



# Shapiro Institute

BETH ISRAEL DEACONESS MEDICAL CENTER  
HARVARD MEDICAL SCHOOL

## 2025 MILLENNIUM CONFERENCE

ARTIFICIAL INTELLIGENCE  
& THE FUTURE OF  
MEDICAL EDUCATION

Newsletter  
October 2025

---

## LETTER FROM THE EXECUTIVE DIRECTOR

---

It's hard to read a newspaper or magazine these days without seeing an article about artificial intelligence (AI). Some claim AI will save the world and make life effortless; others warn of a dystopian future where machines take over. The truth, as is so often the case, lies somewhere in between.



What is undeniable is that AI is advancing rapidly and is already reshaping healthcare and medical education. For physicians and trainees, the questions are pressing: How do we preserve essential skills while leveraging new tools? How do we prepare learners to ask the right questions of AI, to recognize its errors and biases, and to integrate it responsibly into their work with patients?

Recognizing these challenges, the Shapiro Institute for Education and Research began planning a national conference to address these questions. With support from the Macy Foundation and in partnership with the Association of American Medical Colleges, we convened Millennium Conference 2025: Artificial Intelligence—Prompts, Hallucinations, and the Future of Medical Education this past April at Babson College. Over three days, educational leaders from eight medical schools came together

to explore how AI should be integrated into undergraduate and graduate medical education.

The discussions were thoughtful, candid, and forward-looking. While opinions differed, there was strong consensus on a central point: AI should be viewed as a powerful tool, but not a replacement for the physician's expertise, judgment, and accountability. The technology can support learning and clinical decision-making, but the responsibility for patient care will—and must—remain with the human physician.

On a personal note, I have experimented with AI in my own teaching, using ChatGPT to draft case scenarios. Even then, I have had to look carefully at the details to ensure accuracy, a reminder of both the promise and the pitfalls of these tools.

In this newsletter, you'll find a summary of the conference discussions and recommendations. As you'll see, the work is only beginning. AI will continue to evolve, and so too must our approaches to training the next generation of physicians. Once again, the Shapiro Institute and BIDMC are proud to be at the forefront of these national conversations, remaining committed to our mission: preparing physicians who combine science, reasoning, and compassion in the service of their patients.

- Richard M. Schwartzstein



2025 Millennium Conference



## Artificial Intelligence and the Future of Medical Education

Earlier this year, the Shapiro Institute for Education and Research, in collaboration with the Macy Foundation and the Association of American Medical Colleges, hosted Millennium Conference 2025: Artificial Intelligence, Prompts, Hallucinations, and the Future of Medical Education. The meeting brought together teams from eight diverse medical schools from across the country to address a question at the forefront of our field: how do we prepare tomorrow's physicians to thrive in an AI-driven world?

Generative AI (GenAI) has become a daily tool for many practicing physicians — from drafting clinical notes and answering patient questions to supporting diagnosis and treatment planning. At the same time, GenAI has entered classrooms and training environments through personalized learning systems, virtual patient simulations, and automated assessments. With opportunities come challenges: educators must confront inaccuracies, bias, and the risk that learners become too reliant on AI at the expense of foundational skills.

The Millennium Conference provided a forum for educators, curriculum leaders, and technology experts to share perspectives and generate practical recommendations. Participants examined the role of AI across three major domains:

### Pre-clerkship education

Faculty emphasized the importance of grounding medical students in the fundamentals of human biology, pathophysiology, and critical reasoning. While AI can be an effective tutor and feedback tool, it cannot replace the intellectual “struggle” that supports deep learning. The group endorsed using AI to supplement, not substitute for, this learning process — helping students identify gaps and receive personalized support while encouraging curiosity, skepticism, and resilience.

### Clinical training (UME and GME)

Discussions centered on how to maintain the essence of the physician's role as a “humanistic scientist.” Skills such as history-taking, physical examination, communication, and empathy are essential both for high-quality patient care and for prompting accurate

AI outputs. While some debated whether AI might be considered a “member of the clinical team,” most agreed it is best seen as a decision-support tool — powerful, but not accountable in the way a physician must be. Faculty were urged to protect “sacred spaces” in training, such as note-writing, where learners develop essential habits without shortcuts.

