necessary requirements each student is eligible for fellowship in the American Academy of Oral and Maxillofacial Pathology and certification by the American Board of Oral and Maxillofacial Pathology.

## Oral and Maxillofacial Radiology

The oral and maxillofacial radiology program is a three-year program that awards a certificate in oral and maxillofacial radiology and a master of science degree. The primary goal of the program is to prepare specialists to practice clinical oral and maxillofacial radiology; to provide patient care, teach, and conduct research in an oral health care institution; or to provide patient care in the private practice setting.

The program includes training in radiological sciences (radiological physics, radiation biology, radiation protection, imaging science), clinical sciences (intraoral, extraoral, and cone beam CT imaging; radiographic interpretation of conditions affecting the oral and maxillofacial region), medical sciences (oral and maxillofacial pathology, head and neck anatomy), and research sciences (research design and biostatistics). Each graduate student develops an original research project as an integral part of the graduate program, resulting in a written thesis. The program meets the eligibility requirements of the American Board of Oral and Maxillofacial Radiology.

## Operative Dentistry and Biomaterials

The Department of Operative Dentistry and Biomaterials offers a three-year program that awards certificate in operative dentistry and a master of science degree granted by The Graduate School. The primary goal of the program is to prepare graduates for careers in dental education and research. The program involves component areas of research, teaching, and patient care. The curriculum includes general core courses, including topics in basic and clinical sciences; a research component, including courses on research design and statistical methods; a clinical component

in contemporary operative dentistry; and experiences in preclinical and clinical teaching.

A formal thesis based on a selected research topic is required, including its defense before an examining committee. The department also requires a comprehensive written examination.

## Orthodontics

The orthodontic postgraduate program at the UNC Adams School of Dentistry provides a combination of clinical experience in orthodontics and critical thinking and research experience, which leads to a certificate in orthodontics and a master of science degree conferred by The Graduate School. Students in the advanced orthodontic education program are required to demonstrate clinical and professional proficiency as well as to complete the didactic and research components of the M.S. degree prior to graduating. During the program's first year students participate in core courses, attend didactic and clinical seminars, and begin patient care. As the program progresses, didactic seminars gradually yield to research participation, while clinical seminars continue, and the volume of patient care increases. All students must perform satisfactorily on oral and written comprehensive examinations to complete the program successfully.

The orthodontics program offers a 33-month curriculum. Six residents are admitted to begin the program each August. By the second or third year of the program, students are educationally qualified to take the written portion of the American Board of Orthodontics. Successful completion of a research project is required to earn a certificate in orthodontics as well as an M.S. degree.

## Pediatric Dentistry

The department offers a graduate program in pediatric dentistry leading to a clinical certificate in pediatric dentistry and an M.S., M.P.H., or Ph.D. degree awarded by The Graduate School. The minimum program length is 36 months, beginning on July 1 of each year. The program's goal is to prepare the student for a career in academic research, dental education, clinical practice, or public health. Emphasis is placed on developing leadership skills and training advocates for children's health. For interested students, this program can be combined with other educational programs in the social sciences, basic sciences, or allied health professions that lead to an additional master's degree, postdoctoral fellowship, or a doctoral degree.

During the first year each student completes courses in research design and statistics; a protocol for the research project is completed in conjunction with the coursework. This project develops a student's skill set in the scientific method and scientific writing. During the second year data are collected, and during the third year the thesis is written and defended. Under the direction of leaders in many fields, research opportunities are available in a range of topics and can be undertaken in the UNC Adams School of Dentistry, at a facility in nearby Research Triangle Park, or at any of several neighboring institutions of higher learning. Numerous projects have received national acclaim and garnered publication in dental literature. Hospital training is conducted through the University of North Carolina Health Care System. Graduate students are active members of the program's teaching team during all years. Development of leadership skills in the health profession is supported by externships at the local, state, and national levels.

## Periodontology

The periodontology program is designed to prepare dentists to enter the clinical practice of periodontics or to work in academics and research. The program consists of a 36-month course of study leading to a certificate in periodontics and a master of science degree conferred by The Graduate School. Alternative degree programs include a master of public health and a Ph.D. in oral and craniofacial biomedicine. The curriculum is devoted to the study of biological concepts and literature that encompass the prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes, and the maintenance of the health, function, and esthetics of these structures and tissues. Clinical acquisition of skills in periodontology and implantology is a primary focus of the program. Resident experiences include patient care, teaching, and research. Elective courses relating to areas of research interests are available.

## Prosthodontics

The prosthodontics program is a 36-month course of study in fixed and removable prosthodontics, dental implant prosthodontics, and maxillofacial prosthetics, leading to a certificate in prosthodontics and a master of science degree conferred by The Graduate School. The primary goals of the program are to prepare a student for clinical practice and/or a teaching and research career. The curriculum offers a broad educational experience in clinical, research, didactic, and teaching activities. The program satisfies the formal training requirements for certification by the American Board of Prosthodontics.

A number of graduate courses from allied clinical and biomedical disciplines are available as electives for prosthodontic graduate students. Though not required, elective courses are encouraged. Potential electives (within or outside the Adams School of Dentistry) should be discussed with the program director so that the core curriculum can be adjusted to accommodate the student's needs.

## Dental Hygiene Education

The primary objective of the dental hygiene education program is to prepare well-qualified educators to be instructors in dental hygiene academic programs. Upon the successful completion of this program, the student should have

1. Acquired advanced knowledge and skills in one of the following minors: dental management/administration, biological sciences, oral pathology, or clinical education
2. Developed the knowledge, skills, and attitudes necessary in the conduct of dental hygiene programs
3. Acquired the ability to teach courses in more than one dental hygiene field, and
4. Defined their own problems from the present body of knowledge in dental and dental hygiene education, solved those problems, and presented their work in a scholarly fashion

Course requirements vary and are based on the individual background of the student and on the minor selected by the student. Available minors include clinical education, management/administration/biological sciences, and oral pathology. Thirty-six credit hours are required for the master of science degree. The length of the program is approximately two years.

## Admissions

### Oral and Craniofacial Biomedicine

There are two pathways for admission to the Curriculum in Oral Biology:

1. Direct application to oral and craniofacial biomedicine Individuals (domestic or international) with a doctoral or biomedical professional degree, including D.D.S., D.M.D., M.D. or equivalent, should apply directly to the program through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>).
2. Application through the Biological and Biomedical Sciences Program Individuals (domestic or international) *without* an advanced professional biomedical degree must apply through the Biological and Biomedical Sciences Program (BBSP (<http://bbbsp.unc.edu>)).

