

ABSTRACT: 2015 ELAM Institutional Action Project Poster Symposium

Project Title: Excellence in Medicine & Engineering: A New Paradigm in Medical Education

Name and Institution: Janet Jokela, MD, MPH, FACP, FIDSA, University of Illinois College of Medicine at Urbana-Champaign

Collaborators: Dimitri Azar, MD, MBA

Background, Challenge or Opportunity:

In 2014, two proposals were put forth to the University of Illinois Board of Trustees to incorporate engineering into medical education and training at the University of Illinois: one from the current College of Medicine, comprised of four regional campuses (Chicago, Peoria, Rockford, Urbana) and administratively headquartered at University of Illinois—Chicago; and one from Urbana, the flagship campus, proposing to establish a new independent school of medicine with a novel medicine-engineering curriculum.

Purpose/Objectives:

My project focuses on developing the educational underpinnings and curriculum for medicine-engineering professional training at the University of Illinois, the result of which could be adapted by either proposal.

Methods/Approach:

First, the two proposals were reviewed in detail. Next, meetings were held with numerous stakeholders, including personnel on the Urbana and Chicago campuses, and are ongoing. Curricula from medical-engineering initiatives (including bioengineering, computer science, 'big data,' and health systems engineering programs), accreditation requirements of the Liaison Committee on Medical Education (LCME), new educational initiatives from the Association of American Medical Colleges (AAMC), and national innovative medical curricular reforms are all under review. Collaborative work with biomedical, engineering, and clinical faculty is ongoing. All of the above is proceeding in tandem with direction as put forth by the University of Illinois Board of Trustees.

Outcomes and Evaluation Strategy:

On March 12, 2015, the University of Illinois Board of Trustees unanimously voted to move ahead with the Urbana proposal, with the admonition to be mindful of the current College of Medicine and its students, so as to ensure its continued support and success. Next steps include addressing administrative issues pertaining to the current Urbana College of Medicine including its MD-PhD program (ongoing at the President's office), hiring a new Dean for the new school (ongoing, at the Urbana Provost's office), and exploring multiple issues regarding how best to proceed and envision the curriculum (Is this medicine fitting into an engineering curriculum, or engineering fitting into a medicine curriculum? How best should they be blended? What career outcomes do we seek for the graduating students?). Potential outcomes and evaluation of the new curriculum will be driven by input from the stakeholders, and include metrics such as LCME accreditation, student performance on U.S. Medical Licensing Exams (USMLE), residency matches for graduating students, patents, opportunities for students after graduation, and ultimately student careers, amongst others.

