Dual Degree Programs in Dental Education: Exploring Benefits and Challenges
SESSION OBJECTIVES

• Describe how existing dual degree program models can be implemented in dental schools.

• Identify how a dual degree program may benefit both students and institutions.

• Address challenges in forming and maintaining dual degree programs.

• Three dual degree programs will be discussed today:
  • DDS/MA in Science and Dental Education
  • DDS/MBA
  • DMD/MPH
CONTACT INFORMATION

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  Columbia University
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• Wanda Wright, DDS, MS, MSD
  Tufts University
  Wanda.Wright@tufts.edu
INTRODUCTION: DDS/MA at Columbia University

• Joint DDS/MA program for pre-doctoral students established at Columbia University’s College of Dental Medicine
  • First student enrolled in 2003

• In conjunction with Columbia University Graduate School of Education, Teachers College.

• MA is in Science and Dental Education through the Department of Mathematics, Science and Technology
BACKGROUND

• Evolved from a Dental Education Track in an internal Area of Concentration (AoC) Program

• A student in the AoC program began taking courses at the Graduate School of Education

• Student’s mentor encouraged student to pursue a degree

• The formal program emerged
RATIONALE

• Encourage and mentor dental students regarding a career in academic dentistry

• Use student’s dental school experience as a time to cultivate an interest in becoming a dental educator

• “Growing our own” has been identified as long-term solution for individual schools and the profession as a whole
Advancing the Educational Training of Dental Educators: Review of a Model Program


Abstract: Very few dental educators have formal pedagogical training, and the availability of degree-granting programs for dental educators is very limited. A joint D.D.S.-M.A. program for predoctoral students and a Ph.D. program for faculty members have
GOALS OF THE PROGRAM

• To develop group of people with formal training in dental education/research to be leaders in the field
• To promote the use of innovative and effective teaching methods in dental education
• To address the need for qualified educators in dental education
APPROVALS

• Internal approval (Columbia University):
  • Deans of both schools: CDM and Graduate School of Education
  • Provost of the University
  • University Senate

• External approval (NYS):
  New York State Education Department
Master of Arts in Science & Dental Education

Description appearing in Graduate School of Education Catalog

- CDM students planning to enter teaching of dental medicine are eligible to enroll
- **Curriculum includes:**
  - content courses in dental science,
  - basic courses in adult learning,
  - teaching of science-related disciplines,
  - culminating research on current educational theory and practice
**Choose Your Area of Interest**

**Initial Certification -**
**Masters of Arts (M.A.)**
- Biology 7-12 (SCIB-INIT)
- Chemistry 7-12 (SCIC-INIT)
- Earth Science 7-12 (SCIE-INIT)
- Physics 7-12 (SCIP-INIT)

**Supervisor/Teaching of Science (SCSS)**
**Master of Arts (M.A.)**

**Science and Dental Education (SCDT)**
**Master of Arts (M.A.)**

**Teacher of Education in Science (SCTE)**
**Master of Science (M.S.)**
**Master of Education (Ed.M.)**

**Transitional B -**
**Master of Arts (M.A.)**
- Biology 7-12 (SCIB-TRAN)
- Chemistry 7-12 (SCIC-TRAN)
- Earth Science 7-12 (SCIE-TRAN)
- Physics 7-12 (SCIP-TRAN)

**Science Education (SCSD)**
**Doctor of Education (Ed.D.)**
**Doctor of Philosophy (Ph.D.)**
DDS/MA CURRICULUM

• Students in degree program take at least one course in each of five disciplines:
  1. Basic & Applied Sciences in the Health Professions
  2. Instructional Theory & Practice
  3. Adult Learning
  4. Instructional Design
  5. Research Competencies in Education

• #1 is part of curriculum for all students at CDM

• Courses in four remaining disciplines are taken at the Graduate School of Education
Ed Pract & Rsrch Dental Sci (Fall 2014)

Current Announcements

NEED HELP?

FACULTY
In person 345 MACY (LDTW)
MON to FRI 12:00pm to 4:00pm
you may also contact your Tech-Fellow, call x3348 or
e-mail techfellowhelp@tc.columbia.edu

Student Support
studenthelpdesk@tc.columbia.edu

ONLINE HELP
• Moodle for Faculty
• Moodle for Students

Navigation

Home
• My home
• Site pages
• My profile
• Current course

2014-09-MSTC5009.001

September 3 - September 9

Course Introduction and Current Issues and Topics in Dental Education
Tuesday, September 9, 2014
The Beube Conference Room, PH-7 East Room 123
5:10-6:50 PM
Overview of Course
Drs. Graham, Klyver, and Zubiaurre
Current Issues and Topics in Dental Education
Dr. Salentijn

Attached you will find a word document with readings that Dr. Salentijn has recommended you have in your resource files. In addition you will find three articles to be reviewed after class.