### Endodontics

Application to the endodontics program requires submission of the required transcripts and documentation to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following year's class can be found on the PASS Web site (<http://www.adea.org/PASSapp>). A personal interview is required for admission. After review by the program, successful applicants will be recommended to The Graduate School. Admission to The Graduate School is granted only after the department reviews and approves the application, transcripts, or prior academic work, letters of reference, and other credentials. The number of admitted students is limited to three each year. Stipends are available, depending upon available resources.

### Oral and Maxillofacial Pathology

Applications for admission to the program should be submitted online through the Graduate School's admissions Web site (<https://gradschool.unc.edu/admissions>). As part of the Graduate School application, applicants must upload a curriculum vitae, three letters of recommendation, and a statement of purpose which outlines motivations, experience and professional goals. National Dental Board Scores should be uploaded as a Supplement document if available. Applicants must also upload unofficial transcripts. Official transcripts should not be sent to the department or the Graduate School until requested to do so. Applicants must possess a D.D.S., D.M.D., or equivalent degree. Stipends are available, depending upon available resources.

### Oral and Maxillofacial Radiology

Applications for admission to the program should be submitted online through the Graduate School's admissions Web site (<https://gradschool.unc.edu/admissions>). As part of the Graduate School application, applicants must upload a curriculum vitae, three letters of recommendation, and a statement of purpose which outlines motivations, experience and professional goals. National Dental Board Scores should be uploaded as a Supplement document if available. Applicants must also upload unofficial transcripts. Official transcripts should not be sent to the department or the Graduate School until requested to do so. Applicants must possess a D.D.S., D.M.D., or equivalent degree. Stipends are available, depending upon available resources.

### Operative Dentistry and Biomaterials

Application to the operative dentistry and biomaterials program requires submission of the required transcripts and documentation to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following year's class can be found on the PASS Web site (<http://www.adea.org/PASSapp>). A personal interview is required for admission. After review by the program, successful applicants will

be recommended to The Graduate School. Applications for admission to the program should be submitted online through the Graduate School's admissions Web site (<https://gradschool.unc.edu/admissions>). Admission to The Graduate School is granted only after the department reviews and approves the application, transcripts, or prior academic work, letters of reference, and other credentials. The number of admitted students is limited to three each year. Stipends are available, depending upon available resources.

### Orthodontics

Application to the orthodontics program requires submission of the required transcripts and documentation to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer class are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching Program (<http://www.natmatch.com/dentres>). A personal, on-site interview is required for admission, and interviews are made by invitation of the program after its review of applications. Interviews are usually held in late October or early November. Once a student has been accepted through the Matching Program, the student must apply to The Graduate School to complete the requisite courses to earn a master's degree. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

### Pediatric Dentistry

The pediatric dentistry program requires application through both the centralized application and matching services: Submission of the required transcripts and documentation is made to the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer class are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching Program (<http://www.natmatch.com/dentres>). A personal interview is required, and interviews are made by invitation of the department after applications have been reviewed. Once a student has been accepted through the Match Program, the student must apply to The Graduate School. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

### Periodontology

All applications for the periodontology program, as well as transcripts and letters of reference, should be submitted through the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer cohort are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching program (<http://www.natmatch.com/dentres>). A personal interview is required for admission. Once a student has been accepted through the Match program, applicants will be informed of their eligibility to apply to The Graduate School. Admission to The Graduate School is granted only after the department reviews and approves the application, transcripts of prior academic work, letters of reference, and other credentials. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). The number of students is limited to three each year. Stipends are available, depending upon available resources.

## Prosthodontics

All applications for the prosthodontics program, as well as transcripts and letters of reference, should be submitted through the Postdoctoral Application Support Service (PASS). Application deadlines to PASS for the following summer cohort are available on the PASS Web site (<http://www.adea.org/PASSapp>). All candidates must register with the Postdoctoral Dental Matching program (<http://www.natmatch.com/dentres>). A personal interview is required for admission. Once a student has been accepted through the Match program, the admission policy for the master of science in prosthodontics program follows the regular requirements for admission to The Graduate School. Admission to The Graduate School is granted only after the application, transcript of prior academic work, letters of reference, and other credentials are reviewed and approved by the program's admissions committee. Applications for admission to The Graduate School must be submitted online through the Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

## Dental Hygiene Education

Minimum admissions requirements for the program in dental hygiene education include current licensure, a bachelor's degree from an accredited institution, and graduation from a dental hygiene program accredited by the Commission on Dental Accreditation of the American Dental Association. Exceptions to this requirement include graduation from an international bachelor of science program in dental hygiene, where CODA accreditation is not possible. Previous work experience in dental hygiene education or dental hygiene practice is strongly recommended.

Applicants must have a grade point average of B or better in the professional undergraduate curriculum. Three letters of recommendation are required, as well as an admissions questionnaire by the applicant. The course of study begins in August of each year. Applications for admission to The Graduate School must be submitted online through The Graduate School's admissions Web site (<http://gradschool.unc.edu/admissions>). Stipends are available, depending upon available resources.

## Professors

**Roland R. Arnold**, Immunology, Host-Microbial Biology  
**James D. Beck**, Oral Epidemiology  
**Terry Donovan**, Restorative Sciences  
**Eric Everett**, Oral and Craniofacial Health Sciences, Pediatric Dentistry  
**Ashraf Fouad**, Endodontics  
**H. Garland Hershey**, Orthodontics  
**Ching-Chang Ko**, Orthodontics  
**Jessica Lee**, Pediatric Dentistry  
**Valerie Murrah**, Oral Carcinogenesis, Salivary Gland Malignancies  
**Lauren Patton**, Oral Medicine, Dental Ecology  
**Ceib Phillips**, Associate Dean for Advanced Education/Graduate Programs, Oral and Craniofacial Health Sciences  
**Luis Pimenta**, Dental Ecology  
**Rocio Quinonez**, Pediatric Dentistry  
**Andre Ritter**, Executive Dean, Restorative Sciences  
**Sigurdur Saemundsson**, Pediatric Dentistry  
**Gary Slade**, Oral Epidemiology  
**Ronald P. Strauss**, Medical Sociology and Health Promotion/Disease Prevention  
**Cristiano Susin**, Periodontology  
**Edward J. Swift**, Vice Dean for Education, Restorative Sciences  
**Timothy Turvey**, Oral and Maxillofacial Surgery  
**Donald A. Tyndall**, Diagnostic Sciences

**Jennifer Webster-Cyriaque**, Oral Medicine, Dental Ecology  
**Jane Weintraub**, Dental Ecology  
**Rebecca Wilder**, Dental Hygiene, Periodontology  
**J. Tim Wright**, Pediatric Dentistry  
**Mitsuo Yamauchi**, Oral and Craniofacial Health Sciences  
**David Zajac**, Craniofacial Disorders

