Orthodontics

Degree Offered

• Master of Science

General Information

The School of Dentistry and its Department of Orthodontics offer a program of advanced study and clinical training leading to the degree of Master of Science. The program requires a minimum of thirty-four months (three academic years and two summers) of full-time residency in the School of Dentistry. It is designed to qualify dentists for careers in orthodontic clinical practice, teaching, and research.

A stipend plus tuition waiver will be provided for graduate students in Orthodontics at the end of the second year for summer session and fall/spring semesters. Special fees are not covered by the tuition waiver. You must pay special fees each term/semester.

Inquiries concerning this program should be directed to the Office of Academic and Postdoctoral Affairs. Applications will be processed in the School of Dentistry. Applicants approved for admission to the program will be notified soon after December 1.

This program is accredited by the Commission on Dental Accreditation of the American Dental Association. For details about the faculty, publications, and alumni information, please visit the Department website at http://dentistry.hsc.wvu.edu/Academic-Programs/Graduate-Programs/Master-of-Science-in-Orthodontics.

Program Goals

The postgraduate program is designed to develop skilled practitioners who can easily transition into and manage a busy orthodontic practice. The goal of this program is to teach a variety of treatment mechanics that are scientifically valid, and let the residents make choices based on treatment needed on a case-by-case basis. Clinical experiences are diverse, including cleft lip and palate and orthognathic surgery cases. An original master’s thesis project is required and is designed to obtain results suitable for publication in a reputable dental journal. The curriculum focuses on didactic and clinical materials to prepare residents in taking the American Board of Orthodontics (ABO) Examinations. Classes pertaining to the written board are given throughout the three-year program. It is a requirement for every third year resident to take and pass the written component of the ABO, and all residents are encouraged to complete the board certification process.

Graduate Courses

Advanced Orthodontic Mechanics: A continuation of the previous course involving more difficult case types and introducing more sophisticated appliance therapy.

Advanced Topics: Investigation of advanced topics not covered in regularly scheduled courses.

Advanced Topics: Biomedical Sciences Module Series: The Biomedical Sciences Module series has been designed as an online course for students enrolled in the advanced education programs in the WVU School of Dentistry. Four modules are planned. They include pharmacology, physiology/biochemistry, anatomy/histology/embryology, and microbiology/immunology/genetics.

The content of these modules focuses on the clinical application of each of the biomedical sciences of dentistry. Cases will be used to integrate theory and practice. Students will attend a virtual classroom by viewing online lectures, reading prescribed materials, and interacting with faculty and classmates through an online discussion forum.

Applied Biostatistics for Health: Statistical models, distributions, probability, random variables, tests of hypotheses, confident intervals, regression, correlation, transformations, F and Chi-square distributions, analysis of variance, and multiple comparisons.

Biomechanics: Design and function of the teeth and their surrounding structures, and response of these tissues to orthodontic procedures.


Craniofacial Growth and Maturation: The current concepts of craniofacial growth and maturation are presented and integrated for application to clinical problems.

Directed Study: Directed study, reading, and/or research.

Graduate Seminar: It is anticipated that each graduate student will present at least one seminar to the assembled faculty and graduate student body of program.

Growth and Development: Seminar course on normal and abnormal growth of the human head and its application to orthodontics.
**Independent Study**: Faculty supervised study of topics not available through regular course offerings.

**Orthodontic Clinic**: Clinical treatment of selected patients.

**Orthodontic Diagnosis**: Seminar class on technique of patient examination, acquiring diagnostic records.

**Orthodontic Materials**: Physical properties of materials used in orthodontic appliances.

**Orthodontic Mechanics**: Seminar and laboratory course on basic orthodontic mechanical properties.

**Orthodontic Seminar**: Discussions including all branches of dental science, with special emphasis on the orthodontic interest. Assigned topics and articles in the literature are discussed.

**Orthodontic Technique**: Laboratory course in techniques related to fabrication and manipulation of orthodontic appliances and wires.

**Research**: Research activities leading to thesis, problem report, research paper, or equivalent scholarly project or a dissertation.

**Seminar**: Seminars arranged for advanced graduate students.

**Special Studies in Oral Pathology**: Advanced study of local and systemic disease processes affecting oral structures through seminars, assignment of specific topics, or research activities.

