Mathematics People

Zagier Receives Von Staudt Prize

This is the fourth time that the Otto and Edith Haupt Foundation has awarded the Karl-Georg Christian von Staudt Prize for outstanding achievements in the field of theoretical mathematics. The prizewinner is Don B. Zagier of the Max-Planck-Institut für Mathematik in Bonn. Zagier received this distinguished award for his pioneering work in the field of number theory. Through his work he has facilitated the solving of old and new problems using methods from many mathematical disciplines, and thus he has had considerable impact on the development of number theory over the last few decades. The award, endowed with DM 120,000 (about US$52,000), was presented on May 11, 2001, during a ceremony held in the auditorium of the Erlangen Palace.

The Otto and Edith Haupt Foundation, which was founded in 1986 at the Friedrich-Alexander-Universität Erlangen-Nürnberg, has the awarding of the Karl-Georg Christian von Staudt Prize as its main objective.

Otto Haupt was a full professor of mathematics at the university in Erlangen from 1921 until his retirement in 1953. When he died at the age of 101 in November 1988, he left a considerable amount of money to the foundation, which is named after his wife and him and from which the von Staudt Prize is financed.

In 1991 Hans Grauert of Universität Göttingen was the first recipient of the von Staudt Prize. In the following years the prize went to Stefan Hildebrandt, Universität Bonn (1994), and Martin Kneser, Universität Göttingen (1997). According to the statutes of the foundation, the prize is awarded approximately every three years to a scientist who is working at a university or research facility in the Federal Republic of Germany on a permanent basis. The prize is awarded for specific results with special appeal, as well as for the overall work of accomplished researchers in the field of theoretical mathematics.

The award is named after the mathematician Karl-Georg Christian von Staudt (1798–1867), who held what was at the time the only chair of mathematics in Erlangen. Von Staudt came from an old patrician family in Rothenburg. During his studies in Göttingen he was greatly influenced by Karl Friedrich Gauss. He received his doctorate in 1822 in Erlangen and subsequently taught at high schools in Würzburg and Nürnberg. In 1835 he was appointed to the Erlangen chair of mathematics, where he worked until his death. Von Staudt is one of the creators of projective geometry. His most important research results in this field of mathematics were published in 1847 in Nürnberg in his book titled *Geometrie der Lage.* Von Staudt's pioneering ideas continue to influence the development of geometry to this day. He is considered to be the first modern mathematician at a Bavarian university.

Don Zagier, an American citizen, was born in 1951 in Heidelberg and grew up in the United States. He finished high school at the age of 13, and three years later he received his master's degree in physics and mathematics from the Massachusetts Institute of Technology. At the age of 20 he received his doctorate from Oxford. One year earlier he had come to Bonn, where he is still working today. Zagier started his career at the university in Bonn in the "Sonderforschungsbereich Theoretische Mathematik", sponsored by the Deutsche Forschungsgemeinschaft (the German equivalent of the U.S. National Science Foundation). In 1982 the Max-Planck-Institut für Mathematik evolved from this research project. Since its founding, Zagier has been a scientific member, and since 1995 he has acted as one of the four directors of the institute.

In addition to his work in Bonn, Zagier was also a professor at the University of Maryland (1979–1990). Since 1990 he has been a professor at the University of Utrecht (The Netherlands), and recently he was appointed professor at the renowned Collège de France in Paris.

Zagier's main area of work and expertise is in number theory, one of the oldest fields of mathematics. In 1984, together with B. H. Gross from Harvard University,

he succeeded in effectively solving the so-called "Class Number Problem" of Gauss.

The presentation ceremony of the von Staudt Prize included the four movements of Brahms's Sonata in E-minor for violoncello and piano. After addresses by the university rector and the vice president of the Max Planck Society, the laudatio for Zagier was given by Hendrik Lenstra of the University of California, Berkeley. The certificate of the von Staudt prize was presented to Zagier with the following text: "In 2001 the Otto and Edith Haupt Foundation awarded the Karl-Georg Christian von Staudt Prize to Prof. Dr. Don B. Zagier in appreciation of his pioneering works on number theory and its applications, such as the theory of modular forms, elliptic curves, hyperbolic spaces, zeta functions and polylogarithms, which he brought forward substantially in the last decades via the application of deep methods from algebraic geometry, analysis and combinatorics."