Reading Resources

Article 1

Article 2
SELECTION PROCESS

• Students required to be enrolled in CDM DDS degree program

• During D2, information sessions provided
  – If interested, students complete application and interview
  – Selected students are reviewed & approved by Chair of the Department of Mathematics, Science and Technology
  – Students complete standard application process for enrollment in a MA program at TC
  – Meet same criteria as any other student

• Admission to MA in Science and Dental Education program
CURRICULUM CREDITS

• Students admitted to the MA program at TC must be enrolled in the DDS degree program at CDM

• 12 credits of coursework completed at CDM credited toward MA degree after student is accepted and enrolled

• Remaining 20 credits taken at TC
TIMELINE

Spring D2: Interview and selection for program

Fall D3: Master’s project proposal

Summer D2/D3: Students begin taking courses

Fall D3-Spring D4: Students continue taking courses and work on Master’s project

Spring D4: Students complete coursework and present Master’s Project

Spring D4: DDS and MA are conferred*

*If either coursework or master’s project is not completed, students may continue into PGY1.

Columbia University College of Dental Medicine
COSTS

• Current tuition: $1,398 per credit
• Approximately $28,000 in total tuition
• Most students take additional student loans and some receive scholarships

From aalgroup.org:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Degree</th>
<th>Credit Hours</th>
<th>Program Structure</th>
<th>Tuition Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADEA/AAL/University of the Pacific</td>
<td>MA in Health Professions Education</td>
<td>32 (1 year)</td>
<td>Onsite &amp; Online</td>
<td>$26,500</td>
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<tr>
<td>John Hopkins University</td>
<td>MEd in Health Professions</td>
<td>33 (1 year)</td>
<td>Online</td>
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<td>Columbia University Teacher’s College</td>
<td>MA in Health Education</td>
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<td>University of Pennsylvania</td>
<td>MEd in Medical Education</td>
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<td>University of Michigan</td>
<td>MS in Health Professions Education</td>
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<td>Onsite</td>
<td>$44,000</td>
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<tr>
<td>Rutgers University</td>
<td>MS in Health Science Education</td>
<td>30 (1.5 years)</td>
<td>Online</td>
<td>$34,500</td>
</tr>
</tbody>
</table>
OUTCOMES

Graduates of the Program

• 18 students have earned the DDS/MA since 2005
  – Three students in Class of 2015 on track to be awarded DDS/MA in May 2015
OUTCOMES

• Dual Degree Program has lead to
  – growth of educational research and scholarship at CDM
  – innovation in curriculum and assessment methods
  – collaborative network of individuals who serve as a resource for other CDM dental educators.

• Graduates have contributed to the educational mission at CDM.

• Graduates have brought their expertise to specialty programs and dental schools throughout the country.
Tracking trends in dental students’ attitudes toward providing care to underserved populations

Bansari Modi, Roseanna Graham, DDS, MA, PhD
College of Dental Medicine & Teachers College, Columbia University, New York, NY

Introduction
According to the landmark U.S. surgeon general’s report in 2000, oral health care disparities stem from the poor access to dental care by historically disadvantaged and underserved populations. More than 31 million Americans now have no dentist in their immediate area.

Dental care is out of reach for so many Americans, yet there are too few practicing dentists committed to improving this public health concern. Approximately 4,700 students graduate from dental school each year in the U.S., the majority of whom go on to practice in upper-middle-class suburban neighborhoods.

The foundations of a student’s understanding of dentistry and their place in the field are laid during predoctoral training. While dental institutions are successful in preparing students to perform competent clinical procedures, dental schools fail to encourage enough students to enter public health dentistry since so few graduating dental students express interest in the certified public health dental specialty or incorporating public health dentistry into their practice plans.

