

January 2009 Prizes and Awards

**4:25 P.M., Tuesday,
January 6, 2009**

PROGRAM

OPENING REMARKS

James G. Glimm, President
American Mathematical Society

DEBORAH AND FRANKLIN TEPPER HAIMO AWARDS FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS

Mathematical Association of America

EULER BOOK PRIZE

Mathematical Association of America

CHAUVENET PRIZE

Mathematical Association of America

LEVI L. CONANT PRIZE

American Mathematical Society

ALBERT LEON WHITEMAN MEMORIAL PRIZE

American Mathematical Society

LEONARD M. AND ELEANOR B. BLUMENTHAL AWARD FOR THE ADVANCEMENT OF RESEARCH IN PURE MATHEMATICS

Leonard M. and Eleanor B. Blumenthal Trust for the Advancement of Mathematics

RUTH LYTTLE SATTER PRIZE IN MATHEMATICS

American Mathematical Society

ALICE T. SCHAFER PRIZE FOR EXCELLENCE IN MATHEMATICS BY AN UNDERGRADUATE WOMAN

Association for Women in Mathematics

LOUISE HAY AWARD FOR CONTRIBUTIONS TO MATHEMATICS EDUCATION

Association for Women in Mathematics

FRANK AND BRENNIE MORGAN PRIZE FOR OUTSTANDING RESEARCH IN MATHEMATICS BY AN UNDERGRADUATE STUDENT

American Mathematical Society
Mathematical Association of America
Society for Industrial and Applied Mathematics

GEORGE DAVID BIRKHOFF PRIZE IN APPLIED MATHEMATICS

American Mathematical Society
Society for Industrial and Applied Mathematics

COMMUNICATIONS AWARD

Joint Policy Board for Mathematics

CERTIFICATES OF MERITORIOUS SERVICE

Mathematical Association of America

YUEH-GIN GUNG AND DR. CHARLES Y. HU AWARD FOR DISTINGUISHED SERVICE TO MATHEMATICS

Mathematical Association of America

FRANK NELSON COLE PRIZE IN ALGEBRA

American Mathematical Society

LEROY P. STEELE PRIZE FOR MATHEMATICAL EXPOSITION

American Mathematical Society

LEROY P. STEELE PRIZE FOR SEMINAL CONTRIBUTION TO RESEARCH

American Mathematical Society

LEROY P. STEELE PRIZE FOR LIFETIME ACHIEVEMENT

American Mathematical Society

CLOSING REMARKS

Joseph A. Gallian, President
Mathematical Association of America



EULER BOOK PRIZE

The Euler Book Prize is given to the author or authors of an outstanding book about mathematics. Mathematical monographs at the undergraduate level, histories, biographies, works of mathematical fiction, and anthologies are among those types of books eligible for the prize. They shall be judged on clarity of exposition and the degree to which they have had or show promise of having a positive impact on the public's view of mathematics in the United States and Canada. A textbook, though not normally eligible for this award, could be recognized if the Committee on the Euler Book Prize is convinced that it is innovative, distinctive, well written, and very likely to have a long-standing impact on mathematics.

The prize was established in 2005 and will be given every year at a national meeting of the Association, beginning in 2007, the 300th anniversary of the birth of Leonhard Euler. This award also honors Virginia and Paul Halmos, whose generosity made the award possible.

Citation

Siobhan Roberts

King of Infinite Space: Donald Coxeter, the Man Who Saved Geometry, Walker and Company, New York, 2006.

This book by Siobhan Roberts gives an intimate and engaging portrait of one of the most influential mathematicians of the last century. It also provides a mathematical history of those years, including the currents set in motion by Hilbert's 23 problems, the influence of Bourbaki, and the unexpected applications of mathematics to computer science, communications, information, crystallography, medical research, environmental studies, as well as in art—Coxeter's work directly inspired *Circle Limit III* by M.C. Escher. Above all, it gives a superbly readable account, in personal terms, of the search for beauty that sets mathematics in motion, and of the synergy of individual and group efforts that make it happen. It's an engaging page-turner, even for nonmathematically trained readers, and it will offer them an insider's look at the world of mathematics and the people who create it. The scope of Roberts' research and scholarship is impressive, and fully documented in fine print with 74 pages of endnotes, a 14-page bibliography, and eight appendices.

From many years of experience, Coxeter had a sure sense of what was important and what was peripheral and indulgent. "Saving geometry" refers to his stance in the 1950s and 1960s, and indeed throughout his entire career, when he was one of the few mathematicians who completely immersed his thinking in the world of classical geometry. Those were difficult times to be a geometer. Jean

Dieudonné, who represented the views of Bourbaki, notoriously proclaimed, “Down with Euclid; Death to Triangles!” A thaw, of sorts, came in 1968, when Dieudonné declared: “[O]ne must never speak of anything dead in mathematics because the day after one says it, someone takes this theory, introduces a new idea into it, and it lives again.” That same year Bourbaki produced a volume featuring Coxeter groups, Coxeter matrices, and Coxeter graphs later described as the only great book that Bourbaki ever wrote. At last, Coxeter was vindicated.

King of Infinite Space will fascinate the general reader with its detailed and frank account of Coxeter's personal life. It will also strike a special chord with mathematicians, because it honors the spirit of wonder and openness that Coxeter embodied in his approach to mathematics.