## Associate Professors

**Eric Bair**, Oral and Craniofacial Health Sciences  
**Silvana Barros**, Periodontology  
**Adalberto Bastos De Vasconcellos**, Restorative Sciences  
**George H. Blakey**, Oral and Maxillofacial Surgery  
**Lee Boushell**, Restorative Sciences  
**Jennifer Brame**, Dental Ecology, Periodontology  
**Angela Broome**, Diagnostic Sciences  
**Ryan Cook**, Restorative Sciences  
**Alice Curran**, Diagnostic Sciences  
**Apoena De Aguiar Ribeiro**, Diagnostic Sciences  
**Ingeborg DeKok**, Restorative Sciences  
**Kimon Divaris**, Pediatric Dentistry  
**Ibrahim Duqum**, Restorative Sciences  
**Richard Eidson**, Restorative Sciences  
**Sylvia Frazier-Bowers**, Orthodontics  
**Susan Hadler**, Diagnostic Sciences  
**Carol Haggerty**, Diagnostic Sciences  
**Glen Karunanayake**, Endodontics  
**Lorne D. Koroluk**, Pediatric Dentistry, Orthodontics  
**Mark Kutcher**, Oral Medicine  
**Lewis Lampiris**, Dental Ecology, DISC  
**Pei Feng Lim**, Orofacial Pain, Endodontics  
**Nigel Shaun Matthews**, Oral and Maxillofacial Surgery  
**Michael Milano**, Pediatric Dentistry  
**Shannon Mitchell**, Dental Ecology, Periodontology  
**Andre Mol**, Diagnostic Sciences  
**Antonio Moretti**, Periodontology  
**Tung Nguyen**, Orthodontics  
**Ricardo Padilla**, Diagnostic Sciences  
**Mary T. Pettiette**, Endodontics  
**Glenn Reside**, Oral and Maxillofacial Surgery  
**Anne Sanders**, Dental Ecology  
**Allen Samuelson**, Dental Ecology  
**Lisa Stoner**, Associate Dean Clinical Affairs, Restorative Sciences  
**Ricardo Walter**, Restorative Sciences  
**Darryn Weinstein**, Pediatric Dentistry

## Assistant Professors

**Sumitha Ahmed**, Restorative Sciences  
**Antonio Amelio**, Oral and Craniofacial Health Sciences  
**Li Chen**, Dental Ecology, Periodontology  
**Wendy Clark**, Restorative Sciences  
**Renie Daniel**, Oral and Maxillofacial Surgery  
**Massimiliano Di Giosia**, Endodontics  
**Christine Downey**, Dental Ecology  
**Glenn Garland**, Restorative Sciences  
**Jennifer Harmon**, Dental Ecology, Periodontology  
**Tate Jackson**, Orthodontics  
**Brandon Johnson**, Diagnostic Sciences  
**Jean Kontos Ginnis**, Pediatric Dentistry  
**Elizabeth Kornegay**, Dental Ecology, Periodontology  
**Kevin Lim**, Restorative Sciences  
**Julie Marchesan**, Periodontology

**Beau Meyer**, Pediatric Dentistry  
**Patricia Miguez**, Restorative Sciences  
**Mauro Forgearini Nunes**, Restorative Sciences  
**Gustavo Oliveira**, Restorative Sciences  
**Jonathan Reside**, Periodontology  
**Carolina Vera Resendiz**, Restorative Sciences  
**Lattice D. Sams**, Dental Hygiene, Periodontology  
**Rishma Shah**, Orthodontics  
**Lynn Smith**, Dental Ecology  
**Taiseer Sulaiman**, Restorative Sciences  
**Lida Swann**, Restorative Sciences  
**Peter Tawil**, Endodontics  
**Inna Tchivileva**, Oral and Craniofacial Health Sciences  
**Tiffany White**, Dental Hygiene, Periodontology  
**Michael Wolcott**, Oral and Craniofacial Health Sciences  
**Di Wu**, Oral and Craniofacial Health Sciences  
**Alexandra B. Yarborough**, Restorative Sciences

## Information Relevant to the UNC Adams School of Dentistry Experience

### Immunization Requirements

The State of North Carolina immunization requirements and the UNC Adams School of Dentistry immunization requirements for dental assisting, dental hygiene, and doctor of dental surgery students are listed below. Documentation of all is required with application.

#### State Requirements

- Three DTP (diphtheria, tetanus, pertussis), Td (tetanus, diphtheria), or Tdap (tetanus, diphtheria, pertussis) doses. (This fulfills the primary series requirement.)
  - One Tdap booster after completion of the primary series that did not include a Tdap, and then a Td vaccine every 10 years thereafter.
- Three polio (unless greater than 18 years of age).
- Two measles (rubeola), two mumps, one rubella (two MMR doses meet this requirement) or positive titers.
- Hepatitis B series (not required for individuals born before July 1, 1994). *See school requirements below.*

#### UNC Adams School of Dentistry Requirements

- Varicella vaccination series (two shots) or a positive titer.
- Hepatitis B vaccination series (three shots) and a positive hepatitis B antibody (HBsAb) quantitative titer. (Please make sure your physician does not order a qualitative titer.) Ideally, a titer is recommended one to two months after completion of the series for proof of immunity to hepatitis B but can be checked at a later date.
- Two-step tuberculosis skin test (TST) or a TB blood test (IGRA). DDS and DH students report to Campus Health and follow the testing procedures required. Advanced Dental Education students report to Employee Health and follow the testing procedures required.

Entering students must present a certificate of immunization from a physician or local health department prior to matriculation.

The matriculating student is required to submit a certificate of immunizations to UNC Campus Health Services (CHS) by a published and specified date. Through ConnectCarolina, CHS will notify students who are not in compliance with the state immunization requirements noted above. Individuals who have not met the state immunization requirements after 30 calendar days from the first date

of attendance will be administratively withdrawn from the University by the University Registrar. See the UNC Campus Health Web site (<http://campushealth.unc.edu/services/immunizations/health-science-students-immunizations>).

Students with deficiencies in the additional immunization requirements of the school will be notified of the deficiencies by the UNC schools director of clinical compliance. The school will work with students to meet these additional requirements. The failure to comply with the school's requirements after consultation with the director of clinical compliance and the agreed-upon resolution schedule will result in administrative withdrawal from the school.

#### Additional Requirements

Annually:

- Influenza vaccine not earlier than September 1.
- Tuberculosis screening.
- Verification of health insurance. The University of North Carolina at Chapel Hill requires all eligible students to have health insurance (See the UNC Campus Health Student Health Insurance Web site (<http://campushealth.unc.edu/charges-insurance/mandatory-student-health-insurance>.) Students are required to waive with existing creditable insurance each semester or they will automatically be enrolled in the UNC System Student Health Insurance Plan, which is administered by Student Blue/BCBS of NC. To waive or enroll/renew, visit the Student Blue Web site (<http://www.bcbnsnc.com/unc>).

