
Mathematics People

Budaghyan Awarded Artin Junior Prize

LILYA BUDAGHYAN of the University of Bergen, Norway, has been awarded the 2011 Emil Artin Junior Prize in Mathematics. She was chosen for her joint paper with Tor Helleseth, “New commutative semifields defined by new PN multinomials”, published in *Cryptography and Communications* 3 (2011), 1–16. Established in 2001, the Emil Artin Junior Prize in Mathematics carries a cash award of US\$1,000 and is presented usually every year to a student or former student of an Armenian university under the age of thirty-five for outstanding contributions to algebra, geometry, topology, and number theory—the fields in which Emil Artin made major contributions. The prize committee consisted of A. Basmajian, Y. Movsisyan, and V. Pambuccian.

—Victor Pambuccian, New College,
Arizona State University

Rapoport Awarded Hopf Prize

MICHAEL RAPOPORT of the University of Bonn has been awarded the 2011 Heinz Hopf Prize of the ETH Zürich. He was honored “for his broad and extraordinarily deep scientific works.” Rapoport uses algebraic geometry to establish higher reciprocity laws, which serve as a bridge between the field of arithmetic and the theory of automorphic forms. He is interested in Shimura varieties and their local variants from the point of view of constructing interesting Galois representations, of identifying algebraic cycles on them, and of studying their deformations. He delivered the Heinz Hopf Lectures, titled “How Geometry Meets Arithmetic”, in October 2011.

Born in 1948, Michael Rapoport grew up in the former East Germany. After initial studies in Berlin, he emigrated and continued his studies in Paris and at Princeton and Harvard. He received his Ph.D. in 1976 from the Université

de Paris-Sud under the direction of Pierre Deligne. He has held positions in Heidelberg, Bonn, Wuppertal, and Köln. In 2003 he was appointed to his current position as professor of arithmetic algebraic geometry at the University of Bonn. Rapoport received the Leibniz Prize in 1992 for his work on Shimura varieties and on the proof of the local Langlands conjecture for the general linear group $GL_n(K)$ for local fields K of positive characteristic, work done jointly with Gérard Laumon and Ulrich Stuhler. Rapoport has had a great impact on the arithmetic of elliptic curves.

The Hopf Prize is awarded every two years on the occasion of the Heinz Hopf Lectures, which are given by the prizewinners. The prize carries a cash award of 30,000 Swiss francs (approximately US\$32,700).

—From an ETH announcement

Maharaj and Sarkar Awarded Bhatnagar Prize

MAHAN MAHARAJ of Ramakrishna Mission Vivekananda University and PALASH SARKAR of the Indian Statistical Institute have been awarded the 2011 Shanti Swarup Bhatnagar Prize for Science and Technology in the mathematical sciences. The prize is awarded by the Council of Scientific Research and Industrial Development to recognize outstanding Indian work in science and technology. Shanti Swarup Bhatnagar was the founding director of the Council. It is the highest award for science in India. The prize carries a cash award of 500,000 rupees (approximately US\$10,000).

—Council of Scientific Research and Industrial
Development, India

Soundararajan Awarded Infosys Prize 2011

KANNAN SOUNDARARAJAN of Stanford University has been awarded the Infosys Prize in Mathematical Sciences for 2011. According to the prize citation, “Soundararajan has made fundamental contributions to analytic number theory. These include numerous brilliant breakthroughs in well-known and difficult problems, as well as the resolution of some that have been open for a long time. In particular, his recent development of new, unexpected techniques to study the critical values of general zeta functions has led to the proof of the quantum unique ergodicity conjecture for classical holomorphic modular forms. Many of the analytic and combinatorial tools that Soundararajan and his collaborators have developed, in works ranging from prime numbers and sieve methods to character sums and zeta functions, have become standard tools for researchers in these fields.”

The Infosys Prize recognizes outstanding contributions to research in engineering and computer science, life sciences, mathematical sciences, physical sciences, and social sciences. The prize carries a cash award of 5 million rupees (approximately US\$97,000).