Zagier thanked the rector and the audience and gave a lecture with the title "Number theory: Old questions, modern answers".

—W.-D. Geyer, Universität Erlangen

Packard Fellowships

The David and Lucile Packard Foundation awarded 24 Fellowships for Science and Engineering for the year 2000. Among the awardees were two mathematical scientists.

RAHUL V. PANDHARIPANDE of the California Institute of Technology and ADAM SOBEL of Columbia University will each receive a fellowship of $625,000 over five years.

The fellowships are awarded to researchers in mathematics, natural sciences, computer science, and engineering who are in the first three years of a faculty appointment.

—From a Packard Foundation announcement

Schramm and Smirnov Awarded 2001 Salem Prize

The Salem Prize for 2001 has been awarded jointly to ODED SCHRAMM of Microsoft Corporation and the Weizmann Institute and STANISLAV SMIRNOV of the Royal Institute of Technology, Stockholm.

Schramm was recognized for his development of stochastic Loewner equations and for his contributions to the geometry of Brownian curves in the plane. Smirnov was recognized for his work on existence of scaling limits and conformal invariance for critical percolation in the hexagonal grid.

The prize, in memory of Raphaël Salem, is awarded yearly to young researchers for outstanding contributions in the field of analysis.

Previous winners of the Salem Prize include the following: N. Varopoulos, R. Hunt, Y. Meyer, C. Fefferman, T. Körner, E. M. Nikishin, H. Montgomery, W. Beckner, M. R. Herman, S. B. Bochkarëv, B. E. Dahlberg, G. Pisier, S. Pichorides, P. Jones, A. B. Aleksandrov, J. Bourgain, C. Kenig, T. Wolff, N. G. Makarov, G. David, J. L. Journé, A. L. Vol´berg, J.-C. Yoccoz, S. V. Konyagin, C. McMullen, M. Shishikura, S. Treil, K. Astala, H. Eliasson, M. Lacey, C. Thiele, T. Wooley, F. Nazarov, T. Tao.

The 2001 Salem Prize committee consisted of J. Bourgain, C. Fefferman, P. Jones, N. Nikolski, P. Sarnak, and J.-C. Yoccoz.

—Elaine Kehoe

CMI Long-Term Prize Fellows

The Clay Mathematics Institute (CMI) has announced its selection of four long-term prize fellows for 2001. Their names and most recent affiliations follow: ROMAN BEZRUKAVNIKOV, University of Chicago; ALEXEI BORODIN, Institute for Advanced Study, Princeton University; SERGEI GUKOV, Harvard University; and MIRCEA MUSTATA, University of Nice. They join the following long-term prize fellows for 2000, the first year in which the fellowships were awarded: MANJUL BHARGAVA, Princeton University; DENNIS GAITSGORY, University of Chicago; DANIEL GOTTESMAN, University of California, Berkeley; and TERENCE TAO, University of California, Los Angeles.

The prize fellowships are awarded to mathematicians who are thirty years old or younger and who have contributed profound ideas and major achievements to the discipline of mathematics. The long-term prize fellows are employed by CMI for terms ranging from one to five years and are paid a salary to conduct research at institutions of their choice. Additional research funding can be requested. Areas of research in which current fellows are involved range from the theory of numbers to error correction in quantum computation.

The Clay Mathematics Institute is a private, nonprofit foundation dedicated to increasing and disseminating mathematical knowledge. It sponsors a series of programs that include creating new mathematical knowledge, disseminating mathematical insights, inspiring talented students, and recognizing extraordinary mathematical achievement and solutions of specific mathematical problems.

—From a CMI announcement

Trjitzinsky Memorial Awards Presented

The AMS has made awards to nine undergraduate students through the Waldemar J. Trjitzinsky Memorial Fund. The fund is made possible by a bequest from the estate of Waldemar J., Barbara G., and Juliette Trjitzinsky. The will

of Barbara Trjitzinsky stipulates that the income from the bequest should be used to establish a fund in honor of the memory of her husband to assist needy students in mathematics.

For the 2001 awards the AMS chose eight geographically distributed schools to receive one-time awards of $4,000 each. The mathematics departments at those schools then chose students to receive the funds to assist them in pursuit of careers in mathematics. The schools are selected in a random drawing from the pool of AMS institutional members.

