
NANDINI TRIVEDI

Education

1981 BS and MS, Physics, Indian Institute of Technology, Delhi
1987 Ph.D. Physics, Cornell University

Employment

2004 - Professor, Department of Physics, The Ohio State University
2002-2003 Visiting Professor, Physics and MRL, University of Illinois at Urbana
1995-2004 Reader, Associate Professor, & Professor,
Tata Institute of Fundamental Research, India
1991-1995 Assistant Scientist and Scientist, Materials Science Division,
Argonne National Laboratory
1989-1991 Postdoctoral Research Associate, Physics,
SUNY at Stony Brook
1987-1989 Post-Doctoral Research Associate, Univ. of Illinois at Urbana

Current Research Interests:

Strongly Correlated Systems; Ultracold atoms in Optical Lattices; Transition Metal Oxides

Quantum Monte Carlo Simulations for Bosons and Fermions

Disorder and Interaction Driven Quantum Phase Transitions

Recent Publications

1) *Direct Mapping of the Finite Temperature Phase Diagram of Strongly Correlated Quantum Models*, Q. Zhou, Y. Kato, N. Kawashima, and N. Trivedi **Phys. Rev. Lett.** **103**, 085701 (2009).

2) *Competition between Antiferromagnetic and Superconducting States, Electron-Hole Doping Asymmetry, and Fermi-Surface Topology in High Temperature Superconductors*, S. Pathak, V. B. Shenoy, M. Randeria, N. Trivedi, **Phys. Rev. Lett.** **102**, 027002 (2009).

3) *Sharp peaks in the momentum distribution of bosons in optical lattices in the normal state*, Y. Kato, Q. Zhou, N. Kawashima, and N. Trivedi, **Nature Physics** **4**, 617-621 (2008).

4) *Strong correlations make high-temperature superconductors robust against disorder*, A. Garg, M. Randeria, and N. Trivedi, **Nature Physics** **4**, 762 - 765 (2008).

5) *Quantum phases in a doped Mott insulator on the Shastry-Sutherland lattice*, J. Liu, N. Trivedi, Y. Lee, B. N. Harmon, J. Schmalian, **Phys. Rev. Lett.** **99**, 227003 (2007).

6) *Particle-Hole Asymmetry in Doped Mott Insulators: Implications for Tunneling and Photoemission Spectroscopies*, M. Randeria, R. Sensarma, N. Trivedi, and F.C. Zhang, **Phys. Rev. Lett.** **95**, 137001 (2005).

7) *Pairing and Superconductivity Driven by Strong Quasiparticle Renormalization in Two-Dimensional Organic Charge Transfer Salts*, J. Liu, J. Schmalian, and N. Trivedi, **Phys. Rev. Lett.** **94**, 127003 (2005).

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- 8) *Inhomogeneous Metallic Phase in a Disordered Mott Insulator in Two Dimensions* D. Heidarian and N. Trivedi, **Phys. Rev. Lett.** **93**, 126401 (2004).
- 9) *The Physics Behind High-Temperature Superconducting Cuprates: The ‘Plain Vanilla’ Version Of RVB*, P. W. Anderson, P. A. Lee, M. Randeria, T. M. Rice, N. Trivedi, and F. C. Zhang; **J. Phys. Cond. Mat.** **16** R755R769 (2004).
- 10) *High Tc superconductors: A Variational Theory of the Superconducting State*, A. Paramekanti, M. Randeria and N. Trivedi, **Phys. Rev.** **B70**, 054504 (2004).

Synergistic Activities:

Member, NSERC proposal review panel, Canada;
Member, NSF MRSEC panel (2009);
Member INCITE DOE review panel for large scale computations, October 2008;
Member, Advisory Committee, Division of Condensed Matter Physics, American Physical Society;
Member, Program Committee, International Conference on Strongly Correlated Electron Systems (SCES’07), Houston, 2007;
Co-organizer, Workshop on “Recent Progress in Many Body Theories” (July 2009);
Co-organizer, Workshop on “Conductor-Insulator Quantum Phase Transitions” (January 2008);
Organiser of “Festival of Physics”, Columbus Science Museum COSI, October 2007; November 2010 (planned).

Invited talks at International Conferences in 2004 - 2009:

KITPC, Beijing (2009); ETH, Zurich (2009); Princeton (2009); ICTP, Trieste (2009); Beijing (2008); Sant Feliu, Spain (2007); KITP, Santa Barbara (2007); APS March Meeting (Denver) (2007); ISSP, Tokyo, Japan (2006); U. Arizona, (2006); Gordon Conference, Buellton (2006); KITP (2005); APS March Meeting (Los Angeles)(2005); Brookhaven (2005); Engelbrecht school, Drakensburg, South Africa (6 lectures) (2005); Cargese, France (2004); IISc. Bangalore (2005), Kyoto, Japan (2004) SERC school, Allahabad (10 lectures)(2004).

Collaborators in past five years:

J. Freericks (Georgetown); A. Garg (UC Santa Cruz); Y. Kato (ISSP, Japan); H.R. Krishnamurthy (IISc Bangalore); N. Kawashima (ISSP, Japan); M.Randeria (OSU); R. Scalettar (UC Davis); J. Schmalian (Ames); R. Sensarma (Maryland); V. Shenoy (IISc); Q. Zhou (Maryland).

Ph.D. and Postdoctoral Advisors:

Ph.D. Advisor: Neil W. Ashcroft, Cornell (1981-1986);
Post-doc Advisor: David M. Ceperley, Urbana-Champaign (1987-1989).

Current Students/postdocs:

Graduate Students: Oinam Ngamba Meetei, William Cole, Eric Duchon, Mason Swanson

Postdoctoral Associates: Yen-Lee Loh, Karim Bouadim, Anamitra Mukherjee, Soon-Yong Chang

Undergraduate Students: Joseph Garrett, Tyler Heisler-Taylor