Mathematics People

Nagel and Wainger Receive 2007–2008 Bergman Prize

ALEXANDER NAGEL and STEPHEN WAINGER of the University of Wisconsin-Madison have been awarded the 2007–2008 Stefan Bergman Prize. Established in 1988, the prize recognizes mathematical accomplishments in the areas of research in which Stefan Bergman worked. The prize consists of one year's income from the prize fund. Because the prize is given for the years 2007 and 2008, Nagel and Wainger will each receive US$26,950.

The previous Bergman Prize winners are: David W. Catlin (1989), Steven R. Bell and Ewa Ligocka (1991), Charles Fefferman (1992), Yum Tong Siu (1993), John Erik Fornæss (1994), Harold P. Boas and Emil J. Straube (1995), David E. Barrett and Michael Christ (1997), John P. D'Angelo (1999), Masatake Kuranishi (2000), László Lempert and Sidney Webster (2001), M. Salah Baouendi and Linda Preiss Rothschild (2003), Joseph J. Kohn (2004), Elias M. Stein (2005), and Kengo Hirachi (2006). On the selection committee for the 2007–2008 prize were Raphael Coifman, Linda Preiss Rothschild, and Elias M. Stein (chair).

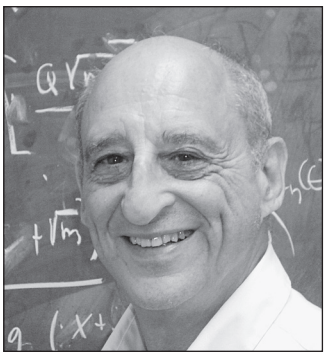
Citation

The 2007–2008 Bergman Prize is shared by Alexander Nagel and Stephen Wainger of the University of Wisconsin for their fundamental contributions in collaborative work in the study of Bergman and Szegö kernels, the geometry of control (Carnot-Carathéodory) metrics associated with vector fields, and the initial breakthroughs for singular integrals on curves, culminating in a general theory of singular Radon transforms.

Biographical Sketch: Alexander Nagel

Alexander Nagel was born in New York City in 1945. He received his B.A. from Harvard College in 1966 and his Ph.D. from Columbia University in 1971, where he wrote his thesis under the direction of Lipman Bers. He joined the faculty at the University of Wisconsin-Madison in 1970, serving as chair of the mathematics department from 1991 to 1993 and as associate dean for the natural sciences in the College of Letters and Science from 1993 to 1998. He was named Steenbock Professor of Mathematical Sciences in 2004.

Alexander Nagel



Stephen Wainger

Nagel held a National Science Foundation Graduate Fellowship (1996–1970), an H. I. Romnes Faculty Fellowship at the University of Wisconsin (1980–1985), and a Guggenheim Fellowship (1987–88). He received the Wisconsin Distinguished Teaching Award from the Mathematical Association of America in 2004 and was elected a Fellow of the American Association for the Advancement of Science in 2009.

Biographical Sketch: Stephen Wainger

Stephen Wainger was born in Schenectady, New York, in 1936. He received his Ph.D. from the University of Chicago in 1961, writing his thesis under the direction of Elias M. Stein. He then had short stints at De Paul University and Cornell University. Since 1966 he has been on the faculty at the University of Wisconsin-Madison. He is currently the Antoni Zygmund Professor of Mathematics at the University of Wisconsin.

About the Prize

The Bergman Prize honors the memory of Stefan Bergman, best known for his research in several complex variables, as well as the Bergman projection and the Bergman kernel function that bear his name. A native of Poland, he taught at Stanford University for many years and died in 1977 at the age of eighty-two. He was an AMS member for

thirty-five years. When his wife died, the terms of her will stipulated that funds should go toward a special prize in her husband's honor.