Waldemar J. Trjitzinsky was born in Russia in 1901 and received his doctorate from the University of California, Berkeley, in 1926. He taught at a number of institutions before taking a position at the University of Illinois, Urbana-Champaign, where he remained for the rest of his professional life. He showed particular concern for students of mathematics and in some cases made personal efforts to insure that financial considerations would not hinder their studies. Trjitzinsky was the author of about sixty mathematics papers, primarily on quasi-analytic functions and partial differential equations. A member of the AMS for forty-six years, he died in 1973.

What follows are the names of the selected schools for 2001, the names of the students receiving Trjitzinsky awards, and brief biographical sketches of the students.

Columbia University: ALEXANDER IVANOV SOTIROV. Born in Sofia, Bulgaria, Sotirov attended high school there before becoming a student at Columbia University in September 1998. He has taken a variety of undergraduate and graduate mathematics courses and has an A average. He received Columbia's Van Amringe and I. I. Rabi/Kann-Rasmussen Prizes. A recipient of a Global Scholarship for international students, Sotirov also works and relies on loans to support his education. After finishing his bachelor's degree he intends to go to graduate school in mathematics. Henry Pinkham of Columbia University called Sotirov "one of our most talented students."

Florida Atlantic University: GREGORY NEVIL LEUCHIALI MAXWELL. Maxwell is a mathematics major and a participant in a program whereby students earn a bachelor's degree in an area of specialization and then go on to receive an M.Ed. degree. Maxwell was born and raised in Jamaica, where he was one of three children in a single-parent, low-income family. He came to the U.S. in 1997, originally intending to study medicine. His experiences teaching mathematics have drawn him to a career in mathematics education. In addition to working as a student assistant in the mathematics department, he has volunteered his time to be a tutor at the university and also to help high school students prepare for the Scholastic Aptitude Test. "He is an excellent student struggling to make ends meet," the mathematics department said.

Henderson State University: ANN SMITH. Smith is "an outstanding math student with potential to be a very good graduate student," said William M. Durand, chair of the department of mathematics and computer science. Smith graduated first in her class from high school and now has a 3.97 grade point average. She has served as a tutor for the past two years and "has done an outstanding job,"

Durand reported. A recipient of one of the departmental scholarships, she is a member of three honor societies and secretary of the math club. She was selected by the dean to serve as the student representative on the General Education Committee. "Ann is an outstanding student and a worthy recipient of this award," Durand concluded.

John Carroll University: ANDREA C. FORNEY. Forney is a mathematics major in her junior year. In addition to a love of and talent for mathematics, Forney plays the piano and cello and also enjoys field hockey, and track and field sports. She finances her education through summer jobs, scholarships, and a federal work/study award. She also grades calculus homework for the mathematics department. She is an inductee of Pi Mu Epsilon and will serve as chapter secretary next year. She would like to have a career in an analysis-based field and perhaps to teach. Her favorite mathematics class so far has been abstract algebra. "It was the hardest math class I ever took," she said, "but I grew to love it because I realized that a compartment of my brain was opening up that I never knew I had."

Seattle University: SINÉAD POLLOM. Born in Seattle, Pollom is one of four children and the first in her family to attend college. She got interested in mathematics "rather by accident," she said. At first she took mathematics courses because she had to; then as she started to like them, she decided to minor in the subject. Eventually mathematics became her major. She has two other majors, in ecology and German, and a minor in economics. She hopes to pursue a career that involves mathematics, such as being a teacher or an actuary.

University of Texas at Austin: VIRGINIA ROBERTS. Roberts receives no financial assistance from the university and supports her studies by working as a grader and a consultant in the computer laboratory of the mathematics department. A faculty member nominating her for the award said Roberts "possesses both an incisive intelligence and broad interests across the spectrum of math, science, and arts." In the summer of 1999 she learned about wavelets in order to apply them to remastering music. She was able to remove audience noise from a short recording of a 1961 Miles Davis concert. With support from University of Texas mathematician Karen Uhlenbeck, Roberts presented her results last year at a conference for women in mathematics in Lincoln, Nebraska. In naming Roberts as the recipient of the Trjitzinsky award, mathematics department chair Efraim Armendariz wrote, "She is richly deserving of this honor."