### Assessment and faculty development

As AI becomes a regular part of learning, assessments must evolve to measure not only knowledge and reasoning, but also how learners use AI responsibly. Faculty will need training to supervise and evaluate students in this environment, as well as to guard against “deskilling” of critical clinical abilities. While high-stakes exams will continue to exclude AI for now, formative assessments may increasingly involve it, paired with human oversight.

### Cross-cutting themes

Beyond these domains, participants acknowledged broader issues — from equity and access for learners from under-resourced backgrounds to concerns about student privacy, faculty anxiety, and the need for institutions to invest in both technology and the educators who use it. Across all discussions, one principle remained clear: AI must be integrated in ways that strengthen, not weaken, the physician's professional identity.

The consensus of the conference is both pragmatic and inspiring. AI is here, advancing rapidly, and medical educators cannot ignore it. But we must shape its role thoughtfully, ensuring that curiosity, empathy, accountability, and adaptive expertise remain at the heart of training. The recommendations generated at MC2025 — including AI literacy curricula, targeted use of AI in pre-clerkship and clinical settings, and faculty development initiatives — provide a roadmap for the next two years.

As one participant noted, “Technology will change, but the mission of medical education endures: to train physicians who combine science, reasoning, and compassion in the service of their patients.”

The Shapiro Institute is proud to lead this work, convening national conversations that set the course for the future of medical education and ensuring that our community is equipped to meet the challenges — and seize the opportunities — of an AI-enabled future.

# Millennium Conference at a Glance

Artificial Intelligence: Prompts, Hallucinations and the Future of Medical Education

April 28–April 30, 2025

## Participating Schools

- Harvard Medical School
- Morehouse School of Medicine
- Northwestern University/Feinberg School of Medicine
- NYU Grossman School of Medicine
- Perelman School of Medicine at the University of Pennsylvania
- Uniformed Services University of the Health Sciences, F. Edward Hebert School of Medicine
- University of Michigan Medical School
- Virginia Tech Carilion School of Medicine

## Questions

During breakout sessions, participants explored how artificial intelligence will shape the future of medical education and practice. Key questions included:

- How should AI be integrated into early medical education while safeguarding critical thinking and foundational knowledge?
- Can AI effectively serve as a teaching assistant — generating cases, assessing student work, or providing feedback — without promoting overreliance?
- What role should AI play in clinical teaching, from patient communication and teamwork to rounds, image interpretation, and professional identity formation?
- How can we fairly assess both learners and faculty in an AI-enabled environment, and should there be standards or certifications for AI competence?
- Across all settings, how do we prepare students and faculty to recognize AI's limitations, biases, and potential for error?

## Recommendations

At the Millennium Conference, participants developed a set of shared recommendations to guide the integration of AI into medical education and training. Key priorities include:

- Build AI literacy into the curriculum across medical school and GME.
- Emphasize foundational knowledge and critical thinking to support adaptive expertise.
- Use AI as a tool for personalized coaching, tutoring, and reflection.
- Reinforce history-taking, physical exam skills, and communication in an AI-enabled environment.
- Assess learners' competence with AI in use, and train faculty to be AI-competent
- Leverage AI to fill gaps in patient experiences and create opportunities for safe “failure” and growth

“To prepare tomorrow’s physicians, we must harness AI not as a replacement for human judgment, but as a catalyst for deeper learning, stronger skills, and more compassionate care.”

## Using MedEdMentor for Theory-Based Medical Education Research

Incorporating theory is one of the most challenging aspects of medical education research, but is an essential element of rigorous and impactful research. A strong theoretical foundation can improve your research questions, guide your methodology, and improve your chances of getting published.

**MedEdMentor** is a free online resource created by Dr. Geoff Stetson and Dr. Greg Ow to help medical educators and researchers do just that. The platform includes a theory database, a “Lessons” page with primers on research methods, and a search engine that pulls only from relevant medical education literature.

