Conferences | January 22, 2024

SIAM New York – New Jersey – Pennsylvania Section Holds Inaugural Conference

By Kathleen Kavanagh and Roy Goodman

In July 2022, SIAM approved the creation of a new Section to serve industrial and applied mathematicians in the region of New York, New Jersey, and Pennsylvania. The resulting SIAM New York – New Jersey – Pennsylvania (SIAM-NNP) Section seeks to promote collaboration for basic research and mathematical applications in industry and science, facilitate continued communication among its members, and generally support the SIAM mission. As such, SIAM-NNP held its first annual meeting at New Jersey Institute of Technology (NJIT) in October 2023. Roughly 375 attendees convened over the course of several days to enjoy and participate in 26 unique minisymposia, nine contributed sessions, and 47 poster presentations. Four plenary speakers discussed their research and introduced the audience to a broad range of topics, as follows:

- Yuejie Chi (Carnegie Mellon University): “A Tale of Preconditioning and Overparameterization in Ill-conditioned Low-rank Estimation”
- Qiang Du (Columbia University): “Nonlocal Models on Bounded Domains: Formulation, Analysis, and Computation”
- Susan Bailey (Clarkson University): “Using Models and Experiments to Explore the Drivers of Microbial Evolution”
- Fengyan Li (Rensselaer Polytechnic Institute): “Efficiency Improvements in Wave and Kinetic Transport Simulations.”

The meeting featured a strong student and early-career presence; 30 undergraduate students, 133 graduate students, and 54 postdoctoral researchers were in attendance. Two junior researchers also presented a pair of engaging 50-minute tutorials on the following emerging research topics, which was certainly a conference highlight:

- Roni Barak Ventura (New York University): “Causal Inference with Transfer Entropy: An Introduction for Beginners”
- Annan Yu (Cornell University): “Theory and Practices of Linear Systems in Machine Learning.”

Students attend the industry question-and-answer panel with experts in the field during the introductory mixer event at the first annual meeting of the SIAM New York – New Jersey – Pennsylvania Section (SIAM-NNP), which took place at New Jersey Institute of Technology in October 2023. Photo courtesy of Roy Goodman.

The evening before the invited talks and minisymposia began, student attendees were invited to a special mixer that included a pizza dinner, networking opportunities, and a digital SIAM scavenger hunt (with SIAM merchandise prizes for the winning teams). The night concluded with a question-and-answer panel with industry experts that allowed participants to ask candid questions about industrial career opportunities for applied and computational mathematicians. The panel comprised Michael Henderson (IBM Research), Ross Ingram (Naval Nuclear Laboratory), Jeffrey Sachs (Merck), Erin Tripp (Air Force Research Laboratory), and Biao Yin (Bank of America).

SIAM and the NJIT Department of Mathematical Sciences, College of Science and Liberal Arts, and Office of the Provost all offered support for SIAM-NNP's 2023 Annual Meeting. SIAM-NPP Section leadership—president Roy Goodman (NJIT), vice president Yue Yu (Lehigh University), secretary Rongjie Lai (Purdue University), and treasurer Eric Forgoston (Montclair State University)—orchestrated the event, with help from Anthony Harkin (Rochester Institute of Technology), Ross Ingram (Naval Nuclear Laboratory), Silvia Jiménez Bolaños (Colgate University), Kathleen Kavanagh (Clarkson University), and Kyle Mandli (Flatiron Institute). A scientific committee of 20 SIAM members from academia and industry—including companies such as Corning Inc., IBM, and Merck—also supported the conference.

Beginning with the first announcement of our intention to form this Section, the response from the community has been overwhelmingly positive. We hope that this meeting helps to establish SIAM-NNP as a strong hub for our region's industrial and applied mathematics community. All of the region's SIAM members are automatically members of this Section. We encourage them to get involved and continue to build upon what we have started.

Kathleen Kavanagh is a professor of mathematics at Clarkson University and the former Vice President for Education at SIAM.

Roy Goodman is an associate professor in the Department of Mathematical Sciences at New Jersey Institute of Technology and founding president of the SIAM New York – New Jersey – Pennsylvania Section.