Dear Congressman Capuano,

Thank you for your continuous support for federal research and higher education. While the Massachusetts Institute of Technology (MIT) Graduate Student Council (GSC) appreciates the dedication of members of the House Committee on Science, Space, and Technology to promoting and advancing the U.S. engineering and physical sciences, we are writing to express deep concerns about the America COMPETES Reauthorization Act of 2015 (H.R. 1806) as reported by the committee in the U.S. House of Representatives on April 15, 2015 and which we understand will be debated on the floor during the week of May 18th.

The MIT GSC represents the interests and concerns of all graduate students at MIT. MIT is known worldwide as a center of excellence in STEM research and education, but MIT also has robust programs in business, economics, history, anthropology, and other social sciences. The MIT research community has pioneered methods for interdisciplinary collaboration and research, and social scientists here are intimately involved in major studies like the "The Future of..." Studies examining the long term impacts of development and use of certain energy technologies. Strong and sustained support for social science is therefore very important to our community.

Further, the MIT graduate student community is deeply troubled by the precedent this bill would set, in which Congress micromanages the National Science Foundation (NSF) and Department of Energy (DOE) by mandating a particular distribution of funding among their directorates and programs and forbidding the use of research results in the development of regulations. Both NSF and DOE have several advisory bodies of academic, industry, and policy experts that are charged with providing guidance on agency priorities. The Congressional intervention in directorate level funding and regulatory proceedings called for in this bill do not improve the conduct of science.

We have included in the attachment of this letter the descriptions and significance of some social science research projects currently underway at MIT, as written by the graduate students themselves. We understand the House Committee on Science, Space, and Technology faces challenges due to the spending caps set by the Budget Control Act and House rules requiring budget offsets. However, H.R. 1806 sets arbitrary funding caps on scientific fields, picks winners and losers among them, and discourages interdisciplinary science. For these reasons, we encourage you and your colleagues to vote against H.R. 1806. We hope the deliberations next week will lead to an improved version of the bill that strengthens the policies that support the federal research and development enterprise.

Sincerely,

MIT Graduate Student Council
MIT Social Science Research Experience and Impacts
Written in response to H.R. 1806 America COMPETES Reauthorization

Key:
GFRP (NSF Grant) – Graduate Research Fellowship Program
DDRIG (NSF Grant) - Doctoral Dissertation Research Improvement Grant
HASTS (MIT Degree Program) – History, Anthropology, Science, Technology, and Society
SBE (NSF Directorate) - Social, Behavioral & Economic Sciences

Name: Lan Li
Field: History of science and medicine

Supported by the NSF Graduate Research Fellowship and Dissertation Research Fellowship, my project compares how the human body was visualized and mapped in biomedicine and Chinese medicine throughout the 20th century. This facilitates greater understanding across different historical and cultural approaches to science and medicine and contributes to current efforts in improving clinical and experimental treatments. Drawing on methodologies in the Social Sciences has significantly sharpened the analytical integrity of my dissertation so that it goes beyond recounting historical events to articulating more refined, nuanced, and thoughtful critique. This then enhances the social impact of this work, which is communicated through video documentary and other forms of public scholarship.

Sustaining federal funding in the social study of sciences is critical to aiding new research projects in a field that is becoming increasingly transnational. With the generous support of NSF grants, my colleagues and I have been able to travel to gather invaluable sources from different parts of the world. Because my work involves historical and contemporary aspects, I can afford accommodate to last-minute changes, as often happens while conducting research in China. We are individual researchers with limited budgets, but expansive potential. Searching for alternative solutions to this act would set a precedent in enhancing the social and cultural value of the humanities within academic and institutional hierarchies.

Name: Shira Shmuely

In my research I examine the origins of British regulation of animal experimentation. The project demonstrates that historically situated "facts" about animal bodies and sentient capacities determined late nineteenth-century regulation of vivisection. It provides valuable insights for ethicists, policymakers and those who are concerned with the regulation of science. I received NSF research funding, which I am using for archival research in the U.K. and in the U.S. I believe that Social Science research should be supported for better informed policy decisions regarding the work of science.
Name: Emily Lin

My name is Emily Lin, and I’m a 6th year PhD Student at MIT. My doctoral study of how Chinese families manage care for children diagnosed with autism has been made possible by the NSF grant. Science and Technology take place in complex social contexts; my study seeks to shed light on the social barriers for communities in accessing diagnosis or behavioral therapies. I oppose the America COMPETES act because basic research across the domains of science, technology, and social and behavioral sciences are necessary for sound policies which will benefit the diverse families caring for autistic offspring in the US.

Name: Luísa Reis Castro
Home District: MA-7

My name is Luísa Reis Castro and I research the transmission of mosquito-borne diseases and new technologies for tackling them. Looking particularly at dengue, also known as breakbone disease, there is a rise in number of cases as well as a spread of its geographical distribution worldwide. Social science researches look at the complex causation relations in these diseases, as well as the effects the increase has/can have in different contexts. Furthermore, new technologies manipulate the mosquito so that instead of vector, it is transformed into the very tool to control the disease (e.g., genetic modifications, Wolbachia-induced pathogen resistance or sterility through radiation). This entails such radical reshaping of public health policies, that successful implementation demands a social science analysis of the impacts and responses. I oppose H.R. 1806 The America COMPETES Reauthorization Act because the bill would cut NSF’s Social, Behavioral, and Economic Sciences Directorate nearly in half. Today’s major problems and needs -- water shortages, endemic and infectious diseases, infrastructural capacity, etc. -- all have SOCIAL components that need to be understood in order for technoscientific solutions to succeed. The U.S. needs basic social science research now more than ever. Drastic cuts to NSF’s SBE programs would have devastating long-term consequences.

