Mathematics People

Yuri Manin Awarded Rolf Schock Prize

The Royal Swedish Academy of Sciences has announced the names of recipients of the Rolf Schock Prizes. These international prizes honor contributions to mathematics, logic and philosophy, visual arts, and music. The prizes, awarded every two years, amount to 400,000 Swedish crowns (approximately US$50,000).

Yuri Manin of the Max Planck Institute for Mathematics in Bonn, Germany, has been awarded the 1999 prize in mathematics "for his important work in algebraic geometry and mathematical physics, in particular for those fundamental papers he has recently published about quantum groups and mirror symmetry."

Manin has published mathematical papers covering many fundamental results, including: the proof of a variant of a conjecture by Mordell, counterexamples to the Lüroth theorem in higher dimensions, the study of diophantine equations, p-adic analysis and modular forms in pure mathematics, the study of solutions of Yang-Mills equations and their relations to 4-dimensional manifolds, the theory of quantum groups, and mirror symmetry in mathematical physics.

Yuri Manin was born in 1937 in Simferopol in the former Soviet Union and is a Russian citizen. He studied mathematics at Moscow University and received his Ph.D. degree in 1960 from the Steklov Institute of Mathematics in Moscow. He was professor of mathematics at Moscow University from 1965 to 1991 and has been at the Max-Planck-Institute für Mathematik in Bonn since 1993.

About Rolf Schock

Rolf Schock was born in France on April 5, 1933. His family had emigrated from Germany in 1931; they later settled in the United States. He studied geology, psychology, and mathematics at the University of New Mexico and then pursued postdoctoral studies in philosophy, first at the University of California, Berkeley, and then at UCLA. After moving to Sweden he received the Fil.Lic. degree in philosophy from Stockholm University in 1964 and a Ph.D. from Uppsala University in 1968. His dissertation, "Logics without Existence Assumptions", was an early work in what is now known as free logic and has often been cited by scholars in the field. Schock wrote many other works in logic and the philosophy of science. He never held a permanent appointment, although he was a lecturer in Sweden for brief periods, and for many years the Royal Institute of Technology provided him with a base. He was also a painter, photographer, and traveler. After his death in an accident on December 5, 1986, it came to light that he had left a considerable fortune, which he had inherited from his father. Schock bequeathed half of the funds for prizes in the arts and sciences.

—From a Royal Swedish Academy of Sciences announcement

Rockafellar Wins von Neumann Prize

R. Tyrrell Rockafellar of the University of Washington has been awarded the 1999 John von Neumann Theory Prize, the highest prize given in the field of operations research and management science.

The $5,000 prize, awarded by the Institute for Operations Research and the Management Sciences, was given to Rockafellar "for his fundamental contributions to the theoretical foundations of optimization, including convex optimization, nonsmooth analysis, and stochastic programming." His principal research interests include de-

velopment of optimization methodology for modeling large-scale problems in decision or control over time, possibly with stochastic elements; numerical techniques for solving such problems; and associated innovations in mathematical analysis. Using the notions of epi- and proto-derivatives, he created a systematic calculus for dealing with nonsmooth functions and, with Roger Wets, promoted epi-convergence as a systematic device for modeling and analyzing the way optimization problems change. He has used this methodology to extend and reshape the theory of differentiation for set-valued functions.

R. Tyrrell Rockafellar received both his bachelor's degree in 1957 and his Ph.D. in 1963 from Harvard University. During the academic year 1957–58 he held a Fulbright Scholarship at the University of Bonn. He has taught at the University of Texas, Austin (1963–65), and has been at the University of Washington since 1966, where he now teaches jointly in the departments of mathematics and applied mathematics. He has held visiting positions at various institutions, including the Mathematics Institute in Copenhagen, the International Institute of Applied Systems Analysis in Vienna, Princeton University, and the universities of Grenoble, Colorado, Pisa, Paris-Dauphine, and Pau (France).

His numerous honors include the Dantzig Prize, jointly awarded by the Society for Industrial and Applied Mathematics (SIAM) and the Mathematical Programming Society (1982), the von Neumann Lecture Prize of SIAM (1992), and the Lanchester Prize of the Institute for Operations Research and the Management Sciences (1998, shared with Roger Wets).

—Elaine Kehoe

SIAM von Kármán Prize Awarded

The Society for Industrial and Applied Mathematics (SIAM) has awarded its Theodore von Kármán Prize for 1999 to STUART S. ANTMAN of the University of Maryland, College Park, and JOHN M. BALL of Oxford University. Antman was honored for his work on viscosity of solids and Ball for work on microstructure and the austenite-martensite transition.

The von Kármán Prize is awarded every five years for a notable application of mathematics to mechanics and/or the engineering sciences made during the five to ten years preceding the award. The award may be given either for a single notable achievement or for a collection of such achievements. The award consists of a $1,000 cash prize and a hand-calligraphed certificate. The members of the selection committee for the 1999 award were Philippe Ciarlet, Joseph B. Keller, and Jerrold E. Marsden (chair).

