Update from the Harvard Medical School Masters of Medical Science in Medical Education Program

By Ayres Heller, Program Manager & Jennifer Kesselheim, Program Director

The Harvard Medical School Master of Medical Sciences (MMSc) in Medical Education program welcomed a new cohort of nine students in September. This cohort joins seven students who are in their second year of the master's program to form a robust group engaged in formal coursework (year one) and active research (year two) in medical education.
The first year students are engaged in courses including qualitative methods for research, statistics for educational research, and Research in Medical Education: Principles and Practice (RIME), taught by HMS Academy member Subha Ramani. Additionally, these students engage in a longitudinal seminar in medical education in which many HMS Academy members teach on core medical education concepts and theories including curriculum development, assessment, adult learning theory, and educational technology. These students are beginning to develop their thesis projects and will bring their ideas to the Harvard Macy Institute Program for Educators in the Health Professions in January for further refinement.

Our second year master's students are engaged full-time in their thesis research with mentorship from many HMS Academy members. These students are collecting data that they will begin to analyze before defending their theses in the spring. Many are gathering data at their home institutions and we look forward to congregating in early December for project updates and career development sessions with the group. Their thesis projects are on the following topics:

- How does resident resilience and tolerance of ambiguity impact burnout, medical error and clinical competence? (Arabella Simpkin)
- What is the relationship between perceived and physiologic stress and procedural learning during a simulation? (Adrian Hasdienda)
- How does a longitudinal integrated block influence residents' career goals, mentorship, and patient-centeredness? (Kate Distler)
- What are the views of students and teaching faculty in Thailand about implementation of the flipped classroom? (Atipong Pathanasethpong)
- What impact will an online module to teach physiology have on entering medical students' knowledge? (Eric Gantwerker)
- What are the communication needs of parents of children with cancer and how will an educational intervention teaching communication influence parents' satisfaction with their child's physician? (Angela Feraco)
- What are the characteristics and best practices of successful collaborations between academic institutions? (Mansour Alfadhel)

We are now recruiting our third cohort of students for matriculation in the fall of 2016. The degree is an ideal fit for medical educators who seek expanded skills not only as teachers but also as leaders and investigators. The program is open to faculty as well as to residents and fellows whose training programs provide protected time for scholarly work. For trainees interested in medical education as a career focus, this master's degree would be a perfect way to complete GME research requirements.

Please see the complete announcement at later in this edition of Insights. If you, your colleague, or your mentee might be interested in pursuing the new MMSc in Medical Education degree, please visit our website at: http://hms.harvard.edu/masters_medical_education

For further information or e-mail Ayres at: ayres_heller@hms.harvard.edu

Please find additional program information in a recorded webcast at: http://video.dfcionline.org/accordent/MMSCMedEd100915
Teaching Residents about Leadership
By Dara Brodsky


In the pilot 1-week curriculum, twenty 2nd and 3rd year residents in internal medicine, surgery, and emergency medicine at BWH received leadership training "to improve competence and mastery of core topics including team dynamics, leading change, understanding the business of medicine and communication skills." Classes were taught by local experts affiliated with Harvard Medical School and Harvard Business School with diverse teaching approaches, including case-based learning, interactive talks, small group sessions and simulation exercises.

Feedback from participants showed that the course was very well-received and all residents thought the course would help them to become more effective clinical leaders. Residents recommended additional courses about negotiation and leadership in research. Since this pilot program, the authors modified the curriculum based on feedback, plan to offer this program 1-2 times per year, and will make this course available to BWH residents in any specialty.

In 2013, BWH received the Leape Ahead Award from the American Association for Physician Leadership in recognition of this program's dedication to improving the quality of health care by fostering leadership skills in residents (https://www.youtube.com/watch?v=8OPI9PnEMdw).
HMS Academy Medical Education Day keynote speaker Dr. Thomas Viggiano, Associate Dean for Faculty Affairs, Mayo Medical School, Rochester, MN.

With a record-setting 290 faculty registered for Medical Education Day, the HMS Academy reached a new level of community engagement. I am deeply appreciative of our co-chairs (Drs. Meredith Atkins and Andy Lichtman), our workshop leaders, our Academy staff, and all those who submitted abstracts and contributed to the insightful and inspiring discussions held throughout the day. I look forward to continuing our work together throughout the academic year.