Name: Alison Laurence
Home District: IL-9

My name is Alison Laurence and I am a second-year in the HASTS Ph.D. program. My historical research focuses on the political, cultural, and legal implications of paleontological and paleoanthropological science in the public sphere, focusing on museums as sites that call attention to the blurred boundaries between science and society. I strongly oppose the COMPETES Act because it would negatively impact my ability to complete the robust doctoral research I have planned. I have not yet received NSF funding but will be applying for multiple NSF grant and fellowship opportunities in the coming years and so I am urgently concerned about the proposed cuts.
Name: Clare Kim  
Home District: RI-1

My name is Clare Kim and I am a second-year doctoral student in the HASTS program. My research centers on the history of mathematics in conjunction with the changing shape of higher education--two trajectories with SOCIAL components that require research in order for educational, technoscientific and mathematical solutions to be effectively deployed. I oppose the H.R. 1806 The America COMPETES Reauthorization Act because it would cut funds nearly in half and eliminate a crucial resource for basic social science research that is needed more than ever. Moreover, it would set a destructive precedent for discouraging interdisciplinary science.

Name: Shreeharsh Kelkar

I study the organizational forms emerging around online learning platforms like edX: the networks of engineers, instructors, researchers and support staff that do the work of producing online courses as well as the knowledge about students that gets generated. Online learning platforms are currently seen as a panacea to many problems of higher education in the United States. My work shows that online platforms are produced through an arguably unique division of labor: from the start-up where the software is written and tested, to the university where the course team prepares the course material and executes the class, to the many different research labs where researchers build and test new software tools to augment and measure learning. Moreover this division of labor is shaped by institutional landscape and professional identity. I demonstrate this by showing the different organizational forms around the edX platform emerging at MIT, Harvard, Berkeley and Stanford. I received the NSF Dissertation Research Improvement Grant which helped me conduct fieldwork in the Bay Area, at Berkeley and Stanford. Social science research is especially important when it comes to evaluating the way technologies are shaped through institutional practices. University social science produces knowledge as a public good (unlike the social science done in corporations) and this knowledge can be deployed to particularly useful ends, especially in the design of technology to tackle social problems.

Name: Lucas Mueller

I’m Lucas Mueller, a third year graduate student in MIT’s Program in History, Anthropology, and STS. I investigate how scientists have studied cancer and its causes in the US, Europe, and India, and how their research has influenced the regulation of carcinogens. My research will contribute our understanding of the relationship between science, public health, politics, and institutions on a global scale, and help us to develop more effective and comprehensive policies. I will apply for NSF Funding to realize my project in 2015. I strongly oppose the COMPETES Reauthorization Act 2015 as it would have devastating consequences for making sound policies that protect our health.
Name: Grace Kim

My name is Grace Kim, and I'm a third year PhD student in the History, Anthropology, and Science, Technology, and Society (HASTS) program at MIT. My dissertation is on new, cutting-edge technologies for art restoration in the United States and Italy. My research will show the social implications of enlisting scientists to help make decisions on the ethical care of fine art and cultural heritage. I plan to apply for NSF funding for both my field research and writing stages. I oppose H.R. 1806 The America COMPETES Reauthorization Act, which devalues investigations on the social aspects of technoscientific interventions.

Name: Mitali Thakor
Home State: Maryland

Research: My doctoral research examines the role of new technologies in the policing of child sexual abuse and child pornography. I am motivated by the rapid developments in software design to analyze the social impact of new technologies on this pressing, global issue of exploitation. My social study of such technology helps bridge communication and relationships between activists, UN agencies, law enforcement, and technology companies. I have the privilege of being awarded an NSF Doctoral Dissertation Research Improvement Grant to fund my field research on this pressing topic. I oppose an Act that would slash funding for social science research. For critical issues like my research topic, on digital child exploitation, there is an urgent need for an anthropological and organizational analysis of the impact of new software, the gap between technology and governmental policy, and to better streamline partnerships to best eliminate child exploitation online.

Name: Jia-Hui Lee

My name is Jia-Hui Lee and I am a first year in a PhD program at MIT that looks at the impact of science and technology on society. The program allows me to pay attention to how public health systems, technological innovations, and scientific discoveries are always influenced by and can dramatically change social landscapes. Researching the social dimension of science and technology ensure that innovations are effective and socially just. I will be focusing my research on olfaction and how biological research into smells may yield solutions for counter-terrorist technologies.
The use of prescription opioid pain relievers to manage pain has increased fivefold since 1998. A concomitant rapid rise in opioid-related adverse events, especially a quadrupling of opioid overdose deaths, has led to nationwide efforts to crack down on prescription opioid use and abuse, but these efforts have been controversial due to possible unintended costs for patients requiring pain control. Additionally, these crackdown efforts have been blamed for a dramatic recent national surge in the use of heroin, which can function as an imperfect substitute for prescription opioids.

I use geographic variation in the introduction of state Prescription Monitoring Program laws to study the effects of a crackdown on the prescribing of opioid pain relievers. Initial findings suggest substantial tradeoffs when setting optimal opioid policy. In particular, I have found that after the introduction of a PMP, opioid prescribing is significantly reduced, and:

- Opioid abuse and overdose deaths fall, while heroin overdose deaths rise in the near term and fall in the longer term.
- Total inpatient and outpatient spending for patients requiring pain management increases.
- Injured workers under workers compensation take more absent days.