Biographical Note

Siobhan Roberts is a Toronto writer whose work focuses, to a greater or lesser extent, on reconciling what the British novelist and scientist C.P. Snow famously referred to as “the two cultures” of science and art. She is currently the creative producer and writer on a documentary film about Coxeter for TVOntario. In 2007–2008 she was a Director's Visitor at the Institute for Advanced Study in Princeton, where she generally chased her curiosity and began research on another book in the works about the Princeton mathematician John Horton Conway. She writes for numerous publications, including *The New York Times*, *The Boston Globe*, *SEED*, *The Mathematical Intelligencer*, *The Walrus*, *Canadian Geographic*, *Maisonneuve*, and the *Globe and Mail*. Current projects range from wind engineering to paleontology, the latter for a forthcoming article in *Smithsonian* on the Burgess Shale fossils. Her magazine profile of Coxeter, titled “Figure Head,” appeared in *Toronto Life* magazine and won a National Magazine Award.

Response from Siobhan Roberts

While researching *King of Infinite Space*, I came upon a book with a title that caught my imagination: *I Want To Be A Mathematician*, by Paul R. Halmos. I promptly placed my order at Amazon. While only tangentially relevant to my subject at hand, I dipped into Halmos' “automathography” from time to time and the spirit of his title spurred a similar sentiment as I wrote. Math was one of my favorite subjects in high school. Then I flipped the arts-or-sciences coin and studied history at university. Writing the Coxeter book serendipitously caused my happy reunion with an entire world of ideas that I almost forgot I missed. And Halmos' passion for mathematics, for conveying math to a general audience (his article on Bourbaki in *Scientific American* was an invaluable source), served as a powerful inspiration. For this kaleidoscope of intersecting reasons it is particularly nice to receive the Euler Prize, founded by Virginia and Paul Halmos. It is a great, and encouraging, honor.



YUEH-GIN GUNG AND DR. CHARLES Y. HU AWARD FOR DISTINGUISHED SERVICE TO MATHEMATICS

The Gung and Hu Award for Distinguished Service to Mathematics, first presented in 1990, is the endowed successor to the Association's Award for Distinguished Service to Mathematics, first presented in 1962. This award is intended to be the most prestigious award for service offered by the Association. It honors distinguished contributions to mathematics and mathematical education, in one particular aspect or many, and in a short period or over a career. The initial endowment was contributed by husband and wife Dr. Charles Y. Hu and Yueh-Gin Gung. It is worth noting that Dr. Hu and Yueh-Gin Gung were not mathematicians, but rather a professor of geography at the University of Maryland and a librarian at the University of Chicago, respectively. They contributed generously to our discipline because, as they wrote, "We always have high regard and great respect for the intellectual agility and high quality of mind of mathematicians and consider mathematics as the most vital field of study in the technological age we are living in."

Citation

Robert Megginson

A great deal of Bob Megginson's interest and time has been absorbed by the problem of the serious underrepresentation of minorities in mathematics. He has not only worked on this problem through the professional committee structure and with programs on college and university campuses, but has also spent much time working directly with students from various underrepresented groups. For example, beginning in 1992, he helped design and teach programs for precollege students at Turtle Mountain Community College, a tribally controlled college of the Turtle Mountain Chippewa Nation in North Dakota. The purpose of these programs is to keep Native American students in the educational pipeline leading to college degrees in mathematics and related fields, and the programs have accumulated a record of success in doing exactly that. Megginson has also mentored many undergraduate and graduate students from varied backgrounds who have gone on to receive degrees in mathematically based disciplines.

Professor Megginson has served on and chaired numerous professional and national committees; noted here are some of those that address the problem of underrepresentation of minorities in mathematics. He was co-chair of the MAA Committee on Minority Participation in Mathematics and chair of the MAA's Coordinating Council on Human Resources. In addition he chaired the Human Resources Advisory Committee of the Mathematical Sciences Research Institute (MSRI) in Berkeley, and currently is chair of the Committee on Opportunities

in Science of the American Association for the Advancement of Science. He chaired the subcommittee of the AMS Committee on the Profession charged with identifying successful diversity programs. Bob Megginson has been an advisor to many programs of the American Indian Science and Engineering Society and is a Sequoyah Fellow of the organization. His many talks at colleges and universities as well as at national meetings have addressed the issues of attracting students from diverse backgrounds into the mathematical sciences, both the why and the how.

Bob Megginson's service in helping underrepresented students succeed in mathematics and science is complemented and enriched by many of his other professional activities: co-principal investigator on several grants that have helped fund MAA's National Research Experiences for Undergraduates Program (NREUP); principal investigator on a NSF grant to implement an electronic mathematics testing and skill building center at the University of Michigan (2000–2003); co-organizer for both the 1999 and 2004 Conferences for African American Researchers in the Mathematical Sciences, June 1999 at Michigan and June 2004 at MSRI; and principal investigator on an MAA-led project for enhancing mathematics/science faculty at Native American Tribal Colleges in the use of calculators and technology (Project ENACT). Megginson designed, directed, and implemented a reformed precalculus program at Michigan that emphasized cooperative learning, and he was director of the Michigan mathematics laboratory, a walk-in tutoring service.

Dr. Megginson's mathematical area is functional analysis, specifically the geometry of Banach spaces; his graduate textbook *An Introduction to Banach Space Theory* was published by Springer in 1998. He served as Deputy Director of MSRI from 2002 through 2004, after which he returned to the University of Michigan where he is currently Arthur F. Thurnau Professor of Mathematics and Associate Dean for Undergraduate and Graduate Education in the College of Literature, Science, and the Arts. He contributed to the MAA Notes volume *Rethinking the Road Toward Calculus* and his article "College-based Precollege Intervention Projects: A Model for Outreach to Groups Underrepresented in Science and Mathematics" appears in the *Journal of Public Service and Outreach*, Fall 1999.