The American Mathematical Society was asked by Wells Fargo Bank of California, the managers of the Bergman Trust, to assemble a committee to select recipients of the prize. In addition, the Society assisted Wells Fargo in interpreting the terms of the will to assure sufficient breadth in the mathematical areas in which the prize may be given. Awards are made every one or two years in the following areas: (1) the theory of the kernel function and its applications in real and complex analysis and (2) function-theoretic methods in the theory of partial differential equations of elliptic type with attention to Bergman's operator method.

—Allyn Jackson

AMS Menger Awards at the 2010 ISEF

The 2010 Intel International Science and Engineering Fair (ISEF) was held May 9–14, 2010, in San Jose, California. This was the sixtieth year of the ISEF competition. More than fifteen hundred students in grades 9 through 12 from more than fifty countries participated in the fair. Student finalists who competed at the ISEF went through a multistep process to qualify and won an all-expenses-paid trip to the fair. They qualified by winning local, regional, and state fairs in the United States or national science fairs abroad. In addition to numerous grand awards presented by the ISEF, sixty-seven federal agencies and professional and educational organizations, including the American Mathematical Society (AMS), participated by giving special awards. Prizes given by the AMS included cash, certificates, books, and tote bags.

For the AMS, this was the twenty-third year of participation, and it was the twenty-first year of the presentation of the Karl Menger Awards. The members of the 2009–2010 AMS Menger Prize Committee and AMS Special Awards judges were Edward Connors, University of Massachusetts (chair); Doron Levy, University of Maryland; and Greg Fasshauer, Illinois Institute of Technology. The panel of judges initially reviewed all sixty-nine projects in mathematics, as well as mathematically oriented projects in computer science, physics, and engineering. From these entries they interviewed several students selected for further consideration for a Menger Award. In the mathematics category fifty-nine entries were submitted by individuals, and ten were submitted by teams of two or three students. The AMS gave awards to one first-place winner, two second-place winners, four third-place winners, and honorable mentions to two others.

The Karl Menger Memorial Prize winners for 2010 are as follows:

First-Place Award (US$1,000): "Adiabatic Quantum Evolution for NP-Complete and Physical Problems", YALE WANG FAN, The Catlin Gabel School, Portland, Oregon.

Second-Place Awards (US$500): "Super Kähler-Ricci Flow", JOSHUA W. PFEFFER, North Shore Hebrew Academy

AMS Menger Award winners. Left to right: Ed Connors (judge), Yale Fan, Almas Abdulla, Evgeniia Alekseeva, Anirudha Balasubramanian, Joshua Pfeffer, Jacob Hurwitz, and Kate Geschwind.

High School, Great Neck, New York; and "On the Lower Central Series Quotients of a Graded Associative Algebra", ANIRUDHA BALASUBRAMANIAN, Saint Albans School, Washington, DC.

Third-Place Awards (US$250): "Explaining Wind Farm Output Using Regression Analysis", Kate A. Geschwind, Mayo High School, Rochester, Minnesota; "Universal Law for the Distribution of Odd Periodic Cycles within Chaos in Nonlinear Dynamical Systems: A Fine Classification of Odd Cycles (Year III)", ALMAS ABDULLA, West Shore Junior/Senior High School, Melbourne, Florida; "Decycling Densities of Tessellations", JACOB B. HURWITZ, Montgomery Blair High School, Silver Spring, Maryland; and "Hyperbolic Triangles of the Maximum Area and Two Fixed Sides", EVGENIIA I. ALEKSEEVA, GOU Lyceum "Vtoraiia shkola", Moscow, Russia.

Honorable Mention Awards: "Deligne Categories and Representation Theory in Complex Rank", AKHIL MATHEW, Madison High School, Madison, New Jersey; and "Effects of Motility and Contact Inhibition on Tumor Viability: A Discrete Simulation Using the Cellular Potts Model", JONATHAN F. LI, Saint Margaret's Episcopal School, San Juan Capistrano, California.

