The Research Academy at HSDM and Forsyth

Description
Harvard School of Dental Medicine and The Forsyth Institute are pleased to announce a joint Research Academy which will offer an unparalleled three-year (minimum) structured Doctor of Medical Sciences (DMSc-only) research-intensive degree in oral biology.

Under the mentorship of world-renowned scientists, participants will undertake an intensive research training experience in laboratories at the Harvard School of Dental Medicine (HSDM) or Forsyth. The goal of the program is to train academic researchers in oral and craniofacial biology and skeletogenesis in the best possible scientific environment, and thus provide superior research leadership to institutions and countries around the globe.

The Program will include required coursework, laboratory rotations, a qualifying examination, thesis proposal, and will culminate in a rigorous DMSc dissertation. Coursework will include a core of HSDM courses including research methods, biochemistry, biostatistics, genetics, cell and molecular biology, and seminar presentations. In addition each student will take elective courses in disciplines relevant to the student's research theme.

The program will commence in the summer 2015 and is offered to candidates who hold a MD, DMD or equivalent degree and have taken the GRE, and obtained a TOEFL score of at least 95.

Application
http://www.adea.org/PASSapp/
Search HSDM programs for ‘Oral Biology’

Time Frame
Application Deadline: December 15, 2014
Start Date: July 1, 2015
Oversight Committee

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## Coursework

<table>
<thead>
<tr>
<th><strong>DMSc DEGREE without SPECIALTY</strong></th>
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<tbody>
<tr>
<td><strong>Minimum # of Credits</strong></td>
<td>24 credits</td>
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<tr>
<td><strong>HSDM Core Courses</strong></td>
<td>8 credits</td>
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<td>choose one; 4 credits each</td>
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<tr>
<td>• Craniofacial Developmental Genetics OB611</td>
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<td>• Mineralized Tissue Biology and Diseases OB614</td>
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<td>mandatory</td>
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<tr>
<td>• Introduction to Research IDP602.IN</td>
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<tr>
<td><strong>Graduate Level Basic Science Courses taken at HMS, HSPH, MIT, FAS</strong></td>
<td>12 credits</td>
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<td><strong>Biochemistry</strong></td>
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<td>choose one; 4 credits each</td>
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<td>• Biochemical and Genetic Analysis of Eukaryotic Gene BCMP335</td>
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<td>• Biological Macromolecules: Structure, Function and Pathways BCMP201</td>
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<td><strong>Genetics</strong></td>
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<td>• Cellular Metabolism and Human Disease BCMP234</td>
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<td>• Molecular Medicine BCMP218</td>
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<td>• Molecular Biology of the Cell 1044</td>
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<td><strong>Biostatistics</strong></td>
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<td>choose one; 4 credits each</td>
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<tr>
<td>• Basics Statistical Inference BIO222-01</td>
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<tr>
<td>• Introduction to Statistical Methods BIO201.01</td>
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<tr>
<td><strong>Electives</strong></td>
<td>4 credits (or more)</td>
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<tr>
<td>Please work with your research mentor on selecting elective courses from the Harvard University Catalog and Cross Registration (<a href="https://coursecatalog.harvard.edu">https://coursecatalog.harvard.edu</a>)</td>
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<tr>
<td>Please consider taking nano courses and attending seminars and lectures that complement your research interests.</td>
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<td><strong>Additional Requirements</strong></td>
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<td>Oral Qualifying Exam</td>
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<td>Thesis Proposal</td>
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<td>Thesis Defense</td>
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<td>Presentation at Research Day</td>
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Time Line

YEAR 1:
July 2015 – September 2015  Orientation and Lab Rotations
September 2015 – June 2016  Required Coursework (24 credits)
April 2016  Attend Student Research Day
May 2016  Identify Oral Qualifying Examination Committee
June 2016  Oral Qualifying Examination

YEAR 2:
September 2016  Identify Thesis Advisory Committee and obtain approval by Oversight Committee
December 2016  Approval of Thesis Proposal by Thesis Advisory Committee
April 2017  Attend Student Research Day
April/May 2017  Convene Thesis Advisory Committee (check in every 4 months thereafter)

