DENTISTRY, MASTER OF SCIENCE IN (M.S.D.) WITH A CONCENTRATION IN PEDIATRIC DENTISTRY

Program accreditation
Commission on Dental Accreditation of the American Dental Association

Program goals and objectives
The didactic requirements of the Master of Science in Dentistry are combined with the goals of the M.S.D. program to provide the student with a strong clinical background that is supported by a strong background in research methodology.

Program goals
1. To provide an academic environment for inquiry in which expertise and knowledge in basic sciences and clinical pediatric dentistry can be achieved
2. To provide a sound background in medicine as it applies to the pediatric/adolescent patient and to patients with special healthcare needs
3. To provide a sound background in oral pathology
4. To be able to interpret, critique and apply literature associated with the field of pediatric dentistry
5. To develop sound diagnostic, clinical, nonsurgical and surgical skills in the clinic and in the operating room
6. To provide didactic instruction and clinical training in the area of nonpharmacologic and pharmacologic behavior management
7. To provide instruction and training in growth and development to include clinical interceptive orthodontic care
8. To provide methods of pain and anxiety control, including nitrous oxide and oral conscious sedation
9. To provide an environment for the interpretation and implementation of research
10. Enable successful completion of the American Board of Pediatric Dentistry exam
11. To develop sound lifelong didactic and clinical learning skills
12. To provide specialists in pediatric dentistry for community health care, professional service and dental education

Program objectives
1. To be exposed to the basic sciences and be able to apply concepts to clinical pediatric dentistry
2. To be able to critically critique and interpret the old and new literature
3. To have an understanding of oral pathology and medicine as it applies to management of the pediatric/adolescent patient and patients with special health care needs
4. To have residents become exposed to and proficient in multiple nonsurgical and surgical treatment modalities to include treatment of patients under general anesthesia
5. To become competent in diagnosis and treatment planning
6. To obtain competency and certification in moderate conscious sedation
7. To complete research, M.S.D. and prepare a paper for presentation and publication
8. To prepare the student to successfully complete Part I and II of the ABPD examination
9. To develop communication and presentation skills and lifelong learners

Student learning outcomes
Graduates of this program will be competent in:

Knowledge – concepts, facts and information
1. Knowledge and skills in the areas of pediatric medicine and oral medicine, as well as the delivery of dental care and oral surgery for compromised children and adolescents
2. In-depth knowledge and skills in the use of pharmacologic and nonpharmacologic behavior management techniques
3. Knowledge of hospital protocol, policies, rules, regulations and the ability to treat pediatric dental patients in the hospital environment
4. Ability to evaluate the dental literature and its research findings to the benefit of patients and to engage in scholarly activity which results in completion of a master's degree thesis suitable for publication
5. Knowledge of preventive and corrective dental procedures relating to general and oral health and to growth and development of the stomatognathic system
6. Knowledge and skill in oral and maxillofacial radiology specific to the needs of the child and adolescent
7. Preparation for managing a contemporary pediatric dental practice relative to practice administration, efficient auxiliary utilization and marketing
8. Understanding of the biomedical sciences related to the practice of contemporary pediatric dentistry: biostatistics/epidemiology, pharmacology, microbiology, embryology, genetics, anatomy and oral and medical pathology
9. In-depth knowledge of the physical, psychological and social development of children
10. In-depth knowledge of oral and perioral lesions and anomalies in the pediatric dental patient
11. In-depth knowledge of the management of dental and medical emergencies in the dental setting
12. Understanding of normal and abnormal language development
13. Understanding of jurisprudence, risk management and biomedical ethics
14. Understanding office and practice management including the use of contemporary technologies

Clinical competency
1. Ability to appropriately manage and guide the behavior of the child patient to accept needed treatment and to provide advice or guidance to the parent to enhance the child's acceptance
2. Expertise in managing and rendering optimal dental care for the medically, emotionally or physically challenged pediatric dental patient
3. Ability to perform evaluations of the physical status of children and adolescents
4. Ability to transform didactic/learned information into appropriate clinical situations
5. Skill in the use of pharmacologic and nonpharmacologic methods for the comprehensive control of pain and anxiety
6. Ability to recognize, refer and treat children who have sustained abuse and neglect
7. Expertise in dental surgical procedures for the restoration of the dentition
8. Skill/dexterity in performing procedures of periodontal, mucocutaneous and associated hard tissues of the oral-maxillofacial region, including in-depth knowledge of biopsy and adjunctive diagnostic tests
9. Appropriate management of orofacial injuries

Diagnostic skills
1. Ability to recognize the early signs of child abuse and neglect
2. Ability to diagnose dental trauma
3. Skill in the diagnosis, prevention and treatment planning of pediatric disease in the primary and permanent dentition and periodontal, mucocutaneous and associated hard tissues of the oral-maxillofacial region
4. Application and understanding of patient monitoring

