American Mathematical Society
Committee on Education
Annual Mini-Conference on Education
October 25, 2019

“Mathematics Departments and the Explosive Growth of Computational and Quantitative Offerings in Higher Education”

Agenda

8:00 am  Continental Breakfast

8:45 am  Welcome & Introductions
Katherine Stevenson, California State University, Northridge
AMS Committee on Education (COE) Chair

9:00 am  “Under the Radar: The Ubiquity of Mathematics and Statistics in University Education”
Mark Green, University of California, Los Angeles
Chair, National Academy of Sciences (NAS) Board on Mathematical Sciences and Analytics

Description: Using UCLA as an example, I’ll give as complete an answer as I can to: Who requires mathematics and statistics? Which departments teach mathematics or statistics in their courses? Why are mathematics and statistics relevant to them? What are the opportunities and challenges that this offers for us as a discipline?

9:45 am  Q&A
Uri Treisman, University of Texas at Austin
Transforming Post-Secondary Education (TPSE)

10:00 am  “A Survey of Applied Mathematics and Computational Science at NIST”
Anthony Kearsley, National Institute of Standards and Technology (NIST)

Description: In this talk, I will present a survey of applied mathematics projects at the National Institute of Standards and Technology. I will attempt to point at the type of coursework that would prepare a student to join or contribute to the research.

10:45 am  Q&A
Erika Camacho, Arizona State University and
National Science Foundation, Directorate for Education and Human Resources
Division of Human Resource Development

11:00 am  Break
11:30 am  Program Descriptions
Ben Baumer, Smith College
Tom Halverson, Macalester College
Stephanie Hicks, Johns Hopkins University

1:00 pm  Lunch: Table discussions with Baumer, Halverson, and Hicks

2:00 pm  “Mathematics programs that prepare undergraduates for careers in industry”
Michael Dorff, Brigham Young University (BYU)
President, Mathematical Association of America (MAA)

Description: BYU’s Applied and Computational Math Emphasis (ACME) program is a track in our standard math major that teaches both the content and skills in mathematics, statistics, and computation needed to solve the problems from industry. To do this the ACME program designed a new set of junior and senior level math courses and labs based on the theory and skills that industrial consultants said math students should have to be successful in industry. As another example, the MAA’s PIC Math is a national program that prepares students for careers in industry by offering a semester-long, credit-bearing math course in which students work in a small group on solving an undergraduate research problem from industry. The PIC Math course has been taken by over 1750 students at 125 U.S. universities and has involved over 150 industrial partners.

2:45 pm  Q&A
Katherine Stevenson, California State University, Northridge

3:00 pm  Working Break (table discussion, by university type)

3:30 pm  “Mathematics Student Pathways: Data and Tools”
Nirmala Kannankutty, Acting Division Director
National Science Foundation, Directorate for Education and Human Resources
Division of Graduate Education

Description: Science and technology (S&T) capacity has grown dramatically in the U.S. As a result, policymakers have examined the pathways that students take to enter the STEM workforce, and supported policies that promote a robust STEM educational environment. Using nationally representative data and public tools, I will share with the conference attendees a statistical profile of mathematics student pathways from postsecondary participation to the workforce.

4:15 pm  Closing Panel & Thoughts
Brit Kirwan, Chancellor Emeritus
University System of Maryland

5:00 pm  Adjourn