The Society for Science and the Public (SSP), a nonprofit organization based in Washington, DC, owns and has administered the ISEF since 1950. Intel became the title sponsor of ISEF in 1996. The Intel ISEF is the premiere science competition in the world and annually provides a forum for more than fifteen hundred high school students from more than fifty countries.

The panel of judges was impressed by the quality, breadth, and originality of the work and by the dedication and enthusiasm of the students. The projects covered a wide range of topics, somewhat indicated by the titles of the award-winning projects.

As mentioned, the classification of mathematics attracted fifty-nine individual entries and ten team entries. In all there were fifty-nine male and twenty-one female entrants. Of the monetary award winners (first, second, and third place), three are female and six are male. Yale

Fan (first place) and Almas Abdulla (third place) were the only 2010 winners to have also placed in 2009.

The AMS'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. The income from the donation by the Menger family covers less than the amount of the awards. The balance, including the travel expenses of the judges, comes from the AMS's general fund. For more information about this program or to make contributions to this fund, contact the AMS Development Office, 201 Charles Street, Providence, RI, 02904-2294; or send email to development@ams.org; or phone 401-455-4103.

—Ed Connors, University of Massachusetts, Amherst

Gupta and Grattan-Guinness Awarded May Prize

RADHA CHARAN GUPTA of Ganita Bharati Institute and IVOR GRATTAN-GUINNESS, emeritus professor at Middlesex University, have been named the recipients of the 2009 Kenneth O. May Prize for the History of Mathematics by the International Commission for the History of Mathematics.

Gupta was honored for his contributions to the understanding of the development of Indian mathematics. He has analyzed many unknown mathematical formulas in Sanskrit. He also published several papers on the mathematical discoveries of the Jaina tradition, many of which had been almost inaccessible to anyone except specialists in Prakrit. He has also traced the influence of Indian mathematical discoveries in foreign traditions. His major contributions in the field include work on the history of the development of trigonometry in India.

Grattan-Guinness received his Ph.D. in 1969 and his D.Sc. in 1978 from the University of London in the history of science. From 1974 to 1981 he was editor of *Annals of Science*. In 1979 he founded the journal *History and Philosophy of Logic* and edited it until 1992. He was an associate editor of *Historia Mathematica* from its inception in 1974 till 1994 and again from 1996 to the present. He specializes in Euclid, the development of the calculus and mathematical analysis and their applications to mechanics and mathematical physics, and in the rise of set theory and mathematical logic. He has been especially interested in characterizing how past thinkers viewed their findings differently from the way we see them now.

The May Prize is given once every four years in appreciation of a mathematician's scholarly work in the history of mathematics.

—Elaine Kehoe

Buchweitz Receives Humboldt Research Award

RAGNAR-OLAF BUCHWEITZ of the University of Toronto, Scarborough, has been awarded a Humboldt Research Award in recognition of a lifetime of achievement in research. His research focuses on the mathematical fields of commutative algebra and algebraic geometry. He mainly uses tools from homological algebra, which some describe as the most abstract form of pure mathematics. The prize, which is awarded by the Alexander von Humboldt Foundation, carries a cash prize of 60,000 euros (roughly C$80,000) and the opportunity to spend up to one year cooperating on long-term research projects with colleagues at German research institutes.

—From a University of Toronto announcement

Prizes of the Royal Society

GRAEME SEGAL of the University of Oxford has been awarded the Sylvester Medal of the Royal Society "for his highly influential and elegant work on the development of topology, geometry and quantum field theory, bridging the gap between physics and pure mathematics." His work extends the machinery of algebraic topology to quantum field theories. He also studies how smooth manifolds can be modeled algebraically, essentially as quadratic objects in the homotopy category.

DAVID COX, formerly of Oxford University, has been awarded a Copley Medal for his seminal contributions to numerous areas of statistics and applied probability, of which the best known may be the proportional hazards model, which is used in the analysis of survival data. He gave his name to the Cox process, a stochastic process that is a generalization of a Poisson process.