Bob Megginson's work has been recognized by his alma mater (the University of Illinois) as well as the University of Michigan where he has been a faculty member since 1992. He was featured in the University of Illinois alumni magazine with the article "A Mathematician Against the Odds" in the November/December 1999 issue. That year he also received the University of Michigan Regents' Award for Distinguished Public Service. He has received the University of Michigan College of Literature, Science, and Arts Excellence in Education Award three different times (1994, 1997, and 2000). Megginson received the University of Michigan Harold R. Johnson Diversity Service Award in 2000 and is included in Bonnie Juettner's 2002 book *100 Native Americans Who Shaped American History*. Megginson was also the recipient of the 1999 Ely S. Parker Award of the American Indian Science and Engineering Society, AISES's highest honor, which is given each year to one Native American scientist, mathematician,

or engineer for lifetime service to the Native American community and contributions to his or her field of study. In 2006, the Quality Education for Minorities Network honored him with its Etta Zuber Falconer Excellence in Mathematics Teaching Award. For his record of mentoring students and other works on underrepresentation, he was one of ten individuals who were honored at the White House with the 1997 U.S. Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring.

Response from Robert Megginson

I was greatly surprised and deeply honored to learn that I had been selected for this prestigious award, particularly when I look at the distinguished list of past recipients. There are many connected with the Association to whom I owe a debt of thanks for helping bring this about, too many to be able to list here. However, I must mention Lida Barrett who really started this all, by inviting me in the late 1980s to serve on the MAA's newly formed Committee on Minority Participation in Mathematics, and that single phone call had an immeasurable impact on my subsequent career. To the rest of my mentors and collaborators who have worked with me on these issues since that first invitation, thanks much to you also. Since all of this work is so collaborative, this award is as much yours as mine.



CHAUVENET PRIZE

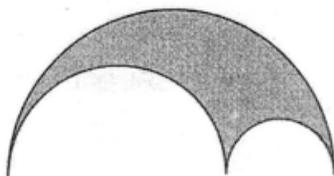
The Chauvenet Prize is awarded to the author of an outstanding expository article on a mathematical topic by a member of the Association. First awarded in 1925, the prize is named for William Chauvenet, a professor of mathematics at the United States Naval Academy. It was established through a gift in 1925 from J. L. Coolidge, then MAA president. Winners of the Chauvenet Prize are among the most distinguished of mathematical expositors.

Citation

Harold P. Boas

"Reflections on the Arbelos," *American Mathematical Monthly*, 113 (2006), no. 3, 236–249.

As with most good mathematical stories, this fascinating piece begins with a problem, a geometry problem that was sent to the author by a young mathematician and that deals with a mathematical figure known as an "arbelos." (An arbelos is the region bounded by three semicircles, tangent in pairs, with diameters on the same line; see the figure.)



The subject's long history, on which much of this erudite and beautifully written paper dwells, is smoothly interwoven with interesting results and elegant proofs. Reflections and inversions in lines and circles are key tools.

The classical remarkable theorem, attributed to Pappus by default, concerning an infinite chain in an arbelos is described. The proof by Pappus was a *tour de force* of Euclidean geometry, while the modern proof using inversion is elegantly simple. Connections are made with Pythagorean triangles (i.e., right triangles that are similar to triangles having sides with integral lengths), and also with the Gothic arch.

The author made a surprising discovery. Textbooks in solid mechanics deal with "Mohr's circle," which come up in analyzing shear stress. The relevant linear-algebra theorem is that the range of a certain mapping is an arbelos.

In addition to Pappus, Jacob Steiner, William Thomson (Lord Kelvin), and Leon Bankoff play roles in the story. (Bankoff was a dentist with a strong interest in mathematics, including the arbelos.) This paper stands out as a model of expository excellence.

Biographical Note

Harold P. Boas is professor of mathematics at Texas A&M University in College Station. His cited article on the arbelos, which also received the 2007 Lester R. Ford Award from the MAA, is a departure from his primary research interest in multi-dimensional complex analysis. He shared the 1995 Stefan Bergman Prize with his collaborator Emil J. Straube for progress on the boundary-regularity theory of solutions of the inhomogeneous Cauchy–Riemann equations on pseudoconvex domains. He has served as book-review editor of the *American Mathematical Monthly* (1998–1999), as editor of the *Notices of the American Mathematical Society* (2001–2003), and as editor of the *Anneli Lax New Mathematical Library* (2007–2009). He has supervised the dissertations of four Ph.D. students.

Response from Harold Boas

I am honored to receive the Chauvenet Prize, the MAA's most prestigious award for expository writing. What a pleasure it is to be recognized for work that was actually recreation! I thank the distinguished selection committee for choosing me from among many worthy authors.

As I write these words, some of the world's premier athletes are performing feats of physical prowess at the Summer Olympic Games. We mathematicians, who play instead the game of ideas, get our thrills not from "faster, higher, stronger" but from "clearer, deeper, sharper." Like the athletes, however, we esteem precision of presentation, command of complexity, and elegance of execution.

Whether in the arena or in the academy, every individual prizewinner's success depends on the support of many unsung heroes. I laud the dedicated editors, referees, and production staff who faithfully shepherd the mathematical literature into print.



DEBORAH AND FRANKLIN TEPPER HAIMO AWARDS FOR DISTINGUISHED COLLEGE OR UNIVERSITY TEACHING OF MATHEMATICS

In 1991 the Mathematical Association of America instituted the Deborah and Franklin Tepper Haimo Awards for Distinguished College or University Teaching of Mathematics in order to honor college or university teachers who have been widely recognized as extraordinarily successful and whose teaching effectiveness has been shown to have had influence beyond their own institutions. Deborah Tepper Haimo was president of the Association, 1991–1992. She died at age eighty-five in Claremont, California, on May 17, 2007.