Results and Conclusions

Students’ interest in providing care to underserved patients (using a scale from 1 to 5, with 5 representing strong interest)

<table>
<thead>
<tr>
<th>Year</th>
<th>201</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>3.5</td>
<td>3.6</td>
<td>3.8</td>
<td>3.9</td>
</tr>
<tr>
<td>2</td>
<td>3.6</td>
<td>3.7</td>
<td>3.9</td>
<td>4.0</td>
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<tr>
<td>3</td>
<td>3.8</td>
<td>4.0</td>
<td>4.1</td>
<td>4.2</td>
</tr>
<tr>
<td>4</td>
<td>4.0</td>
<td>4.2</td>
<td>4.3</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Self-reported barriers that may deter students’ interest or ability to provide care to underserved populations

- Financial 25%
- Location 15%
- Physical health 10%
- Personal reasons 20%
- Reluctance to take on underserved patients

Discussion
In comparing responses to questions on interests, barriers, and preparedness in regards to providing care to underserved populations, certain trends and patterns were identified. While students’ sense of preparedness increased over the four years, their interest level did not show much change. Furthermore, common barriers towards caring for the underserved and factors that influence students’ interest levels were identified. The results of this study will help dental school faculty understand the current student perspective, a first step in determining how to encourage more students to provide care to the underserved and close the access to care gap.

Materials and Methods
An 11-item questionnaire was distributed to students in all four years of study at the College of Dental Medicine. Responses were obtained from 75 1st year, 50 2nd year, 50 3rd year, and 51 4th year students. The questionnaire contained 3 open-ended questions and 7 quantitative questions using a five-point Likert scale with 1=strongly disagree and 5=strongly agree or 1=rarely and 5=always. Participants were asked to reflect on their interest, possible barriers, and self-perceived preparedness for practicing public health dentistry in the future.

Example of Questions:
1. Since the beginning of dental school, has your preparedness in providing care to underserved populations changed?
   - Strongly Decreased
   - Moderately Decreased
   - Unchanged
   - Moderately Increased
   - Strongly Increased

2. What has been most influential in affecting your interest in providing care to underserved populations?
   - Students further along in dental school feel more knowledgeable on ways to provide care to the underserved
   - Students further along in dental school feel more aware of opportunities for pursuing public health dentistry
   - Students feel increasingly more prepared to provide care to the underserved as they progress through dental school

Literature Cited

Acknowledgements
Thank you to Dr. Graham for her wonderful guidance and support as my research mentor. I also thank Dr. Klyver for keeping me on track throughout my research and coursework. Thank you also to the faculty who helped me collect data and the all the students who participated in the study. Finally, thank you to Dr. Lamster for encouraging and supporting my dual-degree program at Teachers College.
Extramural hospital rotations and dental student clinical performance

Pasha Shakoori, Roseanna Graham, DDS, MA, PhD
College of Dental Medicine & Teachers College, Columbia University, New York, NY

Introduction
Teaching dentistry poses a rather unique challenge for dental educators, since the profession requires both extensive theoretical and hands-on training. A useful method of improving students’ clinical skills during dental school is utilization of extramural clinical rotations where students leave the familiar and comfortable school environment and use their acquired skills to treat patients and perform complex or emergency procedures. The positive effects of extramural experiences have been shown to not be limited to just performing dental procedures. A study done by Robinson and colleagues showed not only improved levels of confidence in dental students performing epidural injections but also increased performance and competency, as evidenced by clinical evaluations. On the other hand, the possible negative effects of extramural experiences are also important to consider. Students who are closely supervised during clinical training and play a major role in providing care for patients are likely to benefit more from the clinical experience. Due to the high variability associated with extramural rotations, more studies are needed in order to determine how to most effectively implement such rotations in dental school curricula.

Objectives
The purpose of this study is to investigate the correlation between procedures done during hospital rotations and clinical productivity by the end of fourth year of dental school. Although dental schools employ extramural rotations as part of their clinical education, limited information is available on the effect of these rotations on dental student clinical performance.

Study Design and Methods
Existing data on the number and type of dental procedures students completed at hospital rotations throughout the New York City area were correlated with existing data on the clinical productivity of students at the end of their dental school training at the Columbia University College of Dental Medicine. All data was coded and analyzed statistically through calculation of correlation coefficients. Existing data was analyzed from the class of 2013 as this is the only class that has had the requirement of attending extramural hospital rotations to date. When available, data from the class of 2014 will be analyzed. Full data sets were available for 72 students (n=72).

