
Mathematics People

Jerison and Lee Awarded 2012 Bergman Prize

DAVID JERISON of the Massachusetts Institute of Technology and JOHN M. LEE of the University of Washington have been awarded the 2012 Stefan Bergman Prize. Established in 1988, the prize recognizes mathematical accomplishments in the areas of research in which Stefan Bergman worked. Jerison and Lee will each receive US\$12,494, which is half of the 2012 income from the prize fund.

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), Kengo Hirachi (2006), Alexander Nagel and Stephen Wainger (2007–2008), Ngaiming Mok and Duong H. Phong (2009), and Gennadi Henkin (2011). On the selection committee for the 2012 prize were Harold P. Boas, Carlos E. Kenig, and Alexander Nagel.

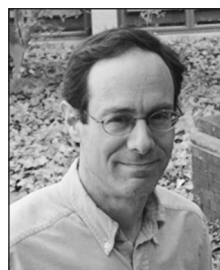
Citation

The Bergman prize for 2012 is awarded jointly to Professor David S. Jerison of MIT and Professor John M. Lee of the University of Washington for their pioneering works on the CR Yamabe problem, which led to finding canonical metrics in a given conformal class, for strictly pseudo-convex manifolds. This problem was introduced by Jerison and Lee in their landmark paper in the *Journal of Differential Geometry*, 1987. It consists of finding, for a compact, strictly pseudo-convex, hypersurface-type CR manifold M of dimension $2n+1$, a contact form for M whose Webster-Tanaka scalar curvature is constant, i.e., to change the pseudo-Hermitian structure to obtain constant scalar curvature. The problem is a striking analog of the Yamabe problem in Riemannian geometry. In their fundamental series of papers (*Journal of Differential Geometry*,

1987, *Journal of the AMS*, 1988, and *Journal of Differential Geometry*, 1989), Jerison and Lee established this result for the case n bigger than or equal to 2, with M not locally CR equivalent to the sphere. (The remaining cases $n=1$ and M conformally flat were subsequently settled by Gamara, *Journal of the European Math Society*, 2001, and Gamara-Yacoub, *Pacific Journal of Math*, 2001). In settling a large part of this problem, Jerison and Lee developed a myriad of important tools in the subject, such as casting the problem as a nonlinear subelliptic partial differential equation for the conformal factor, finding the best constant in Sobolev inequalities in the Heisenberg group, and constructing suitable normal CR coordinates on M .

Biographical Sketch: David Jerison

David Jerison was born in Lafayette, Indiana, in 1953. He received his B.A. from Harvard College in 1975 and then



David Jerison

spent a year at the University of Paris at Orsay on a Rotary Fellowship. He received his Ph.D. from Princeton University in 1980, writing a thesis under the direction of Elias M. Stein. After a year as a National Science Foundation Postdoctoral Fellow at the University of Chicago, he joined the faculty of MIT in 1981, where he is professor of mathematics and MacVicar Faculty Fellow. He has held visiting positions at the University of Paris at Orsay, the Mathematical Sciences Research Institute in Berkeley, the Institute for Advanced Study in Princeton, and Harvard University. He has served in various administrative positions in the MIT mathematics department: undergraduate chair, graduate chair, chair of the Pure Mathematics Committee, and director of SPUR, the summer research program for undergraduates in mathematics at MIT. He served on the editorial boards of several journals, including the *Transactions of the AMS*, the *Notices of the AMS*, and *Inventiones*. He is currently an associate editor of the *Duke Mathematical Journal* and an editor of the *Cambridge Journal of Mathematics*.

In 1985 Jerison received an A. P. Sloan Foundation Fellowship and a Presidential Young Investigator Award. He delivered an invited address at the AMS summer meeting in Salt Lake City in 1987 and an invited address in the Partial Differential Equations Section of the International Congress of Mathematicians in Zurich in 1994. In 1999 he was elected to the American Academy of Arts and Sciences.

Biographical Sketch: John M. Lee

John M. (Jack) Lee is a professor of mathematics at the University of Washington in Seattle. Born and raised in Philadelphia, he received his bachelor’s degree from Princeton University in 1972. After spending five years trying out a



John M. Lee

few different career paths (computer systems programmer, high school teacher, vagabond), he settled on mathematics and started graduate school at Tufts University. He transferred a year later to MIT, where he received his Ph.D. in 1982 under the direction of Richard Melrose. After MIT he spent five years as a Benjamin Peirce Assistant Professor at Harvard University. While there, he struck up a fruitful collaboration with David

Jerison, which lasted more than seven years and resulted in the work that has been cited for the Bergman award. In 1987 he moved to the University of Washington and has been on the faculty there ever since. In addition to his work with Jerison on the CR Yamabe problem, Lee has published research on asymptotically hyperbolic Einstein manifolds, low-dimensional CR structures, and the constraint equations in general relativity. He is the author of a popular series of graduate textbooks on manifolds and differential geometry and of a new AMS undergraduate textbook on axiomatic geometry. Previous awards include a National Science Foundation Postdoctoral Research Fellowship, an AMS Centennial Research Fellowship, and the Joseph R. Levenson Prize for excellence in teaching at Harvard.