—Elaine Kehoe

SIAM Prizes Awarded

The Society for Industrial and Applied Mathematics (SIAM) awarded a number of prizes at its annual meeting in July 2010 in Pittsburgh, Pennsylvania.

EMMANUEL CANDÉS of Stanford University and TERENCE TAO of the University of California, Los Angeles, were awarded the George Pólya Prize. The prize is awarded every two years (1) for a notable application of combinatorial theory or (2) for a notable contribution in another area of interest to George Pólya, such as approximation theory, complex analysis, number theory, orthogonal polynomials, probability theory, or mathematical discovery and learning. Each prizewinner receives a cash award of US$10,000.

JOHN A. BURNS of the Virginia Institute of Technology was awarded the W. T. and Idalia Reid Prize in Mathematics, given for research in or other contributions to the broadly defined areas of differential equations and control theory.

COLIN B. MACDONALD of the University of Oxford was awarded the Richard C. DiPrima Prize. The prize is awarded to a young scientist who has done outstanding research in applied mathematics and carries a cash award of US$1,000.

MARTIN GRÖTSCHEL of the Konrad-Zuse-Zentrum für Informationstechnik Berlin, Germany, was awarded the SIAM Prize for Distinguished Service to the Profession.

BERND STURMFELS of the University of California, Berkeley, was named the John von Neumann Lecturer. This lectureship is given for outstanding and distinguished contributions to the field of applied mathematical sciences and for the effective communication of these ideas to the community. It carries a cash award of US$5,000.

DMITRI TYMOCZKO of Princeton University was selected as the I. E. Block Community Lecturer. The lectureship is intended to encourage public appreciation of the excitement and vitality of science. Tymoczko's lecture was titled "The Geometry of Music". It carries an honorarium of US$1,500.

JOHN R. KING of the University of Nottingham, United Kingdom, was honored with the Julian Cole Lectureship. This lectureship is awarded for an outstanding contribution to the mathematical characterization and solution of a challenging problem in the physical or biological sciences or in engineering or for the development of mathematical methods for the solution of such problems. It carries a cash award of US$1,000.

SUZANNE LENHART of the University of Tennessee was named the AWM-SIAM Sonia Kovalevsky Lecturer. This lectureship highlights significant contributions of women to applied or computational mathematics.

The SIAM Student Paper Prizes were awarded to the following students: BUBACARR BAH, University of Edinburgh, for "Improved Restricted Isometry Constant Bounds for Gaussian Matrices"; RUSSELL CARDEN of Rice University for "A Simple Algorithm for the Inverse Field of Values Problem"; and KARIN LEIDERMAN of the University of Utah for "Grow with the Flow: A Spatial-Temporal Model of Platelet Deposition and Blood Coagulation under Flow". The prize carries a cash award of US$1,000 per paper.

The SIAM Awards in the Mathematical Contest in Modeling were awarded to the following students: For Problem A, the Continuous Problem: The Sweet Spot, the awardees were ZHE XIONG, QIPEI MEI, and FEI HAN of Huazhong University of Science and Technology (HUST), PRC School of Civil Engineering and Mechanics, for "An Optimal Model of the 'Sweet Spot' Effect". Their faculty advisor was Liang Gao. For Problem B, the Discrete Problem: Criminology, the awardees were JOSEPH H. GIBNEY, EMILY P. MEISSEN, and YONATAN NAAMAD of Rensselaer Polytechnic Institute for "Following the Trail of Data". Their faculty advisor was Peter Kramer. Each student member of the winning teams receives a cash award of US$300.

—From a SIAM announcement

Prizes of the London Mathematical Society

The London Mathematical Society (LMS) has awarded several prizes for 2010.

KEITH W. (BILL) MORTON of Oxford University received the DeMorgan Medal in recognition of his seminal contributions to the field of numerical analysis of partial differential equations and its applications and for services to his discipline.

JONATHAN KEATING of the University of Bristol was awarded the Fröhlich Prize in recognition of his seminal work on the modeling of zeta functions via random matrix theory.

