

JPBM Awards Presented in San Antonio

The Joint Policy Board for Mathematics (JPBM) Communications Award was established in 1988 to reward and encourage journalists and other communicators who, on a sustained basis, bring accurate mathematical information to nonmathematical audiences. Any person is eligible as long as that person's work communicates primarily with nonmathematical audiences. The lifetime award recognizes a significant contribution or accumulated contributions to public understanding of mathematics.

At the Joint Mathematics Meetings in San Antonio in January 1999, the 1999 JPBM Communications Award was presented to IAN STEWART. Below is the award citation, a biographical sketch, and Stewart's response upon receiving the award. This is followed by information about a JPBM Special Communications Award presented to JOHN LYNCH and SIMON SINGH.

Citation

The 1999 JPBM Communications Award is given to Ian Stewart of the University of Warwick. For more than twenty years Ian Stewart has communicated the excitement of science and mathematics to millions of people around the world.

He has written more than a dozen expository and popular books on mathematics, including *The Problems of Mathematics*, *Does God Play Dice?*,

Fearful Symmetry (with M. Golubitsky), *Nature's Numbers*, *The Magical Maze*, and *Life's Other Secret*. (One of these has been translated into at least fourteen different languages, and all of them have been translated into several.) He has written more than two hundred expository articles, appeared in more than two hundred television and radio shows, delivered dozens of popular lectures (including the BBC-TV Christmas Lectures in 1997), and written hundreds of columns on mathematics in *Scientific American*, *Pour La Science*, and *Nature*.



Photograph courtesy of The Royal Society.

Ian Stewart

The sheer volume of this work is staggering, but the quality is spectacular as well. With clarity and humor, Ian Stewart explains everything from number theory to fractals, from Euclidean geometry to fluid dynamics, from game theory to foundations. He conveys both the beauty and the utility of mathematics in a way seldom achieved by a single author, and he does so with charm and eloquence.

Biographical Sketch

Ian Stewart was born in 1945, did his undergraduate degree at Cambridge, and his Ph.D. at Warwick. He is now a professor at Warwick University and director of the Mathematics Awareness Centre at Warwick. He has held visiting positions in Germany, New Zealand, Connecticut, and Texas. He has published over 120 papers. His present field is the effects of symmetry on nonlinear dynamics, with applications to animal locomotion, fluid dynamics, mathematical biology, electronic circuits, and intelligent control of spring coiling machines. He takes a particular interest in problems that lie in the gaps between pure and applied mathematics. He is the author of several research texts, including *Singularities and Groups in Bifurcation Theory* (with Martin Golubitsky and David Schaeffer) and *Catastrophe Theory and Its Applications* (with Tim Poston).

Among the general public he is well known for his popular science writing on mathematical themes and for frequent appearances on UK radio and television. In 1995 he was awarded the Royal Society's Michael Faraday Medal for furthering the public understanding of science. He has written numerous popular books on mathematics, one of which, *Nature's Numbers*, was shortlisted for the 1996 Rhone-Poulenc Prize for Science Books. He delivered the 1997 Royal Institution Christmas Lectures in the UK, televised by the BBC. He is the mathematics consultant for *New Scientist* and writes the monthly "Mathematical Recreations" column in *Scientific American*.

Response

Ever since I was an undergraduate I have found myself involved in various aspects of the communication of mathematics. It all began with student mathematical society magazines, and it grew from there. I did it because I enjoyed mathematics and

because I thought other people might enjoy the subject too—if only somebody would bother to tell them what was happening in an accessible manner. When I started it never occurred to me that such activities could ever become more than a hobby, but they seem to have taken on a life of their own, to such an extent that Warwick University has formalized them with the creation of a small centre, the Mathematics Awareness Centre at Warwick (MAC@W).

I feel extremely honored to receive the JPBM Communications Award for mathematics. It is especially gratifying that the award comes from my peers—from an alliance of mathematicians of all kinds, be they teachers, researchers, or both. Rightly or wrongly, I take this as a sign that communicating mathematics to the public is now viewed as an acceptable activity for an academic rather than as a feeble substitute for serious research, and I am sure that trend will continue. Of course, it is important that enough communicators should know from personal experience what it is like to do serious research and stay in contact with the research frontiers. That way, they have something valuable to communicate.

A number of friends and colleagues have exerted a substantial influence on my career, and this is a good opportunity to thank a few of them. My ex-boss, Sir Christopher Zeeman, actively encouraged and promoted my extracurricular activities for thirty years—and still does. Tim Poston awoke my dormant interest in the applications of mathematics, and Marty Golubitsky caused a major change in my research area by opening my eyes to the attractive combination of classical symmetry and modern nonlinear dynamics, a field we have both been milking assiduously ever since. Jack Cohen, the other member of MAC@W and a reproductive biologist, walked into my office one day with fascinating questions about the nature of physical laws, how living organisms could function in a chaotic world, and the workings of the human mind, completely changing my view of the relations between science, mathematics, nature, and humanity. Three successive vice-chancellors at Warwick University had the imagination to see the advantages of communicating mathematics to the public, long before most other institutions did, and in various ways made my life a lot easier than they might have done. In particular, Sir Brian Follett, the present vice-chancellor, has gone out of his way to smooth the path for me on many occasions.

Above all, I want to thank my wife, Avril, and my sons, James and Christopher, for their tolerance, understanding, and support when I kept disappearing into the study to pound the keyboard.

Special Communications Award

The selection committee of the JPBM Communications Award made a special award in 1999 to rec-

ognize the exceptional contributions to public understanding of mathematics by John Lynch and Simon Singh for their documentary on Andrew Wiles and the Fermat Conjecture, entitled “Fermat’s Last Theorem” (shown on *NOVA* as “The Proof”).

The citation for the award says: “The achievement of Andrew Wiles in settling a 300-year-old conjecture captured the public’s imagination. Nonetheless, while many people understood the statement of the Fermat Conjecture, few understood the process by which it was settled. For most people, what mathematicians do remains a mystery. In a remarkable documentary, John Lynch and Simon Singh used Wiles and his proof to explain the mystery of mathematicians. Their work conveys the excitement, the disappointments, and the passion of research mathematics. It helps to explain the depth of mathematics research and at the same time shows its human side. It is an engaging account of the process of mathematical research that is both accurate and illuminating. The importance of this work on the public is best explained by a phrase mathematicians often heard from friends and family after viewing the documentary: ‘At last, I understand what makes mathematics so exciting.’”

John Lynch joined BBC Science Television in 1976 as the researcher for James Burke’s classic series on the history of technology, *Connections*. As a BBC Science producer and director he co-produced Burke’s next series, *The Day the Universe Changed*, and made fourteen Horizon documentaries. In 1994 he was appointed editor of the Horizon series, which is regarded as a world leader in science documentary. At the beginning of 1998 he also became deputy head of BBC Science and is responsible for all BBC Science documentary programs.

Simon Singh completed his Ph.D. in particle physics at the University of Cambridge, conducting much of his research at the European Center for Particle Physics (CERN) in Geneva. In 1990 he joined the BBC’s science department. In 1997 he wrote a popular account of Fermat’s Last Theorem, entitled *Fermat’s Enigma*. Since then he has been working as a freelance journalist, writing for newspapers and magazines such as *The New York Times* and *Scientific American*. He is currently working on his second book, a history of codes and ciphers from Julius Caesar to quantum cryptography.



John Lynch



Simon Singh

Photograph by Sarah Ainslie, courtesy of the British Broadcasting Corporation.