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# Mathematics People

## Louis Nirenberg: National Medal of Science



**Louis Nirenberg**

An article in the March 1999 issue of the *Notices* announcing the presentation of the National Medal of Science to Cathleen Morawetz contained a list of the mathematicians who have received the medal in the past five years. The list omitted Louis Nirenberg. The correct list is S.-T. Yau (1997), Richard Karp (1996), Stephen Smale (1996), Louis Nirenberg (1995), and Martin Kruskal (1994).

The award to Nirenberg occurred about the time of the transition to the new format of the *Notices*, and the *Notices* failed to announce the award. Nirenberg was cited by President Clinton for having done “research on partial differential equations and related parts of analysis, developed intricate interactions between mathematical analysis, differential geometry, and complex analysis, and applied them to fluid flow concepts and other physical phenomena.” Nirenberg received the AMS Steele Prize for Lifetime Achievement in 1994, and the prize citation and a biographical sketch may be found in the October 1994 issue of the *Notices*, pages 910–912.

—Allyn Jackson

## D’Angelo Receives 1999 Bergman Prize



**John P. D’Angelo**

JOHN P. D’ANGELO has been awarded the Stefan Bergman Prize for 1999. The prize, established in 1988, recognizes mathematical accomplishments in the areas of research in which Stefan Bergman worked.

The previous Bergman Prize winners are: David W. Catlin (1989), Steven Bell and Ewa Ligocka (1991), Charles Fefferman (1992), Yum Tong Siu (1993), Jon Erik Fornæss (1994), Harold P. Boas and Emil J. Straube (1995), and David E. Barrett and Michael Christ (1997).

On the selection committee for the 1999 award were Frederick Gehring, J. J. Kohn (chair), and Yum Tong Siu.

### Citation

John P. D’Angelo’s remarkable geometric insight has led him to make several spectacular contributions to complex analysis. His study of boundaries of weakly pseudoconvex domains, which resulted in a deep understanding of points of finite D’Angelo type, uses completely original techniques that are a mixture of real and complex geometry. This work has led to spectacular progress in the study of

holomorphic functions on such domains, and it enabled David Catlin to prove regularity estimates for the  $\bar{\partial}$ -Neumann problem, the Bergman projection, and related operators. Basically one is dealing with a system of second-order equations whose symbol degenerates, and it is D'Angelo's insight into how to deal with the degeneracies that led to fundamental existence and regularity results.

His work on holomorphic and rational mappings again shows his insight, accompanied by a powerful technique. Recently he has written, jointly with David Catlin, a series of highly original papers generalizing Hilbert's 17th problem (expressing functions as sums of squares) which uses the theory of the Bergman kernel function in an essential way. D'Angelo has made many other contributions to the theory of several complex variables, many of them closely related to the study of the Bergman projection.

### Biography

John P. D'Angelo was born March 5, 1951, in Philadelphia. He received his B.A. from the University of Pennsylvania in 1972 and his Ph.D. from Princeton University in 1976. Joseph J. Kohn directed his Ph.D. thesis, which was titled "Real hypersurfaces with degenerate Levi form". D'Angelo was a Moore Instructor at the Massachusetts Institute of Technology from 1976 to 1978, became an assistant professor at the University of Illinois in 1978, and was promoted to his current position of professor in 1986. He has held visiting appointments at the Institute for Advanced Study, Princeton University, the Institut Mittag-Leffler, Washington University in St. Louis, and the Mathematical Sciences Research Institute. He and his wife, Annette, have two children.

### 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, which 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 year 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

## Stewart Awarded Bauer Prize

GILBERT W. STEWART of the University of Maryland has been awarded the F. L. Bauer Prize of the Technical University of Munich. Stewart, who is a faculty appointee in the Mathematical and Computational Sciences Division of the Information Technology Laboratory at the National Institute of Standards and Technology, was honored for lifetime achievements in the field of numerical linear algebra. He received an award of 50,000 German marks (about \$30,000) and delivered a lecture at the Technical University of Munich.

The Bauer Prize was established in honor of Fritz Bauer, a computer scientist and numerical analyst who was instrumental in building the discipline of computer science in Germany.

—From a NIST announcement

## Presidential Early Career Awards Announced

Sixty young researchers have been chosen to receive the third annual Presidential Early Career Awards for Scientists and Engineers. This award is the highest honor bestowed by the U.S. government on outstanding young scientists, mathematicians, and engineers who are in the early stages of establishing their independent research careers.

The recipients were selected from nominations made by nine participating federal agencies. Each recipient receives a five-year grant of up to \$500,000 to further his or her research and educational efforts.