DUSA MCDUFF of Barnard College was awarded the Senior Berwick Prize for her papers "Symplectic embeddings of 4-dimensional ellipsoids" and "Some 6-dimensional Hamiltonian S^1-manifolds", published in the *Journal of Topology*, volume 2, 2009.

Four Whitehead Prizes were awarded. HARALD HELFGOTT of the University of Bristol was honored for his varied contributions to number theory, including work on Möbius sums in two variables, integral points on elliptic curves, and, in particular, his groundbreaking work on growth and expansion of multiplication of sets in $SL_2(F_p)$. JENS MARKLOF of the University of Bristol was recognized for his work on quantum chaos, random matrices and number theory. LASSE REMPE of the University of Liverpool was honored for his work in complex dynamics, in particular his research on the escaping set for entire functions. FRANÇOISE TISSEUR of the University of Manchester was recognized for outstanding research achievements in numerical linear algebra, including polynomial eigenvalue and structured matrix problems.

—From an LMS announcement

Prizes of the Canadian Mathematical Society

The Canadian Mathematical Society has made several awards for 2010.

BÁLINT VIRÁG of the University of Toronto has been awarded the Coxeter-James Prize for outstanding research by a young mathematician. The prize citation reads in part: "As a relatively young probabilist, Bálint Virág has produced significant high quality research. This award recognizes the research excellence of his substantive early career research contribution to the area of probability." He is well known for his research on random walks, random matrices, random polynomials, and probabilistic methods in group theory.

VLADIMIR MANUILOV of Moscow State University and KLAUS THOMSEN of Aarhus University were awarded the G. de B. Robinson Prize for their joint paper "On the lack of inverses to C^*–extensions related to property T groups", published in the *Canadian Mathematical Bulletin* **50**, no. 2 (2007), pp. 268–283. The prize recognizes the publication of excellent papers in the *Canadian Journal of Mathematics* and the *Canadian Mathematical Bulletin*.

WALTER WHITELEY of York University was honored with the Adrien Pouliot Award for his "noteworthy and influential contribution to research and development of tasks in visual reasoning (broadly and within mathematics) as well as in the teaching and learning of geometry." The Pouliot Award is for individuals, or teams of individuals,

who have made significant and sustained contributions to mathematics education in Canada.

JENNIFER HYNDMAN of the University of Northern British Columbia received the Excellence in Teaching Award for her "proven excellence as a teacher, her unusual effectiveness in the classroom, and her commitment and dedication to teaching and to students." The award recognizes sustained and distinguished contributions in teaching at the undergraduate level at a Canadian postsecondary education institution.

CHRISTIANE ROUSSEAU of the University of Montreal was awarded the Graham Wright Public Service award for her "outstanding service to CMS and to world recognition of Canadian mathematics; her numerous mathematical outreach activities, ranging from delivering lectures in schools and CEGEPs, to organizing student conferences, math camps or public lectures, all of which aim to stimulate public or student engagement with mathematics." The award recognizes individuals who have made sustained and significant contributions to the Canadian mathematical community and, in particular, to the Canadian Mathematical Society.

—From a CMS announcement

2010 International Mathematical Olympiad

The fifty-first International Mathematical Olympiad (IMO) was held July 2–14 in Astana, Kazakhstan. The IMO is the preeminent mathematical competition for high school-age students from around the world. This year 517 young mathematicians from 97 countries competed. The IMO consists of solving six extremely challenging mathematical problems in a nine-hour competition administered over two days.

The team from China finished first for the third straight year, with 197 points out of a possible 252. Each team member earned a gold medal. Russia finished second, with 169 points. The team from the United States finished third with 168 points and three gold medals.

