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**Education**

Massachusetts Institute of Technology	Postdoctoral Fellow	Physics	2012 - 2013
Cornell University	Ph.D., M.S.	Physics	2012
Pennsylvania State University	B.S. (Highest Distinction)	Physics	2004

Selected Awards and Honors

- CIFAR Azrieli Global Scholar Award 2017 – ‘CIFAR invites outstanding early career investigators into research programs addressing some of the most complex challenges facing the world today.’
- Research Corporation for Science Advancement Scialog Fellow 2017 – ‘Bringing together promising early career investigators and distinguished scientific leaders for the search and discovery of truly transformative ideas.’
- NSF CAREER Award 2017 – ‘The National Science Foundation’s most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education.’
- Cottrell Scholar Award 2017 – ‘Honors outstanding teacher-scholars who are recognized by their scientific communities for the quality and innovation of their research programs and academic leadership skills.’
- AFOSR YIP Award 2016 – ‘Supports scientists and engineers demonstrating exceptional ability and promise for conducting basic research with relevance to the Air Force mission.’
- Inaugural UCR Junior Faculty Excellence in Teaching (JET) Award 2015 – ‘Awarded to teachers whose record shows that they have vibrancy, passion, and devotion to the University of California’s teaching mission.’
- SPIE International Society for Optics and Photonics Best Paper Award 2014 – ‘Given based on originality, depth of research, significance of findings and historical interest.’
- MIT School of Science Excellence Award – ‘Acknowledging extraordinary efforts toward fulfilling the goals, values and mission of the Institute. This is among the highest honors awarded by MIT.’
- Clark-Russell Award Cornell Physics – ‘For extraordinary dedication to undergraduate education. This award honors outstanding teaching and scholarship.’
- Spanson Award Cornell Nanoscale Science and Technology Facility (CNF) – ‘Recognizes the demonstration of novel techniques in nanofabrication and device engineering.’
- AAPT Teacher Recognition Award – ‘For exceptional contribution to AAPT’s mission, to enhance understanding and appreciation of physics through education.’
- John and Elizabeth Holmes Teas Scholarship – ‘Recognizes and supports excellence in research within the physical sciences and engineering.’
- Jean Bennet Physics Award – ‘Acknowledging excellence and leadership among undergraduate students in the Eberly College of Science at the Pennsylvania State University.’

Research Interests

Quantum mechanics is a theoretical description of reality that has been used to understand numerous phenomena at atomic and subatomic scales. It is among the most successful scientific theories, exhibiting not one single contradiction in nearly a century since its inception. The QMO lab aims to discover new phenomena in emerging quantum material systems, including zero-dimensional (0D) material systems (e.g., nanocrystal Nd:AlN), one-dimensional (1D) materials like the transition metal trichalcogenides (e.g., TaSe₃), and atomically thin two-dimensional (2D) electronic materials such as the transition metal dichalcogenides (TMDs). These materials, many of which can be separated into few or single atomic layers, wires and crystals, exhibit quasi-low dimensionality that may lead to unique quantum electronic behavior.