Results
![Scatter plot showing the total number of procedures completed at CDM and rotations](image1.png)

![Scatter plots showing the individual categories of procedures completed at CDM and rotations](image2.png)

Discussion
The results of this study showed a low correlation between the number of procedures done during the rotations and the number of procedures completed at CDM. It is important to note that different sites allowed different levels of student involvement in treatments during the rotations. The results of the correlation analysis of the class of 2014 will provide further information regarding this study. A survey study will also be conducted reporting the effects of rotations on confidence levels of students at CDM clinic.

Literature Cited
After completing her bachelor's at Cornell University, Dr. Bansari Modi received a dual-degree (DDS, MA in Science Education) from Columbia University College of Dental Medicine and Columbia University Teachers College in Manhattan, NY. Dr. Modi also completed a residency in orthodontics at New York University College of Dentistry. She currently practices in New Jersey.

Having been a student for the majority of her life, Dr. Modi has integrated all of her knowledge and experience as an
KEY THINGS TO CONSIDER

• Support needed from both institutions
• Steps to form the program
• Funding for program
• Availability of mentors
• Sustainability of program
Breakout Session

• Discuss in your small group the challenges you think you would face (or have faced) in forming a dual degree program at your institution.

• Pick the greatest challenge to discuss with the larger group.
Dual Degree DDS/MBA

- Designed to educate the next generation of dental leaders in our health care system.

- There is a need for this type of dual expertise in the dental profession:
  - Delivery of dental care services is becoming an increasingly complex proposition.
  - In this type of climate, the field of dentistry will be best served by individuals who are not only professionally trained managers, but who also understand the basic conditions for ethical and responsible dental health care.

- Students receive thorough foundations in the basic biological sciences and clinical dentistry, and gain invaluable insights into the financial considerations and managerial aspects of health care organizations preparing them to assume leadership roles at the forefront of the health care industry.
Dual Degree DDS/MBA

- Those who wish to pursue a business degree along with their dental certification may apply to the five-year DDS/MBA dual degree program.
- Registration is tailored to meet the academic objectives of each school and meet both schools’ course, residence, and sequencing requirements.
Columbia Business School

- Columbia Business school prides itself on the independence of its students and faculty.

- The Business school offers a wide range of dual degree options:
  - Architecture: MBA and MS in Urban Planning
  - Dental and Oral Surgery: MBA and DDS
  - Engineering and Applied Science: MBA and MS
  - International and Public Affairs: MBA and MIA
  - Journalism: MBA and MS
  - Law: MBA and JD
  - Nursing: MBA and MS in Nursing
  - Physicians and Surgeons: MBA and MD
  - Public Health: MBA and MPH
  - Social Work: MBA and MS in Social Work
  - Teachers College: MBA and MA in Private School Leadership
Dual Degree DDS/MBA

- To be admitted, students must apply and gain acceptance to both the CDM and the Graduate School of Business separately. Admissions decisions are based solely on that school’s selection criteria and are made independently.
- Interested students apply prior to completing half of the coursework at CDM.
- GMAT (preferred) including Analytical Writing Assessment (AWA) and Integrated Reasoning (IR) sections or GRE. Scores valid for 5 years.
- Students can only be registered in one school per semester.
- DDS/MBA candidates must interrupt their dental school studies for three terms to complete the required business curriculum, which includes fifteen business courses and 45 overall credit points.
- DDS/MBA students enroll for three terms: Fall, Spring, Summer.
- Students pay the tuition and fees of, and are granted financial aid by, the school in which they are in residence.
# Dual Degree DDS/MBA

## First Term Core Courses

<table>
<thead>
<tr>
<th>Pre-term</th>
<th>Lead: People, Teams, Organizations (1/2 term equivalent)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st half</td>
<td>Managerial Statistics&lt;br&gt;Strategy Formulation&lt;br&gt;Financial Accounting&lt;br&gt;Finance&lt;br&gt;Managerial Economics</td>
</tr>
<tr>
<td>2nd half</td>
<td>Business Analytics&lt;br&gt;Marketing&lt;br&gt;Global Economic Environment</td>
</tr>
</tbody>
</table>

## Second Term Core Courses

<table>
<thead>
<tr>
<th>1st half</th>
<th>Operations Mgmt&lt;br&gt;1/2 Elective</th>
<th>Elective</th>
<th>Elective</th>
<th>Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd half</td>
<td>1/2 Elective&lt;br&gt;1/2 Elective</td>
<td></td>
<td></td>
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</tbody>
</table>

Third Term: All electives
The Development of the DMD/MPH Program at Tufts University