The U.S. team consisted of CALVIN DENG, (William G. Enloe High School, Raleigh, North Carolina); BEN GUNBY (Georgetown Day School, Washington, D. C.); XIAOYU HE (Acton-Boxborough Regional High School, Acton, Massachusetts); IN SUNG NA (Northern Valley Regional High School, Old Tappan, New Jersey); EVAN O'DORNEY (Berkeley Math Circle, Berkeley, California); and ALLEN YUAN (Detroit Country Day School, Beverly Hills, Michigan). Gunby, Na, and O'Dorney won gold medals; and Deng, Na, and Yuan won silver medals. O'Dorney, winner of the 2010 national Who Wants to Be a Mathematician competition, as well as of the 2007 Scripps National Spelling Bee, finished with a score of 39 (out of a possible 42 points), the second highest individual score overall. Zipei Nie of China was the highest scoring individual, earning a perfect score of 42.

The Mathematical Association of America sponsors the U.S. team through its American Mathematics Competitions program, with travel support provided by a grant from the Army Research Office. Training for the team at the University of Nebraska, Lincoln, is aided by a grant from the Akamai Foundation. Additional support for the team is provided by the National Council of Teachers of Mathematics.

—Elaine Kehoe

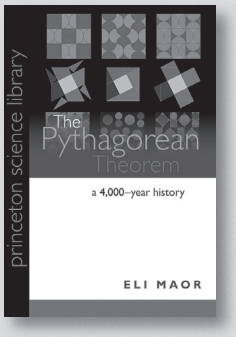
SIAM Fellows Elected

The Society for Industrial and Applied Mathematics (SIAM) has elected its class of fellows for 2010. Fellowship is an honorific designation conferred on members distinguished for their outstanding contributions to the fields of applied mathematics and computational science. The names, institutions, and brief citations of the new fellows follow.

URI M. ASCHER (University of British Columbia), for contributions to numerical solution of differential equations and numerical software; ANDREA L. BERTOZZI (University of California, Los Angeles), for contributions to the application of mathematics in incompressible flow, thin films, image processing, and swarming; SUSANNE C. BRENNER (Louisiana State University), for advances in finite element and multigrid methods for the numerical solution of partial differential equations; JOHN C. BUTCHER (University of Auckland), for developing the foundations of the modern theory of Runge-Kutta methods; STEPHEN L. CAMPBELL (North Carolina State University), for contributions to analysis and algorithms for differential algebraic equations; CARLOS CASTILLO-CHAVEZ (Arizona State University), for contributions to the mathematical modeling of infectious diseases and for leadership as a mentor and teacher; TONY F. CHAN (Hong Kong University of Science and Technology), for contributions to numerical analysis and image processing and for service to the mathematical community; PETER CONSTANTIN (University of Chicago), for contributions to the mathematical analysis of nonlinear partial differential equations, fluid dynamics, and turbulence; JOHN E. DENNIS JR. (Rice University and University of Washington), for contributions to the theory and applications of nonlinear optimization; IAIN S. DUFF (Rutherford Appleton Laboratory, United Kingdom, and CERFACS, France), for contributions to sparse matrix computations; PAUL DUPUIS (Brown University), for contributions to stochastics and control; BJORN E. ENGQUIST (University of Texas, Austin), for contributions to numerical analysis and multiscale modeling; DONALD GEMAN (Johns Hopkins University), for contributions to stochastic processes, image analysis, and statistical learning; JOHN R. GILBERT (University of California, Santa Barbara), for contributions to the development and analysis of algorithms for sparse matrix problems; MICHAEL T. HEATH (University of Illinois), for contributions in computational science and engineering, especially parallel computing; T. C. HU (University of California, San Diego), for contributions to network flows, integer programming, and combinatorial algorithms; GEORGE KARNIADAKIS (Brown University), for contributions to stochastic