Excellence in Medicine & Engineering: A New Paradigm for Medical Education

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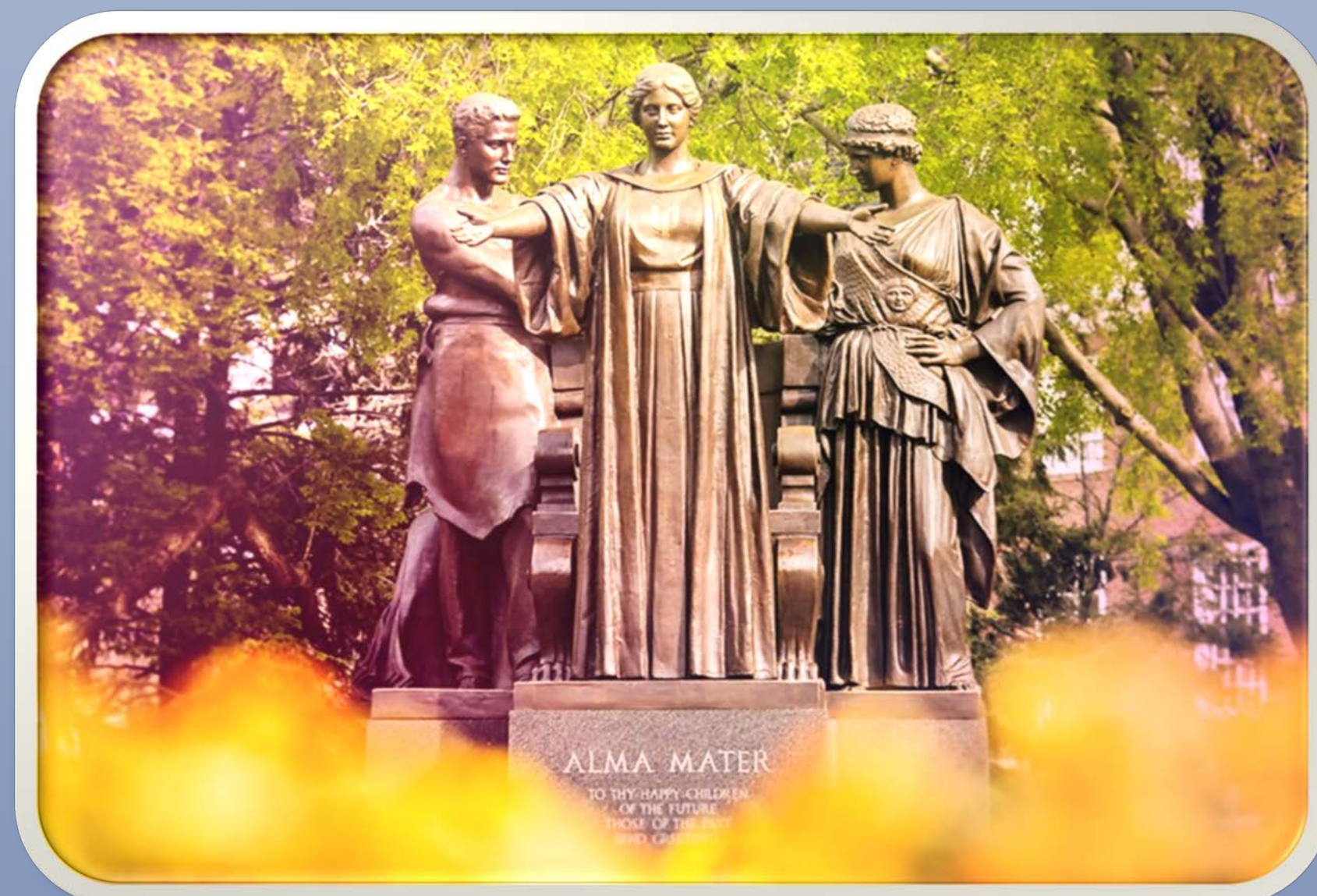
Background

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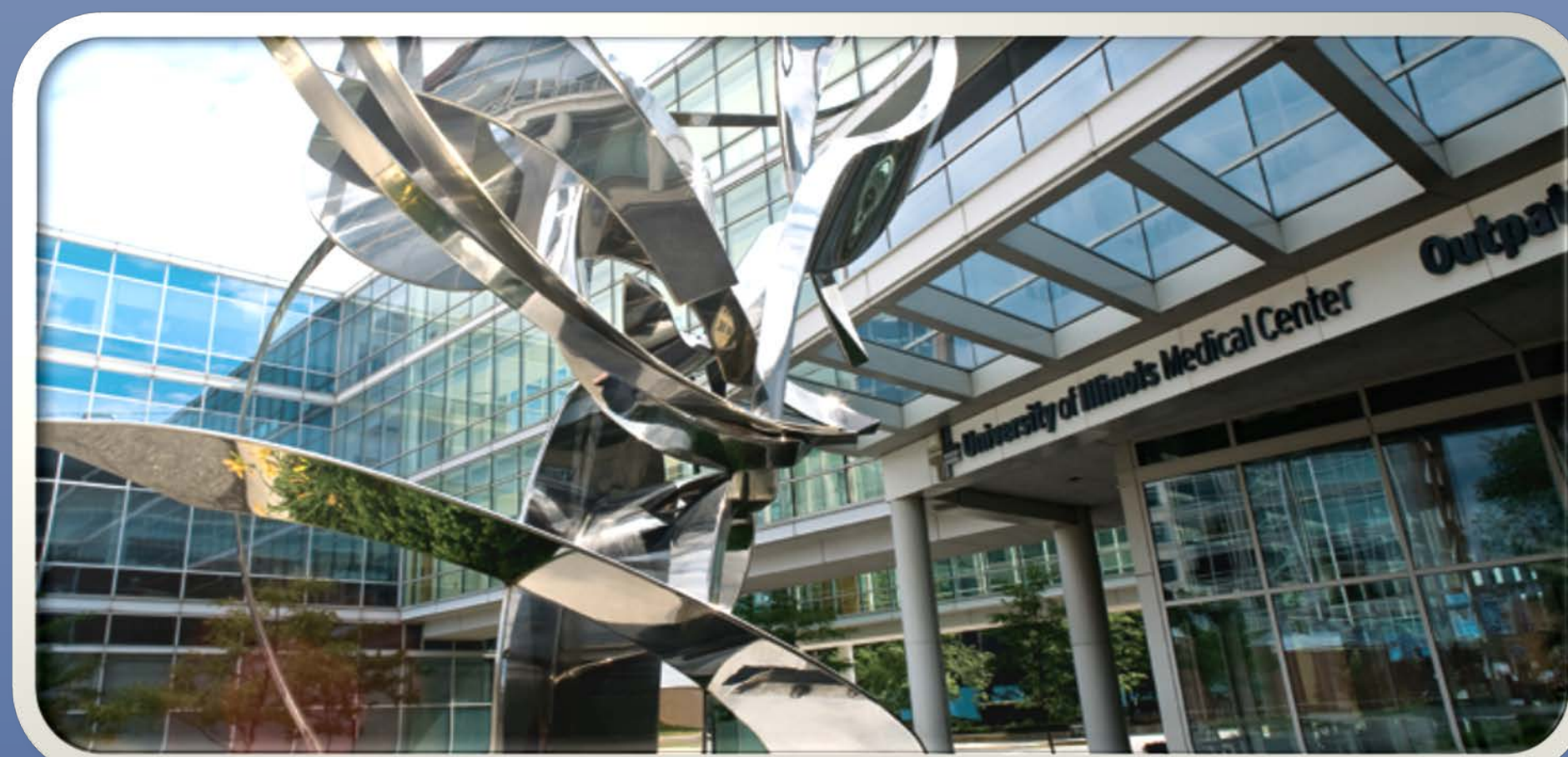
Aim

