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PERSONAL INFORMATION

Educational Background

- 1986, PhD., Nuclear Physics, State University of New York at Stony Brook
- 1980, Bachelor of Arts, Wesleyan University, Middletown, CT

Academic Appointments at UMD

- 2009, Marquee Professor of Science and Technology, 2009-Present
- 2003, Professor, Department of Physics, 2003- Present

Administrative Appointments at UMD

- 2016-present, Chair, Dept. of Physics
- 2008, Co-Director, 2008 –2017, Joint Quantum Institute
- 2006-2009, Associate Chair, Dept. of Physics

Other Employment

- 1988-2003, Physicist, National Institute of Standards and Technology
- 1987-1988, Post-Doctoral Research Associate, Harvard University, Atomic Physics
- 1986-1987, Post-Doctoral Research Associate, University of Washington, Atomic Physics

RESEARCH, SCHOLARLY AND CREATIVE ACTIVITIES

Articles in Refereed Journals

Refereed Journal Articles

- “Optimal and secure measurement protocols for quantum sensor networks,” Z Eldredge, M Foss-Feig, JA Gross, SL Rolston, AV Gorshkov, Physical Review A 97 (4), 042337, (2018)

- “Optical nanofibers: a new platform for quantum optics,” P Solano, JA Grover, JE Hoffman, S Ravets, FK Fatemi, LA Orozco, ...Advances In Atomic, Molecular, and Optical Physics 66, 439-505, (2017)
- “Alignment-dependent decay rate of an atomic dipole near an optical nanofiber,” P Solano, JA Grover, Y Xu, P Barberis-Blostein, JN Munday, LA Orozco, arXiv preprint arXiv:1704.08741, (2017)
- “Super-radiance reveals infinite-range dipole interactions through a nanofiber,” P Solano, P Barberis-Blostein, FK Fatemi, LA Orozco, SL Rolston, Nature communications 8 (1), 1857, (2017)
- “Anomalous broadening in driven dissipative Rydberg systems,” EA Goldschmidt, T Boulier, RC Brown, SB Koller, JT Young, AV Gorshkov, Physical review letters 116 (11), 113001, (2016)
- “Ultracold neutral plasmas, M Lyon, SL Rolston, Reports on Progress in Physics 80 (1), 017001, (2016)
- “Ultrahigh transmission optical nanofibers,” J. Hoffmann, S. Ravets, J. Grover, P. Solanao, P. Kordell, D. Wong-Campos, L. Orozco, and S. L. Rolston, AIP Advances **4** 067124 (2014).
- “Intermodal energy transfer in a tapered optical fiber: optimizing transmission,” S. Ravets, J. Hoffman, P. Kordell, J. wong-Campos, S. L. Rolston, and L. Orozco, J. Opt. Soc. Amer. A **30**, 2361 (2013).
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- “A low-loss photonic silica nanofiber for higher-order modes,” S. Ravets, J. Hoffman, L. Orozco, S. L. Rolston, G. Beadie, and F. Fatemi, Opt. Express **21** 18325 (2013).
- “Integrated optical dipole trap for cold neutral atoms with an optical waveguide coupler,” J. Lee, D. Park, S. Mittal, M. Dagenais, and S. L. Rolston, New J. Phys. **15** 043010 (2013).
- “Precision measurement of transition matrix elements via light shift cancellation,” C. Herold, V. Vaidya, X. Li, S.L. Rolston, and J. Porto, Phys. Rev. Lett. **109**, 243003 (2012).
- “Disorder-driven loss of phase coherence in a quasi-2D cold atom system,” M. Beeler, M. Reed, T. Hong, and S.L. Rolston, New J. Phys. **14**, 073024 (2012).
- “Atomic interface between microwave and optical photons , M. Hafezi, Z. Kim, S. L. Rolston, L. Orozco, B. Lev, and J. Taylor, Phys. Rev. A **85**, 020302 (2012).
- “Electronic Detection of Collective Modes of an Ultracold Plasma,” K. Twedt and S.L. Rolston, Phys. Rev. Lett. **108**, 065003 (2012).
- “Thin-film superconducting resonator tunable to the ground-state hyperfine splitting of Rb-87,” Z. Kim, C. Vlahacos, J. Hoffman, J. Grover, K. Voigt, B. Cooper, C. Ballard, B. Palmer, M. Hafezi, J. Taylor, J. Anderson, A. Dragt, C. Lobb, L. Orozco, S.L. Rolston, F. Wellstood, AIP Advances **1** 042107 (2011).
- “Photon statistics and polarization correlations at telecommunications wavelengths from a warm atomic ensemble, “ R. Willis, F. Becerra, L. Orozco, and S.L. Rolston, Opt. Express **19**, 14632 (2011).
- “Quantum beats from four-wave mixing in Rubidium 87,” F. Becerra, R. Willis, S.L. Rolston, and L. Orozco, Rev. Mex. De Fisica, **57**, 23 (2011).

