Jianwei (John) Miao is Professor of Physics & Astronomy and California NanoSystems Institute at UCLA. He received a Ph. D. in Physics, a M. S. in computer science, and an Advanced Graduate Certificate in Biomedical Engineering from State University of New York at Stony Brook in 1999. After graduation, he became a Staff Scientist at the SLAC National Accelerator Laboratory, Stanford University. In 2004, he moved to UCLA as an Assistant Professor and was promoted to Full Professor in 2009. Miao is an internationally renowned pioneer in the development of novel imaging methods with X-rays and electrons, and has made contributions to theory, computation, and experiment. He theoretically explained under what conditions the phase problem of non-crystalline specimens can be solved in 1998. A year later, he performed the seminal experiment on extending X-ray crystallography to allow structural determination of non-crystalline specimens, which is known as coherent diffractive imaging (CDI), lensless or computational microscopy. CDI methods including Bragg CDI and ptychography have been broadly implemented using synchrotron radiation, X-ray free electron lasers (XFELs), high harmonic generation, optical lasers, and electrons. It has also become one of the major justifications for the construction of XFELs worldwide, each of which costs hundreds of millions of dollars.

In addition to his seminal contribution to CDI, Miao has also pioneered atomic electron tomography (AET) for determining 3D atomic arrangements in materials without assuming crystallinity. In 2005, he developed a novel data acquisition and tomographic reconstruction method, known as equal slope tomography (EST). By combining EST with electron microscopy, Miao demonstrated electron tomography at 2.4 Å resolution in 2012. A year later, he applied AET to observe nearly all the atoms in a platinum nanoparticle, and for the first time imaged the 3D core structure of edge and screw dislocations in materials at atomic resolution. More recently, he determined, for the fist time, the 3D atomic arrangement of chemical order and disorder in a materials system with 22 picometer precision. The measured atomic positions and chemical species were used as direct input to quantum mechanical calculations to correlate crystal defects and chemical order/disorder with material properties at the single-atom level. This work makes significant advances in characterization capabilities and expands our fundamental understanding of structure-property relationships.

Miao is the Deputy Director of the NSF Science and Technology Center on Real Time Functional Imaging (called STROBE), a Fellow of the American Physical Society, an Associate Editor for *Science Advances*, and *Crystallography Reviews*. His other honors include the Werner Meyer- Ilse Memorial Award (1999), an Alfred P. Sloan Research Fellowship (2006-2008), the Outstanding Teacher of the Year Award in the Department of Physics & Astronomy at UCLA (2006-2007), a Kavli Frontiers Fellowship (2010), a Theodore von Kármán Fellowship from the RWTH Aachen University in Germany (2013), the Microscopy Today Innovation Award (2013) and the University of Strasbourg Institute for Advanced Study (USIAS) Fellowship, France (2015-2017). He has been a Guest Scientist of the Institute of Physical and Chemical Research (RIKEN) in Japan since 2004, and a Guest Professor of Zhejiang University in China since 2009.