The site also offers two great AI tools - a Theory Suggester, which recommends relevant theories based on a few words you input about your project, and MedEdMentorAI, a GPT-4 chatbot that helps answer questions and brainstorm ideas (note: the latter requires a paid ChatGPT Plus Subscription). See screenshot below for a look at some of the resources available on this website. Give it a try at <https://mededmentor.org>

If you're interested in exploring how to incorporate theory into your medical education research, the Office of Education Research is here to help! We offer consultation appointments to support you at any stage of your project. To schedule a meeting, please reach out to Johannah at [jmitch12@bidmc.harvard.edu](mailto:jmitch12@bidmc.harvard.edu)

### Selecting and Applying Theories in Medical Education Research

An amazing in-depth guide for this key step in med ed scholarship. It's worth the read!

13 min read | Jan. 31, 2024

#### What's New

##### Selecting and Applying Theories in Medical Education Research

How to perform this crucial task for medical education scholarship

13 min read | Jan. 31, 2024

##### Using 50,000 Papers to Build MedEdMentor's Theory Suggester

Creating a system to suggest theories for your research phenomenon

3 min read | Jan. 31, 2024

##### Evaluating MedEdMentor AI for Theory Recommendation

Can AI help researchers select theories?

4 min read | Nov. 18, 2023

#### Editor's Picks

##### Ten Essential Theories

Explore the top theories that shape health professions education

Jan. 31, 2024

##### What is a Paradigm? Medical Education as a Social Science

Because medical education research is more complicated than a heart attack (just kidding)

7 min read | Sept. 26, 2023

##### Using 50,000 Papers to Build MedEdMentor's Theory Suggester

Creating a system to suggest theories for your research phenomenon

3 min read | Nov. 18, 2023



### Welcome New GME Directors

**Taylor Brown, MD**

Director of Resident Wellbeing

Dr. Brown will focus on creating a supportive learning environment in which residents and fellows are able to thrive. She will lead initiatives aimed at mental health, resiliency, and work-life balance, helping trainees sustain long and rewarding careers in medicine.

**James Naples, MD**

Director of Coaching for Performance

Dr. Naples brings his experience in medical education and performance management to this new role, where he will help trainees identify strengths, set goals, and reach their full potential. His focus will be on performance improvement strategies that empower residents to succeed at every stage of their training.

**Tracy Byrne, MD**

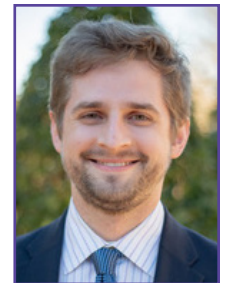
Director of Professional Development and Wellness Initiatives

Dr. Byrne will guide programs designed to enhance professional growth and long-term career satisfaction. Her work will build on existing wellness initiatives while creating additional resources centered around coaching in order to reduce burnout, anxiety and stress across the GME environment.

**Benjamin Wagner, MD**

Director of GME Quality & Safety

Dr. Wagner will be working to strengthen our commitment to safe, high-quality patient care across the GME community. His leadership will ensure that education and clinical practice remain closely connected, with residents actively engaged in quality improvement initiatives.



### GME Professionals Day

On August 13, we joined the national celebration of GME Professionals Day, recognizing the incredible contributions of our GME Program Coordinators and administrators. These dedicated professionals are the heart of our GME programs, keeping everything running smoothly and supporting residents, fellows, and faculty every step of the way.



### GME Orientation

On July 31, we hosted the GME Welcome Reception, where we celebrated the arrival of our newly hired advanced trainees and provided an overview of resources available throughout their training. The evening marked the start of a new academic year and the exciting journey ahead for these future leaders in medicine.



## PCE Student Social

Join us for an evening of fun and connection with the PCE students on Thursday, October 16, from 6:00–8:00 PM at Lucky Strike in Fenway. This casual social event is open to all BIDMC faculty and offers a great opportunity to meet and mingle with students outside of the clinical and classroom setting. We hope you'll join us for a relaxed night of conversation, community, and camaraderie!