Richard Schwartzstein, MD
Director, HMS Academy

As Harvard Medical School launches its redesigned medical education curriculum,
Pathways, entering students are beginning their clinical experiences earlier-in their second rather than their third year of medical school.

That means faculty must shift focus to the question of how to best teach members of the Class of 2019 when they enter clinics next fall.

Pathways "is going to have many ripple effects as it rolls through, and none greater than for the clinical curriculum," said Ed Hundert, dean for medical education and the Daniel D. Federman, M.D. Professor in Residence of Global Health and Social Medicine and Medical Education at HMS.

Leading up to Pathways' launch this past August, curriculum planning and implementation initially focused on basic science and pre-clinical education, but now it will evolve.

"For this curriculum to work, for it to do all the things we want it to do, the clinical faculty who are teaching in the PCE [Principal Clinical Experience] and beyond need to think about how we take the goals and objectives and themes of this curriculum and bring it to the bedside and the care of the patient," said Richard Schwartzstein, director of the HMS Academy and the Ellen and Melvin Gordon Professor of Medical Education at Beth Israel Deaconess Medical Center.

Medical Education Day 2015, held Oct. 27 in the TMEC Amphitheater, invited faculty in the HMS community to consider how to do just that--how to translate the revised educational philosophy of Pathways into the clinical training of students, residents and fellows.

Over the course of six hours, leaders of "Taking Pathways to the Clinical Realm" raised questions, shared pedagogical models and provided skill-building workshops designed to help HMS clinical faculty figure out how to nurture critical thinking and problem-solving skills in students through more active learning rather than through rote memorization.

Keynote speaker Thomas Viggiano, associate dean for faculty affairs at Mayo Medical School, discussed how physicians acquire expertise and outlined teaching methods that can lead to the most effective clinical reasoning.

Novices, he said, learn from books and classes, relying on deductive reasoning founded on limited knowledge. Intermediates have goal-directed schemes or algorithms and can use inductive reasoning to progress through narrowing possibilities of the patient's condition.

Seasoned physicians, on the other hand, have developed a deep understanding of the basic science of individual organ systems as well as years of experience with individual cases that allow them to recognize patterns and work from so-called illness scripts. They have gained thorough knowledge of the conditions that give rise to a patient's disease, the precise nature of the fault in the body and the consequences an illness may have on that person's life.
Physicians with expert judgment are able to transition from automatic to analytical mode when assessing a patient, he added. They recognize when something doesn't fit, they slow down when anomalies appear and they use the opportunity to expand their knowledge and employ creative thinking rather than trying to make an unusual scenario fit within a comfortable model.

"We are more than problem solvers," Viggiano said. Recognizing a patient's "functional disturbance, what they're not able to do, what their fears are, what they can expect from having this illness [...] makes all the difference in the world."

He proposed that only with a combination of scientific understanding and empathy can physicians practice the art of healing.

Viggiano then turned to the question of what makes a good clinical teacher. He said the ideal set of traits includes clinical knowledge, critical reasoning abilities, a supportive learning environment, good communication skills, enthusiasm for medicine and teaching, humanism, professionalism and an awareness of the impact of societal issues.

He outlined several evidence-based teaching frameworks that faculty might find useful but concluded that providing positive role models for students is more important than following any particular structure to the letter.

"Treat this new curriculum as if its success depends on you," he said in closing. "We are role models in this medical apprenticeship system, and we must be everything we want our students to become."

2015 Medical Education Day
Abstract Award Recipients

Undergraduate Medical Education Research
Assessing item quality in open-book online readiness assessment exercises using student feedback and item response time
H.C. Besche, PhD; M.I. Stefan, PhD; Y. Liu, PhD; R.W. King, PhD; A.Sullivan, EdD

Innovation for Undergraduate Medical Education
Impact of the Resident-as-Teacher Video Series in Preparing Students to be Resident Teachers
Bri Anne McKeon, MD; Celeste Royce, MD; L. Renata Vicari; Miriam Haviland MSPH; Lori Newman, MEd; Hope A. Ricciotti, MD
Graduate Medical Education Research