modeling, spectral elements, and fluid mechanics; WILLIAM L. KATH (Northwestern University), for contributions to wave propagation, nonlinear dynamics, optical fibers and waveguides, and computational neuroscience; IOANNIS G. KEVREKIDIS (Princeton University), for research contributions in chemical engineering, applied mathematics, and the computational sciences; BARBARA LEE KEYFITZ (Ohio State University), for advances in hyperbolic conservation laws and the study of shock waves; RANDALL J. LEVEQUE (University of Washington), for contributions to numerical analysis and scientific computing, particularly for conservation laws; ANDERS G. LINDQUIST (KTH–Royal Institute of Technology), for contributions to systems and control; STEVE MCCORMICK (University of Colorado, Boulder), for contributions to numerical partial differential equations, especially multigrid and first-order system least-squares methods; CARL D. MEYER (North Carolina State University), for contributions to theory and applications of linear algebra; JORGE NOCEDAL (Northwestern University), for contributions to the theory and practice of continuous optimization; YOUSEF SAAD (University of Minnesota, Twin Cities), for contributions in numerical linear algebra and its applications; FADIL SANTOSA (University of Minnesota, Twin Cities), for contributions to the mathematics of inverse problems and for advancing the application of mathematics in industry; ROBERT SCHREIBER (Hewlett-Packard Corporation), for contributions to parallel and high-performance computing and algorithms for matrix computations; MITCHELL D. SMOOKE (Yale University), for the development of new methods in computational combustion and their application to problems involving hydrocarbon chemistry; DANNY C. SORENSEN (Rice University), for contributions to numerical linear algebra, optimization, and model reduction; GUNTHER UHLMANN (University of Washington), for contributions to the analysis of inverse problems and partial differential equations; FREDERIC Y. M. WAN (University of California, Irvine), for contributions to the theory of elasticity and to developmental biology and for outstanding service to the mathematical sciences; MICHAEL I. WEINSTEIN (Columbia University), for contributions to the analysis and applications of nonlinear waves; OLOF B. WIDLUND (Courant Institute of Mathematical Sciences, New York University), for contributions to the theory of domain decomposition methods.

—From a SIAM announcement



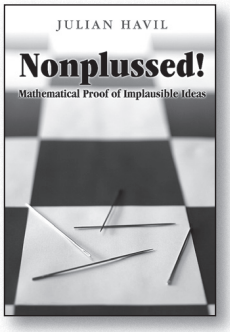
The Pythagorean Theorem

A 4,000-Year History

Eli Maor

"This excellent biography of the theorem is like a history of thought written in lines and circles, moving from ancient clay tablets to Einstein's blackboards. . . . There is something intoxicating about seeing one truth revealed in so many ways. It all makes for hours of glorious mathematical distraction."
—Ben Longstaff, *New Scientist*

Princeton Science Library
Paper $17.95 978-0-691-14823-6



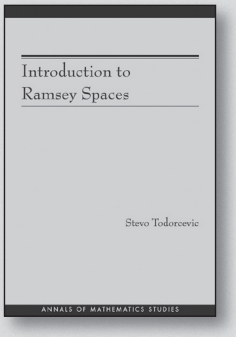
Nonplussed!

Mathematical Proof of Implausible Ideas

Julian Havil

"*Nonplussed!* is a collection of lovely paradoxes: facts that are provable logically but are nevertheless seriously counterintuitive."
—Peter M. Neumann, *Times Higher Education*

Paper $16.95 978-0-691-14822-9



Introduction to Ramsey Spaces

Stevo Todorcevic

Introduction to Ramsey Spaces presents in a systematic way a method for building higher-dimensional Ramsey spaces from basic one-dimensional principles. It is the first book-length treatment of this area of Ramsey theory, and emphasizes applications for related and surrounding fields of mathematics, such as set theory, combinatorics, real and functional analysis, and topology.

Annals of Mathematics Studies, 174
Phillip A. Griffiths, John N. Mather, and Elias M. Stein, Series Editors
Paper $45.00 978-0-691-14542-6
Cloth $89.50 978-0-691-14541-9

PRINCETON UNIVERSITY PRESS
800.777.4726
press.princeton.edu