Mathematics People

Arora and Mitchell Awarded Gödel Prize

SANJEEV ARORA of Princeton University and JOSEPH S. B. MITCHELL of the State University of New York at Stony Brook were named recipients of the Gödel Prize of the Association for Computing Machinery (ACM) at the International Colloquium on Automata, Languages and Programming (ICALP 2010), held July 5–10 in Bordeaux, France. The prize carries a cash award of US$5,000.

Arora and Mitchell were honored for their concurrent discovery of a polynomial-time approximation scheme (PTAS) for the Euclidean Traveling Salesman Problem (ETSP). Mitchell was chosen for his 1999 paper, "Guillotine subdivisions approximate polygonal subdivisions: A simple polynomial-time approximation scheme for geometric TSP, *k*-MST, and related problems", published in the *SIAM Journal of Computing* **28**(4), 1298–1309. Arora was selected for his 1998 paper, "Polynomial-time approximation schemes for Euclidean TSP and other geometric problems", published in the *Journal of the ACM* **45**(5), 753–782.

The Euclidean Traveling Salesman Problem in dimension 2 is one of those old, seemingly innocent, problems known to be NP hard but still not known to be in NP. At the time of publication, the impact of the Euclidean assumption was hardly understood: the best polynomial-time approximation scheme could only guarantee 50% error at best. Arora and Mitchell showed that solutions that are arbitrarily close to optimal in a relative sense can be found in polynomial time. These techniques, further simplified, improved, and then generalized, occupy a chapter of their own in the theory of approximation algorithms. The discovery of a PTAS for ETSP, with its long trail of consequences, counts as a crowning achievement of geometric optimization.

The 2010 Gödel Prize committee consisted of Cynthia Dwork (Microsoft Corporation); Johan Hastad (KTH Stockholm); Jean-Pierre Jouannaud (INRIA and Tsinghua University), chair; Mogens Nielsen (Aarhus University); Mike Paterson (University of Warwick); and Eli Upfal (Brown University).

The Gödel Prize for outstanding papers in the area of theoretical computer science is sponsored jointly by the European Association for Theoretical Computer Science (EATCS) and the Special Interest Group on Algorithms and Computation Theory of the Association for Computing Machinery (ACM-SIGACT). This award is presented annually, with the presentation taking place alternately at the International Colloquium on Automata, Languages, and Programming (ICALP) and the ACM Symposium on Theory of Computing (STOC). The prize is named in honor of Kurt Gödel in recognition of his major contributions to mathematical logic and of his interest, discovered in a letter he wrote to John von Neumann shortly before von Neumann's death, in what has become the famous "P versus NP" question.

—From an EATCS announcement

Mathematical Sciences Awards at the 2010 ISEF

The 2010 Intel International Science and Engineering Fair (ISEF) was held in May 2010 in San Jose, California. Fifteen hundred students in grades 9 through 12 from more than fifty countries participated in the fair. The Society for Science and the Public, in partnership with the Intel Foundation, selects a Best in Category contestant, who receives a cash award of US$5,000. The student chosen this year was JOSHUA W. PFEFFER, a seventeen-year-old student at North Shore Hebrew Academy High School in Great Neck, New York, for his project, "Super Kähler-Ricci Flow". He also received the First Award, which carries a cash prize of US$3,000. In addition, a grant of US$1,000 was given to his school. Pfeffer also received the Seaborg SIYSS award. He will receive an all-expenses-paid trip to attend the Stockholm International Youth Science Seminar (SIYSS) during the Nobel Prize Ceremonies in December 2010. The award is named for the late Glenn T. Seaborg, Nobel Laureate in chemistry.

—From an ISEF announcement

Ford Foundation Diversity Fellowships Awarded

The Ford Foundation has named the recipients of its Diversity Fellowships for 2009. The Ford Foundation's predoctoral, dissertation, and postdoctoral fellowship programs seek to increase the presence of underrepresented

minorities on college faculties. Awardees later serve as role models and mentors for a new generation of scholars. CARLOS E. ARRECHE of the University of Chicago, a student in algebra, and ASHLEY N. CRUMP, a student in applications of mathematics at Princeton University, were awarded predoctoral fellowships of US$20,000 a year for up to three years. BIANCA L. VIRAY, a student in algebra at the University of California, Berkeley, received a dissertation fellowship of US$21,000 for one year of study.

