

**University of California, Irvine
Statistics Seminar**

Quantum Computation and Statistics

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2011 Donald Bren Hall
ZOOM: <https://uci.zoom.us/j/96267791125>**

Quantum computation and quantum information are of great current interest across various fields, including computer science, mathematics and statistics, physical sciences and engineering. As the theory of quantum physics is fundamentally stochastic, quantum computation and quantum information are inherently infused with elements of randomness and uncertainty. Consequently quantum algorithms are random in nature. This highlights the important role for statistics to play in the realm of quantum computation, which in turn offers great potential to revolutionize computational statistics. In this talk, I will provide an overview of quantum computation, covering the fundamental concepts and exploring quantum advantage along with the role of statistics and the implications for statistics.

Dr. Yazhen Wang is George Box Chair Professor of Statistics at the University of Wisconsin-Madison and was the Department Chair of the Statistics Department during 2015-2018 and from 2021 to 2024. He earned his Ph.D in statistics from the University of California at Berkeley in 1992. He is a Fellow of the American Statistical Association (ASA) and the Institute of Mathematical Statistics (IMS). His extensive service to the statistical community includes serving as an NSF program director from 2007 to 2009, participating in various committees for ASA, IMS, CATS, and ICSA. He has also co-edited *Statistica Sinica* and *Statistics and Its Interface*. In addition, he serves as an associate editor for prestigious journals such as the *Annals of Statistics*, *Annals of Applied Statistics*, *Journal of the American Statistical Association*, *Harvard Data Science Review*, *Journal of Business & Economic Statistics*, *Statistica Sinica*, and the *Econometrics Journal*. His research interests span a wide array of areas, including financial econometrics, machine learning, quantum computation, high-dimensional statistical inference, nonparametric estimation, wavelets and multi-scale methods, change points, long-memory processes, and order-restricted inference.