Citation

Michael Bardzell

Michael Bardzell has had a pronounced impact, both locally at Salisbury University in Maryland and well beyond. At Salisbury he has involved many students with a variety of backgrounds in research. Over the last twelve years, his students have presented their work at various venues, including the National Conference on Undergraduate Research (for eleven of the last twelve years), regional undergraduate conferences and local meetings, and national and sectional meetings of the MAA. Several of his students have won awards for their presentations, and a variety of publications have resulted.

In addition, Professor Bardzell, together with faculty from five institutions, has received two grants from the CCLI program of the NSF Division of Undergraduate Education. The second of these was on visualizing abstract mathematics and included his organization of two summer undergraduate research retreats at New College of Florida, where students spent a week learning and investigating various aspects of mathematics. The grants have also led to a set of laboratory exercises that help students visualize concepts in abstract algebra, including normal subgroups, quotient groups, and subnormal series. There are similar exercises in dynamical systems and number theory, as well as two computer programs that allow for mathematical visualization, and the collection of related data for student exploration.

In the twelve years Professor Bardzell has taught at Salisbury, he has taught 24 different courses, many of which he designed. These include a capstone course, two cross-listed courses with computer science, and four graduate courses for in-service teachers. In partnership with school districts in Maryland and Delaware, he and his colleagues have developed a series of workshops for high school teachers in geometry, in real world mathematics, and in algebra.

In 2001, he won the Distinguished Faculty Award of Salisbury. In 2007, he won the MAA MD-DC-VA Sectional Teaching Award. For all of his accomplishments, and for his commitment to mathematics education, Michael Bardzell is very deserving of the Haimo Distinguished Teaching Award.

Biographical Note

Michael Bardzell graduated summa cum laude with departmental honors in physics from Mary Washington College. There he was recruited during his senior year to engage in an undergraduate research project with a new faculty member. In the spring of 1989 he attended the 3rd National Conference on Undergraduate Research in San Antonio, which significantly affected his interest in academics. After staying at Mary Washington an extra year to complete the requirements for a mathematics major, Bardzell then went on to complete his M.S. and Ph.D. in mathematics at Virginia Tech. Since that time he has been on the faculty at Salisbury University where he enjoys teaching a variety of courses, supporting student research, and promoting the time-honored student vs. faculty volleyball grudge match, which takes place each spring immediately following Salisbury's Pi Mu Epsilon induction ceremony. In his spare time he enjoys camping with his family and cycling on the Eastern Shore of Maryland.

Response from Michael Bardzell

Reading over the names of previous winners of the Haimo Award is a humbling experience. It is truly an honor to join this group of dedicated mathematics teachers, and I thank my department, the MD-DC-VA Section of the MAA, and the Haimo Award Committee for what has led to this recognition. It has been a blessing to work with a wonderful group of colleagues at Salisbury University, especially my department chair for all of her years of support. My colleagues' commitment to teaching has been an inspiration since beginning a career with them 12 years ago. Their early encouragement to get involved with student research allowed me to develop what has become one of my strongest teaching passions. I am also indebted to all of my research students over the years. Many of them touched my life in ways I never imagined possible when starting in academics. For their influence, I am most grateful.

Citation

David Pengelley

For the past 20 years, David Pengelley has been continually reinventing his teaching, and the mathematical community has benefited greatly from those innovations.

At the beginning of the calculus reform movement, he and his colleagues developed a program of student projects. Major multi-step problems were used to engage students in imaginative thinking, to challenge them to integrate ideas and to express them in a written report. They disseminated this work to instructors

in one hundred projects published in the MAA volume, *Student Research Projects in Calculus*, a best seller. Student projects have become a part of many calculus reform courses.

Pengelley is passionate about using primary historical sources in teaching. He feels that studying primary sources fosters motivation, broadens perspective, reveals context, hones verbal and deductive skills, provides excitement, brings students closer to the practice of research, shows the genesis and progression of ideas, and displays the human face of mathematics. Moreover, knowledge of difficulties of the past can help students better understand the problems of today. At New Mexico State University, he developed honors courses based on primary sources leading to two coauthored textbooks of guided primary sources, *Mathematical Expeditions: Chronicles by the Explorers* and *Mathematical Masterpieces: Further Chronicles by the Explorers*. These and his many national and international presentations and minicourses have widely disseminated this pedagogy. Furthermore, this approach has led to Pengelley's own original research in the history of mathematics.

NSF has supported Professor Pengelley's innovations through seven multi-year grants spanning 20 years. His current grant is a collaboration to develop student projects based on primary sources for a variety of discrete mathematics and computer science courses, thereby melding the student project and historical sources approaches. His personal dream is that all students would learn the principal content of their mathematics directly from studying primary sources, as done in the humanities.

More recently, Pengelley has been developing a student-centered, inquiry-based teaching method as an alternative to lecturing. Students prepare in advance via guided reading, writing assignments, and warm-up exercises. Thus, their first contact with new material never occurs via lecture, allowing class time to be spent more productively and at a higher intellectual level.

In 2007, Professor Pengelley won a Faculty Outstanding Achievement Award from the College of Arts and Sciences at New Mexico State University, and in both 1993 and 2008 he won the MAA Southwestern Section Teaching Award.

On campus, Pengelley is an extremely popular and successful teacher. In addition, his teaching methods and their connections to history of mathematics have been disseminated through a wide variety of publications and talks, domestically and internationally, and even through a broadcast interview with the BBC. For all these accomplishments, David Pengelley is eminently deserving of the Haimo Distinguished Teaching Award.

Biographical Note

David Pengelley was raised in Canada and the U.S., punctuated by immersion in the German boarding school Die Odenwaldschule. His B.S. is from the University of California, Santa Cruz, and Ph.D. from the University of Washington, including a year at Oxford University unsuccessfully trailing his thesis advisor, Doug

Ravenel, around the world. After an M.I.T. Moore Instructorship he came to New Mexico State University.