For more information, please contact Naomi Montilla at [nmontil1@bidmc.harvard.edu](mailto:nmontil1@bidmc.harvard.edu)



IT IS TIME TO

# STRIKE UP

*Some Fun*

## PCE STUDENT SOCIAL

THURSDAY | OCTOBER 16 | 6 PM

LUCKY STRIKE FENWAY  
145 IPSWICH ST, BOSTON, MA 02215



2024 PCE Student Social

## Harish Pudukodu, MD named Psychiatry Associate Clerkship Director



We are delighted to welcome Harish Pudukodu, MD to the BIDMC Department of Psychiatry, where he joins us as an Outpatient Psychiatrist, Associate Clerkship Director, resident caseload supervisor, and the Quality Improvement (QI) team. Dr. Pudukodu received his medical degree from the University of North Carolina–Chapel Hill School of Medicine and went on to complete his psychiatry residency in the Brigham and Women's Hospital/Harvard Medical School Psychiatry Residency Program, serving as an Administrative Chief Resident in his final year.

In his new role at BIDMC, Dr. Pudukodu will be engaged in both patient care and medical education. He brings a strong commitment to mentoring medical students and residents, advancing curriculum development, and supporting learners at every stage of their training. His clinical focus on longitudinal mental health care reflects his dedication to building meaningful, sustained relationships with patients, while his interest in quality improvement underscores his drive to strengthen psychiatric care systems for both providers and patients.

## Epic Training Drop-In Session

The BIDMC PCE Medical Education Representatives, Near Peer PCE Advisors, and collaborating PCE students of the current class will be holding a drop-in session to provide an overview of Epic for incoming medical students. Topics will include high-yield inpatient and outpatient navigation, specialty-specific tips, and practical tools such as key dot phrases and note templates.

When: Thursday, December 11, 5–6:30 PM

Format: Hybrid — Leventhal Conference Room or Zoom

For details or to volunteer, please contact Naomi Montilla at [nmontil1@bidmc.harvard.edu](mailto:nmontil1@bidmc.harvard.edu)

## 2025 S. Robert Stone Awards for Excellence in Teaching Announced

The Carl J. Shapiro Institute for Education and Research is proud to announce this year's recipients of the prestigious S. Robert Stone Awards for Excellence in Teaching from Harvard Medical School. Established in 1981, the Stone Award was the first Harvard teaching award created at an academic affiliate, honoring the late S. Robert Stone, Honorary Trustee and past Board Chairman of the former Beth Israel Hospital. Presented annually, the award reflects Beth Israel Deaconess Medical Center's enduring commitment to excellence in medical education and recognizes faculty for their outstanding contributions to the teaching of medical students and house staff.

This year, two distinguished faculty members are being honored:

### Senior Stone Award Recipient Celeste Royce, MD, MPH

Associate Professor of Obstetrics, Gynecology and Reproductive Biology



Dr. Royce has been named the 2025 recipient of the S. Robert Stone Senior Award for Excellence in Teaching. Dr. Royce attended the David Geffen School of Medicine at the University of California, Los Angeles, and completed residency in Obstetrics and Gynecology at Harbor/UCLA Medical Center. She completed the HMS Academy Fellowship in Medical Education in 2014 and is deeply committed to service across the continuum of medical education. Dr. Royce is the Clerkship Director, Simulation Director, and Director of Undergraduate Medical Education for the department of Obstetrics and Gynecology at Beth Israel Deaconess Medical Center (BIDMC). Dr. Royce is co-director for the second-year BRIDGES course at HMS and the co-Director of the Rabkin Medical Education Fellowship at BIDMC. Her scholarly interests include critical thinking, patient safety initiative, professional identity development, and curriculum development.

### Stone Award Recipient Jacob Koshy, MD, MPH

Instructor in Medicine



Dr. Koshy has been named the 2025 recipient of the S. Robert Stone Award for Excellence in Teaching.

After completing college in Boston, he went on to medical school at the University of Massachusetts and obtained an MPH in health policy & management from the Harvard School of Public Health. He followed his wife to New York City to complete their respective residencies in internal medicine, and then they returned home to Boston.