My project focuses on developing the educational underpinnings and curriculum for medicine-engineering professional training at the University of Illinois, the result of which could be adapted by either proposal.

University of Illinois at Urbana-Champaign



University of Illinois College of Medicine at Chicago



Methods

- First, the two proposals were reviewed in detail
- Next, meetings were held with numerous stakeholders, including personnel on the Urbana and Chicago campuses,
- Collaborative work with biomedical, engineering, and clinical faculty is ongoing
- Under review:
 - Curricula from medical-engineering initiatives (including bioengineering, computer science, 'big data,' and health systems engineering programs)
 - Accreditation requirements of the Liaison Committee on Medical Education (LCME),
 - New educational initiatives from the Association of American Medical Colleges (AAMC),
 - National innovative medical curricular reforms
- All of the above is proceeding in tandem with direction as put forth by the University of Illinois Board of Trustees

Outcome

On March 12, 2015, the University of Illinois Board of Trustees unanimously voted to move ahead with the Urbana proposal, with the admonition to be mindful of the current College of Medicine and its students, so as to ensure its continued support and success.

Next Steps

Include:

- Addressing administrative issues pertaining to the current Urbana College of Medicine including its MD-PhD program (ongoing at the President's office)
- Hiring a Dean for the new school (ongoing, at the Urbana Provost's office)
- Fundraising: no new state funds are to be utilized
- Exploring multiple issues regarding how best to proceed and envision the new curriculum :
 - Is this medicine fitting into an engineering curriculum, or engineering fitting into a medicine curriculum?
 - How best should they be blended?
 - What career outcomes do we seek for the graduating students?

Evaluation Strategy / Discussion

The University of Illinois at Urbana-Champaign, a nationally recognized land grant institution and the flagship campus with a top 5 College of Engineering, provides the optimal milieu for a newly envisioned direction in medical education.

Such a venture represents additive value to medical education in the state of Illinois and nationally.

Given that the experience is designed to be novel, and technology and data driven, it is expected that a specific type of student would be attracted to such a curriculum.

A novel curriculum requires a great deal of creativity and input from a deliberately diverse group of stakeholders: medicine, biomedical sciences, engineering (including bioengineering, computer science, health systems engineering, big data), social sciences.

Ongoing fundraising will be integral to its success.

Potential outcomes and evaluation of the new curriculum will be driven by input from the stakeholders, and include metrics such as

- LCME accreditation
- Student performance on U.S. Medical Licensing Exams (USMLE),
- Residency matches for graduating students,
- Opportunities for students after graduation, and
- Student & faculty careers, amongst others.

Conclusions

The nation's first proposed engineering focused medical school represents a new paradigm in medical education: "the medical school of the future,"

Acknowledgments

Numerous student, resident, and faculty colleagues in Urbana and Chicago; Tracey Johnson and Lori Osterbur .

