Mathematics People

Wise Awarded 2016 CRM-Fields-PIMS Prize

Photo courtesy of Steven Wise.

Daniel Wise

Daniel Wise of McGill University has been awarded the 2016 CRM-Fields-PIMS Prize. According to the prize citation, Wise "is widely recognized as one of the top geometric group theorists in the world. His fundamental research contributions lie at the core of what is widely considered as the most important development in geometry and topology since Perelman's celebrated proof of the Poincaré Conjecture, namely the proof of Thurston's virtually fibered conjecture for hyperbolic three-manifolds. It has also been central to the resolution of major open problems such as Waldhausen's virtual Haken conjecture and Baumslag's famous 1968 conjecture, which states that every one-relator group with torsion is residually finite. Over the past forty years, the works of Thurston and Waldhausen have been central to the development of 3-manifold topology and hyperbolic geometry. The work of Wise followed a totally different direction, which he developed with exceptional insight and virtuosity over more than fifteen years, leading to the spectacular results mentioned above."

Wise received his PhD from Princeton in 1996, held postdoctoral positions at Berkeley and Cornell, and joined the mathematics department at McGill University in 2001, where he is now James McGill Professor. He was awarded the Veblen Prize of the AMS, along with Ian Agol, in 2013. He delivered an invited address at the 2014 International Congress of Mathematicians in Seoul and was elected a Fellow of the Royal Society of Canada, also in 2014. He currently holds the Henri Poincaré Chair (2015–2016) of the Institut Henri Poincaré and the Clay Mathematics Institute (CMI).

The prize recognizes exceptional achievement in the mathematical sciences. It is awarded by the Centre de Recherches Mathématiques (CRM), the Fields Institute, and the Pacific Institute for the Mathematical Sciences (PIMS). The winner is selected by a committee appointed by the three institutes. The winner receives a monetary award and an invitation to present a lecture at each institute within one year after the award is announced.

—Elaine Kehoe

Golomb Awarded Franklin Medal

Solomon Golomb of the University of Southern California has been awarded the Benjamin Franklin Medal in Electrical Engineering for his pioneering work that applies mathematics in space communications and the design of digital spread spectrum signals, transmissions that provide security, interference suppression, and precise location for cryptography; missile guidance; defense, space, and cellular communications; radar, sonar, and GPS. Golomb received his PhD in mathematics from Harvard University in 1957 and has been a member of the faculty at USC since 1963. He was awarded the National Medal of Science in 2012 and is a Fellow of the AMS. He is known for his work on mathematical games, including Cheskers, polyominoes, and pentominoes, the latter of which inspired the game Tetris.

Photo courtesy of Will Taylor, USC Viterbi.

Solomon Golomb

The USC press release provides this anecdote: "When Golomb first studied mathematics, the discipline was expected to remain pure without application. However, on occasion, an engineer would come to Golomb with a practical problem, and Golomb would have the mathematical tools to provide the solution. Golomb was most satisfied when his ideas were used. 'The more usable an application was, the more satisfied I was,' he said."

The Franklin Medals are awarded by the Franklin Institute to provide public recognition and encouragement of excellence in science and technology.

—Elaine Kehoe

Bedford and Demailly Receive Bergman Prize

Eric D. Bedford of Stony Brook University and Jean-Pierre Demailly of Université de Grenoble have been awarded the 2015 Bergman Prize. Established in 1988, the prize recognizes mathematical accomplishments in the areas of research in which Stefan Bergman worked. Bedford and Demailly each receive US$12,231, which is one-half of the 2015 income from the Stefan Bergman Trust.

Citation: Eric D. Bedford

Eric D. Bedford is well known for his many fundamental contributions to several complex variables, pluripotential theory, and complex dynamics. More specifically, he is recognized for his pioneering works with B. A. Taylor on generalized solutions for the complex Monge-Ampère equations and the corresponding theory of capacity; his works with John E. Fornaess on the construction of peak functions; his works with B. Gaveau and W. Klingenberg on the precise description of the holomorphic hull of a Bishop two-sphere; and his works with J. Smillie et al. on complex dynamics in several variables. His influence on the whole subject has been deep and wide ranging.

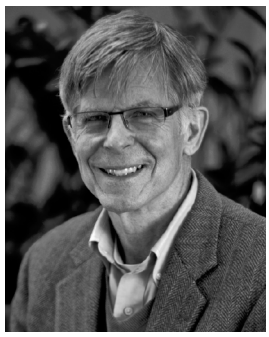

Photo courtesy of Holly Chen.