Jacob joined BIDMC in the summer of 2020 as a hospitalist in the Section of Hospital Medicine and he has steadily grown as an educator since that time. He currently teaches Harvard Medical School (HMS) students from their first year to their fourth year. He serves as a core faculty member in the Interviewing & Clinical Skills (ICS), Physical Diagnosis & Reasoning (PDR) and Co-Site Director at BIDMC for the BRIDGES course for 2nd year Harvard Medical & Dental students. He also serves as one of the Core Faculty in medicine for students in their PCE at BIDMC and a coach in the Clinical Learning & Coaching Program for HMS students. In addition to his teaching, he is actively participating in research on AI & medicine with collaborators at Stanford, Google and the Longwood area. When not working professionally, he can be found exploring the outdoors and trying new restaurants with his wife, who is a Hematologist/Oncologist at the Dana Farber Cancer Institute, and unsuccessfully reasoning with his 4-year-old son.

We congratulate both Dr. Royce and Dr. Koshy for their exceptional commitment to teaching and mentorship, and we celebrate their contributions to shaping the next generation of physicians.



### Join Us for “Teaching the Teacher” The BIDMC Toolbox for Effective Educational Practices

Join us for dinner and an evening of skill-building designed to enhance teaching, mentoring, and student engagement. This program is especially for new BIDMC faculty who have joined in recent years and are looking to strengthen their teaching for the upcoming academic year. Topics will include:

- Best practices for teaching in clinical settings
- Giving effective, motivating feedback
- Ensuring your learners are using critical thinking skills

The program will be offered twice this fall - September 30 and October 29, from 5–7 PM in the Leventhal Conference Room. Register at: [www.shapiroinstitute.org/teachingtheteacher](http://www.shapiroinstitute.org/teachingtheteacher)

### Simulation Center Welcomes Adam Jacobs

We would like to extend a warm welcome to Adam Jacobs, our new Simulation Center Technician. Adam joins us from Brigham and Women’s Hospital where he served as a Research Technician.



### Join Us for “Principles of Medical Education: Maximizing Your Teaching Skills”

Incorporating best practices, newer principles of adult learning, and widely available technologies into your teaching can significantly improve your ability to engage and inspire students, residents, fellows, and colleagues. This special program, ranked among Harvard Medical School’s highest-rated CME courses, is a uniquely comprehensive exploration of best practices for teaching medicine at the bedside, in ambulatory settings, and in the classroom.

Case-based and hands-on learning are a hallmark of this course, with significant participant interaction and active modeling of instruction techniques. Whether you are newer to teaching or a seasoned educator and mentor, this course will give you modern tools and practices to optimize skills transfer and learner success.

The 2025 program has been enhanced for distance learning. In addition to being live streamed, all sessions will be recorded and made available to participants for online viewing for 90 days after the end of the course. Register at: <https://medicaleducators.hmscme.com>



**HARVARD**  
MEDICAL SCHOOL

Beth Israel Lahey Health  
Beth Israel Deaconess Medical Center

### PRINCIPLES OF MEDICAL EDUCATION **MAXIMIZING YOUR TEACHING SKILLS**

**October  
22-24  
2025**

Best Practices to Teach, Engage, and Inspire  
Medical Students, Residents, Fellows, Faculty, Allied Health Students

#### Participants will learn to:

- **Leverage AI in teaching**
- **Use effective feedback**
- **Utilize active learning strategies**
- **Deliver impactful lectures**
- **Enhance critical thinking**
- **Inspire and mentor learners**
- **Identify strategies to recognize and mitigate bias**
- **Examine the role of coaching in supporting learner well-being**



CREDITS - 20.25 AMA PRA Category 1 | 20.00 AAFP / 20.25 ECME  
20.25 Continuing Nursing Education

*From all of us at the Shapiro Institute, we hope you enjoy the beautiful fall season!*

Follow Us!



@BIDMC\_Education



ShapiroInstitute

[www.ShapiroInstitute.org](http://www.ShapiroInstitute.org)