



Communications

2012 Australian Laureate Fellows*

Professor Nalini Joshi

Geometric construction of critical solutions of nonlinear systems

Professor Nalini Joshi is Professor of Applied Mathematics at The University of Sydney and was Head of the University's School of Mathematics and Statistics from 2007 to 2009. She is the 2012 Georgina Sweet Australian Laureate Fellow. This fellowship recognises her leading research role in science and technology and provides her with additional funding to help her to mentor women in science.



'I applied for the Georgina Sweet Australian Laureate Fellowship because I needed a sustained period of time and support to focus on some difficult mathematical problems. At the same time, I was very aware of the support my father had given me early in my life, which enabled me to become a mathematician. His philosophy in life was to give before you take. I wanted to support early career researchers, particularly women, to enter and establish careers in mathematics and science as he supported me', Nalini says.

Nalini's fellowship will facilitate her efforts to create new mathematical methods to describe critical solutions of nonlinear systems, which are ubiquitous in modern science. It will also help her to increase the profile of women in science through a framework of workshops that will simultaneously promote women researchers and provide mentoring-style activities.

'As one of very few women in mathematical research in my early years, I found it incredibly empowering to meet and talk to other women in similar circumstances and hear about their solutions. I would like to bring about similar opportunities for others. I hope to hold two workshops a year, one primarily for early career researchers and one for more experienced researchers', Nalini says.

In 1987, Nalini was awarded her PhD in the field of Applied and Computational Mathematics at Princeton University, United States. Before moving to The University of Sydney in 2002, she held visiting positions at Princeton University and was appointed an ARC Senior Research Fellow at The University of Adelaide. She has been a Visiting Fellow at the Isaac Newton Institute for Mathematical Sciences at Cambridge University.

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Nalini is a Fellow of the Australian Academy of Science, was appointed Chair of the National Committee for Mathematical Sciences at the Australian Academy of Science and has been the President of the Australian Mathematical Society.

Her most significant contributions have been in the field of nonlinear science and her analysis of the Painlevé equations.

Professor Nicholas Wormald

Advances in the analysis of random structures and their applications



Professor Nicholas Wormald is Professor and Canada Research Chair in the Department of Combinatorics and Optimization at the University of Waterloo in Canada.

Nicholas's Australian Laureate Fellowship will help him to explore new approaches, insights and results for probabilistic combinatorics. In applying these new approaches, Nicholas aims to discover solutions to fundamental mathematical problems and provide versatile tools of widespread use in algorithmic computer science, with other applications in physics, coding theory for communications, and genetics.

Nicholas was awarded his PhD in Mathematics at The University of Newcastle in 1979. He has held appointments at The University of Melbourne, The University of Auckland and the University of Waterloo. New mathematical methods of his invention have been applied to fields outside mathematics, such as computer science, and he also has results on underground mine design. His Australian Laureate Fellowship will bring him home to Australia, and he will undertake his fellowship at Monash University.

Professor Wormald has received numerous awards, including The Australian Mathematical Society Medal in 1993 and the Euler Medal of the Institute of Combinatorics and its Applications in 2006.