—From a SIAM announcement

Lebowitz Receives AAAS Scientific Freedom and Responsibility Award

JOEL LEBOWITZ of Rutgers University has been awarded the 1999 Scientific Freedom and Responsibility Award by the American Association for the Advancement of Science (AAAS). The award is given to scientists who have acted to protect the public's health, safety, or welfare; who have focused public attention on important potential effects of science and technology on society by participating in public policy debates; or who have established important new precedents in carrying out the social responsibilities of or defending the professional freedom of scientists and engineers.

Lebowitz was honored "for his tireless devotion to the rights of scientists in oppressive regimes throughout the world and his extraordinary creativity in finding ways to help these scientists survive their ordeal." In 1979, as president of the New York Academy of Sciences, Lebowitz mounted a strong appeal on behalf of persecuted scientists, particularly in the former Soviet Union. He met with dissident scientists in the Soviet Union on several occasions and provided a written forum for the results of seminars held by the dissidents. He has also advocated for the rights of scientists in Argentina, South Korea, Turkey, and Myanmar.

—From an AAAS announcement

Mathematicians Elected to American Academy of Arts and Sciences

Six mathematicians have been elected to membership in the American Academy of Arts and Sciences in 1999. They are: LEO BREIMAN (University of California, Berkeley), DAVID JERISON (Massachusetts Institute of Technology), HARRY KESTEN (Cornell University), ALAN S. PERELSON (Los Alamos National Laboratory), THOMAS SPENCER (Institute for Advanced Study), and JEAN E. TAYLOR (Rutgers University).

The American Academy of Arts and Sciences was founded in 1780 to foster the development of knowledge as a means of promoting the public interest and social progress. The membership of the academy is elected and represents distinction and achievement in a range of intellectual disciplines: mathematical and physical sciences, biological sciences, social arts and sciences, and humanities and fine arts.

—From an American Academy of Arts and Sciences announcement

AMS Menger Award winners. Back row, left to right: Jack Bewley, Adam Bryant, Jason Loy, Bryce Roberts, John Pope. Front row, left to right: Julian Palmore, chairman of judges' panel, Amit Sabharwal, Andrew Chi, Jennifer Pelka, Jennifer Walk, Heidi Williams, C. Andrew McManus, Ching-Tang Chen.

AMS Menger Awards at the 1999 Intel-International Science and Engineering Fair

The 1999 Intel-International Science and Engineering Fair (ISEF) was held May 2–8 in the Philadelphia Convention Center in Philadelphia, Pennsylvania. This year marked the fiftieth anniversary of the ISEF and saw a return to the origins of the fair in Philadelphia. Student winners were among approximately 1,100 ninth- through twelfth-graders who earned the right to compete by winning top prizes at local, regional, and state fairs in the United States or national science fairs abroad. ISEF Special Award prizes were given by over fifty organizations, including the AMS. These prizes include scholarships, cash awards, T-shirts, magazines, and books.

This was the twelfth year of participation in ISEF by the American Mathematical Society and the tenth year of presentation of the Karl Menger Memorial Awards. The AMS Awards are Special Awards. This year's panel of judges included Loren Argabright (Drexel University), Gisele Goldstein (University of Memphis), Marius Nkashama (University of Alabama, Birmingham), and Julian Palmore, chair (University of Illinois at Urbana-Champaign). The panel of judges reviewed 52 projects, all in mathematics. Each panel member inspected every project, and a panel member interviewed each student. To select the winning projects, the panel conducted several inspections of a student finalist's work. The winners (one first-place award, two second-place awards, and four third-place awards) were given cash prizes, and they and the five honorable mention winners were given copies of *What's Happening in the Mathematical Sciences*, Vol. 4, by Barry Cipra (published by the AMS) and a short biography of Karl Menger, in whose honor the awards are named. The Karl Menger Memorial prize winners were as follows:

First Place ($1,000): AMIT KUMAR SABHARWAL, *Exploration and Generalization of Ring and Localization Properties Associated to GKM Graphs*, Senior, Detroit Country Day School, Beverly Hills, Michigan.

Second Place ($500 each): ANDREW CHI, *Counting Organic Compounds*, Sophomore, Terre Haute South Vigo High School, Terre Haute, Indiana; JENNIFER LYNN PELKA, *Hamiltonicity of Graphs of Self-Complementary Degree Sequences*, Junior, Lake Highland Preparatory School, Orlando, Florida.

Third Place ($250 each): CHING-TANG CHEN, *Centers, Euler Line, Feuerbach Circle and Conjugate Euler Line of a Triangle*, Freshman, Chien-Tai Senior High School, Taiwan, Miao-Li, Republic of China; C. ANDREW MCMANUS, *Elliptic Curves over Finite Fields*, Junior, South Western High School, Hanover, Pennsylvania; JENNIFER ROSE WALK, *Which Factors Affect Noninsulin-Dependent Diabetes Mellitus in China?* Junior, Suncoast High Community School, Riviera Beach, Florida; HEIDI LEE WILLIAMS, *Applying Statistical Language Recognition: Techniques in the Cybertext-only Cryptanalysis of Enigma*, Senior, Williston Senior High School, Williston, North Dakota.