A Cadaveric Procedural Anatomy Course Enhances Operative Confidence and Competence
G. Sharma, MD; Mario A. Aycart, MD; Peter A. Najjar, MD; Trudy van Houten, PhD; Douglas S.
Smink, MD, MPH; Reza Askari, MD; Jonathan D. Gates, MD, MBA

Honorable Mention for Graduate Medical Education Research

Test-Enhanced Learning Applied to the Digital World
Lisa A. DelSignore, MD; Traci Wolbrink, MD, MPH; Tanya Logveniko, PhD; Jeffrey P. Burns, MD,
MPH

Effective Mentorship During Residency Training: Needs Assessment and Perspectives of Residents

Innovation for Graduate Medical Education

A Compiling Analytic Software Program for the ACGME Milestones is an Efficient, Flexible and
Timely Monitor of Resident Performance and Progress
D.K. Urion, M.D., FAAN; Joseph Viscomi

Student Research

Committed to Leadership: A Landscape Analysis of Leadership Training in the Medical School
Curriculum
D. Wohler, B.S.

Honorable Mention for Student Research

Implementation and Assessment of a Near-Peer Teaching Program for Preclinical Medical Students
Samantha Epstein, B.A.; Zoë Gottlieb, M.D.; Holly Gooding, M.D. M.S.; Jeremy Richards, M.D.
M.A.

Increased Resident Research in the Era of Work Hour Restriction
Jenny X. Chen, BA; Elliott D. Kozin, MD; MPH, Rosh K.V. Sethi, MD, MPH; Aaron K.
Remenschneider, MD; Kevin S. Emerick, MD; Stacey T. Gray, MD

Continuing Medical Education Special Mention

Impact of a Professional Education Program on Physician and Patient Metrics in Diabetes Care
Garcia-Dolagaray G, BS; Romero-Ibarguengoitia, ME, MD, MS; Okeke E, MD; Gautam S, PhD; Kuc
K, MPH; Neighbours J MEd, Caballero AE MD
Call for Applications: MMSc in Medical Education
Degree program to train research scholars in medical education

Accepting applications now! Harvard Medical School recently opened a new Master of Medical Sciences (MMSc) in Medical Education, a unique two-year master's program designed to provide rigorous research training in the field of medical education. While many medical schools in the U.S. and abroad offer one-year master's degrees in medical education, Harvard’s new program will require two years, blending one year of formal coursework with an additional year of research leading to a publishable master’s thesis.

The concept and design of the new MMSc in Medical Education was developed over an 18-month period by a faculty committee, with representation from across HMS and the HMS-affiliated institutions as well as from the Harvard Graduate School of Education, the Harvard Macy Institute, and the MGH Institute for Health Professions.

We are now recruiting our third cohort of students for matriculation in the fall of 2016! During their first year, students will engage in formal course work led by faculty from the HMS Academy. They will also participate in courses at the Harvard Graduate School of Education and the Harvard Macy Institute and will choose elective courses available throughout the Harvard community. Mentored research will commence halfway through the first year and will continue throughout Year 2.

The new degree is an ideal fit for medical educators who seek expanded skills not only as teachers but also as leaders and investigators. The program is open to faculty as well as to residents and fellows, whose training programs provide protected time for scholarly work. For trainees interested in medical education as a career focus, this master's degree would be a perfect way to complete GME research requirements.

Dr. Jennifer Kesselheim, HMS Academy member, is the founding director of the degree program and is available for individual discussions about the program.

If you, your colleague, or your mentee might be interested in pursuing the new MMSc in Medical Education degree, please contact MMSC_med_ed@hms.harvard.edu
For more information and please visit our website at: http://hms.harvard.edu/masters_medical_education
Life is full of challenges. We all experience successes and failures. Unfortunately, everyone is touched at some time by death in their family, an unexpected accident, a disappointment. Some people, when faced with adverse circumstances are able to assess the situation, see the "silver lining" in the clouds on the horizon and move into the future with hope; others are mired in seeming tragedy of the moment. What is the difference between these individuals? Are there predictors of how a person will react to the inevitable difficulties of life?