Communication skills
1. Competence in the skills required to instruct and motivate children and their caretakers in methods of achieving and maintaining optimum oral health
2. Ability to prepare patients and caretakers for procedures
3. Ability to interact meaningfully with dental and nondental health care providers
4. Ability to work cooperatively with consultants and clinicians of other specialties and health-related fields

Organizational skills and documentation
1. Coordination of tasks such that diagnosis, case analysis, treatment planning and clinical management of oral-facial health problems of the pediatric dental patient occur in a logical, efficient manner
2. Ability to present an organized treatment plan to the patient, parent, attending and front desk
3. Ability to manage time and tasks and to work effectively with people

Research
1. Coordination and implementation of a research project
2. Successful completion of a research project, thesis preparation and thesis defense

VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website (http://www.graduate.vcu.edu) and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the academic regulations section for additional information on academic regulations for graduate students. (http://bulletin.vcu.edu/academic-reg/grad/candidacy)

Degree candidacy requirements

A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master’s or doctoral status according to the degree candidacy requirements of the student’s graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student’s faculty regarding the student’s academic achievements and the student’s readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

Visit the academic regulations section for additional information on degree candidacy requirements. (http://bulletin.vcu.edu/academic-reg/grad/candidacy)

Graduation requirements

As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the academic regulations section for additional information on graduation requirements. (http://bulletin.vcu.edu/academic-reg/grad/graduation-info)

Apply online at graduate.admissions.vcu.edu (http://www.graduate.admissions.vcu.edu).

Admission requirements

<table>
<thead>
<tr>
<th>Degree:</th>
<th>Semester(s) of entry:</th>
<th>Deadline dates:</th>
<th>Test requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.S.D.</td>
<td>Fall (Jul 1 start date)</td>
<td>Sep 15</td>
<td>National Dental Boards, Part 1 and 2</td>
</tr>
</tbody>
</table>

Special requirements

- Applicants from countries where English is not the primary and official language must complete the TOEFL.
- Upon acceptance in the specialty certificate program in pediatric dentistry, applicants must apply to the Graduate School for the M.S.D.

In addition to the general admission requirements of the VCU Graduate School (http://bulletin.vcu.edu/graduate/study/admission-graduate-
study/admission-requirements), the following requirements represent the minimum acceptable standards for admission:

1. D.D.S. or D.M.D. from an American Dental Association-accredited dental school
2. Successful completion of Part I of the National Dental Board Exam at the time of application and completion of Part II by the time of matriculation
3. Minimum grade point average of 3.0 (4.0 scale) or equivalent
4. Ranking in the top 50 percent of the class of the dental school attended
5. Personal interview
6. An externship in pediatric dentistry of at least one week in duration while attending dental school (highly encouraged)
7. Participation status with American Dental Education Association Postdoctoral Application Support Service and the Postdoctoral Dental Matching Program
8. Agreement to participate in the Postdoctoral Dental Matching Program
9. Agreement to participate in the ADEA PASS
10. Graduation or anticipated graduation from a CODA-accredited U.S. or Canadian dental school
11. Eligibility to obtain a Virginia Temporary Resident’s License from the Virginia Board of Dentistry
12. Completion of GRE
13. Completion of TOEFL or IELTS for students whose native language is not English
14. Application to the pediatric graduate program is accepted through the ADEA PASS program. The PASS application should include the following items:
   a. Online application form
   b. Essay/personal statement: Please tell us about your personal history that led you to apply for an educational program in pediatrics. Include your plans for the future and any factors you believe are important for us to know in reviewing your application. Please limit your comments to one page.
   c. Curriculum vitae/resume: Include a curriculum vitae/resume to give us more information about yourself. Include your education and work experiences, awards, honors, research experiences, and personal interests.
   d. Undergraduate college transcripts: Include official transcripts from all colleges or universities you attended before dental school.
   e. Dental school transcripts
   f. Institution Evaluation Form (completed by the dean of your dental school)
   g. Personal potential index report (evaluation of different criteria by three to five evaluators compiled into a single report)
   h. Professional evaluations: two letters of recommendation from individuals who can personally attest to your professional and personal qualities (the program director’s letter can count as one). A letter from the chair of pediatrics is not required, but may be included if the chair has personal knowledge of your skills. Note: Professional evaluations are listed as optional for PASS; however, they must be submitted for VCU’s program.

Special admission requirements
International applicants must complete the following requirements and documentation. Permanent U.S. residents and international students are advised to contact VCU International Admissions (http://international.admissions.vcu.edu) to ensure eligibility.