Professor Pengelley seems to continue increasing the number of hats he wears, collaborating in communities of which he may be the only intersection point. He continues long-time research in algebraic topology, on the structure over the Steenrod and Kudo–Araki–May algebras of the homology and cohomology of classifying spaces for various types of vector bundles, and connections to invariant theory. This has been supplemented by developing the pedagogies of teaching with student projects and with primary historical sources, most recently with both rolled into one. And he has developed a mathematics education graduate course on the role of history in teaching mathematics. To Pengelley's great surprise, teaching with primary sources has led to research in history, including two decades marinated in Sophie Germain's nineteenth century manuscripts on *Fermat's Last Theorem*, and a potential addiction to exposing Leonhard Euler. More on these eclectic pursuits can be found at <http://www.math.nmsu.edu/~davidp>.

David loves backpacking and wilderness, is active on environmental issues, and has become a fanatical player with the NMSU Badminton Club.

Response from David Pengelley

I am heartened and honored to receive recognition for the eclectic fringe of activities I seem driven to pursue. A common thread is to create a classroom pervaded by active student inquiry, and by higher level discussion, in which mathematics may come alive as something of fun, beauty, awe, and humanity—just what it should be.

I am so grateful for tremendous encouragement, inspiration, ideas, and opportunities making my adventures possible. I heartily thank my diverse teaching collaborators, way too many to mention here. I also appreciate my collaborators in algebraic topology research for their support and tolerance of my sometimes consuming nontopology activities. They have enabled me to continue mathematical research while embarking on huge teaching adventures. I also relish the worldwide community devoted to fostering history in the pedagogy of mathematics, and thank the history of mathematics research community for welcoming me when teaching with primary sources slid me inexorably into their laps.

I have been blessed with enthusiastic, loving, and supportive family. My parents, Daphne and Ted, provided perpetual encouragement, and somehow instilled the spark of interest in history; and my sister Alison Penfield continues this as that most caring of personal cheerleaders. My wife Pat Penfield (sort that one out!) is my constant encouragement, love, and insightful and incisive compass, for which I am ever grateful.

New Mexico State University has tolerated, even supported, unusual teaching endeavors, with a nurturing honors program, a stream of wonderful colleagues who have become partners in innovation, and some enabling departmental leadership. I have found a truly congenial and stimulating balance between teaching

and research, have had class sizes and teaching freedom to activate students and build personal relationships, and have had a receptivity to my wearing multiple hats, in mathematical research, pedagogical innovation, and research in history of mathematics. Of course the reward of working with wonderful students has made it all worth it.

Finally, the MAA and its members are an inspiration, since our community is increasingly valuing and fostering the history of mathematics in professional development, teaching, and publication.

Citation

Vali Siadat

Vali Siadat is an educator, scholar, and researcher at the City College of Chicago, Richard J. Daley Campus, who cares deeply about the success of his students, and does whatever it takes to help them achieve their educational goals.

Student comments from a recent semester give a sense of his impact. “My fear of taking calculus was wiped out in the first class...” “I have always liked mathematics. However, after my experience in Dr. Siadat’s class, I [feel] passionate about the subject...” “He has always shown to students that he cares about their future, and wants them to succeed in life.”

Vali Siadat is best known for his Keystone Project, a synergistic teaching program that focuses on frequent assessment, constant feedback, and student support. In a controlled experiment with 800 entering college students, 63% of Keystone students passed an Elements of Algebra class, while only 18% passed in the control group. An interesting concomitant result was that the Keystone students also achieved significant positive gains on a standardized reading test whereas those in the control group did not.

He has also been a leader in Project Access, a NASA-funded mathematics-based summer program for low-income and minority students. Each summer from 1996–2004, 80–100 students were recruited from 52 middle schools and high schools to explore engineering as a career option. Vali Siadat directed the local program and was a key figure in developing curriculum related to mathematical logic and computer science for the national program.

As a mentor and advisor, Siadat supports students to obtain internships in scientific organizations and laboratories outside the college. He has had excellent success in arranging numerous summer research internship programs for two-year college students at the world renowned Argonne National Laboratory.

As a scholar with two doctorates, one in pure mathematics and another in mathematics education, Vali continues with his research to develop innovative approaches in pedagogy and improvement of teaching of undergraduate mathematics. His research in this area has been widely recognized and published in peer-reviewed journals.

Dr. Siadat won the Distinguished Professor Award of Richard J. Daley College in 1999–2000. He won the 1999 Exemplary Initiatives in the Classroom Award from the National Council of Instructional Administrators, the 2001 Award for Excellence in Teaching from the Illinois Council of Teachers of Mathematics, and the 2001 Excellence in Learning-Centered Instruction Award from the Illinois Community College Board. He received the MAA Illinois Section's Distinguished Teaching Award in 2002, and the Carnegie Foundation for the Advancement of Teaching Illinois Professor of the Year Award in 2005.

Vali Siadat is a dedicated, tireless, and effective teacher of mathematics. He is extremely deserving of the Haimo Distinguished Teaching Award.

Biographical Note

Vali Siadat earned his B.S. from the University of California at Berkeley. While working as a professional engineer in California's Silicon Valley, he obtained an M.S.E.E. from San Jose State University. Throughout his academic and professional work, however, mathematics remained the subject of his utmost passion. Upon coming to Illinois, he enrolled at the University of Illinois at Chicago where he earned an M.S. in applied mathematics, a Ph.D. in pure mathematics (harmonic analysis) and a D.A. (Doctor of Arts) in mathematics education. Dr. Siadat has taught at several institutions of higher learning, including California State University at Dominguez Hills, University of Southern California, Chicago State University, Loyola University Chicago and the City Colleges of Chicago where he is currently professor of mathematics at its Richard J. Daley campus. He was the director/co-principal investigator of over three-quarter of a million dollar grant from NASA to conduct Project Access/Chicago PREP program. He is also the director/co-principal investigator of a grant from the Gabriella and Paul Rosenbaum Foundation intended to expand the Keystone Project. Dr. Siadat has published in mathematics and mathematics education journals and has had numerous presentations at state-wide and national mathematics meetings.