Within medicine today, we hear increasingly about burnout and depression among our students, trainees and practicing physicians. There have been reports of increasing numbers of suicides. All of this has occurred despite the implementation of duty hours and more attention to safe learning environments. In this context, the 2016 Symposium on the Science of Learning will focus on the way the brain responds to stress and the impact of research findings for the behavioral responses which ensue. We will examine the development of resilience in the face of failure or adversity while exploring ways in which faculty can support students to aspire to high achievement.
José R. Romero is a cellular physiologist interested in cation transport dysregulation in cardiovascular diseases including hypertension, sickle cell disease and diabetes. These studies have focused their research on two problems relevant to patients with CVD: (1) the role of cellular magnesium homeostasis in the pathophysiology of cardiovascular disease, and (2) the role of acute aldosterone responses in vascular inflammation. A significant part of his professional activities is also devoted to mentoring and training junior faculty, fellows, and students at local, national, and international levels; and he is a consultant for medical research and training institutes in Puerto Rico, Portugal, and Mexico. In addition and with colleagues at Boston Children’s Hospital, he Co-Direct a Translational Research Summer Program for Medical Students and recent medical graduates interested in minority health research. For his contributions, he was humbled to receive the Harold Amos Faculty Diversity Award and honored with the A. Clifford Barger Excellence in Mentoring Award at Harvard Medical School.
Dr. Peckins is a graduate of Harvard College and Harvard Medical School. After finishing his residency in Internal Medicine at the Brigham and Women's Hospital, he has worked in primary care and teaching clinical medicine, first at Harvard Vanguard Medical Associates and then Mount Auburn Hospital. He has been active in teaching Harvard Medical Students in year I - IV as well as Medical residents. His teaching focus has been on the history and physical, case formulation, clinical thinking, and the patient-doctor relationship. He has developed a Cardiac Auscultation Module for the HMS IV capstone course. Currently he is working primarily at the Houston Methodist Hospital in Houston, Texas.
Podcasts of Past Academy Events

**Medical Education Grand Rounds**

**Innovations in External Education:**
Teaching New Learners in New Ways  
**Friday September 11, 2015**  
David H. Roberts, MD  
Dean for External Education  
Harvard Medical School  

[Click here](#) for podcast

**Medical Education's Global Transformation and Reach:**  
Opportunities for Research Translation and Social Accountability  
**Friday, October 2, 2015**  
Paul Worley, MD  
Dean of Medicine  
School of Medicine, Flinders University,  
Adelaide, Australia  
[Click here](#) for podcast

**Operationalizing a Program of Assessment for Medical Learners**  
**Wednesday, November 4, 2015**  
Eric Warm, MD  
Richard W. & Sue P. Vilter Professor of Medicine Director, Internal Medicine Training Program  
University of Cincinnati College of Medicine  

[Click here](#) for podcast
Upcoming Academy Events:

Medical Education Grand Rounds: Building Diversity: A Voyage - RSVP
Andre Churchwell, MD, Professor of Medicine (Cardiology), Professor of Radiology and Radiological Sciences, Professor of Biomedical Engineering, and Senior Associate Dean for Diversity Affairs
Vanderbilt University School of Medicine
Wednesday, December 16, 2015 4-5:30 PM

Diversity and inclusion reside among the central values of medical education institutions. In this session, HMS alumnus ('79), Andrè L. Churchwell, MD, Senior Associate Dean for Diversity Affairs of Vanderbilt University School of Medicine, reflects upon the voyage undertaken at VUSM to build the climate and structures to best support diversity and inclusion. Dr. Churchwell will use the theme of an evolution of diversity into VUSM’s culture, characterizing how the institution went from a "diversity 1.0" conceptual framework to a "diversity 3.0" framework. Dr. Churchwell will share the successes and challenges along the way and how VUSM hard-wired diversity and inclusion into institutional culture.

New Medical Education Pubmed Citations from Academy Members

Please note that we use an automated search system to identify new pubmed-cited medical education literature. If we have missed a medical education paper you have published, please let us know. Also, please let us know if you have published medical education materials on MedEdPortal or other sites.


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<th>Authors</th>
<th>Title</th>
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<td>Smith AD, de Vos MS, Smink DS, Nguyen LL, Ashley SW.</td>
<td>Text paging of surgery residents: Efficacy, work intensity, and quality improvement.</td>
<td>PMID: 26531236</td>
<td>[PubMed - as supplied by publisher]</td>
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