2016 Norbert Wiener Prize in Applied Mathematics

Constantine Dafermos

CONSTANTINE DAFERMOS was awarded the 2016 AMS-SIAM 2016 Norbert Wiener Prize in Applied Mathematics at the 122nd Annual Meeting of the AMS in Seattle, Washington, in January 2016.

Citation

The 2016 Norbert Wiener Prize in Applied Mathematics is awarded to Professor Constantine M. Dafermos for his foundational work in partial differential equations and continuum physics. Professor Dafermos is recog-

nized for his seminal contributions to the theory of nonlinear conservation laws and its application to continuum mechanics, gas dynamics, and nonlinear elasticity. His work has advanced the research areas of fading memory, N -waves, periodicity and decay, dissipation, entropy, and compensated compactness; it has directed applications to two-phase flows, thermoelasticity, viscoelastic materials, and both sonic and subsonic flows. He has introduced several fundamental concepts such as the methods of relative entropy, generalized characteristics, wave-front tracking, and the entropy rate criterion for the selection of admissible wave fans.

Biographical Sketch

Constantine Dafermos was born in Athens, Greece, in 1941. He received a diploma in civil engineering from the National Technical University in 1964 and a PhD in mechanics from Johns Hopkins

University in 1967. After teaching for three years at Cornell University, he moved to Brown University in 1971, where he is currently professor of applied mathematics. His work lies at the interface between continuum mechanics and partial differential equations.

Response from Constantine Dafermos

I am deeply honored to receive 2016 Norbert Wiener Prize in Applied Mathematics but also am humbled by the prospect of joining the company of such distinguished earlier recipients. I feel that I am sharing the award with scores of teachers, colleagues, and students who shaped me as a scientist and provided, over the years, invaluable support and inspiration. The list is very long, so I shall only mention those who departed way too early: my wife Stella and Ron DiPerna.

About the Prize

The Norbert Wiener Prize in Applied Mathematics is awarded every three years to recognize outstanding contributions to applied mathematics in the highest and broadest sense (until 2001, the prize was awarded every five years). Established in 1967 in honor of Norbert Wiener (1894–1964), the prize was endowed by the Department of Mathematics of the Massachusetts Institute of Technology. The prize is given jointly by the AMS and the Society for Industrial and Applied Mathematics (SIAM). The recipient must be a member of one of these societies and a resident of the United States, Canada, or Mexico. The prize carries a cash award of US\$5,000.

The recipient of the Norbert Wiener Prize in Applied Mathematics is chosen by a joint AMS-SIAM selection committee. For the 2016 prize, the members of the selection committee were the following individuals.

- Walter Craig
- Ronald A. DeVore
- Charles L. Epstein (Chair)

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The complete list of recipients of the Norbert Wiener Prize in Applied Mathematics follows.

- 1970 Richard E. Bellman
- 1975 Peter D. Lax
- 1980 Tosio Kato, Gerald B. Whitham
- 1985 Clifford S. Gardner
- 1990 Michael Aizenman, Jerrold E. Marsden
- 1995 Hermann Flaschka, Ciprian Foias
- 2000 Alexandre J. Chorin, Arthur T. Winfree
- 2004 James Sethian
- 2007 Craig Tracy, Harold Widom
- 2010 David L. Donoho
- 2013 Andrew Majda
- 2016 Constantine Dafermos

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