YEAR 3: *
January 2018  Identify Thesis Defense Committee and obtain approval by Oversight Committee
February 2018  Deadline for submission of abstract for Thesis Defense
March 2018  Deadline for submission of abstract for HSDM Student Research Day
April 2018  Thesis Defense Deadline
April 2018  Present a poster at Student Research Day
May 2018  Final Thesis Submission Deadline

* (if graduating in 3 years)
MENTORS

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The Research Academy at HSDM and Forsyth

Mentor Guidelines: What to think about when mentoring a DMSc student

The importance of mentor and project selection should not be overlooked: they are crucial to the quality of the student’s experience and the successful completion of their research requirements at Harvard School of Dental Medicine and The Forsyth Institute. Students are expected to devote a considerable amount of time to finding a mentor, by critically assessing the research environment offered by the mentor. It is essential that the specific aims of the student’s project be clearly delineated and be feasible within the available timeframe. The mentor that the student selects should have the resources to allow the student to achieve the specific aims.

A few questions that a student might ask before selecting a mentor:

- Will the mentor be able to provide research space?
- Will the necessary supplies be purchased by mentor?
- What kinds of equipment will mentor be giving the student access to?
- Will this mentor be available to supervise the student’s research? Does the mentor feel that this student could have an intellectually fulfilling experience?
- Will the mentor directly supervise the student?

Possible questions students may ask themselves regarding their expectations of the student/mentor relationship:

- Will this mentor view me as a valuable but inexperienced colleague?
- Will this mentor take the time to provide guidance?
- Will this mentor set and model high standards?
- Will this person view me as an individual with certain strengths and needs?
- Will this person help me through the low spots that I might encounter in either my academic program or in my chosen project?
- Will this person be available to meet with me on a regular basis?
- Will this work result in a publication?

Reasonable questions a mentor may ask themselves regarding their expectations of this relationship:

- Will this student recognize that I am a busy professional who is donating valuable time? Will this student limit questions to those that are professional rather than personal?
- Will this student carefully think out questions to maximize the use of my time? Will this student realize that some communication with me might be professionally sensitive and should not be repeated?
- Will this student understand that at times my schedule may prevent me from being available at the time or in the mode that (s)he desires?
- Can this student suggest ways in which he/she can benefit from this relationship?
What Makes a Good Mentor?
By Lamar Riley Murphy and Gaye Wong
University of Illinois at Urbana

Respectful: Good mentors treat their students with respect and trust, viewing them as invaluable but inexperienced junior colleagues. They see graduate students as apprentices; it is their responsibility, privilege, and reward to guide students successfully through that apprenticeship. As one nominee phrased it, "Working closely with one's advisor is more than a supplement to formal instruction; it is the core of the matter." Good mentors act in accordance with their vision that their students are, in the words of a nominee, "important partners in learning, teaching, and research."

Committed: Good mentors make "an investment of faith in the growth potential of students," starting at the beginning of graduate school - or earlier - and continuing well beyond graduation, eventually evolving into a collegial relationship. This commitment manifests itself every day and in every facet of graduate training and professional socialization. As one nominee put it, "That commitment must be very broad, including not only counsel on acquiring intellectual skills likely to be of later value, but direct guidance on everything from public speaking style to the management of career details such as nuances of interaction with journal editors and academic/corporate politics, to name only two."

Demanding: Good mentors have high standards for themselves and their students, and they constantly strive for excellence. Wrote a former student, "He always guided me in a direction that was within my reach to complete the work, but clearly had me challenged to the maximum extent of my abilities." Good mentors are sensitive to the toll such high expectations can take on students' self-confidence, and they consciously endeavor to build rather than erode self-esteem. Explained one former student, "[My mentor's] distinctive mentoring style allowed me room to stumble, to take blind alleys and wrong turns, but always made me know I was accompanied on the journey. [My mentor] encouraged even as he criticized, and he criticized frequently."

