# Report on the Sixth Annual North American School of Information Theory

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The sixth annual North American School of Information Theory took place June 4-7, 2013 on the campus of Purdue University. Hosted by the Center for Science of Information (http://soihub.org), 140 total students, postdocs, faculty, and professional staff took part in the school this year. A concurrent workshop for faculty and postdocs on teaching science of information

courses brought faculty from across the nation who also attended the lectures at the school. The school provides a venue where doctoral and postdoctoral students can meet to learn from distinguished professors in information theory, and form friendships and collaborations. This year the school introduced several interdisciplinary topics in the emerging field of science of information.

The school format has courses by distinguished scientists followed by student poster presentations. The five featured speakers this year were Michelle Effros (Cal-Tech) who explained "Information Theory for Large Networks", Scott Aaronson (M.I.T.) gave an enthusiastic tutorial on "Quantum Computing and Information", P.R. Kumar (Texas A&M) and postdoctoral scholar Jonathan Ponniah co-presented "A Clean Slate Approach to Security of Wireless Networks", Mehmet Koyuturk, gave a survey on "Complex Diseases and Information Theory". Emina Soljanin (Bell Labs), gave the Padovani Lecture
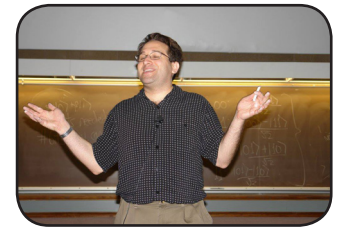

on "The Secret Lives of Codes: From Theory to Practice and Back". Videos and slides of the lectures are viewable on the Science of Information Channel via http://soihub. org/summerschool, as well as on the IEEE IT Society 2013 School page http://www.itsoc.org/north-american-school-2013

Students gave fast-paced overviews of their research during the traditional "one minute madness" series of presentations that was enjoyed by all. Three poster sessions took place during the school. There was a broad scope of topics presented, and many students commented that the interdisciplinary nature of the posters presented provided much insight and helpful discussions. Many connections were made between the students and several mentioned possible future collaborations. Several students offered to lead open problem discussions in the evenings following dinner, and a

professional development session on biases and diversity in hiring was also offered to the students one evening.
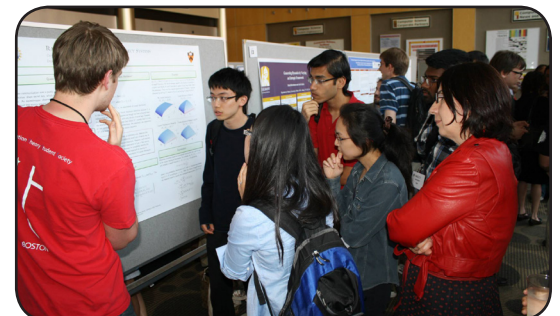
We had the most perfect weather we could have asked for during the week of the school, with blue skies and temperatures in the mid 70's. Built into the schedule were lunches and dinners that allowed ample time for students to network and discuss issues in their respective fields. The social program included a sit-down roundtable dinner on the first evening of the school, with an outdoor BBQ cookout on Wednesday evening (with veggie sandwiches and frisbee games too!).

Many people helped make the 2013 school a success. Wojtek Szpankowski and Brent Ladd put the program together, Mike Atwell took care of the many web and print media duties, Kiya Smith and Erica Wilson assisted with organizing meals, lodging, lecture hall, and t-shirts, Bob Brown served as treasurer and organized key sponsorships, Barbara Gibson organized student diversity components including a session on recognizing biases in hiring. Sergio Verdu presented our school proposal and updates to the IT BoG, and the Center for Science of Information Executive Committee provided overall support. Erin Blakeslee, Mike Atwell, and Bob Brown all took great photographs - a full school album available at https://www.facebook.com/media/set/?set=a.47758074 2319450.1073741827.132095200201341&type=3 . Robynne McCormick assisted with financial items, and Andy Thompson tirelessly ran video equipment and edited the final lectures. Deepak Kumar and Mark Ward facilitated a workshop for faculty interested in teaching science of information courses.

A big thank you to all of the sponsors that made the 2013 school possible. In particular, IEEE Information Theory Society, Center for Science of Information, Purdue Computer Science Department, and Vice President for Research, Princeton Electrical Engineering Department, UC Berkeley Departments of Electrical Engineering & Computer Sciences, Statistics, and ERSO, Bryn Mawr College Computer Science Department, and Texas A&M Electrical & Computer Engineering.

We close this brief report with feedback and representative quotes from students and faculty. In addition to gaining experience presenting their research to their peers, students report a 3.7/4 on obtaining useful feedback to their research from talking with other students and faculty, and a 3.4/4 that they were able to start some level of professional connection with their peers for possible collaborations.

"The poster sessions were a great opportunity to see the variety of information-theoretic research that is going on. They facilitated meaningful conversations. I hope to continue discussing my research with some of these students. The one-minute madness sessions were useful, too."

"Sharing my research and getting to see what the other students' research was certainly valuable. It is also good to speak to someone in the same stage of career and talk about practical aspects of the PhD life, questions that you would not feel so comfortable to ask to your advisor, in general."

"I think the summer school was a big success. I enjoyed the talks very much. The poster sessions were very interesting. I had several deep discussions with other researchers about my (and their) research which was very helpful for me."

"The best thing about the summer school for me is getting to know students from other universities, learn about their research and share ideas with them. And even talk about future collaborations!"

"I will look forward to attending this conference again, especially if the accommodations and food are as decent as they were at Purdue. Thank you."

"Great Summer School!! Thank you for a really well organized and enriching event!"