Response from Vali Siadat

I am deeply honored to have received this prestigious national award from the MAA. My gratitude goes to all my students (over 10,000 as I last counted), who provided me with the opportunity to teach, mentor and nurture them, and to cultivate a culture of intellectual curiosity and academic excellence. I am also indebted to my colleagues in the mathematics community who inspired me and exhorted me to move on and reach the skies. I would also like to thank my two-time doctoral advisor and the co-developer of the Keystone Method, Professor Yoram Sagher, who has always supported me throughout my academic career. Finally, I would like to thank the MAA and the Haimo Awards Committee for their distinguished service to the mathematics community.

AMERICAN MATHEMATICAL SOCIETY
MATHEMATICAL ASSOCIATION OF AMERICA
SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS



FRANK AND BRENNIE MORGAN PRIZE FOR OUTSTANDING RESEARCH IN MATHEMATICS BY AN UNDERGRADUATE STUDENT

The Frank and Brennie Morgan Prize for Outstanding Research in Mathematics by an Undergraduate Student recognizes and encourages outstanding mathematical research by undergraduate students. It was endowed by Mrs. Frank Morgan of Allentown, Pennsylvania.

Citation

Aaron Pixton

Aaron Pixton is the winner of the 2009 Morgan Prize for Outstanding Research by an Undergraduate Student. The award is based on five impressive papers in addition to his Princeton senior thesis. One of Pixton's papers has already appeared in the *Proceedings of the American Mathematical Society*, two others have been accepted by *Forum Mathematicum* and the *International Journal of Number Theory*, and two others have been submitted. In addition to being creative, Pixton's work spans a remarkable range of topics, including combinatorial number theory, modular forms, algebraic topology, and Gromov–Witten invariants.

Pixton participated in Research Experience for Undergraduates (REU) programs at Cornell University, the University of Wisconsin–Madison, and the University of Minnesota Duluth, and wrote interesting papers at all three. One of his mentors described his “ability to digest current research papers, to formulate interesting questions ..., and within a week's time, to start solving [them]” as “simply astonishing” and considers his work as “probably stronger than many Ph.D. dissertations.” Another mentor describes the “depth and breadth” of his papers as “amazing.”

Biographical Note

Aaron Pixton was born in Binghamton, New York, and has lived in nearby Vestal, New York, all his life. He was interested in mathematics from an early age, when he enjoyed reading recreational math books. His formal study of mathematics began when he took various math classes from Binghamton University during high school.

Pixton spent the past four years studying mathematics at Princeton University, from which he graduated in June 2008. During this time period, Pixton took advantage of opportunities to work on original research both at Princeton during the school year and at REUs during the summers.

Pixton is currently at the University of Cambridge doing Part III of the Mathematical Tripos. Next fall, he will be returning to Princeton to enter the Ph.D. program there, where he plans to study some combination of number theory and algebraic geometry. Pixton's nonmathematical diversions include playing chess, reading fantasy books, and watching his seven cats.

Response from Aaron Pixton

I am extremely honored to have been selected for the 2009 Morgan Prize by the AMS, MAA, and SIAM. I would like to thank everyone who has helped and encouraged me to do research. First, I thank my parents for always supporting my desire to think about mathematics. Next, I thank my coauthors, Tom Church, Carl Erickson, and especially Alison Miller; they not only collaborated and shared their ideas with me, but they also taught me a lot in the process of doing so. I would like to thank Tara Brendle, Ken Ono, and Joe Gallian for giving me interesting mathematics to think about during the enjoyable REUs that they ran. I thank the other students at these research programs for greatly enriching my mathematical experiences. Finally, I would like to thank everyone in the Princeton Mathematics Department for providing a supportive and stimulating mathematical environment for the last four years; particular thanks are due to Manjul Bhargava for teaching the classes which made me most excited about being a mathematician and to Chris Skinner and Rahul Pandharipande for supervising the research I did at Princeton.

Citation for Honorable Mention, Morgan Prize

Andrei Negut

The Morgan Prize Committee is pleased to award Honorable Mention for the 2009 Morgan Prize for Outstanding Research by an Undergraduate Student to Andrei Negut. The award recognizes his excellent Princeton senior thesis on "Laumon spaces and many-body systems," which establishes a large part of a conjecture of Braverman made at the 2006 International Congress of Mathematicians. In addition to this work, Negut has made important contributions to problems in very diverse fields: algebraic cobordism theory and dynamical systems. His recommenders consider Negut to be off to a "spectacular start" and look forward to future great achievements.

Biographical Note

Andrei Negut was born and lived in Romania until the age of 18, by which time his passion for mathematics had been sparked. He attended Princeton University as an undergraduate, where contacts with some of the world's best mathematicians and teachers inspired his passion for the subject. At Princeton, he had the chance to pursue several research projects in different fields, honing his

area of interest and broadening his appreciation of mathematics. After finishing his undergraduate studies, Negut spent a year in Europe, travelling between several research institutes (i.e., IHES in France, MPIM in Germany, and IMAR in Romania), learning mathematics from various perspectives. Next year, he will pursue graduate studies at Harvard University. Apart from mathematics, he enjoys travelling the world, photography, and the Russian culture.