Honorable Mention: JACK NELSON BEWLEY, *Analysis of Iterated Odd-Cycle Matching Graph Sequences*, Senior, Westmoore High School, Oklahoma City, Oklahoma; ADAM DOUGLAS BRYANT, *Fractal Geometry: Nonscaling Koch Curves*, Junior, Tullahoma High School, Tullahoma, Tennessee; JASON A. LOY, *Mechanics of the Common Swing*, Senior, Palm Harbor University High School, Palm Harbor, Florida; JOHN WILLIAM POPE, *Search for a Simple Proof of the Existence of Sylow-p-subgroups*, Senior, Central High School, Philadelphia, Pennsylvania; BRYCE LEITNER ROBERTS, *Fibonacci Expressions in the Mathematics of Oboe Sound and Structure: Phase II*, Freshman, The Altamont School, Birmingham, Alabama.

Within each category the names above were listed alphabetically. It is interesting to note that projects in the mathematics category were awarded prizes by other organizations. For example, JENNIFER PELKA was awarded a scholarship from Lehigh University, and C. ANDREW MCMANUS was awarded a scholarship from Drexel University for their projects. The titles of the winning projects indicate the breadth and scope of the projects and the wide interests of the participants. The judges were impressed particularly by the enthusiasm of the participants and their interest in mathematics. The Society's participation in the Intel-ISEF is supported in part by income from the Karl Menger Fund, which was established by the family of the late Karl Menger. For more information about this program contact Timothy Goggins, AMS development officer, by e-mail: `tjg@ams.org` or by telephone: 401-455-4110.

—Julian Palmore

National Academy of Engineering Elections

The National Academy of Engineering has announced the election of eighty new members and eight foreign associates, including three mathematicians: JAMES W. DEMMEL of the University of California, Berkeley, was elected for his contributions to numerical linear algebra and scientific computing; DONALD W. PEACEMAN of Houston, Texas, was elected for contributions to the development and usage of transient three-dimensional multiphase simulators for predicting performance of petroleum reservoirs; and MARTIN GRÖTSCHEL of Konrad-Zuse-Zentrum, Berlin, Germany, was elected a foreign associate for his contributions to combinatorial optimization and its applications.

—From a National Academy of Engineering announcement

USA Mathematical Olympiad

The 28th USA Mathematical Olympiad (USAMO) exam was held April 27, 1999. The students taking the exam were selected on the basis of their performances on the American High School and American Invitational Mathematics Examinations, which involved more than 350,000 students. The USAMO lasts six hours and consists of six challenging questions.

The highest ranking individual on the 1999 USAMO was SASHA SCHWARTZ, an 11th-grader at Radnor High School in Radnor, Pennsylvania. The other seven top scorers were: REID W. BARTON, grade 10, home schooled, Arlington, Massachusetts; GABRIEL D. CARROLL, grade 10, Oakland Technical High School, Oakland, California; LAWRENCE O. DETLOR, grade 11, Saint Ann's School, Brooklyn, New York; PO-SHEN LOH, grade 11, James Madison Memorial High School, Madison, Wisconsin; STEPHEN E. HAAS, grade 12, Bellarine College Preparatory, San Jose, California; PAUL A. VALIANT, grade 10, Milton Academy, Milton, Massachusetts; and MELANIE E. WOOD, grade 12, Park Tudor High School, Indianapolis, Indiana. Five of these students—Barton, Carroll, Schwartz, Valiant, and Wood—received top honors in last year's USAMO.

These eight students were honored in June 1999 at a ceremony held at the National Academy of Sciences and at a reception and dinner held at the Department of State. Along with sixteen others who did well on the USAMO, these students are attending the four-week Mathematical Olympiad Summer Program at the University of Nebraska, Lincoln, this summer. This program brings together very promising students who have risen to the top in mathematics contests. It aims to broaden the students' view of mathematics and to prepare them for possible participation on the International Mathematical Olympiad (IMO) team. Six of the eight top USAMO winners—Barton, Carroll, Detlor, Loh, Valiant, and Wood—form the IMO team and are to travel to Romania in July for the 40th International Mathematical Olympiad.

Another form of recognition has come to a USAMO participant. PO RU LOH was named the Clay Mathematics Institute Olympiad Scholar. This award recognizes the most original solution to a problem in the competition.

The examinations are administered by the American Mathematics Competitions, a program of the Mathematical Association of America and jointly sponsored by twelve other mathematical organizations, including the AMS.

—Allyn Jackson

Deaths

HOWARD E. KREHBIEL, professor emeritus of Bluffton College, Bluffton, Ohio, died on March 30, 1999. Born on August 8, 1926, he was a member of the Society for 36 years.

WALTER THOMAS KYNER, professor emeritus of the University of New Mexico, Albuquerque, died on April 10, 1999. Born on January 27, 1926, he was a member of the Society for 44 years.

IVAN NIVEN, professor emeritus of the University of Oregon, Eugene, died on May 9, 1999. Born on October 25, 1915, he was a member of the Society for 62 years.

P. P. SUTTON, of Montréal, Canada, died on May 1, 1993, and was a member of the Society for 48 years.