2011-12 Princeton Global Scholar
Shige Peng

Shige Peng is a highly original and influential mathematician whose work is expanding the frontiers of probability theory and financial mathematics. He played a fundamental role in initiating the theory of backward stochastic differential equations and the theory of nonlinear expectations, both of which have become powerful tools for mathematicians and financial engineers and the focus of scholarly books and international conferences. His most recent work, on a theory of g-expectations, has opened exciting new directions for research in the area of stochastic analysis and mathematical finance.

In China, where he personally helped to launch the field of financial engineering, Peng is a member of the Chinese Academy of Sciences and holds prominent professorships in the Institute of Mathematics at Shandong University and in the Chinese Ministry of Education. He has been a visiting professor and lecturer at major institutions around the world, including the École Polytechnique and the Institut Henri Poincaré in France; the Swiss Federal Institute of Technology (ETH) in Zurich; the universities of Osaka and Tokyo in Japan; and Columbia, Brown, and Princeton universities in the U.S. In 2010 he was invited to be plenary speaker at the International Congress of Mathematicians, one of the highest honors in the field of mathematics.

As a Global Scholar at Princeton, Peng joins intellectual forces with a University known for its groundbreaking research and innovation in the fields of theoretical mathematics and financial engineering. During his visits, Peng works jointly with faculty and students in Princeton's Department of Mathematics, Department of Operations Research and Financial Engineering, and Program in Applied and Computational Mathematics, teaching short courses on backward stochastic differential equations and the theory of nonlinear expectations, helping to organize formal and informal seminars on probability theory and financial mathematics, and co-advising undergraduate independent work and graduate student research. His appointment, which was made possible by a generous gift from C.H. Tung, is sparking new collaborative projects and research interests in the area of stochastic analysis and its use in financial mathematics — work that will help advance Princeton's contributions to state-of-the-art methodologies for solving complex problems in real-world applications of engineering and the sciences.

Peng is also an important catalyst for further interactions between mathematicians in Princeton and China. His presence draws top-notch scholars to visit campus, and his high-level connections and active support for scholarly exchange open new avenues for Princeton faculty and students who seek opportunities to collaborate with their counterparts at Chinese universities.