1. D.D.S. or D.M.D. from an international dental school program
2. Provide all information in items 1 through 7 above
3. Test of English as a Foreign Language (http://www.ets.org/toefl) (minimum score of 600 on paper-based test and 100 on Internet-based test)
4. International English Language Testing System (http://www.ielts.org) (score of 6.5 or greater acceptable; test must be taken within two years of application date)

Degree requirements
In addition to general VCU Graduate School graduation requirements (http://bulletin.vcu.edu/academic-regs/grad/graduation-info), a cumulative GPA of 3.0 must be maintained. Students must receive a minimum grade of B for all required courses. Students will take written and oral examinations and must obtain a minimum grade of B or a passing grade. If either is not obtained then the examination must be retaken. For research the student must have a thesis defense and present a poster by mid-April of their second year. Extensions may be approved but at the students own expense.

Curriculum requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>DENS 550</td>
<td>Update in Practice Administration</td>
<td>1</td>
</tr>
<tr>
<td>DENS 580</td>
<td>Biostatistics and Research Design in Dentistry</td>
<td>2</td>
</tr>
<tr>
<td>DENS 660</td>
<td>Interdisciplinary Care Conference (0.5 credits)</td>
<td>1</td>
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<tr>
<td>DENS 699</td>
<td>Thesis Guidance (two credits taken four times)</td>
<td>8</td>
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<tr>
<td>DENS 700</td>
<td>Basic Sciences and Graduate Dentistry</td>
<td>3</td>
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<tr>
<td>ORTH 620</td>
<td>Orthodontic Clinic for Non-orthodontic Graduate Students (one credit taken four times)</td>
<td>4</td>
</tr>
<tr>
<td>PEDD 511</td>
<td>General Anesthesia Rotation</td>
<td>3</td>
</tr>
<tr>
<td>PEDD 512</td>
<td>Growth and Development</td>
<td>1</td>
</tr>
<tr>
<td>PEDD 514</td>
<td>Introduction to Pediatric Dentistry</td>
<td>2</td>
</tr>
<tr>
<td>PEDD 572</td>
<td>Pediatric Dental Emergency Service (2.5 credits)</td>
<td>5</td>
</tr>
<tr>
<td>PEDD 612</td>
<td>Seminar Series: Pediatric Dentistry and Medicine (two credits taken twice)</td>
<td>4</td>
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<tr>
<td>PEDD 620</td>
<td>Pediatric Medicine Rotation</td>
<td>3</td>
</tr>
<tr>
<td>PEDD 640</td>
<td>Clinical Teaching (two credits taken three times)</td>
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<tr>
<td>PEDD 650</td>
<td>Literature Review (two credits taken two times)</td>
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<tr>
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<td>Treatment Planning Seminar (one credit taken four times)</td>
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<tr>
<td>PEDD 656</td>
<td>Current Literature Review (one credit taken two times)</td>
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Total graduate credit hours required (minimum) 69.5

Plan of study

**Year one**

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<th>Semester</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Fall semester</td>
<td>DENS 580</td>
<td>Biostatistics and Research Design in Dentistry</td>
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<tr>
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<td>DENS 660</td>
<td>Interdisciplinary Care Conference (no credit earned in fall; continuing course)</td>
<td>1</td>
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<tr>
<td></td>
<td>DENS 699</td>
<td>Thesis Guidance</td>
<td>2</td>
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<tr>
<td></td>
<td>ORTH 620</td>
<td>Orthodontic Clinic for Non-orthodontic Graduate Students</td>
<td>1</td>
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<tr>
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<td>PEDD 656</td>
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<td>PEDD 680</td>
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<table>
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<th>Hours</th>
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<tbody>
<tr>
<td>Spring semester</td>
<td>DENS 580</td>
<td>Biostatistics and Research Design in Dentistry</td>
<td>2</td>
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<tr>
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<td>DENS 660</td>
<td>Interdisciplinary Care Conference (no credit earned in fall; continuing course)</td>
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**Year two**

<table>
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<th>Semester</th>
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<tbody>
<tr>
<td>Fall semester</td>
<td>DENS 550</td>
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<td>PEDD 680</td>
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<td></td>
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<td>Term Hours:</td>
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**Total Hours:** 69.5

1 Students register for .5 credits for both fall and spring semesters for both years of the program. They receive a continuing grade in the fall semester and a pass/fail grade at the end of the spring semester for the entire year. Students take the class four times for .5 credits each time, but they are only graded for two .5-credit classes.

**Graduate program director**

William O. Dahlke, D.M.D.
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Residency coordinator
Email: pedsdent@vcu.edu
Phone: (804) 828-1790

**Program website:** pediatricdentistry.vcu.edu (http://www.pediatricdentistry.vcu.edu)