**Special Topics**: A study of contemporary topics selected from recent developments in the field.

**Teaching Practicum**: Supervised practice in the college teaching of dentistry.

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**Faculty**

**Chair**

- Peter Ngan - D.M.D. (Harvard University)

**Associate Professors**

- Chris A. Martin - D.D.S. (West Virginia University)
- Timothy J. Tremont - D.D.S. (University of Pittsburgh)

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**Admission Requirements**

The program’s admission requirements are as follows:

- Must have passed the National Dental Board Examination — Part I.
- Must have earned a D.M.D./D.D.S. degree, or its equivalent.
- Must report most recent GRE scores.
- Must be proficient in the English language.
- Must provide the most recent TOEFL score (if you are a foreign applicant).
- Must display evidence of scholastic and clinical achievement that would indicate the applicant's ability to progress in a program of this nature. Generally, a minimum grade point average of 3.0 is required.
- Must apply to the program through the Postdoctoral Application Support Service (PASS, [http://www.adea.org/](http://www.adea.org/)) and have all application materials in PASS by September 15. Each applicant must also have a MATCH number from National Matching Services ([http://www.natmatch.com](http://www.natmatch.com)). For more detailed information, go to the School of Dentistry website ([http://dentistry.hsc.wvu.edu/Academic-Programs/Graduate-Programs/Graduate-Programs/Master-of-Science-In-Orthodontics](http://dentistry.hsc.wvu.edu/Academic-Programs/Graduate-Programs/Graduate-Programs/Master-of-Science-In-Orthodontics)).
- Must become familiar with the West Virginia University School of Dentistry’s policy and procedure for Bloodborne Pathogens and Infectious Diseases.
- Must consent to and pass a criminal background investigation prior to final acceptance.
- Must provide evidence of vaccination for rubella, rubella, mumps, hepatitis B, tetanus, meningococcal, meningitis, varicella, and polio.
- Must provide evidence of a negative PPD test performed within the previous twelve months. A positive PPD test result must be accompanied by an appropriate chest x-ray report and follow-up treatment plan.
- Must meet certain Federal and University standards regarding the Responsible Conduct of Research (RCR). To comply with these standards, all individuals admitted to the Doctor of Dental Surgery (DDS) and dental graduate programs must successfully complete the Biomedical Responsible Conduct of Research (BRCR) online course offered by the Collaborative Institutional Training Initiative (CITI). The BRCR course must be completed no later than 30 days after beginning your first semester in the education program. Failure to satisfy this requirement within the specified period to time will impact your enrollment.
Degree Requirements - Master of Science Degree

- Fulfill University requirements for graduate study.
- Complete thirty-four months (three academic years and two summer sessions) of consecutive full-time advanced study and clinical training at the School of Dentistry.
- Complete an approved master’s thesis based on original research completed during the course of study in an area related to Orthodontics.
- Must satisfactorily pass the Mock ABO clinical examination which includes a written and an oral examination.
- Must pass the written component of the ABO examination.
- Must complete all didactic and clinical work in the required curriculum.
- Must demonstrate satisfactory clinical competency in this field.
- Complete a minimum of eighty-five credit hours, including fifty-seven hours of orthodontic courses and a minimum of ten hours of selected basic science subjects, six hours of teaching practicum, and a research/thesis (twelve hours).
- Achieve a 3.0 GPA or an overall competence in the student’s field. A minimum grade of B must be earned in all work attempted in the master’s program. A grade of C or below in two courses will require a faculty review of the student’s progress. A third C or below will result in suspension from the program.

Program Curriculum

The thirty-four-month Master in Science program in Orthodontics begins July 1. First-year residents begin an intensive Orthodontic Technique course on July 1 and begin seeing new patients in mid-July. In August, first year residents begin a full clinic schedule which includes morning and afternoon clinic sessions.

Didactic course work at the WVU Department of Orthodontics consists of faculty led, resident taught lectures and seminar sessions for an average of two hours each day. Seminar topics range from patient diagnosis and treatment planning to practice management and financial planning. In addition, the department maintains a relationship with many commercial orthodontic companies that regularly visit the clinic to present new products and techniques.

Clinical work simulates the private practice environment. There are two dental assistants and a patient service coordinator available in the clinic to aid residents during clinic sessions. All orthodontic records are computerized. Diagnosis and treatment planning can be completed entirely in the digital realm. Billing, scheduling, and record storage is accomplished using a commercial dental office management system. The orthodontic clinic has been chosen as the first department in the WVU School of Dentistry to be completely paperless. This process is now underway. The objective is to maximize clinical efficiency so residents are able to increase their number of patient experiences.