THE FUTURE OF PRE-MEDICAL PREPARATION

A PROPOSAL PRESENTED TO
THE JOSIAH MACY, JR. FOUNDATION

BY
ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI

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The Icahn School of Medicine at Mount Sinai has a proven record of exploring novel approaches to pre-medical preparation. For twenty-five years we have accepted undergraduate students through a unique early assurance program called the Humanities and Medicine Program. The cadre of medical students accepted through this program have all been social science or humanities majors, have been accepted two or more years prior to matriculation, and have not taken the standardized MCAT examination. Without the benefit of traditional premedical preparation, these students have performed as well as their traditionally trained premedical classmates. Building on the success of this innovative, forward thinking program, in 2014 Icahn School of Medicine at Mount Sinai is launching a major expansion that will include students from all majors and will constitute half of every incoming class.

We recognize that the leadership of the Josiah Macy Jr. Foundation shares our passion to improve the health of the public by advancing the education of health professionals. We share the Foundation’s concern that on a national scale there has been little significant change in the traditional premedical preparation of our future physician workforce. We believe that Icahn School of Medicine is well situated to bring together leading thinkers in medical education to explore new ways of preparing students to be physicians. We appreciate the Foundation’s invitation to submit a proposal to hold a summit on premedical preparation.

**Summary**

We envision creating and hosting a two day retreat on the future of undergraduate pre-medical education. The program will focus on 1) existing innovative undergraduate curricula, 2) existing innovative medical school admissions requirements, 3) the current state of affairs in preparing minority and disadvantaged students, as well as students pursuing post-baccalaureate pre-medical course work, and 4) a collective vision for the future. By bringing together experts and thought leaders from American and Canadian medical schools we hope to discuss overarching concepts for premedical education as well as practical approaches to operationalize changes on a national level.

The program will include a keynote lecture by Donald Barr, MD PhD, Professor, Department of Pediatrics and School of Education, Stanford University, describing the history of premedical preparation in the United States and highlighting the challenges schools have faced over the past century in trying to enact reform. Each discipline (e.g. undergraduate science educators, pre-health advisors, medical school admissions deans, etc.) will have completed pre-conference work describing the current state of affairs in their field and vision for the future. Each group’s spokesperson will present their pre-conference work to all the attendees. Following this educational component of the program attendees will spend the remainder of the time in mixed-discipline small groups formulating a white paper that will answer the following questions:

- What are the challenges in premedical preparation?
- What are the short term practical solutions?
- What are long term visionary goals?
We are asking the foundation to support the entire cost of the conference and have projected a budget of $40,000 to support travel, honoraria and program expenses. As part of this support, the Josiah Macy Foundation will receive recognition on printed information, and will be cited on any scholarly materials produced as a result of the Symposium.

The Need for Reform
Although the art and science of medicine have dramatically evolved in the last century, undergraduate premedical education has remained stagnant. There have been many calls for reform but disappointingly few innovations.

Medical educators support reform in premedical education for numerous reasons, including the rapid rate of scientific discovery, evolving methods of knowledge acquisition, the global world in which we practice, the need to recruit and retain a more diverse student body and healthcare workforce, and the need to attract ‘disruptive’ talent to medicine if we are to break away from accepted norms (in policy, clinical practice, and science) and envision a better future for society.

Stakeholders
There are many stakeholders in the movement to reform premedical education. Undergraduate and medical school educators, pre-health advisors and admissions professionals, leaders of pipeline and post-baccalaureate programs, leaders in STEM education all have a vested interest in rethinking what kind of education will best prepare someone to practice medicine or perform biomedical research in the 21st century. The system will not substantially evolve without all these stakeholders coming together to share their nuanced perspectives and insist on change.

The Howard Hughes Medical Institute has committed itself to creating and sharing effective models for teaching and assessing interdisciplinary science through the National Experiment in Undergraduate Science Education (NEXUS). Undergraduate institutions involved in this project include the University of Miami, Purdue University and the University of Maryland. The National Science Foundation has made premedical educational reform a priority through its Vision and Change Report. Princeton University, Dartmouth College and others have each integrated their science curriculum across disciplines in order to allow premedical students to obtain a more coherent and relevant science knowledge base. Leaders of combined BA/MD programs such as the Program in Liberal Medical Education (PLME) at Brown University have taken the lead on reforming premedical education for their small cohort of students. Icahn School of Medicine at Mount Sinai and McMaster University have developed programs that allow undergraduates to apply to medical school without having taken the traditional science requirements or the MCAT. The American Association of Medical Colleges (AAMC) is attempting to redefine premedical preparation by revising the Medical College Admission Test (MCAT) to include behavioral and social science, an enhanced verbal section and more emphasis
on critical reasoning. In order to be impactful these stakeholders must come together as a united front in advocating for change.

Numerous pipeline programs such as the Posse Foundation, the Ron Brown Scholars Program, Gates Millennium Scholars and Prep for Prep support disadvantaged and minority students with scholarships, mentorship, and academic counseling in an effort to get these talented young women and men through an educational system that often feels like it’s designed to weed them out. The lessons learned by the dedicated professionals at these programs need to be incorporated into how and why we think about pre-med preparation.

The barriers to change include undergraduate science departments that function in silos, medical school admission requirements that are too heavily influenced by MCATs and USNWR rankings, and national organizations that may need to confront a profound conflict of interest as they consider the future of the MCAT and NBME exams. These barriers can at times seem insurmountable, but the time has come to address them and create a roadmap for the future.

**Mount Sinai’s Response: A National Summit on Medical Education Reform**

**Methodology**

We propose to host a two day summit entitled The Future of Pre-Med Preparation in which we will bring together undergraduate science educators, pre-health advisors, leaders of pipeline programs, medical school admission professionals, leaders of post-baccalaureate programs and thought leaders from national organizations. With all the perspectives represented and with innovators in each field present, our goal is to collectively author a proposal that will ignite a paradigm shift. At the conclusion of the summit we will have a first draft of a position paper that will be submitted for publication and ultimately provide the rationale for substantive and meaningful change.

**Icahn School of Medicine at Mount Sinai Faculty and Staff**

Gary Butts, MD, Sr. Associate Dean for Diversity Policy, Programs and Community Affairs  
Reena Karani, MD, MHPE Associate Dean for UME and Curricular Affairs  
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Valerie Parkas, MD, Associate Dean for Admissions  
Michelle Sainte, Assistant Dean for Academic Administration  
George Schreiner, Assistant Director of Admissions for Non-Traditional Programs
Summit Schedule

Sunday June 15th, 2014

1:00pm Introductions, Welcome
2:00pm Remarks from each of the represented groups (2-6pm)
   Current innovations, current challenges, concepts for the future
   - Undergrad curricula
   - Pre-Health advisors
   - Pipeline programs
   - Medical Schools
   - Post-baccalaureate programs
   - AAMC

6:30pm Keynote and Dinner

Monday June 16th, 2014

8:00am Breakfast
9:00am Break out into multi-perspective working groups to address and write up
   the following:
   - What are the challenges in premedical preparation?
   - What are the short term practical solutions?
   - What are long term visionary goals?

12:00pm Lunch and final presentations

2:00pm Conclusions

Acknowledgement

We acknowledge the Josiah Macy Junior Foundation’s long history of support for the Department of Medical Education at Icahn School of Medicine. We are thankful for the opportunity to submit this proposal. We believe deeply in our shared mission of advancing the health of the public by enhancing the education of health professionals through innovation. It is our hope that we can continue to partner with the Macy Foundation to work towards improved education of our future healthcare workforce.