2017 Annual Meeting of the American Association for the Advancement of Science

The 2017 annual meeting of the American Association for the Advancement of Science will take place in Boston February 16–20. The theme of the meeting is "Serving Society Through Science Policy." There are several sessions which should be of special interest to mathematicians.

Alice Silverberg of the University of California, Irvine, has organized a symposium on "Cybersecurity: Mathematics and Policy," scheduled for Sunday, February 19, 2017: 1:00 pm–2:30 pm. This panel brings together experts on cybersecurity, cybersecurity policy, and relevant fields of mathematics to discuss what is new and debate the latest controversies. Presentations will be followed by a moderated, full-group discussion. Speakers and topics are Ronald Rivest, Massachusetts Institute of Technology, Cryptography and Cybersecurity; Nadia Heninger, University of Pennsylvania, The Mathematics of Cryptographic Security; and Susan Landau, Worcester Polytechnic Institute Cybersecurity and Privacy: A Surprising Alignment. Professor Silverberg will moderate.

Nessy Tania, Smith College, and Richard Judson, US Environmental Protection Agency have organized a symposium on "Supporting Environmental Decision-Making: Modeling Complex and Noisy Biology," for Saturday, February 18, 2017: 10:00 am–11:30 am. This session discusses the promise of mathematical modeling with three case studies. Through examples, speakers will address the following key challenges: models must be able to integrate data from simple levels of biological organization and predict effects on whole animals; methods must be scalable to be able to make predictions on tens to hundreds of thousands of chemicals; and methods must be robust in the face of noise in both the simple data they are built on and the complex phenotypes they are validated against. Speakers and topics are Nicole Kleinstreuer, National Institutes of Health Developing, Validating, and Applying Pathway-Based Models for Endocrine Disruption; Kamel Mansouri, Oak Ridge Institute for Science and Education Fellow at US Environmental Protection Agency Consensus Models to Predict Endocrine Disruption for All Human-Exposure Chemicals; and Matthew Betti, University of Western Ontario Modeling Honey Bee-Plant Symbiosis in the Presence of Environmental Toxins New features of the 2017 meeting are fifteen minute "flash talks." Keith Devlin, Stanford University, will presenting one of these on Saturday, February 18, 2017: 1:30 pm–1:45 pm; the title is "Symbols of Success: New Representations for Teaching and Doing Mathematics." In the abstract, Professor Devlin notes that while symbolic representations are powerful in doing mathematics, it has been known since the early 1990s that much of the difficulty people have learning mathematics is because of the symbolic interface. The modern tablet computer ("paper on steroids") offers the possibilty of developing alternative representations. Applications to K–12 mathematics teaching have already been developed and promise to have a significant impact on mathematics learning. We can expect novel representations to play a role in doing (some) mathematics as well.

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