—*From an Infosys Science Foundation announcement*

Brandenberger Awarded CAP-CRM Prize

ROBERT BRANDENBERGER of McGill University has been awarded the 2011 CAP-CRM Prize in Theoretical and Mathematical Physics by the Canadian Association of Physicists (CAP) and the Centre de recherches mathématiques (CRM). He was honored “for his pioneering contributions in the area of theoretical cosmology, especially the interplay of particle physics and cosmology.” The prize is intended to recognize research excellence in the fields of theoretical and mathematical physics.

—*From a CAP-CRM announcement*

Hinrichs Awarded 2011 Information-Based Complexity Prize

AICKE HINRICHS of the Mathematisches Institut, University of Jena, Germany, has been awarded the 2011 Information-Based Complexity (IBC) Young Researcher Prize. The prize consists of US\$3,000 and a plaque. This annual prize is given for outstanding contributions to information-based complexity.

—*Joseph Traub, Columbia University*

CAREER Awards Presented

The Division of Mathematical Sciences (DMS) of the National Science Foundation (NSF) has honored thirty-one young mathematicians in fiscal year 2011 with Faculty Early Career Development (CAREER) awards. The NSF established the awards to support promising scientists, mathematicians, and engineers who are committed to the integration of research and education. The grants provide funding of at least US\$400,000 over a five-year period. The 2011 CAREER grant awardees and the titles of their grant projects follow.

MARK BEHRENS, Massachusetts Institute of Technology, Arithmetic Structure of Homotopy Theory; HONGJIE DONG, Brown University, Problems in Regularity Theory for Linear and Nonlinear Partial Differential Equations; KIRSTEN EISENTRAEGER, Pennsylvania State University, Undecidability in Number Theory and Applications of Arithmetic Geometry; VOLKER ELLING, University of Michigan, Ann Arbor, Non-Uniqueness in Inviscid Flow and Algebraic Vortex Spirals; MARIA EMELIANENKO, George Mason University, Developing Mathematical Tools for Modeling Complex Materials Systems; IBRAHIM FATKULLIN, University of Arizona, Defects and Singularities in Liquid Crystalline and Bacterial Systems; ILSE C. F. IPSEN, North Carolina State University, Early Career and Student Support for the XVIII Householder Symposium; MAX LIEBLICH, University of Washington, The Brauer Group in Algebraic and Formal Geometry; LEK-HENG LIM, University of Chicago, Numerical Multilinear Algebra and Its Applications: From Matrices to Tensors; PING MA, University of Illinois, Urbana-Champaign, Subsampling Methods in Statistical Modeling of Ultra-Large Sample Geophysics; MOKSHAY MADIMAN, Yale University, An Integrated Probabilistic Approach to Discrete and Continuous Extremal Problems via Information Theory; SVITLANA MAYBORODA, Purdue University, Analysis of Partial Differential Equations in Non-Smooth Media; JASON METCALFE, University of North Carolina, Chapel Hill, The Wave Equation on Black Hole Backgrounds; IRINA MITREA, Temple University, Spectral Theory for Singular Integrals, Validated Numerics and Elliptic Problems in Non-Lipschitz Polyhedra: Research and Outreach; ADILSON MOTTER, Northwestern University, Rescue and Control of Complex Networks of Dynamical Systems: Nonlinear Dynamics Approaches and Applications to Biological and Physical Networks; ALVARO PELAYO, Washington University, Symplectic and Spectral Theory of Integrable Systems; ZHIGUANG QIAN, University of Wisconsin, Madison, A Flexible Design and Modeling Framework for Computer Experiments and Beyond; PHILIPPE RIGOLLET, Princeton University, Large-Scale Stochastic Optimization and Statistics; DAVID SAVITT, University of Arizona, p -adic and mod p Galois Representations; NATASA SESUM, Rutgers University, Singularities and Singularity Models in Curvature Flows; ERIC SHEA-BROWN, University of Washington, Bridging Dynamical and Statistical Models of Neural Circuits: A Mechanistic Approach to Multispikes Synchrony; MAGGY TOMOVA, University of Iowa, New Approaches to Classical Knot Invariants; IGNACIO URIARTE-TUERO, Michigan State