Biennially:

- CPR for Healthcare Providers training. Documentation of current certification is required of the matriculating student. (Note that the school requires in-person CPR skills assessment.)

**Infection Control:** One of the consequences of the delivery of health care is the possibility of contracting an infectious disease such as tuberculosis, hepatitis, HIV, or herpes. To minimize this risk, the school has adopted an Infection Control Policy that requires the wearing of a clinical overgarment, disposable gloves, a mask, and protective eye covering when oral examinations and dental procedures are being performed.

#### Infectious Disease Status

Students engaged in patient care activities are required to know their tuberculosis and hepatitis B (HBV) status, and are encouraged to learn their hepatitis C (HCV) and HIV status. State regulations require health care workers, including students, who perform surgical or dental procedures or who assist in such procedures in a way that may result in an exposure of patients to their blood, and who know themselves to be infected with HIV or HBV, to report their status to the state health director. See UNC's policy (<http://ehs.unc.edu/manuals/ehsmanual/chapter-6/occupational-health-requirements>).

#### Late Registration

University regulations require students who do not register before the first day of classes in any semester or summer session to pay an additional fee of \$20 for delayed registration. Any student who believes that she/he can show sufficient justification for the delay may petition for a refund by completing a form, which can be found online (<https://registrar.unc.edu/guide/registration-policies/late-fee-refund-petition>), and outlining the reason for delay. This form must bear the approval of the dean of the UNC Adams School of Dentistry.

## Awarding of Degrees and Certificates

To be awarded a degree or certificate, students must satisfactorily complete all requirements of their respective program.

## Class and Clinic Attendance

Regular class and clinic attendance is a student obligation. No right or privilege exists that permits a student to be absent from any given number of sessions.

## Patient Care Responsibilities

Students are granted the privilege of participating in the patient care system of the UNC Adams School of Dentistry and are expected to provide care consistent with our patient-centered philosophy. The patient is a central part of the health care team and is involved in the planning of his or her care. It is the responsibility of the dental student to provide the patient with the information needed so they make informed decisions about their treatment. The dental student has the responsibility to provide high-quality, evidence-based care to all their assigned patients in a timely manner and to uphold the ethical responsibilities as outlined in the school's Code of Professional Conduct and the Code of Clinical Behavior.

Current academic policies and procedures can be found online ([https://unc.policystat.com/policy\\_search/category/?terms=54058&search\\_query](https://unc.policystat.com/policy_search/category/?terms=54058&search_query)). However, policies are subject to change at any time. The manual provides guidelines for governing the UNC Adams School of Dentistry educational programs and advises students, faculty, and staff of academic policies and procedures related to the respective programs.

## DENG

### Graduate-level Courses

Code	Title	Hours
DENG 701	Introduction to Research Design	1
DENG 702	Biostatistics	2
DENG 703	Applied Dental Research Methods	2
DENG 704	Interdisciplinary Care Conference	1
DENG 707	Regional Anatomy	3
DENG 720	Applied Pharmacology	1
DENG 751	Advanced Pain and Anxiety Control	2
DENG 890	Special Topics in Dentistry	1-3
DENG 799	Orientation for Clinical and Research Program	2
DENG 901	Research	1-6

#### DENG 701. Introduction to Research Design. 1 Credit.

Introduction to scientific methodology, clinical epidemiology, oral biology and technology transfer, clinical trials, evaluation of scientific literature, experiments of nature, animal models for oral research, ethnics in research, laboratory simulations and research models, and proposal writing.

**Grading status:** Letter grade.

#### DENG 702. Biostatistics. 2 Credits.

Introduction of biostatistical concepts, sampling, descriptive statistics, hypothesis testing, comparisons of means and proportions, 2x2 and r x c tables, correlation and simple regression, sample size and power, analysis of variance, factorial anova, multiple regression, and nonparametric tests.

**Grading status:** Letter grade.

#### DENG 703. Applied Dental Research Methods. 2 Credits.

This course builds on previous courses, DENG 701 Introduction to Research Methods and DENG 702 Biostatistics. The goal is to help students prepare and complete the thesis with emphasis on the results section.

**Grading status:** Letter grade.

#### DENG 704. Interdisciplinary Care Conference. 1 Credit.

For first & second-year dental graduate students. Review and discussion of the diagnoses, treatment plans, prognoses, and interdisciplinary care of selected patients.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

#### DENG 707. Regional Anatomy. 3 Credits.

Review of the anatomy of the head and neck region, including osteology, cardiovascular system, head and neck embryology, special sensory modalities, nervous system, functional nervous system, and extraoral correlation with the oral cavity.

**Grading status:** Letter grade.

#### DENG 720. Applied Pharmacology. 1 Credit.

This course is designed for dental practitioners with sufficient general and specific clinical pharmacology knowledge to appropriately and safely utilize drugs in treatment. The course will be concentrated in three areas: general clinical pharmacology principles, general clinical pharmacology of medications, specific clinical pharmacology of drugs utilized by dental practitioners.

**Grading status:** Letter grade.

#### DENG 751. Advanced Pain and Anxiety Control. 2 Credits.

Introduction to: operating room and recovery room protocol; patient cardiovascular and pulmonary evaluation; adjunct and inhalant agents; nitrous oxide; pharmacology of IV anesthetic agents; EKG interpretation; arterial blood gases; anesthesia equipment monitoring; anesthetic complications and emergencies; fluid and electrolyte and blood therapy; airway management; venipuncture; pediatric anesthesia; and pre-op evaluation, orders, and rounds.

**Grading status:** Letter grade.

#### DENG 799. Orientation for Clinical and Research Program. 2 Credits.

During this course, student complete required clinical training in the program and the School of Dentistry, attend a library orientation, and are introduced to research procedures and requirements.

**Grading status:** Letter grade.

#### DENG 890. Special Topics in Dentistry. 1-3 Credits.

This course will cover foundational topics or dental specialty content tailored to the certificate or master students clinical area of interest.

**Repeat rules:** May be repeated for credit. 12 total credits. 4 total completions.

**Grading status:** Letter grade.

#### DENG 901. Research. 1-6 Credits.

The goal of this course is to provide certificate or master students an opportunity to investigate different research areas and to conduct an independent research project under a faculty mentor.