Two of the awardees work in the mathematical sciences. ALEXANDER BARVINOK of the University of Michigan, Ann Arbor, was one of twenty recipients nominated by the Mathematics and Physical Sciences Directorate of the National Science Foundation. He was honored for original applications of geometric combinatorics to optimization and algorithmic problems and for developing a series of undergraduate courses on related topics. ANTHONY J. KEARSLEY of the Information Technology Laboratory at the National Institute of Standards and Technology was nominated by the Department of Commerce; his research interests include optimization, inverse problems, and optimal control.

—Elaine Kehoe

## Adler and Jackiw Receive Dirac Medals

The International Center for Theoretical Physics (ICTP) in Trieste, Italy, has awarded the 1998 Dirac Medals to STEPHEN ADLER of the Institute for Advanced Study and ROMAN JACKIW of the Massachusetts Institute of Technology.

According to the award citation, "both Adler and Jackiw have been leaders in the sophisticated use of quantum

field theory to illuminate physical problems. The derivation by Adler (and, independently, Weisberger) of a sum rule for pion-nucleon scattering marked a breakthrough in our understanding of the currents and broken symmetries of the strong interactions. Jackiw made a major contribution to field theories relevant to condensed matter physics in his discovery (with Rebbi) of fractional charge and spin in these theories. The paths of Adler and Jackiw (with Bell) crossed in what may be their most important discovery: the celebrated triangle anomaly, one of the most profound examples of the relevance of quantum field theory to the real world."

The Paul Adrien Maurice Dirac medal was instituted in 1985 to recognize outstanding contributions to theoretical physics and mathematics. The awards are announced yearly on August 8, P. A. M. Dirac's birthday. The prize carries a cash award of \$5,000.

An international committee of distinguished scientists selects the winners from among nominated candidates. The committee invites nominations from anyone working in the areas of theoretical physics or mathematics. (The Dirac Medal is not awarded to Nobel Prize or Wolf Foundation Prize winners.) For more information, consult the ICTP Web site, <http://www.ictp.trieste.it/>.

—From an ICTP announcement

## Deaths

FELIX R. ALBRECHT, professor emeritus at the University of Illinois at Urbana-Champaign, died on December 4, 1998. Born on April 19, 1926, he was a member of the Society for 33 years.

DUANE W. BAILEY, professor at Amherst College, Massachusetts, died on October 27, 1998. Born on September 22, 1936, he was a member of the Society for 38 years.

JOHN DAVID CRAWFORD, associate professor at the University of Pittsburgh, Pennsylvania, died in August 1998. Born on February 16, 1954, he was a member of the Society for 16 years.

ANDREJS DUNKELS, associate professor at Lulea University of Technology, Sweden, died on December 30, 1998. Born on October 15, 1939, he was a member of the Society for 6 months.

MOSHE FLATO, professor at the Université of Bourgogne, Dijon, France, died on November 27, 1998. Born in 1937, he was a member of the Society for 3 years.

KENKICHI IWASAWA, of Tokyo, Japan, died on October 26, 1998. Born on September 11, 1917, he was a member of the Society for 47 years. He received the Cole Prize from the AMS in 1962.

L. CLARK LAY, professor emeritus at California State University, Fullerton, died on October 3, 1998. He was a member of the Society for 45 years.

M. M. LESOKHIN, professor at St. Petersburg St. Tech. University, Russia, died in June 1998. Born on August 13, 1933, she was a member of the Society for 12 years.

JAMES MELLENDER of Rochester, New York, died on June 14, 1998. Born on December 29, 1942, he was a member of the Society for 34 years.

EDWIN E. MOÍSE, professor emeritus at Queens College, CUNY, died on December 25, 1998. Born in December 1918, he was a member of the Society for 54 years.

ANATOLII P. PRUDNIKOV, of the Computer Center, Russian Academy of Sciences, Moscow, died on January 10, 1999. He was a member of the Society for 5 years.

MAXWELL ROSENLICHT, professor emeritus at the University of California, Berkeley, died on January 21, 1999. Born on April 15, 1924, he was a member of the Society for 52 years. He received the Cole Prize from the AMS in 1960.

SISTER M. HELEN SULLIVAN, retired from Benedictine College, Atchison, Kansas, died on December 22, 1998. Born on April 10, 1907, she was a member of the Society for 61 years.

BÉLA SZÓKEFALVI-NAGY, professor at the University of Szeged, Bolyai Institute, Hungary, died on December 21, 1998. Born on July 29, 1913, he was a member of the Society for 19 years.

VICTOR TWERSKY, professor emeritus of the University of Illinois at Chicago, died on November 17, 1998. Born on August 10, 1923, he was a member of the Society for 37 years.