University, Weighted Inequalities and Their Applications to Quasiconformal Maps; BENEDEK VALKO, University of Wisconsin, Madison, Random Eigenvalue Problems and Fluctuations of Large Stochastic Systems; MARIEL VAZQUEZ, San Francisco State University, Topological Mechanism of DNA Unlinking by the XerCD-FtsK System; STEFAN WENGER, University of Illinois, Chicago, Geometric Inequalities, Asymptotic Geometry, and Geometric Measure Theory; LAUREN WILLIAMS, University of California, Berkeley, Cluster Algebras, Total Positivity, and Physical Combinatorics; YICHAO WU, North Carolina State University, New Statistical Methods for Classification and Analysis of High Dimensional and Functional Data; DAPENG ZHAN, Michigan State University, Analysis of the Geometric Properties of the SLE Curves; QING ZHOU, University of California, Los Angeles, Sparse Modeling Driven by Large-Scale Genomic Data; ANDREJ ZLATOS, University of Wisconsin, Madison, Reactive Processes and Turbulent Flows.

—*Elaine Kehoe*

Wetzel Chosen Professor of the Year

KATHRYN C. WETZEL of Amarillo College in Texas has been chosen as Professor of the Year for community colleges. A professor of mathematics and engineering and department chair of mathematics, sciences, and engineering, she is one of four selected for the honor by the Council for Advancement and Support of Education (CASE) and the Carnegie Foundation for the Advancement of Teaching. A former nuclear engineer, Wetzel began teaching mathematics part-time at Amarillo after the birth of her daughter. Since then she has become department head of the math and engineering departments, reestablished the engineering program, and created a robust math tutoring center. She takes pride in helping students who have no confidence in their math skills. The math tutoring center she created is now in its sixth year and was used for a total of more than 22,000 visits in the past year.

—*Elaine Kehoe*

Rhodes Scholarships Awarded

Three students in the mathematical sciences are among thirty-two American men and women who have been chosen as Rhodes Scholars by the Rhodes Scholarship Trust. The Rhodes Scholars were chosen from among 830 students at 299 colleges and universities.

ISHAN NATH of Atlanta, Georgia, is a senior at Stanford University, where he will receive bachelor's degrees in economics and earth systems with a minor in mathematics. His senior thesis relates to clean energy and a national cap-and-trade emissions trading system. He has also interned at the Office of Economic Policy at the White House and served as a consultant to the U.S. Department of Energy. A Truman Scholar and a Udall Scholar, he has also been

an editorial writer for the *Stanford Daily* and a political columnist. A marathon runner, he will do the M.Sc. in economics for development at Oxford.

NABEEL N. GILLANI of Glen Allen, Virginia, is a senior at Brown University majoring in applied mathematics and computer science. He has also served as a research assistant on a biotechnology project and as a Microsoft project manager, and he is working now at Brown's optimization lab on electricity restoration for disaster relief. He founded a Providence-based microfinance organization, as well as an outreach program in the Providence, Rhode Island, public schools to help younger students learn math. At Oxford he plans to do the M.Sc. in computer science and the M.Sc. in education.

MOHIT AGRAWAL of West Lafayette, Indiana, received his B.A. in mathematics at Princeton University last year and is currently doing a master's degree in economic policy evaluation at the National University of Ireland. Elected early to Phi Beta Kappa and the winner of a Mitchell Scholarship, he was copresident of Engineers Without Borders and proposed the Ghana School Library Initiative to construct a library in Ashaiman, Ghana. Mohit also spent a semester at the National University of Singapore and developed tools for anticryptology systems for the National Security Agency. He plans to do the D.Phil. in financial economics at Oxford.

—*From a Rhodes Scholarship Trust announcement*