**Repeat rules:** May be repeated for credit. 15 total credits. 5 total completions.

**Grading status:** Letter grade.

## DHED

### Graduate-level Courses

Code	Title	Hours
DHED 705	Medical Emergencies/Local Anesthesia	2
DHED 715	Current Concepts in Clinical Skills	2
DHED 720	Educational Concepts	2
DHED 730	Organization and Administration	3
DHED 736	Clinical/Laboratory Teaching Practicum	3
DHED 753	Advanced Intraoral Functions	3
DHED 754	Advanced Intraoral Functions (Periodontics)	3
DHED 760	Seminar in Education and Research	1
DHED 774	Personnel Management Seminar	2
DHED 834	Dental Management Seminar	4
DHED 836	Advanced/Clinical Teaching	3
DHED 837	Internship	6-9
DHED 860	Seminar in Education and Research	1
DHED 896	Independent Study in Dental Hygiene Education	1-4
DHED 993	Master's Research and Thesis	3

#### DHED 705. Medical Emergencies/Local Anesthesia. 2 Credits.

This is the fundamental course in local anesthesia for the dental hygienist. The course covers pharmacology, neuroanatomy, anatomy, neurophysiology as well as administration and techniques of local anesthesia.

**Grading status:** Letter grade.

#### DHED 715. Current Concepts in Clinical Skills. 2 Credits.

This course reviews and updates students in current treatment and diagnostic modalities in dental allied education. Students who satisfactorily pass the evaluation will be exempt.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

#### DHED 720. Educational Concepts. 2 Credits.

This course is designed to introduce the graduate student to various teaching philosophies and methodologies. A variety of educational concepts such as methods of presentation, testing, and measurement are explored. Emphasis is placed on the practical application of theory.

**Grading status:** Letter grade.

#### DHED 730. Organization and Administration. 3 Credits.

Provides information and experience in leadership, administration, and accreditation for allied dental education programs.

**Grading status:** Letter grade.

#### DHED 736. Clinical/Laboratory Teaching Practicum. 3 Credits.

This course provides students with the knowledge and skills to function as a competent clinical instructor. Psychomotor skill development and analysis and remediation of performance problems are two topics related to clinical teaching that are stressed.

**Grading status:** Letter grade.

#### DHED 753. Advanced Intraoral Functions. 3 Credits.

#### DHED 754. Advanced Intraoral Functions (Periodontics). 3 Credits.

#### DHED 760. Seminar in Education and Research. 1 Credit.

This course is designed to provide knowledge and stimulate discussion about pertinent topics in dental and allied dental education and research.

**Grading status:** Letter grade.

#### DHED 774. Personnel Management Seminar. 2 Credits.

#### DHED 834. Dental Management Seminar. 4 Credits.

#### DHED 836. Advanced/Clinical Teaching. 3 Credits.

#### DHED 837. Internship. 6-9 Credits.

This full semester internship provides the student with the opportunity to student teach in an allied dental program.

**Grading status:** Letter grade.

#### DHED 860. Seminar in Education and Research. 1 Credit.

#### DHED 896. Independent Study in Dental Hygiene Education. 1-4 Credits.

#### DHED 993. Master's Research and Thesis. 3 Credits.

## ENDO

### Graduate-level Courses

Code	Title	Hours
ENDO 710	Advanced Clinical Endodontics	2-6
ENDO 811	Endodontics Case Analysis	3
ENDO 812	Endodontics Topical Literature Review	2
ENDO 821	Literature Review of Current Topics in Endodontics	2
ENDO 993	Master's Research and Thesis	3

#### ENDO 710. Advanced Clinical Endodontics. 2-6 Credits.

870 hours of clinical practice

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

#### ENDO 811. Endodontics Case Analysis. 3 Credits.

180 hours conference.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

#### ENDO 812. Endodontics Topical Literature Review. 2 Credits.

270 hours.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

#### ENDO 821. Literature Review of Current Topics in Endodontics. 2 Credits.

This course aims to provide students in the Endodontic program an opportunity to read, analyze, and comment on contemporary literature in Endodontics and other relevant dental and medical information.

**Repeat rules:** May be repeated for credit. 12 total credits. 6 total completions.

**Grading status:** Letter grade.

#### ENDO 993. Master's Research and Thesis. 3 Credits.

Third year.

**Repeat rules:** May be repeated for credit.

## OCBM

### Graduate-level Courses

Code	Title	Hours
OCBM 701	Research Techniques in Oral Biology	3
OCBM 710	Discussion in Oral Biology	1
OCBM 720	Topics in Oral Biology	1
OCBM 721	Directed Studies in Oral Biology	1
OCBM 722	Directed Studies in Oral Biology	1
OCBM 723	Directed Studies in Oral Biology	1
OCBM 724	Directed Studies in Oral Biology	1
OCBM 730	Biological Concepts	1.5



OCBM 731	Biological Concepts	1.5
OCBM 732	Biological Concepts	1.5
OCBM 733	Translational Pain Medicine	1.5
OCBM 741	Skeletal Biology	2
OCBM 770	Selected Topics in Oral Biology	1
OCBM 780	Introduction to Scientific Writing	1
OCBM 993	Master's Research and Thesis	3
OCBM 994	Doctoral Research and Dissertation	3

**OCBM 701. Research Techniques in Oral Biology. 3 Credits.**

Permission of the instructor. The course familiarizes participants with a selection of specialized research techniques employed in interdisciplinary basic science approaches to problems in oral biology. Four laboratory hours a week.

**Repeat rules:** May be repeated for credit. 12 total credits. 4 total completions.

**Grading status:** Letter grade.

**OCBM 710. Discussion in Oral Biology. 1 Credit.**

Permission of the instructor. A series of seminars on topics relevant to research and scientific knowledge in the field of oral biology. Visiting scientists from other research centers in the country and abroad participate in the discussion series. One lecture hour a week.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**Grading status:** Letter grade.

**OCBM 720. Topics in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**Grading status:** Letter grade.

**OCBM 722. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**Grading status:** Letter grade.

**OCBM 723. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**Grading status:** Letter grade

**Same as:** NBIO 721.

**OCBM 724. Directed Studies in Oral Biology. 1 Credit.**

Topics include extracellular matrices, immunology, inflammation, neurobiology, and pain management.

**Grading status:** Letter grade.

**OCBM 730. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**Grading status:** Letter grade.

**OCBM 731. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**Grading status:** Letter grade.

**OCBM 732. Biological Concepts. 1.5 Credit.**

Overview of structures and biological determinants of conditions and diseases of the oral cavity. Both growth and development and pathophysiology will be introduced in the context of three areas of oral biology: biology of extracellular matrices, host-pathogens interactions, and orofacial neurobiology.

**Grading status:** Letter grade

**Same as:** NBIO 732, PHCO 747.

**OCBM 733. Translational Pain Medicine. 1.5 Credit.**

This is a clinician-taught course that advances students' understanding of chronic pain (e.g., head/face pain, pelvic pain, back pain, cancer pain, surgical pain) in both the classroom and the clinic.

**Requisites:** Prerequisite, OBIO 732; Permission of the instructor for students lacking the prerequisite.

**Grading status:** Letter grade

**Same as:** PHCO 748.

**OCBM 741. Skeletal Biology. 2 Credits.**

This course will examine bone formation and bone homeostasis. Cellular and molecular determinants of osteogenesis, osteoclastogenesis, bone remodeling, and select examples of bone disease will be explored. Course format will be faculty lecture, group discussion, and assigned student presentation of current literature.

