

The Joint Policy Board for Mathematics (JPBM) is a collaborative effort of



JPBM Statement Re: April 22 Presidential Proclamation

On behalf of the members of the Joint Policy Board for Mathematics (JPBM), we write regarding the potential impacts of the April 22 Presidential Proclamation Suspending Entry of Immigrants Who Present Risk to the U.S. Labor Market During the Economic Recovery Following the COVID-19 Outbreak. In particular, we point to Section 6, “Additional Measures”, which mandates that a review be undertaken of all “nonimmigrant programs” with the intention of ensuring “the prioritization, hiring, and employment of United States workers.”

JPBM is concerned about the broad nature of the directive outlined in Section 6 and the implications it carries for programs that are critical to sustaining the health and vitality of the U.S. scientific research enterprise. Specifically, numerous nonimmigrant visa programs enable the best and brightest from around the world to contribute to scientific advancement in the U.S. In fact, international students comprise a majority of doctoral candidates in many science, technology, engineering, and mathematics (STEM) fields.

Recent trends in mathematics help to illustrate the importance of international graduate students. Of the new doctorates in the mathematical sciences earned at U.S. institutions during the 2016-2017 academic year, 46 percent of those awarded at large and medium-sized public institutions went to candidates from outside of the U.S. At all other PhD granting institutions, including at all large private schools, the majority were issued to foreign students.

The advancements that these mathematicians and statisticians enable are critical to addressing profound and unprecedented challenges facing the nation’s economic strength, national security, and general welfare. Many of these challenges are fueled by gaps in our understanding of complex systems such as cyberspace, the energy grid, and human physiology. Mathematical sciences play a foundational and cross-cutting role in understanding these systems through advanced modeling and simulation, developing techniques essential to designing new breakthrough technologies like artificial intelligence, and providing new tools for managing resources and logistics. Most recently, these techniques have been used in the fight against COVID-19 to better track the spread of disease, study its characteristics, and identify potential therapeutic treatments.¹

Given their prevalence in graduate programs, international students are critical to supporting efforts to develop domestic talent. Graduate students in mathematics carry a significant teaching load as university mathematics departments across the country count on them to teach undergraduates. A reduction in the number of graduate students would leave mathematics departments unable to provide classes to meet the demand across STEM fields. Diminished course offerings in undergraduate

¹ <https://covid19-hpc-consortium.org/projects>

mathematics and statistics will harm medical and all STEM fields since pre-med and all STEM majors require mathematics and statistics courses for their students.

JPBM acknowledges that our nation is facing extraordinary circumstances and that our government must adjust accordingly to meet the challenges before us. Still, we urge you to ensure that any policies implemented in the interest of safeguarding public health do not jeopardize the research enterprise that underpins U.S. competitiveness, and which will be critical to enabling economic resurgence once this crisis abates.

Sincerely,



Jill Pipher
President, AMS



Robert L. Santos
President-elect, ASA



Michael Dorff
President, MAA



Lisa Fauci
President, SIAM

JPBM consists of the [American Mathematical Society](#), the [American Statistical Association](#), the [Mathematical Association of America](#), and the [Society for Industrial and Applied Mathematics](#). The four societies have nearly 90,000 members, and the Board represents the mathematics and statistics community in policy discussions.