University of Utah: PAUL T. WATKINS. Originally a German major (he has completed a baccalaureate in that subject), Watkins is now a double major in mathematics and electrical engineering, with a 3.96 grade point average. This year he earned the best score in the mathematics department on the Putnam Examination and tied for third in the local Calculus Challenge. One professor in the mathematics department, who had Watkins in a course, said that Watkins was the best student in the class, "better than the grad students." Watkins' wife is also a mathematics major, and the newly married couple have struggled to support their studies, with Watkins working 30–40 hours a week. "This scholarship will mean a very great deal to this talented young

man," noted the departmental committee choosing Watkins for the award.

Worcester Polytechnic Institute: YAKOV KRONROD and MEGAN LALLY. Worcester Polytechnic Institute chose to split the Trjitzinsky award evenly between two students. Yakov Kronrod was born in Russia and moved to the U.S. in 1989. He is currently a junior, majoring in mathematics and computer science. His interests include random number generation and reaction-diffusion equations associated with biological systems. After graduation he plans to earn a master's degree in computer science and a Ph.D. in mathematics, in preparation for a career in research and teaching. Megan Lally is also a junior and is also majoring in mathematics and computer science. She is interested in cryptography, especially cryptographic algorithms derived from classical mathematics. Her undergraduate major project in mathematics involves studying and simulating patterns in nature using numerical analysis and modeling. A planned future project is studying the Advanced Encryption Standard. After graduation she plans to obtain a master's degree in computer science.

For further information about the Trjitzinsky Memorial Fund, contact the AMS Development Office, P.O. Box 6248, Providence, RI 02940-6248; e-mail: `development@ams.org`; telephone: 401-455-4111.

—Allyn Jackson

AMS Menger Awards Made

The 2001 Intel-International Science and Engineering Fair (ISEF) was held May 6–12, 2001, in the San Jose Convention Center in San Jose, California. This year marked the 52nd anniversary of the ISEF. Nearly 1,200 ninth-through twelfth-graders qualified to compete by winning top prizes in 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 included scholarships, cash awards, T-shirts, magazines, and books.

This was the fourteenth year of participation in ISEF by the AMS, and the twelfth year of presentation of the Karl Menger Memorial Awards. The AMS Special Awards Panel of Judges included Gisele Goldstein (University of Memphis), Marius Nkashama (University of Alabama, Birmingham), and Julian Palmore, chair (University of Illinois at Urbana-Champaign). The judges also comprise the AMS Menger Prize Committee. The panel of judges reviewed forty-eight projects, all in mathematics. Each project was inspected by a panel member, and each student was interviewed. To select the winning projects, the panel conducted additional interviews with the student finalists. There was one first-place award, two second-place awards, and four third-place awards. The winners were given cash prizes, and they and the seven honorable mention winners were given copies of *What's Happening in the Mathematical Sciences*, Volume 4, by Barry Cipra (published by the AMS); and a short biography of Karl Menger, in whose honor the awards are named.

2001 AMS Menger Awardees, shown holding the AMS soft "briefcases" each received. Back row, left to right: Matthew Stemm, Christopher Bruner, Jesse Trana (all Honorable Mention). Third row, left to right: Michael Kaleta, Heon Choe, Jennifer Balakrishnan, Lindsey Cable (all Honorable Mention). Second row, left to right: Craig Schroeder, Jason Chiu, Hasuk Song, Daniel Wichs (all Third Place). Front row, left to right: Julian Palmore (Judge), Abdur Sabar (First Place), Serge Tishchenko (Second Place), Yuri Kudryashov (Second Place).

The Karl Menger Memorial prize winners were as follows:

First Place ($1,000): ABDUR RASHEED SABAR, "Integral Products of Laguerre Polynomials and Their Discrete Analogues", Senior, Parkway West High School, Ballwin, Missouri.

Second Place ($500): YURI GEORGIEVICH KUDRYASHOV, "Realization of Graphs and Surfaces in the Book with Three Pages", Sophomore, Kolmogorov College, Moscow, Russia; SERGE A. TISHCHENKO, "Separators in Planar Graphs as a New Characterization Tool", Junior, Vtoraia Shkola, Moscow, Russia.

Third Place ($250): JASON WAH LONE CHIU, "On the Hamiltonian Decompositions of $Z_m \times Z_n$", Senior, Laramie Senior High School, Laramie, Wyoming; CRAIG ALLEN SCHROEDER, "Soap Hyperfilms", Senior, Wessington Springs High School, Wessington Springs, South Dakota; HASUK FRANCIS SONG, "Application of Differential Evolution to the Solution of Differential Equations", Junior, La Jolla High School, La Jolla, California; DANIEL WICHS, "Algebraic and Number Theoretic Properties of the Perrin Sequence", Senior, Yeshivah of Flatbush, Brooklyn, New York.