Wanda G. Wright, DDS, MS, MSD
Introduction

- Combined DMD/MPH program established at Tufts University School of Dental Medicine in 2011
  - First student enrolled in 2012

- MPH degree offered through the School of Medicine at Tufts University
DMD/MPH Program Project Phases

- **Phase 1**: Assess
- **Phase 2**: Design & Develop
- **Phase 3**: Implement Fall 2012
- **Phase 4**: Measure

**Desired Outcomes**
- Thorough review of evidence/literature
- Justification
Assessment

- Reviewed national and state documents/initiatives
- Demographics
- Reviewed existing documents on oral health needs
- Appraisal of dental workforce
Oral health in America: A Report of the Surgeon General

- Oral health is essential to general health and well-being.
- Profound disparities in oral health
- More information is needed to eliminate disparities.
Professional Initiatives

A National Call to Action to Promote Oral Health

- Change Perceptions
- Remove Barriers
- Build the Science Base
- Increase Oral Health Workforce Diversity, Capacity, and Flexibility
- Increase Collaborations
Professional Initiatives

Healthy People 2010 (2000)

- Goals:
  - To promote health
  - Improve quality of life
  - Eliminate health disparities

- 17 specific oral health objectives

- Requires dental public health action

Future of Dentistry Report

American Dental Association’s Future of Dentistry

- Aggressively address oral health needs of the public
- Expand research and education
- Develop diverse workforce

Missing Persons: Minorities in the Health Professions

To increase diversity in the health professions:

- Culture of health professions schools must change
- New, non-traditional paths explored
- Commitments at highest levels

Assessment

- Reviewed national and state documents/initiatives

Demographics

- Reviewed existing documents on oral health needs

Appraisal of dental workforce
Justification and Need

- Changing demographics of the U.S.

- Population older and more diverse
  - 65 and older population
    - 13% in 2010 to 19.3% in 2030

- Hispanic and Asian population expected to triple over the next 50 years.
Massachusetts Demographic

<table>
<thead>
<tr>
<th>Category</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>6.6 million</td>
</tr>
<tr>
<td>Rank</td>
<td>13th</td>
</tr>
<tr>
<td>Growth (2000-2020)</td>
<td>6%</td>
</tr>
<tr>
<td>Growth &gt;65 years (2000-2020)</td>
<td>61%</td>
</tr>
<tr>
<td>White</td>
<td>80%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8.2%</td>
</tr>
<tr>
<td>Black</td>
<td>6.9%</td>
</tr>
<tr>
<td>Asian</td>
<td>4.9%</td>
</tr>
<tr>
<td>Poverty Rate</td>
<td>10%</td>
</tr>
</tbody>
</table>

U.S. Census Bureau, 2009
Assessment

- Reviewed national and state documents/initiatives

Demographics

- Reviewed existing documents on oral health needs

Appraisal of dental workforce
25% of children have experienced dental disease by grade six

18% of third grade students have untreated dental disease.

Vulnerable populations disproportionately affected.
## Regional Need

### Oral Health Profiles of Massachusetts, Maine, Vermont, and New Hampshire

<table>
<thead>
<tr>
<th></th>
<th>Massachusetts</th>
<th>Maine</th>
<th>Vermont</th>
<th>New Hampshire</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dental Visit in past year</strong></td>
<td>78.2%</td>
<td>68.7%</td>
<td>73.2%</td>
<td>76.2%</td>
</tr>
<tr>
<td><strong>Complete Tooth Loss</strong> (population 65+)</td>
<td>16.5%</td>
<td>24.3%</td>
<td>21.3%</td>
<td>21.1%</td>
</tr>
<tr>
<td><strong>Fluoridation Status</strong></td>
<td>59.1%</td>
<td>79.6%</td>
<td>58.7%</td>
<td>42.6%</td>
</tr>
<tr>
<td><strong>Dental Sealants</strong> (3rd Graders)</td>
<td>45.5%</td>
<td>47.6%</td>
<td>66.3%</td>
<td>45.9%</td>
</tr>
<tr>
<td><strong>Caries Experience</strong> (3rd Graders)</td>
<td>40.7%</td>
<td>44.7%</td>
<td>44.3%</td>
<td>52.0%</td>
</tr>
<tr>
<td><strong>Untreated Tooth Decay</strong></td>
<td>17.3%</td>
<td>20.4%</td>
<td>16.1%</td>
<td>21.7%</td>
</tr>
</tbody>
</table>
Justification and Need: Boston