Eric D. Bedford

Biographical Sketch of Bedford

Eric D. Bedford, born in Salt Lake City, Utah, 1947, grew up in the Washington, DC, suburbs and later earned a BS degree at the University of Illinois in 1969. This was followed by his PhD in mathematics from the University of Michigan (1974) under the direction of B. A. Taylor. He was a Courant Instructor at New York University (1974–1976) and an assistant professor at Princeton University (1976–1982). Following this, he was at Indiana University until retiring in 2012. Currently, he is a visiting professor at Stony Brook University, New York. He was a recipient of a Sloan Foundation Fellowship, and he gave an invited talk at the International Congress of Mathematicians in Kyoto in 1990. He spent a semester at Kyoto University in the fall of 2003 and after that has returned regularly to Kyoto to collaborate with colleagues there. He served on the editorial board of the *Proceedings of the AMS* between 1992 and 2006.

Response from Eric D. Bedford

I am quite honored to share the Bergman Prize with Jean-Pierre Demailly. My work has been an ongoing adventure into different areas. I have been fortunate to have the benefit of many collaborators. They have made the work more enjoyable for me, and I have learned quite a lot from them. I wish to thank them for the important role they have played.

Citation: Jean-Pierre Demailly

Jean-Pierre Demailly has long been a dominant figure in several complex variables and complex geometry. He is awarded this prize in recognition of his many influential works, including his many papers on the holomorphic Morse inequalities and their ramifications, his method of finding effective bounds for the degree of projective embeddings for algebraic varieties, his work with M. Păun on the numerical characterization of Kähler cones, and his work on the $\overline{\partial}$ problem with singular weights, with its applications to multiplier ideal sheaves and his proof with J. Kollár of the semi-continuity of log canonical thresholds. He is also widely recognized as a gifted and very influential expositor of the subject.

Biographical Sketch of Demailly

Jean-Pierre Demailly was born on September 25, 1957. He entered École Normale Supérieure of Paris in 1975, graduated in mathematics in 1976, and defended his PhD thesis under the supervision of Henri Skoda in 1978. In 1979, he entered the Centre National de la Recherche Scientifique (CNRS) as a research fellow and in January 1983 took his present position as a professor at Université de Grenoble, Institut Fourier. His mathematical interests are mainly concerned with complex analysis and its application to analytic or algebraic geometry. Beyond mathematics, Jean-Pierre Demailly also has interests in other domains of science, such as computer science and nuclear physics, and he has a long practice of table tennis. In 2007, he was nominated a member of Académie des Sciences des Paris and served as editor-in-chief of *Comptes Rendus Mathématique* between 2010 and 2015.

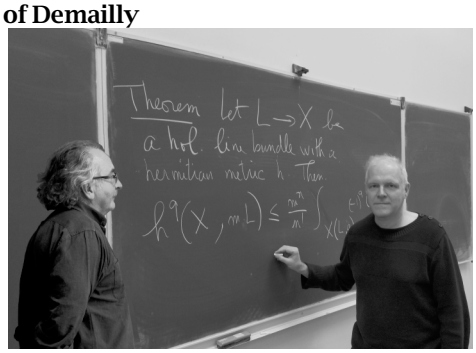

Photo courtesy of Fanny Bastien.

Jean-Pierre Demailly discussing mathematics with Gérard Besson.

Response from Jean-Pierre Demailly

It is a great honor for me to receive the Stefan Bergman Prize, and feel it is a wonderful recognition of my mathematical work. In fact, I believe that one of my most important scientific contributions is the proof of holomorphic Morse inequalities in 1985, which are intimately connected to the asymptotics of Bergman kernels; around 1991, and during all the following years, I also realized that the Ohsawa-Takegoshi L^2 extension theorem implies very general estimates of Bergman kernels, and these lead to precise approximation theorems for plurisubharmonic functions and closed positive currents.

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.

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 Fornaess (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)
- Gennadi Henkin (2011)
- David Jerison and John M. Lee (2012)
- Xiaojun Huang and Steve Zelditch (2013)
- Sławomir Kołdziej and Takeo Ohsawa (2014).

On the selection committee for the 2015 prize were:
- Xiao Jun Huang
- Rafe Mazzeo
- Duong Phong (Chair).

—Allyn Jackson