—From a Ford Foundation announcement

Boleslaw Kacewicz Wins the 2010 Information-Based Complexity Prize

BOLESLAW KACEWICZ of AGH University of Science and Technology, Cracow, Poland, has been awarded the 2010 Prize in Information-Based Complexity. The prize consists of US$3,000 and a plaque. The award will be presented at the 2010 Ninth International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, Warsaw, Poland, in August 2010. This annual prize is given for outstanding contributions to information-based complexity.

—Joseph Traub, Columbia University

Royal Society of London Elections

The following mathematical scientists have been elected to the Royal Society of London: PHILIP CANDELAS, University of Oxford; DONALD A. DAWSON, Carleton University; GEORG GOTTLOB, University of Oxford and Vienna University of Technology; BEN J. GREEN, University of Cambridge; and ROBERT C. GRIFFITHS, University of Oxford. Elected as a foreign fellow was LUDWIG D. FADDEEV, Steklov Mathematical Institute.

—From a Royal Society announcement

Mary L. Boas (1917–2010)

Mary Elizabeth Layne Boas died on February 17, 2010. Born on March 10, 1917, in Prosser, Washington, she earned a bachelor's degree (1938) and master's degree (1940) in mathematics at the University of Washington. She did graduate work and taught at Duke University, where she met her future husband, Ralph P. Boas Jr. Ralph Boas, who died in 1992, was active in the AMS, serving on the Board of Trustees and the Council and as executive editor of *Mathematical Reviews.* Mary Boas went on to earn a Ph.D. in physics in 1948 at the Massachusetts Institute of Technology and taught physics at DePaul University in Chicago for thirty years. She is perhaps best known for her textbook *Mathematical Methods in the Physical Sciences*, the third edition of which appeared in 2005. The Boases had three children, one of whom is Harold Boas of Texas A&M University, who served as editor of the *Notices*, 2001–2003.

—Allyn Jackson

Leo Sario (1916–2009)

Leo Sario was born in Vyborg, Finland, in 1916. He was an accomplished ski jumper as a young man and served valorously in World War II.

Sario earned his Ph.D. under the direction of Rolf Nevanlinna in 1948. He soon played a key role in establishing the Finnish National Academy, and the statute for that purpose is named in his honor. He was later knighted by the country of Finland.

Leo's first jobs in the United States were at the Institute for Advanced Study, the Massachusetts Institute of Technology, Stanford University, and Harvard University. He settled at the University of California, Los Angeles, in 1955 and spent the remainder of his career there.

Leo Sario wrote 6 important books and 134 research papers. His books *Principal Functions* with Burton Rodin, *Riemann Surfaces* with Lars Ahlfors, and *Classification Theory of Riemann Surfaces* with Mitsuru Nakai still stand as classics. He mentored thirty-six Ph.D. students. Among his distinguished students were Kôtaro Oikawa and Burton Rodin. He was an active and prolific mathematician until he retired from UCLA, and from mathematics, in 1986.

Sario is credited with creating the theory of principal functions—a method of constructing harmonic functions on arbitrary Riemann surfaces. He was one of the ranking experts in Riemann surface theory, particularly in the classification theory of Riemann surfaces. He later extended these ideas to the classification theory of Riemannian manifolds.

Sario had many interests, including hiking, running, traveling, and reading. He loved films and was an active participant in the Los Angeles Museum Film Group. He once said that his favorite way to study mathematics was to sit on the beach at two o'clock in the morning. He would wear a child-carrier backward to hold his papers and a miner's helmet to illuminate his work. He used to run twenty miles barefoot on the beach every day.

Leo Sario's students remember him as vigorous, dynamic, and supportive. Many of his students became his collaborators, and they were all his friends. He had a large mathematical family.

—Steven G. Krantz, editor