Honorable Mention: JENNIFER SHYAMALA SAYAKA BALAKRISHNAN, "An Analysis of Elliptical Coordinate Systems", Junior, Harvest Christian Academy, Guam; CHRISTOPHER RYAN BRUNER, "An Improved Mathematical Model of Populations", Freshman, Wewoka High School, Wewoka, Oklahoma; LINDSEY JO CABLE, "Proving POTS", Junior, De Soto High School, De Soto, Missouri; MICHAEL HARRY KALETA, MATTHEW HOWARD STEMM, HEON JOON CHOE, "Daedalus' Box: A Three-Dimensional Parabola", Seniors, Marquette University High School, Milwaukee, Wisconsin; JESSE SCOTT TRANA, "On the Forming of Pascal's N-Simplex Using Multinomial Expansion",

Sophomore, Johnson Corners Christian Academy, Watford City, North Dakota.

The entry titles of the winners 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 or to make contributions to the fund, contact the AMS Development Office, P.O. Box 6248, Providence, RI 02940-6248.

—Julian Palmore, University of Illinois at Urbana-Champaign

Mikaelian Awarded Emil Artin Junior Prize

The first Emil Artin Junior Prize in Mathematics has been awarded to VAHAGN MIKAELIAN of Yerevan State University, Armenia. Mikaelian was chosen for his paper "Subnormal embedding theorems for groups", published in the *Journal of the London Mathematical Society* (2) **62** (2000), 398–406.

The prize carries a cash award of US$500 and will be awarded annually to a student or a former student at an Armenian university who is under the age of 35 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.

—Artin Prize Committee announcement

Royal Society of London Elections

Four mathematical scientists are among those elected as new fellows of the Royal Society of London for 2001: FRANCES KIRWAN, University of Oxford; ADRIAN F. M. SMITH, University of London; IAN STEWART, University of Warwick; and ALEX WILKIE, University of Oxford.

—From a Royal Society announcement

Royal Society of Edinburgh Elections

Five mathematicians are among those elected to the Fellowship of the Royal Society of Edinburgh (RSE) in 2001. MARTIN D. KRUSKAL of Rutgers University was elected as an honorary fellow. Chosen as corresponding fellows were OLE E. BARNDORFF-NIELSEN, Aarhus University, and VLADIMIR MAZ'YA, Linköping University. ANTHONY CARBERY, University of Edinburgh, and JONATHAN A. SHERRATT, Heriot-Watt University, were elected as ordinary fellows.

—From an RSE announcement

USA Mathematical Olympiad

The thirtieth annual USA Mathematical Olympiad (USAMO) was held on May 1, 2001. The students participating in the Olympiad were selected on the basis of their performances on the American High School and American Invitational Mathematics Examinations, which involved hundreds of thousands of students.

The twelve highest scorers in the USAMO were: REID W. BARTON of Arlington, Massachusetts; GABRIEL D. CARROLL of Oakland, California; STEPHEN GUO of San Francisco, California; LUKE GUSTAFSON of Breckenridge, Minnesota; DANIEL KANE of Madison, Wisconsin; IAN LEE of Princeton Junction, New Jersey; RICKY I. LIU of Newton Center, Massachusetts; TIANKAI LIU of San Jose, California; PO-RU LOH of Madison, Wisconsin; OAZ NIR of Cupertino, California; GREGORY PRICE of Alexandria, Virginia; and DONG SHIN of West Orange, New Jersey.

The Clay Mathematics Institute (CMI) selected MICHAEL HAMBURG of South Bend, Indiana, as the CMI Olympiad Scholar for 2001, an award given for the solution judged most elegant. Ricky Liu received that distinction in last year's competition.

These thirteen students and seventeen others who scored highly on the USAMO were invited to attend the four-week Mathematical Olympiad Summer Program (MOSP) at Georgetown University in Washington, DC, from June 5 to July 3, 2001. This program helps to broaden students' view of mathematics and prepares them for possible participation on the United States team for the International Mathematical Olympiad, to be held in Washington, DC, July 4 through July 14, 2001. The USA Team will be selected on the basis of further testing during the MOSP.

—Elaine Kehoe