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- “Electron evaporation form an ultracold plasma in a uniform electric field,” Phys. of Plasmas, **17**, 082101 (2010).
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- “Two-photon dichroic atomic vapor laser lock using electromagnetically induced transparency and absorption,” F. E. Becerra, R. T. Willis, S. L. Rolston, and L. A. Orozco, Jour. Opt. Soc. Am. B **26**, 1315 (2009).
- “Four-wave mixing in the diamond configuration in an atomic vapor,” R. T. Willis, F. E. Becerra, L. A. Orozco, and S. L. Rolston, Phys. Rev. A **79**, 033814 (2009).
- “Adiabaticity and localization in one-dimensional incommensurate optical lattices,“ E. E. Edwards, M. Beeler, T. Hong, and S. L. Rolston, Phys. Rev. Lett. **101**, 260402 (2008).
- “Observation of an ultracold plasma instability,” X. L. Zhang, R. S. Fletcher, and S. L. Rolston, Phys. Rev. Lett. **101**, 260402, (2008).
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- “Ultracold plasma expansion in a magnetic field,” Phys. Rev. Lett. **100**, 235002 (2008).
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Conferences, Workshops and Talks

Keynotes

- 2014, Intl. Conf. on Plasma Science, Washington DC, Plenary Speaker, May 25 2014

Invited Talks

- 2015, S. L. Rolston, Optical Waveguides for trapped atoms, Workshop on Atoms on a Chip, Padua, Italy
- 2015, S. L. Rolston, Trapping atoms on nanofibers, Invited AMO Seminar, Technical University of Vienna
- 2015, S. L. Rolston, Where is my Quantum Computer?, Invited Sigma Xi Colloquium, Naval Research Laboratory
- 2014, Conference on Strongly Coupled Systems, Stony Brook, NY, Mar. 25, 2014

Colloquia

- 2014, Johns Hopkins Applied Physics Laboratory Colloquium, Laurel MD, Dec. 12, 2014
- 2014, Dept. of Physics, University of Toronto, Toronto, Canada, Nov. 10, 2014

Book Reviews, Notes and Other Contributions

Other

- 2015, S. L. Rolston, "Getting the measure of entanglement", *Nature*

TEACHING, MENTORING AND ADVISING

Advising: Research or Clinical

Undergraduate

- Fall 2014, Paul King, Fall 2014-

Mentorship

- Vladimir Manucharyan

SERVICE AND OUTREACH

Editorships, Editorial Boards and Reviewing Activities

Reviewing Activities for Journals and Presses

- Reviewer, Physical Review, Physical Review Letters, Nature

Reviewing Activities for Agencies and Foundations

- Reviewer, National Science Foundation, Research Corporation

Other

- Review Committee for Physical Review X, American Physical Society, Chair

Committees, Professional & Campus Service

Campus Service - University

- University Senate

Leadership Roles in Meetings and Conferences

- 2014, Organizing Committee, International Conference on Atomic Physics

Other Non-University Committees, Memberships, Panels, etc.

- Elect Division of Atomic, Molecular, and Optical Physics, American Physical Society, Vice Chair

Positions/Committee Members in Professional Organizations

- 2014-2017, Chair line, APS Division of Atomic, Molecular and Optical Physics (Chair in 2016)
- 2014-2016, Chair, AIP Public Policy Fellowship Commitee

External Service and Consulting

Consultancies (to local, state and federal agencies; companies; organizations)

- 2015, Review of Wesleyan University Physics Department, Wesleyan University

Non-Research Presentations

Outreach Presentations

- 2015, C. Orzel, Quantum mechanics, Schrodinger Sessions