**Grading status:** Letter grade.

**OCBM 770. Selected Topics in Oral Biology. 1 Credit.**

Review of current findings in selected areas of oral biology. Students will critique current literature dealing with the newest discoveries in neuroscience, inflammation, or pathogenesis in an interactive forum between students and faculty.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**Grading status:** Letter grade.

**OCBM 780. Introduction to Scientific Writing. 1 Credit.**

Seminar series that will give generic instructions covering grant writing skills and structure, as well as offer insight for scientific writing.

**Grading status:** Letter grade.

**OCBM 993. Master's Research and Thesis. 3 Credits.**

Permission of the instructor.

**Repeat rules:** May be repeated for credit.

**OCBM 994. Doctoral Research and Dissertation. 3 Credits.**

Permission of the instructor.

**Repeat rules:** May be repeated for credit.

## ORPA

### Graduate-level Courses

Code	Title	Hours
ORPA 731	Surgical Oral Pathology Seminar	1-3
ORPA 732	Current Perspectives on Oral and Maxillofacial Pathology	1-3
ORPA 733	Advanced Oral Pathology	1-3
ORPA 750	Surgical Pathology in the Hospital Setting	1-3
ORPA 762	Oral and Maxillofacial Pathology Seminar	2
ORPA 763	Oral and Maxillofacial Pathology Seminar	2
ORPA 993	Master's Research and Thesis	3

**ORPA 731. Surgical Oral Pathology Seminar. 1-3 Credits.**

This weekly seminar uses unknown cases as the basis for discussion of a variety of biopsy specimens taken from the head and neck. Clinical management of cases also is discussed. Students will develop skills for interacting with their medical and dental colleagues.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORPA 732. Current Perspectives on Oral and Maxillofacial Pathology. 1-3 Credits.**

This seminar series will focus on current research in oral and maxillofacial pathology (OMP) and related fields. Current scientific literature will be critically reviewed. In addition, students will review historical literature to gain a perspective on the development of OMP as a specialty.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORPA 733. Advanced Oral Pathology. 1-3 Credits.**

This lecture and clinicopathologic correlation series includes study of the etiology, pathogenesis, clinical, and histopathologic aspects of diseases of the head and neck.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORPA 750. Surgical Pathology in the Hospital Setting. 1-3 Credits.**

Under the supervision of the hospital pathologists, the student will rotate in anatomic pathology, laboratory medicine, dermatopathology, hematopathology, molecular medicine, surgical specialties, and other elective areas to develop advanced concepts of disease as well as a working relationship with medical colleagues.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORPA 762. Oral and Maxillofacial Pathology Seminar. 2 Credits.**

Course includes developmental disturbances of soft and hard tissues, syndromes, inflammation, immunology, pulp and periapical disease, periodontal disease, tumor-like proliferations, microbial disease, endocrine and metabolic diseases. Also includes odontogenic cysts, salivary gland disease, oral epithelial and mesenchymal neoplasms, bone and joint diseases, nerve muscle diseases, dermatological diseases, and blood diseases.

**Grading status:** Letter grade.

**ORPA 763. Oral and Maxillofacial Pathology Seminar. 2 Credits.**

Continuation of ORPA 762.

**Grading status:** Letter grade.

**ORPA 993. Master's Research and Thesis. 3 Credits.**

OPER 810	Applied Biomaterials Research	3
OPER 993	Master's Research and Thesis	3

**OPER 701. Operative Dentistry Seminar II. 1 Credit.**

(Aesthetic and Adhesive Dentistry.) In this seminar, graduate students will learn the scientific principles and clinical techniques involved in dental aesthetics and adhesive restorations. Students may be required to develop a case presentation for this seminar.

**Repeat rules:** May be repeated for credit. 2 total credits. 2 total completions.

**Grading status:** Letter grade.

**OPER 702. Operative Literature Review I. 1 Credit.**

This is a weekly seminar offering a forum for presentation and discussion of relevant scientific papers on various operative dentistry related topics. Typically, a resident or faculty member presents one or more relevant papers, which is followed by a critical analysis of the study and discussion of the topic.

**Repeat rules:** May be repeated for credit. 4 total credits. 4 total completions.

**Grading status:** Letter grade.

**OPER 704. Operative Clinical Seminar A. 1 Credit.**

This seminar will involve a series of presentations where the student will present clinical cases resolved in the graduate clinic.

**Repeat rules:** May be repeated for credit. 2 total credits. 2 total completions.

**Grading status:** Letter grade.

**OPER 705A. Teaching Internship. 1-9 Credits.**

Student will be actively involved in teaching Functional Dental Anatomy course. Student will participate in preclinical laboratory instruction and evaluation procedures.

**Grading status:** Letter grade.

**OPER 731. Cariology. 1 Credit.**

Discusses specific topics related to Cariology. Students will provide care in clinic identifying and treating patients based on caries risk assessment. Seminar formats include lectures, discussions, literature reviews, and practical (hands-on) exercises. Students must present a clinical case discussing alternative treatment based on patient's caries risk assessment.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**OPER 732. Introduction to Operative Dentistry. 3 Credits.**

Provides students with broad introduction to key Operative Dentistry concepts. Students will be exposed to a wide variety of topics, including intensive training in direct restorations, dental photography, fabrication of diagnostic casts and implant stents. Prepares incoming graduate students for clinical patient care and teaching in predoctoral courses and clinics.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**OPER 736. Graduate Dental Biomaterials II. 3 Credits.****OPER 790. Operative Dentistry Clinic II. 2-6 Credits.**

(Patient treatment.) Primary focus is on patients requiring more advanced considerations for operative dentistry treatment planning and/or procedures. There will be a strong focus on aesthetic dentistry, prevention, and 'medical management' of caries, and the use of advanced technologies to provide operative dentistry treatment.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

## OPER

### Graduate-level Courses

Code	Title	Hours
OPER 701	Operative Dentistry Seminar II	1
OPER 702	Operative Literature Review I	1
OPER 704	Operative Clinical Seminar A	1
OPER 705A	Teaching Internship	1-9
OPER 731	Cariology	1
OPER 732	Introduction to Operative Dentistry	3
OPER 736	Graduate Dental Biomaterials II	3
OPER 790	Operative Dentistry Clinic II	2-6

**OPER 810. Applied Biomaterials Research. 3 Credits.**

This course involves application of the principles of in-vitro testing of dental materials. Students will be required to prepare, subject them to specified testing, and collect data.

**Repeat rules:** May be repeated for credit. 3 total credits. 10 total completions.

**Grading status:** Letter grade.

**OPER 993. Master's Research and Thesis. 3 Credits.**

The student will begin writing a master's thesis.

