

# 2007 JPBM Communications Award

The 2007 Communications Award of the Joint Policy Board for Mathematics (JPBM) was presented at the 113th Annual Meeting of the AMS in New Orleans in January 2007.

The JPBM Communications Award is presented annually to reward and encourage journalists and other communicators who, on a sustained basis, bring accurate mathematical information to nonmathematical audiences. The award carries a cash prize of US\$1,000.

Previous recipients of the JPBM Communications Award are: James Gleick (1988), Hugh Whitmore (1990), Ivars Peterson (1991), Joel Schneider (1993), Martin Gardner (1994), Gina Kolata (1996), Philip J. Davis (1997), Constance Reid (1998), Ian Stewart (1999), John Lynch and Simon Singh (special award, 1999), Sylvia Nasar (2000), Keith J. Devlin (2001), Claire and Helaman Ferguson (2002), Robert Osserman (2003), Barry Cipra (2005), and Roger Penrose (2006).



Steven H. Strogatz

The 2007 JPBM Communications Award was presented to STEVEN H. STROGATZ. The text that follows presents the selection committee's citation, a brief biographical sketch,

and the recipient's response upon receiving the award.

## Citation

The 2007 JPBM Communications Award is given to Steven H. Strogatz for his work in the mathematical dynamics of synchrony, including phenomena as diverse as human sleep, Josephson junctions, and fireflies. Professor Strogatz not only carried out seminal research in this area, but he also reached out to a wide audience to explain the exciting ideas behind this research in numerous outlets—newspapers, magazines, and radio. In this sense, he is a model for all research mathematicians.

## Biographical Sketch

After receiving his bachelor's degree in mathematics from Princeton in 1980, Strogatz spent two years as a Marshall Scholar at Cambridge University. He did his doctoral work in applied mathematics at Harvard University and then stayed for three years as a National Science Foundation (NSF) postdoctoral fellow. From 1989 to 1994, Strogatz taught in the Department of Mathematics at the

Massachusetts Institute of Technology. He has received awards for both his teaching and his research, including MIT's highest teaching prize, the E. M. Baker Award for Excellence in Undergraduate Teaching, and a Presidential Young Investigator Award from the NSF. Strogatz joined the Cornell University faculty in 1994. He is a member of the Society for Industrial and Applied Mathematics, and the Society for Mathematical Biology.

Strogatz has broad interests in applied mathematics. At the start of his career, he focused on questions arising in mathematical biology, including the geometry of supercoiled DNA, the dynamics of the human sleep-wake cycle, the topology of three-dimensional chemical waves, and the collective behavior of biological oscillators, such as swarms of synchronously flashing fireflies. In the 1990s his work turned toward nonlinear dynamics and chaos applied to physics and engineering. Several of these projects were concerned with large systems of coupled oscillators, such as arrays of lasers and superconducting Josephson junctions. In each case the research involved close collaborations with experimentalists. Currently, with his students, he has been exploring a variety of complex networks in both the natural and social sciences, using ideas from graph theory, statistical physics, and nonlinear dynamics.

## Response

I'm thrilled and humbled to receive the JPBM Communications Award. Thank you for this wonderful honor.

My dad was a quiet man, not prone to giving advice or speechifying, so when he did express himself in this way, it was memorable. He once told me that a truly lucky person is one who could feel excited about going to work each day.

Teaching mathematics is what I love. There's so much to be delighted by: the logic and power of the subject, its colorful history, its stunning results—but what inspires me most is its interconnectedness. Not just the links within mathematics itself, but also its connections to everything in the world around us, from the beating of our hearts to the aggravating density waves of rush hour traffic. I've tried to convey the pervasiveness of mathematics in my communications with the public and feel very grateful to be recognized by the JPBM for these efforts.