- Children with untreated caries was significantly greater than statewide average (43% vs. 27%)
- Any dental visit last year
  - Boston children: 33%
  - Statewide: 79%
- Preventive dental visit last year
  - Boston children: 29%
  - Statewide: 73%
- Children with sealants was significantly less than statewide average.
Assessment

- Reviewed national and state documents/initiatives
- Demographics
  - Reviewed existing documents on oral health needs
- Appraisal of dental workforce
Dental Workforce in MA

- 5,500 dentists
- 1 to 1,095 dentist-to-population ratio
  - 1 to 1,700 nationally
- 53 dental health professional shortage area communities
  - 1.3 million residents
- Average age dentist: 51 years
Distribution of Dentists in MA

Tufts University
School of Dental Medicine
Dental Workforce in MA

- 2008 statewide survey of dentists
  - 97% of respondents reported not accepting Medicaid patients
  - 6% were interested in becoming a Medicaid provider

Massachusetts Dentists Specialty Training, 2008

<table>
<thead>
<tr>
<th>Specialty</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Orthodontics</td>
<td>23.4</td>
</tr>
<tr>
<td>Oral Surgery</td>
<td>18.5</td>
</tr>
<tr>
<td>Periodontics</td>
<td>16.4</td>
</tr>
<tr>
<td>Pedodontics</td>
<td>16.4</td>
</tr>
<tr>
<td>Endodontics</td>
<td>12</td>
</tr>
<tr>
<td>Prosthodontics</td>
<td>11.6</td>
</tr>
<tr>
<td>Oral Pathology</td>
<td>1.1</td>
</tr>
<tr>
<td>Public Health</td>
<td>0.6</td>
</tr>
<tr>
<td>Oral Radiology</td>
<td>0</td>
</tr>
</tbody>
</table>

General Dentists: 72%
Specialists: 28%
Distribution of Professionally Active Dental Specialists, 2008

- 80% of professionally active dentists are generalists
- 20% are specialists

Source: American Dental Association
Distribution of Race Among Professionally Active Dentists, 2006

- White: 86.2%
- Hispanic: 3.4%
- African American: 3.4%
- Asian/Pacific Islander: 6.9%
- American Indian: 0.12%

Source: American Dental Association, 2006
Dental Public Health Workforce

- As of December, 2009, there were 160 active board certified public health dentists in the U.S.

- 12 dental public health residency programs.

- Most advanced degree programs in public health do not offer a specialty in dental public health.
Program Development

- Tufts offers combined MPH programs
  - Medicine
  - Veterinary medicine
  - Nutrition
  - Law

- Creation of DMD/MPH program is a logical next step
Program Development

- Planning committee formed in 2010
  - Members represented academic units of Medical and Dental Schools.
  - Included 2 individuals with board certification in DPH
  - Reviewed other DMD-DDS/MPH programs
DMD/MPH Program Goals

- Improve access to quality health care through appropriate preparation, composition and distribution of the health profession workforce.

- Improve understanding of the health care needs of underserved populations.

- Promote collaboration between schools at Tufts University.
<table>
<thead>
<tr>
<th>Program Objective</th>
<th>Healthy People 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop combined DMD/MPH program which delivers a curriculum that addresses the core areas of public health.</td>
<td>HP Goal 1-7: Increase the proportion of schools of medicine, schools of nursing, and other health professional training schools whose basic curriculum for health care providers includes the core competencies in health promotion and disease prevention</td>
</tr>
</tbody>
</table>
DMD/MPH Program Objectives

Program Objective

- Recruit a culturally and ethnically diverse student body

Healthy People 2010

- HP Goal 1-8: In the health professions, allied and associated health profession fields, and the nursing field, increase the proportion of all degrees awarded to members of underrepresented racial and ethnic groups.
<table>
<thead>
<tr>
<th><strong>Program Objective</strong></th>
<th><strong>Healthy People 2010</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop and implement a cultural competency and health literacy curriculum</td>
<td>Goal 11-2: Improve the health literacy of persons with inadequate or marginal literacy skills.</td>
</tr>
</tbody>
</table>
DMD/MPH Program Objectives

Program Objective

- Develop and refine educational opportunities for students to care for populations with Special Needs