Adaptable: Good mentors recognize that different students have different needs and strengths. In fact, the best mentors capitalize on such differences by tailoring training opportunities to the needs and aspirations of each student. Good mentors do not force students to adapt to their own styles; rather, good mentors adapt their approaches to the needs of individual students. A former student said his mentor had an "uncanny ability to match his style of mentorship to the student's disposition. He seemed to know exactly how to critique and motivate each of us in ways that revealed our deficiencies but left us invigorated for the next attempt." Since students are continually developing throughout their graduate careers, effective mentoring also requires a process of continual reassessment and readjustment. What is common to all effective mentoring, however, is, in one mentor's words, "very personal attention" and "quick and detailed feedback."

Available: Despite their own busy schedules, good mentors are accessible, and approachable, not only to their own current and previous advisees but to other students as well. Their doors are literally always open to their students, and they are available at nights, on weekends, and while on sabbatical. Marveled one student, "[My mentor] always gave me his undivided attention, although he had countless other commitments." Another wrote, "One of [his] students once told me that he worked so hard to turn around a draft of his dissertation proposal in a timely manner because it embarrassed him that [his advisor] was working harder on it than he was."

Encouraging: Good mentors encourage students to develop their own ideas by giving the kind of feedback that promotes a sense of independence, responsibility, and self-confidence. They encourage students to
experiment and teach them not to fear mistakes. Said one former student about his mentor, "He hands his students the rope and shows them how not to hang themselves." Another mentor was said to have the "knack of giving comments in a way that elicited rather than imposed ideas." Another student attested to the importance of this approach: "[He] was the first teacher in my entire college career to take my work seriously. His encouragement, regard, rigor, and attention to my work were contagious, and I began for the first time to take myself seriously because he took me seriously." Indeed, the intellectual passion and enthusiasm that good mentors communicate to their students is contagious. Students find inspiration in their examples, and are further inspired when they realize that they are being encouraged to pursue topics far beyond the particular expertise of the mentor.

**Proactive:** Good mentors do not wait for their students to seek them out with questions or problems. Good mentors have frequent formal and informal meetings with their students, and they aggressively make available and encourage participation in meaningful professional development activities. The nominating materials abound with anecdotes about students whose lack of self-confidence, experience, or foresight would - without the intervention of a mentor - have kept them from pursuing an opportunity that later proved to be extremely beneficial. Good mentors also provide opportunities for other students in their programs. One nominee, for instance, has improved professional development opportunities for all of the students in his department by instituting such programs as a graduate "buddy" system, faculty-graduate student round tables on graduate and professional issues, and various colloquia on job search and interview techniques.

**Nurturing:** "Good mentors," wrote a former student, "nurture the careers of their students. They introduce them to the right people, they are generous with credit and praise, they put in good words in the right ears which result in the earliest professional opportunities, they encourage after setbacks. In short, they spend the credit of their hard earned reputations to advance their students." Good mentors spend significant amounts of their time promoting the careers of their students, beginning with the earliest days of graduate school and continuing well beyond the first job.

**Holistic:** Good mentors view the educational process as encompassing much more than mastery of a particular academic subject. As a former student explained about his mentor, "after spending my graduate career with [him], I know now that an educated individual knows more than the contents of numerous text books and journal articles. An educated individual is knowledgeable about the world around him, tolerates any and all views, goes out of his way to make others a better person, and accepts nothing less than the best possible effort."

**Influential:** "An advisor," wrote one finalist, "has the responsibility to be a positive role model..." Good mentors, as she and the other finalist suggest, practice what they preach. Noted another professor, "students learn at least as much by first-hand observation of you ... as they do by what you tell them." Good mentors have influence that extends far beyond the students with whom they have personally been involved, so that their influence ripples through succeeding generations of students. Wrote one student about the three years he spent studying with one nominee, "Three years is not a long time in my life. However, three years studying with [her] has changed my whole life." Another of this professor's students made a similar testimonial, concluding that her "impact over the generations is immeasurable."