**Repeat rules:** May be repeated for credit.

**ORAD****Graduate-level Courses**

Code	Title	Hours
ORAD 702	Advanced Oral Radiologic Technology	4
ORAD 704	Advanced Radiologic Diagnosis II	3
ORAD 705	Principles for Advanced Diagnostic and Therapeutic Radiology	4
ORAD 706	Advanced Oral Radiology	2
ORAD 707	Graduate Clinical Oral Radiology	2-6
ORAD 710	Oral and Maxillofacial Radiology Literature Review	1
ORAD 802	Clinical Radiology Conference	1
ORAD 993	Master's Research and Thesis	3

**ORAD 702. Advanced Oral Radiologic Technology. 4 Credits.**

Seminars, laboratory, and clinical sessions to provide experience in advanced oral radiologic procedures.

**Grading status:** Letter grade.

**ORAD 704. Advanced Radiologic Diagnosis II. 3 Credits.**

Literature review, seminars, and clinical experience in advanced radiologic diagnosis.

**Grading status:** Letter grade.

**ORAD 705. Principles for Advanced Diagnostic and Therapeutic Radiology. 4 Credits.**

Literature review and seminars in the application of radiologic procedures such as computed tomography, digital imaging, and magnetic resonance for diagnosis of oral and maxillofacial conditions. Fundamentals of radiation therapy are also included.

**Grading status:** Letter grade.

**ORAD 706. Advanced Oral Radiology. 2 Credits.**

Radiographic selection criteria, dental radiographs efficacy, panoramic radiology, extraoral techniques, radiation risks and radiological hygiene in dental practice, principle of radiologic interpretation, radiology of cysts and tumors, radiology of the TMJ, radiology of systemic disease, quality improvement, radiology for dental implants, digital imaging in dentistry, and advanced craniofacial region imaging.

**Grading status:** Letter grade.

**ORAD 707. Graduate Clinical Oral Radiology. 2-6 Credits.****ORAD 710. Oral and Maxillofacial Radiology Literature Review. 1 Credit.**

Course is designed for graduate students with a strong interest in OMFR and seeks to expose students to classical articles in the radiology literature.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORAD 802. Clinical Radiology Conference. 1 Credit.**

Case studies in the interpretation of unusual conditions of the oral and maxillofacial region.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORAD 993. Master's Research and Thesis. 3 Credits.****ORTH****Graduate-level Courses**

Code	Title	Hours
ORTH 801	Orthodontic Technique	4
ORTH 802	Current Topics in Orthodontics	2
ORTH 803	Orthodontic Diagnosis	2
ORTH 805	Advanced Clinical Orthodontics	2-6
ORTH 806	Science of Tooth Movement	2
ORTH 807	Orthodontic Biomaterials	1-3
ORTH 808	Growth and Development	4
ORTH 809	Preventative Orthodontics	3
ORTH 810	Multidisciplinary Management of Craniofacial Anomalies	1
ORTH 815	Oral-Pharyngeal Function	1
ORTH 820	Advanced Biomechanics	3
ORTH 822	Environment of Specialty Practice	3
ORTH 993	Master's Research and Thesis	3

**ORTH 801. Orthodontic Technique. 4 Credits.**

Introduction to orthodontic technique and procedures for beginning orthodontic graduate students.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORTH 802. Current Topics in Orthodontics. 2 Credits.**

Seminars on pertinent orthodontic literature for advanced orthodontic students.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORTH 803. Orthodontic Diagnosis. 2 Credits.**

Principles of orthodontic diagnosis and analysis of diagnostic records for orthodontic specialists.

**Grading status:** Letter grade.

**ORTH 805. Advanced Clinical Orthodontics. 2-6 Credits.****ORTH 806. Science of Tooth Movement. 2 Credits.**

Mechanical principles in orthodontic force production and control; biological response to orthodontic force.

**Grading status:** Letter grade.

**ORTH 807. Orthodontic Biomaterials. 1-3 Credits.**

Introduction to orthodontic biomaterials and integration with the basic principles of engineering, science, and orthodontics.

**Grading status:** Letter grade.

**ORTH 808. Growth and Development. 4 Credits.**

Principles of growth and development, emphasizing dento-facial development from an evolutionary and molecular biology perspective, as well as the traditional anatomical perspective.

**Grading status:** Letter grade.

**ORTH 809. Preventative Orthodontics. 3 Credits.****ORTH 810. Multidisciplinary Management of Craniofacial Anomalies. 1 Credit.**

This course introduces the graduate student to the management of patients with craniofacial anomalies using a multidisciplinary team approach. The course gives the graduate student a basic understanding of the role of specialties involved, the procedures, and timing of interventions in the management of craniofacial patients from birth to adulthood.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**ORTH 815. Oral-Pharyngeal Function. 1 Credit.**

Maturation of oral and pharyngeal function, including speech and its relation to dento-facial development.

**Grading status:** Letter grade.

**ORTH 820. Advanced Biomechanics. 3 Credits.**

Concepts in orthodontic mechanics emphasizing segmented arch approaches and laboratory tests of appliance components and designs.

**Grading status:** Letter grade.

**ORTH 822. Environment of Specialty Practice. 3 Credits.**

Trends in health care delivery; organization and management of orthodontic specialty practice.

**Grading status:** Letter grade.

**ORTH 993. Master's Research and Thesis. 3 Credits.****PEDO****Graduate-level Courses**

Code	Title	Hours
PEDO 800	Maternal and Child Health Seminar Series	1
PEDO 801	Pediatric Diagnosis and Treatment Planning Seminar	1
PEDO 803	Principles of Pediatric Dentistry	1
PEDO 804	Advanced Clinical Pediatric Dentistry	2-6
PEDO 805	Contemporary Practice Management	1
PEDO 806	Treatment of Pediatric Dental Emergencies	1
PEDO 993	Master's Research and Thesis	3

**PEDO 800. Maternal and Child Health Seminar Series. 1 Credit.**

(One hour a week for each fall and spring semester.) This is a seminar series that focuses on a broad range of topics related to pediatric dentistry and pediatric medicine, including general medical issues, practice management, social issues, child advocacy, and presentation of unusual clinical cases.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PEDO 801. Pediatric Diagnosis and Treatment Planning Seminar. 1 Credit.**

(One hour a week each fall and spring semester for two years.) This course is a seminar wherein diagnosis and treatment planning options are considered through a problem-oriented approach. For cases in progress and completed, outcomes are reviewed and critiqued.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PEDO 803. Principles of Pediatric Dentistry. 1 Credit.**

(Six hours a month for fall and spring semesters for 24 months.) This seminar covers the fundamentals of pediatric dentistry from behavior management to pulp therapy. The course relies on readings of classic and contemporary literature with seminars that include discussions and critiques of readings.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PEDO 804. Advanced Clinical Pediatric Dentistry. 2-6 Credits.**

This course provides clinical experience in all phases of pediatric dentistry, including dental treatment under conscious sedation and general anesthesia.