Response from Andrei Negut

I am very honored to have been awarded this prize, which means very much to me on a personal basis. On a more global scale, it makes me very happy to see that the mathematical community carefully watches over young mathematicians and is always willing to offer them its support.



CERTIFICATES OF MERITORIOUS SERVICE

The Certificate of Meritorious Service is presented for service at the national level or for service to a section of the Association. The first such awards were made in 1984. At each January meeting of the Association, honorees from several sections are recognized.

Citation

Carl C. Cowen, Indiana Section

The MAA is pleased to present Carl Cowen with the MAA's Certificate of Meritorious Service. Carl has made significant contributions to the Mathematical Association of America at both the section and national levels.

Carl Cowen is most widely recognized as a former President of the Mathematical Association of America. He has served on many national committees, including the Joint Policy Board for Mathematics and the National Assessment of Educational Progress (NAEP) Mathematics Planning Committee. He has also been active on committees for SIAM, AMS, and the NSF.

Within the MAA, Carl was a co-founder and past-president of SIGMAA on Mathematical and Computational Biology, has been a member of the Joint Advisory Board for *Focus* and *MAA Online*, was chair of the recent Strategic Planning Group on Governance and a member of the 1999 New Agenda Planning Group, was chair of the Coordinating Council on Education, and is a frequent consultant for Project NExT.

A former Governor and Chair of the Indiana Section, Carl was awarded the 1995 Indiana Section Award for Distinguished College or University Teaching and the 2003 Indiana Section Award for Distinguished Service. In 1997, Carl received the Deborah and Franklin Tepper Haimo Award for Distinguished College or University Teaching. Over the course of his professional career, Carl has made over 40 presentations at MAA meetings, and has multiple articles published in the *American Mathematical Monthly*.

Carl Cowen is an extraordinary example of an effective contributor to the goals of the Mathematical Association of America at both local and national levels. He is well deserving of the Certificate of Meritorious Service.

Response from Carl C. Cowen

I'd like to thank my colleagues from the Indiana Section for nominating me for this award. I'd also like to thank my wife, Janice, and the rest of my family for supporting me in my work as a mathematician and teacher and especially in my work in the mathematical community.

I'm very grateful to mathematicians of the past for creating and sustaining the MAA as an organization to support mathematics and mathematicians, and I'm pleased to have the opportunity to serve the community through the MAA. I also appreciate the work of other mathematicians who will continue to support the MAA and mathematics in the future—I hope many of you will take the opportunity to do so! Thank you very much for this honor!

Citation

Richard Anderson, Louisiana-Mississippi Section

The MAA is pleased to present the Meritorious Service Award to the late Richard D. Anderson. Dr. Anderson completed his undergraduate degree in mathematics at the University of Minnesota. His academic career was interrupted by his service as a naval officer in the Pacific theater during World War II. After the war, he returned to graduate study at the University of Texas where he completed his doctoral degree under the direction of R. L. Moore in 1948. He took a position at the University of Pennsylvania from 1950 to 1956 with stints at the nearby Institute for Advanced Studies at Princeton. In 1956, he accepted a position at Louisiana State University where he remained until the end of his life. While there, he held the title of Boyd Professor of Mathematics.

R. D. Anderson's influences on mathematics were many and varied. His research interest in infinite dimensional topology is widely regarded as seminal to the field. He directed the dissertations of ten students through the years. His achievements were recognized by the Bolzano Medal by the Czechoslovakian Academy of Science and the Award for Distinguished Service from the MAA. He served as chair of the National Science Foundation Advisory Panel on Mathematics. He was both a vice president of the AMS and a president of the MAA, one of only seven people to hold such high offices in both organizations. After his retirement, Dr. Anderson remained active in mathematics and mathematics education. He was the senior advisor to the Louisiana System Initiatives Program (LaSIP), which was funded by the NSF as an effort to improve mathematics and science education for K-12 students. In the Louisiana-Mississippi Section he was actively involved before and after his retirement, attending the Section meetings annually and contributing to the vitality of the Section.

Citation

John Fuelberth, Nebraska-Southeast South Dakota Section

John Fuelberth was born and raised in Wayne, Nebraska, and received his undergraduate mathematics degree at Wayne State College. He received his Ph.D. in ring theory from the University of Nebraska-Lincoln in 1969 and began his teaching career at the University of Northern Colorado in 1968. John began teaching part time at Wayne State College in 1981 and has been teaching full time since 1988 where he has enjoyed helping students learn mathematics. He retired this year after 26 years of service. His interests in teaching included the use of computer algebra systems. John's research interests include abstract algebra, ring

theory, and finite geometries. He has had publications in the *Proceedings of the American Mathematical Society*, *Proceedings of the London Mathematical Society*, and *Communications in Algebra*.

Dr. Fuelberth was very active in the MAA and he served the Nebraska-Southeast South Dakota Section of the MAA as chair and liaison. He served as MAA Nebraska-Southeast South Dakota Section Governor from 2002–2005. He is the only chair of the section to serve two consecutive terms—due to a snowstorm! John and his wife Anita have two children and four grandchildren. His service is very much deserving of recognition, and he has the appreciation of all the members of the Nebraska-Southeast South Dakota Section.

Response from John Fuelberth

I am deeply honored to receive this award and want to thank the Nebraska-Southeast South Dakota Section for nominating me for this award. I have truly enjoyed being involved with the MAA as it has been a cornerstone of my professional life in mathematics. The annual section meetings are always a highlight of the year for me. I truly enjoy renewing my friendships with other colleagues and learning new ideas from them. This honor is a capstone for my career as I have just retired from teaching. I will always have a soft spot in my heart for the MAA and what it does for mathematics.

Citation

John R. Michel, Ohio Section

The MAA is pleased to recognize Professor John R. Michel as a 2009 recipient of the Certificate of Meritorious Service. We gratefully acknowledge the many contributions that he has made to the Ohio Section, the MAA, and the greater mathematical community.

