

Nandini Trivedi

Professor, Department of Physics
The Ohio State University
191 W. Woodruff Avenue, Columbus, OH 43220
email: trivedi.15@osu.edu
<http://trivediresearch.org.ohio-state.edu/>

Professional Preparation

Indian Institute of Technology, Delhi, India	M.S., Physics	1981
Cornell University, Ithaca, NY	Ph.D., Physics	1987
University of Illinois at Urbana-Champaign	Post-doctoral research associate	1987-1989
SUNY at Stony Brook, NY	Post-doctoral research associate	1989-1991

Appointments

Professor	Department of Physics, The Ohio State University	2004-present
Visiting Professor	Department of Physics, MIT	Spring 2016
Visiting Professor	Department of Physics, University of California, Berkeley	Fall 2016
Visiting Professor	University of Illinois at Urbana-Champaign	2002-2003
Reader, Assoc. Professor, Professor	Tata Institute of Fundamental Research	1995-2004
Assistant Scientist, Scientist	Argonne National Laboratory	1991-1995

<i>Honors and Awards:</i>	2019	Distinguished Scholar, The Ohio State University
	2015-2016	Simons Fellow
	2010	Fellow, American Physical Society

Research Interests: Quantum spin liquids, Entanglement and measurement, Quantum phase transitions, Spin-orbit coupled and correlated quantum matter, Ultracold atoms, Quantum Monte Carlo simulations.

Selected Recent Publications:

1. N. D. Patel, and N. Trivedi, "Magnetic field induced intermediate quantum spin-liquid with a spinon Fermi surface", **Proc. Nat. Acad. Sc.** 116 12199 (2019).
2. A. Kremen, H. Khan, Y.-L. Loh, T. I. Baturina, N. Trivedi, A. Frydman, and B. Kalisky, "Imaging quantum fluctuations near criticality", **Nature Physics** **14** 1205 (2018).
3. T. M. McCormick, S. J. Watzman, J. P. Heremans, and N. Trivedi, "Fermi arc mediated entropy transport in topological semimetals", **Phys. Rev. B** **97** 195152 (2018).
4. P. T. Brown, D. Mitra, E. Guardado-Sanchez, P. Schauf, S. S. Kondov, E. Khatami, T. Paiva, N. Trivedi, D. A. Huse, and W. S. Bakr, "Observation of canted anti-ferromagnetism with ultracold fermions in an optical lattice", **Science** **357** 1385-1388 (2017).
5. L. W. Cheuk, M. A. Nichols, K. R. Lawrence, M. Okan, Hao Zhang, E. Khatami, N. Trivedi, T. Paiva, M. Rigol, and M. W. Zwierlein, "Observation of Spatial Charge and Spin Correlations in the 2D Fermi-Hubbard Model", **Science** **353** 1260 (2016).
6. Lunan Huang, T. M. McCormick, M. Ochi, Zhiying Zhao, Michi-to Suzuki, R. Arita, Yun Wu, Daixiang Mou, Huibo Cao, Jiaqiang Yan, N. Trivedi, and A. Kaminski, "Spectroscopic evidence for type II Weyl semimetal state in MoTe₂", **Nature Materials** **15** 1155 (2016).
7. Y. -L. Loh, M. Randeria, and N. Trivedi, Chia-Chen Chang, and R.T. Scalettar, "Superconductor - Insulator Transition and Fermi-Bose Crossovers", **Phys. Rev. X** **6** 021029 (2016).
8. R. A. Hart, P. M. Duarte, T-L Yang, X. Liu, T. Paiva, E. Khatami, R. T. Scalettar, N. Trivedi, D. A. Huse, and R. G. Hulet, "Observation of antiferromagnetic correlations in the Hubbard model with ultracold atoms", **Nature** **519** 211 (2015).
9. M. Swanson, Y-L Loh, M. Randeria, and N. Trivedi, "Dynamical Conductivity across the Disorder-Tuned Superconductor-Insulator Transition", **Phys. Rev. X** **4** 021007 (2014).
10. K. Bouadim, Y.-L. Loh, M. Randeria and N. Trivedi, "Single and two-particle energy gaps across the disorder-driven superconductor-insulator transition," **Nature Physics** **7** 884 (2011).