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 AMS 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

2012 Poincaré Prizes Awarded

The International Association of Mathematical Physics (IAMP) has awarded the 2012 Henri Poincaré Prizes for mathematical physics to NALINI ANANTHARAMAN, Université Paris-Sud; FREEMAN DYSON, Institute for Advanced Study; SYLVIA SERFATY, Université Pierre et Marie Curie Paris 6; and BARRY SIMON, California Institute of Technology. Anantharaman was honored “for her original contributions to the area of quantum chaos, dynamical systems and Schrödinger equations, including a remarkable advance in the problem of quantum unique ergodicity.” Dyson was recognized “for his many decisive contributions to physics and mathematical physics, including, in particular, the study of QED, the stability of matter and random matrix theory.” Serfaty was honored “for her outstanding work on the theory of Ginzburg-Landau equations, including remarkable progress towards the rigorous proof of the onset of the Abrikosov lattice in the theory of superconductivity.” Simon was recognized “for his impact on many areas of mathematical physics including, in particular, the spectral theory of Schrödinger operators, for his mentoring of generations of young scientists, and for his lucid and inspirational books.”

The Poincaré Prize, which is sponsored by the Daniel Jagołnitzer Foundation, recognizes outstanding contributions that lay the groundwork for novel developments in mathematical physics. It recognizes and supports young people of exceptional promise who have already made outstanding contributions to the field of mathematical physics. The prize is awarded every three years at the International Mathematical Physics Congress.

—From an IAMP announcement

Simon Awarded Sacks Prize

PIERRE SIMON of the Hebrew University of Jerusalem has been awarded the Gerald Sacks Prize of the Association for Symbolic Logic (ASL). He received his Ph.D. in 2011 from the Université Paris-Sud, and, according to the prize citation, his thesis “provides new model theoretic tools and concepts for the study of NIP structures, a generalization of stability that also encompasses σ -minimal structures, algebraically closed valued fields, and the p -adics. The thesis makes substantial progress at the full generality of NIP theories, and at the same time obtains new results and new proofs in classical settings. It stands out for its depth, originality, and elegance in seeking the appropriate tools and dividing lines for the subject.”

—From an ASL announcement

Mawhin Awarded Schauder Prize

JEAN MAWHIN of the Université Catholique de Louvain, Belgium, has been awarded the first Juliusz Schauder Prize “in recognition of his enormous contributions to nonlinear analysis and outstanding achievements in this area.” The Schauder Prize is awarded to individuals for significant achievements related to topological methods in nonlinear analysis.

—Wojciech Kryszewski
Director, Juliusz Schauder Center for Nonlinear Studies

Prizes of the Accademia Nazionale dei Lincei

The Accademia Nazionale dei Lincei in Rome, Italy, has awarded a number of prizes in mathematics. CHRISTOPHER HACON of the University of Utah has been awarded the 2011 Antonio Feltrinelli Prize in Mathematics, Mechanics, and Applications for his work in algebraic geometry. MAURO FABRIZIO of the University of Bologna was honored with the 2012 Lyneus Prize for Mathematics in Mechanics and Applications. GUIDO DE PHILIPPIS of Scuola Normale Superiore, Pisa, was awarded the 2012 Joachim Iapichino Prize for mathematical analysis. Founded in 1603, the Accademia is the oldest academy in the world, and its goal is to promote, coordinate, integrate, and disseminate the highest expression of scientific knowledge in the context of unity and universality of culture.

—From an Accademia dei Lincei announcement

Irving Adler (1913–2012)

Irving Adler, a mathematician known for his popular books about mathematics and science and for his political activism, died on September 22, 2012, at the age of ninety-nine.

Adler was born on April 27, 1913, in New York City. He received his B.S. degree from the City College of New York in 1931 at the age of eighteen. He then began teaching mathematics in the New York City public high schools. During the McCarthy era, Adler refused to answer questions about his association with groups the U.S. government considered to be subversive. As a result, he was suspended from his teaching position and department chairmanship in 1952 and dismissed in 1954. In the well-known U.S. Supreme Court case *Adler v. Board of Education of the City of New York*, his dismissal was upheld until its reversal in 1967, when that same Court declared unconstitutional the law that had led to his dismissal in the first place. Adler was then reinstated, with his pension rights restored, in 1977.

From 1957 until 1960, Adler taught at Columbia University. Under the direction of Ellis Kolchin, he received a Ph.D. in mathematics from Columbia in 1961. Around

this time he moved to Vermont and taught at Bennington College for one year.

Adler wrote fifty-six trade books, all except one on topics of science and mathematics. He wrote thirty additional books with his wife, Ruth, for the Reason Why series. Ruth illustrated most of his books, and his daughter, Peggy, an artist, illustrated some as well. Their books were published in thirty-one countries in nineteen different languages, and some were cited as outstanding science books for children by the Children’s Book Council and the National Science Teachers Association.

In the 1960s Adler became interested in connections between plant growth and the Fibonacci numbers and the Golden Ratio. He published several papers and books on the subject, including his eighty-seventh book, *Solving the Riddle of Phyllotaxis: Why the Fibonacci Numbers and Golden Ratio Occur on Plants*, published posthumously five days after his death.

Adler was active throughout his adult life as a trade unionist and in the peace and civil rights movements. With his wife, Ruth, he was a principal organizer of the Southern Vermont contingent of the 1963 March on Washington for Jobs and Freedom. In 2009 he received the Lifetime Achievement Award from the American Civil Liberties Union of Vermont. He also received honorary doctorates from Vermont’s St. Michael’s College (1990) and the City College of New York (2002). Adler was an AMS member for fifty-three years.

In addition to his daughter, Peggy Adler, a police commissioner in Clinton, Connecticut, Irving Adler is survived by his son, Stephen L. Adler, a theoretical particle physicist and emeritus professor at the Institute for Advanced Study in Princeton, New Jersey.

—Peggy Adler