Healthy People 2010

- 21-1 Dental caries experience
- 21-2 Untreated dental decay
- 21-5a Reduce gingivitis among adults
- 21-5b Reduce periodontal disease among adults
- 21-11 Use of oral health care system by residents in long-term care facilities
- 6-10 Increase the proportion of health and wellness and treatment programs and facilities that provide full access for people with disabilities
Program Development

- Health Resources and Services Administration (HRSA) 5-year funding
  - 4.5 or 5 year combined program
  - 2-3 students per year
    - 8-10 students enrolled at any time
DMD/MPH Program Project Phases

Phase 1: Assess
- Thorough review of evidence/literature
- Justification
- OH needs
- Workforce

Phase 2: Design & Develop
- Competencies and how they will be measured
- Methods
- Implementation needs

Phase 3: Implement 2012
- Successful execution

Phase 4: Measure
Curriculum

- Competency based
- Generalist training in public health
- Core as well as specialized knowledge
  - Coursework
  - Interdisciplinary seminars
  - Applied Learning Experience
- 13 credits MPH coursework
  - 1 course = 1 credit
Curriculum

- Start after 2\textsuperscript{nd} DMD year

- 4.5 year program
  - 4.5 credits while in dental school
  - 8.5 credits summer and fall following DMD program
  - December completion
5 year program
- 4.5 credits while in dental school
- 8.5 credits summer and fall & spring following DMD
- May completion
# SAMPLE SCHEDULE FOR MPH CURRICULUM

## Third year start (4.5-year program)

<table>
<thead>
<tr>
<th>Timing of MPH Courses</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Third Year of DMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>Public Health and Health Care</td>
<td>1.0</td>
</tr>
<tr>
<td>Spring</td>
<td>Principles of Biostatistics (w/Lab)</td>
<td>1.0</td>
</tr>
<tr>
<td>Summer</td>
<td>Principles of Epidemiology</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Fourth Year of DMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>Public Health Research Methods</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Seminar in Health Literacy</td>
<td>0.5</td>
</tr>
<tr>
<td>Spring</td>
<td>Introduction to Occupational and Environmental Health</td>
<td>1.0</td>
</tr>
<tr>
<td>Summer</td>
<td>ALE Planning</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>Health Behavior and Health Communication</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Healthcare Organization: Budgeting and Management</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>2 Electives (0.5 credits each)</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Post DMD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall</td>
<td>ALE Implementation</td>
<td>0.5</td>
</tr>
<tr>
<td></td>
<td>4 electives (0.5 credits each)</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Race, Culture, Ethnicity</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Curriculum

- New course:
  - Integrating Dentistry and Public health
    - DPH Competencies
- Required courses
  - Core MPH courses
  - Race, Culture and Ethnicity
  - Health Literacy
  - Patients with Special Needs
Estimated Costs

MPH tuition rate while in DMD program: $5053/term

MPH tuition after graduating from DMD program: $4,664/credit
Program Status

- First student admitted January 2012
  - Completed program May 2014
  - Enrolled in DPH Residency Program

- 8 students currently enrolled

- We have successful retained 100% (9 of 9) enrolled students
DMD/MPH Program Project Phases

Phase 1
Assess

Phase 2
Design & Develop

Phase 3
Implement 2012

Phase 4
Measure

Desired Outcomes
- Thorough review of evidence/literature
- Justification
- OH needs
- Workforce

Desired Outcomes
- Competencies and how they will be measured
- Methods
- Implementation needs

Desired Outcomes
- Successful execution

Desired Outcomes
- Outcomes measured
- Lessons learned
Evaluation

- Percentage employed in the public health field within one year of graduation.

- Percentage enrolled in a dental public health residency program within three years of graduation.
Challenges

- Securing adequate funding
- Offering additional classes compatible with dental student’s schedule
- Different academic calendars
- Tuition and scholarship structure
- Teaching approaches
- Ensuring sustainability of the program
Lessons Learned

- Assigning individual advisors right away is not effective.
- Students integral and valuable component in the advising process.
- Coordination of logistical support require thorough planning (admissions, financial aid, scholarships, registration)
- Differences in dentistry and public health cultures must be understood.
Next Steps

- Evaluation
- Scholarship funding
- Opportunities for DPH Residencies/Board Certification for graduates
Acknowledgement

Health Resources and Services Administration (HRSA)

Grant # D85HP20035-03-00
Breakout session

- Do you think a dual degree program could benefit your school? If so, what type?
- If you already have a dual degree program, what type is it and what benefits have you seen?