Book: “Conductor-Insulator Quantum Phase Transitions”, edited by V. Dobrosavljevic, N. Trivedi and J. M. Valles Jr., **Oxford University Press** (2012)

Synergistic Activities

- Chair (2020), Gordon Research Conference, Strongly Correlated Systems.
- Vice Chair (2019), APS Buckley Prize Committee.
- Chair (2018), Vice Chair (2017), APS Onsager Prize Committee (2018).
- Chair (2017-2018), CMT Advisory Committee, Kavli Institute of Theoretical Physics, Santa Barbara.
- Member (2016-2019), Advisory Board, Kavli Institute of Theoretical Physics, Santa Barbara.
- Editorial board (2015- present), Reports on Progress in Physics.
- Co-organizer (2015), International Conference on “Spin-Orbit Coupling and Magnetism in Correlated Transition Metal Oxides”, Ohio State University.
- Member-at-large (2011-2014), Division of Condensed Matter Physics, American Physical Society.
- Member (2014), DOE Panel on “Grand Challenges at the Interface of Condensed Matter Physics and High Energy Physics”.
- Co-organizer (2013), Aspen summer program on “Disorder, Dynamics, Frustration and Topology in Quantum Condensed Matter”, Aspen Center of Physics.
- Member (2011), DOE-BES review panel for Oak Ridge National Laboratory.
- Founder-Director (2012-present), “Scientific Thinkers”, an inquiry-based science outreach program at Innis Elementary School, Columbus, Ohio, a largely minority school. The program brings STEM undergraduate and graduate students to the classroom to teach hands-on experiments and critical thinking to elementary school students.
- Director and organizer of 3 “Festivals of Physics” (2007, 2009, 2011) in partnership with Columbus Science Museum COSI with participation by ~80 undergraduate and graduate students engaging with the public in each event.

Graduate Advisor: Neil W. Ashcroft, Cornell University

Postdoctoral advisors: David M. Ceperley, University of Illinois, Urbana-Champaign
Philip B. Allen, SUNY Stony Brook

Post-Graduate Advisees:

Current: Kyungmin Lee (PhD Cornell), Nirav Patel (PhD U. Tennessee), Subhasree Pradhan (PhD IIT Kharagpur)

Past (including joint): Kyusung Hwang (Postdoc, Korea), Karim Bouadim (Industry), Soon-Yong Chang (Finance), Mehdi Kargarian (Faculty, Sharif Univ.), Yen-Lee Loh (Prof., Univ. North Dakota), Anamitra Mukherjee (Faculty, IOP), David Nozadze (Industry), Prasenjit SenSarma (Faculty, HRI, Allahabad), Salman Ullah (Finance), Shizhong Zhang (Faculty, Hong Kong Univ.)

Graduate students:

Current: David Ronquillo, Wenjuan Zhang, Franz Utermohlen, Joseph Szabo, Shi Feng

Past (including joint): Hasan Khan, Timothy McCormick, Chris Svoboda, William Cole, Oinam Ngamba Meetei, Onur Erten, Mason Swanson, Eric Duchon, Julia Janczak, Sara Rajaram, Dariush Heidarian, Arun Paramakanti, Amit Ghosal

Undergraduate Advisees:

Current: Ian Osborne, Noah Donald, Caitlin Patterson, Michael Ferrarelli, Noah Sediqe

Past: Adu Vengal, Robert McKay, Henry Xiong, Omar Mansour, Charles Woodrum, William Chuirazzi, Joseph Garrett, Robert Ivancic, Nickolas Sedblock, Nathan Turner, Natalie Zeleznick, Nathan McKee