**Repeat rules:** May be repeated for credit. 6 total credits. 99 total completions.

**Grading status:** Letter grade.

**PEDO 805. Contemporary Practice Management. 1 Credit.**

(One hour monthly during the spring semester for three years.) This course provides an understanding of the design, implementation, and management of a modern pediatric dental practice. Most seminar leaders are private practitioners who are adjunct faculty in the department.

**Grading status:** Letter grade.

**PEDO 806. Treatment of Pediatric Dental Emergencies. 1 Credit.**

(One hour a week each week for 36 months.) This seminar series serves as a faculty/resident forum for reviewing the previous week's emergency cases and in which diagnosis and treatment options are reviewed and critiqued. Endodontic faculty and residents also participate in this course.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PEDO 993. Master's Research and Thesis. 3 Credits.****PERI****Graduate-level Courses**

Code	Title	Hours
PERI 710	Periodontal Therapy	1
PERI 711	Periodontal Therapy	1
PERI 721	Case Analysis	2
PERI 723	Case Analysis	2
PERI 731	Seminar in Periodontology	2
PERI 761	Seminar in Periodontology	2
PERI 762	Seminar in Dental Implantology	1
PERI 820	Introduction to Implants	1
PERI 821	Clinical Implantology	1
PERI 891	Advanced Clinical Periodontics and Clinical Practice	2-6
PERI 993	Master's Research and Thesis	3

**PERI 710. Periodontal Therapy. 1 Credit.**

This graduate seminar reviews techniques and procedures for treating periodontal diseases. Topics include gingival grafting, surgical flap management, osseous surgery, periodontal regeneration, antimicrobials, host modulation, and periodontal medicine.

**Grading status:** Letter grade.

**PERI 711. Periodontal Therapy. 1 Credit.**

This graduate seminar reviews techniques and procedures for treating periodontal diseases. Topics include gingival grafting, surgical flap management, osseous surgery, periodontal regeneration, antimicrobials, host modulation, and periodontal medicine.

**Grading status:** Letter grade.

**PERI 721. Case Analysis. 2 Credits.**

This graduate seminar continues themes introduced in PERI 720 and discusses advanced implant topics including bone augmentation, peri-implantitis, and implant efficacy assessment. The seminar includes didactic lectures, case presentations, and journal club components. Spring.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PERI 723. Case Analysis. 2 Credits.****PERI 731. Seminar in Periodontology. 2 Credits.**

In this first-year literature review course, graduate students present and evaluate the evidence on periodontal disease etiology, pathogenesis, risk factors and treatments including mechanical, surgical, and pharmacological approaches.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PERI 761. Seminar in Periodontology. 2 Credits.**

In this second- and third-year literature review course, graduate students discuss evidence on advanced topics in periodontology or related disciplines.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PERI 762. Seminar in Dental Implantology. 1 Credit.**

In this literature review course, graduate students will discuss evidence on dental implant and other related therapies.

**Grading status:** Letter grade.

**PERI 820. Introduction to Implants. 1 Credit.**

This graduate seminar traces the biology of osseointegration, surgical techniques in dental implant placement, and prosthetic restoration. The seminar includes didactic lectures, case presentations, and journal club components.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PERI 821. Clinical Implantology. 1 Credit.**

This graduate seminar continues themes introduced in PERI 820 and discusses advanced implant topics including bone augmentation, peri-implantitis, and implant efficacy assessment. The seminar includes didactic lectures, case presentations, and journal club components.

**Grading status:** Letter grade.

**PERI 891. Advanced Clinical Periodontics and Clinical Practice. 2-6 Credits.**

Within this specialty clinic, graduate students gain experience and competency in diagnosing and comprehensively treating patients with periodontal diseases. Cases may involve interdisciplinary care, medical management, dental implants, and sedation procedures.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PERI 993. Master's Research and Thesis. 3 Credits.****PROS****Graduate-level Courses**

Code	Title	Hours
PROS 702	Introduction to Prosthodontic Literature	1
PROS 722	Prosthodontic Principles, Diagnosis, and Treatment Planning - Fixed and Removable	2
PROS 732	Prosthodontic Diagnosis and Treatment Planning	1
PROS 751	Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment	1
PROS 752	Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment	1
PROS 801	Advanced Clinical Fixed and Removable Prosthodontics	2-6
PROS 851	Clinical Maxillofacial Prosthodontics	2
PROS 853	Clinical Maxillofacial Prosthodontics	2
PROS 993	Master's Research and Thesis	3

**PROS 702. Introduction to Prosthodontic Literature. 1 Credit.**

A seminar designed to review early and classic prosthodontic literature common to fixed and removable prosthodontics.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 722. Prosthodontic Principles, Diagnosis, and Treatment Planning - Fixed and Removable. 2 Credits.**

Principles of diagnosis and treatment relative to the prosthodontic patient are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 732. Prosthodontic Diagnosis and Treatment Planning. 1 Credit.**

This course provides the prosthodontic student with adequate knowledge in fixed prosthodontics to promote continued lifelong learning, offer quality treatment to a diverse population with various needs using fixed prosthesis, manage complications and failures of fixed prostheses, and to challenge the ABP examination.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 751. Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment. 1 Credit.**

Principles of diagnosis and treatment relative to maxillofacial prosthodontic patients are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 752. Maxillofacial Prosthodontic Principles, Diagnosis, and Treatment. 1 Credit.**

Principles of diagnosis and treatment relative to maxillofacial prosthodontic patients are covered in depth in this seminar series.

**Repeat rules:** May be repeated for credit. 6 total credits. 6 total completions.

**Grading status:** Letter grade.

**PROS 801. Advanced Clinical Fixed and Removable Prosthodontics. 2-6 Credits.**

This clinical offering is designed to permit the graduate student to experience all phases of advanced patient management in fixed and removable prosthodontics.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 851. Clinical Maxillofacial Prosthodontics. 2 Credits.**

This clinical offering is designed to permit the graduate student to manage the comprehensive prosthodontic care of congenital and/or acquired maxillofacial defects in both the dental school and hospital environment.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 853. Clinical Maxillofacial Prosthodontics. 2 Credits.**

This clinical offering is designed to permit the graduate student to manage the comprehensive prosthodontic care of congenital and/or acquired maxillofacial defects in both the dental school and hospital environment.

**Repeat rules:** May be repeated for credit.

**Grading status:** Letter grade.

**PROS 993. Master's Research and Thesis. 3 Credits.**

Completion of thesis for master of science degree.

**Repeat rules:** May be repeated for credit.