Professor Michel has served the Ohio Section as secretary-treasurer (1985–1991) and president (1995–1996). Also in service to the Section, he has been chair of several committees, including the Program Committee, Nominating Committee, and Local Arrangements Committee. He was an originator of the Ohio Project NExT. In this capacity he mentored dozens of Ohio new faculty members, sharing his experience and wisdom. Many of these are current officers of the Section.

Michel did his undergraduate work at the University of Missouri and received his Ph.D. in functional analysis from the University of Wisconsin. He joined the faculty at Marietta College in 1970. He was chair of the department of mathematics for nine years. He wrote the National Science Foundation grant that helped fund computers and software for the department's first calculus computer labs. He was twice selected as a Harness Fellow, awarded on the basis of excellence in teaching. His many and diverse contributions to the college were formally recognized when he received the Marietta College Service Award in 2002. Professor Michel retired from the college in 2004.

For 30 years Michel worked summers as a consultant for Caltech's Jet Propulsion Laboratory. He has developed novel algorithms and computer programs used for navigation of some of NASA's robotic space missions to Mars, Jupiter, and Saturn. His continued interest in space exploration led to his involvement in founding Space Adventure Camp at Marietta College, an educational outreach for Ohio youth.

During a sabbatical at Duke University in 2000, Professor Michel wrote Matlab supplements to most of the modules of the online Connected Curriculum Project and also originated several new modules for use in calculus and linear algebra.

For his many years of dedicated service and outstanding leadership, the MAA is proud to honor Professor John R. Michel.

Response from John R. Michel

It is a great honor to be recognized by my friends and colleagues in the Ohio Section. In particular, I am pleased that the citation recognizes my role in the founding of Ohio NExT in 1997 and as one of the coordinators in its early years. My colleagues Barbara Aston and Tom LaFromboise should also be recognized as partners in this enterprise. As we veterans moved on, Angela Spalsbury and David Sobbecki laudably took on the responsibilities of running the program. Ohio NExT has been a great boon to the Ohio Section, helping provide a new generation of Section members and a generous supply of new leaders.

Citation

David R. Stone, Southeastern Section

David R. Stone has served the Mathematical Association of America with distinction at the national, section, state, and local levels over his 40-year career as a mathematics professor at Georgia Southern University in Statesboro, Georgia. He has held several important appointments during that time, including serving three terms on the Board of Governors, two terms on the MAA Executive Committee, two terms on the Nominations Committee, and two terms on the Joint Advisory Board for *Focus* and *MAA Online*. He has also chaired several national committees. These include the Committee on Sections, the Committee on Departmental Liaisons, the Subcommittee on Early Career Mathematicians, and the Committee on Pólya Lecturers. He has also been an active and contributing member to many other national committees, including the Alder Awards Committee, the Committee on SIGMAAs, the 1997 and 2003 MathFest Program Committees, the Project NExT Advisory Panel, the Coordinating Council on Awards, the Development Committee, the Strategic Planning Design Committee, and the Strategic Planning Working Group on Governance. He has also served the Association on search committees for MAA Executive Director and Director of Member Services. In 2007, David Stone was a nominee for MAA President-Elect.

David Stone's service at the Section level is equally remarkable. He served as Governor, Chair, Chair-Elect, Past-Chair, Newsletter Editor, State Director for Georgia, and Project Director for the Southeastern Section Project NExT. He is

currently the Beginning Faculty Activities Coordinator. He has also served on committees within the Section, including the Teaching Award Committee, which he chaired, as well as the Nominations and Service Award Committees on which he was a member several times. Due to his exemplary service record at the Section level, David Stone received the 1998 Southeastern Section Distinguished Service Award.

At the state and local levels, David Stone served as Departmental Liaison for 10 years and chartered the MAA Student Chapter at Georgia Southern University. He also served as a faculty advisor for the student chapter and coached the Math Jeopardy Team. In addition, he served for many years as the liaison between the MAA and the Academic Advisory Committee on Mathematical Subjects of the University System of Georgia. This year he served as the speaker for the MAA Georgia State Dinner.

David Stone has conducted his career in such a way that his work epitomizes the goals and mission of the MAA. His excellence in working with undergraduates in the classroom and beyond has been recognized in many ways, including the 2005 Southeastern Section Award for Distinguished College or University Teaching of Mathematics as well as several other university and college teaching awards. His outreach to the public schools has also been recognized by two of the highest honors in the Georgia Council of Teachers of Mathematics: the Gladys M. Thomason Award for Distinguished Service in 1993 and the John Neff Award in 2005. David Stone's service contributions to the MAA and to the mathematics community overall also led to his selection for the Georgia Southern University Award for Excellence in Contributions to Service and the Georgia Southern University College of Science & Technology Service Award in 2000.

In dedicating his career to the advancement of mathematics, particularly at the undergraduate level, David Stone has established himself as a valued contributor and leader in the MAA. Based on these exceptional contributions throughout his career, the MAA presents David R. Stone the Meritorious Service Award.

Response from David R. Stone

I am honored, surprised and gratified upon receiving the Meritorious Service Award. I want to thank the MAA, especially the Southeastern Section, which has been my mathematical family for many years: colleagues have become friends and have helped me grow professionally, while the meetings and activities have been beneficial and fun—my service in the Section has been a pleasure. I would like to give special thanks to and for John Neff—I've tried to live up to the example he set and to contribute in the ways we all wish he were still here to do. I also want to thank my friend and collaborator Tina Straley for her help and advice on many projects and Martha Abell for being a wonderful colleague and supportive chair. And none of this would have been possible without the support and encouragement of my wife, Ann.