Bethany J. Little
Rochester, NY bethanyjeanlittle@gmail.com

Highlights

- Technical expertise in optics, atomic physics, interferometry, nonlinear materials, microscopy (AFM, SEM, optical), precision measurements, and high speed detectors.
- 6+ years optics lab experience
- Self-Motivated learner with experience in research efforts in an both industry and academic enviroments
- Competent with Labview, Mathematica, MatLab, LaTeX and other software
- Experienced as part of technical team for a fast-growing small business.
- Outstanding communicator
- Creative problem solver

Education

Ph.D. in Physics, University of Rochester 2017
M.A. in Physics, University of Rochester 2011
Certificate of College Teaching in Physics, University of Rochester 2010
B.S. in Physics, *summa cum laude*, Houghton College 2009

Post-Doctoral Work Experience

Applications and Solutions Engineer at Sydor Technologies

- Worked with scientists to find detector solutions and support experiments/diagnostics
- Spearheaded research efforts to characterize and improve detectors
- Responsible for installation, training, and support
- Represented the company through presentations at conferences

Research

John Howell's lab, University of Rochester, Rochester, NY 2010-2017

- Research in experimental quantum optics and nonlinear optics
- Built rubidium magneto optical trap from the ground up

Houghton College, Houghton, NY 2005-09

- Worked with Brandon Hoffman on the design and construction of a variable temperature atomic force microscope

Los Alamos National Laboratory, Los Alamos, NM 2008

- Worked with Mark Yuly (Houghton) and June Matthews (MIT) in nuclear physics

Cornell University, Ithaca, NY 2007

- REU student, worked with Sheff Baker (Cornell) and Brandon Hoffman (Houghton) on characterization of thin silver films

Selected Publications

Femtometer Displacement Resolution with Phase-Insensitive Doppler Sensing, **Bethany J. Little**, Julin Martnez-Rincn, Umberto Bortolozzo, Stefania Residori, and John C Howell, in submission, i*in publication process, arXiv:1804.01170* (2018).

Slow Light in Flight Imaging, Kali Wilson, **Bethany J. Little**, Genevieve Gariepy, Robert Henderson, John Howell, and Daniele Faccio, Phys. Rev. A **95**, 023830 (2017).

Quantum and Classical Optics - Emerging Links, J. H. Eberly, Xiao-Feng Qian, Asma A. Qasimi, Hazrat Ali, M. A. Alonso, Gutirrez-Cuevas, **Bethany J. Little**, John C. Howell, Tanya Malhotra, and A. N. Vamivakas, Phys. Scr. **91**, 063003 (2016).

Shifting the Quantum-Classical Boundary: Theory and Experiment for Statistically Classical Optical Fields, Xiao-Feng Qian, **Bethany J. Little**, John C. Howell, and J. H. Eberly, Optica **2** (7), 611-615 (2015).

Rapidly Reconfigurable Optically Induced Photonic Crystals in Hot Rubidium Vapor, **Bethany J. Little**, David J. Starling, John C. Howell, Raphael D. Cohen, David Shwa, and Nadav Katz, Phys. Rev. A **87** (4), 053826 (2012).

A Double Lorentzian Atomic Prism, David J. Starling, Steve M. Bloch, Praveen K. Vudyastu, Joseph S. Choi, **Bethany J. Little**, and John C. Howell, Phys. Rev. A **86** (2), 023826 (2012).

Recent Presentations

Characterization of a Picosecond Gated Optical Intensifier, **Bethany Litte**, Yoram Fisher, April 2018, High Temperature Plasma Diagnostics (HTPD) 2018, San Diego, CA (poster).

Experimental Demonstration of Reflection and Refraction of Optical Pulses from Temporal Boundaries **Bethany J. Little**, Brent Plansinis, Govind Agrawal, and John Howell, Oct 2016, Frontiers in Optics FF3H.2, Rochester, NY.

Nonlinear Optics with Tapered Fibers and Magneto-Optically Trapped Rb, **Bethany J. Little**, Christopher Mullarkey, Hanxiao Liang, Qiang Lin, Nick Vamivakas, and John C. Howell, May 2016, APS Division of Atomic, Molecular and Optical Physics (DAMOP) Meeting, Providence, RI (poster).

Light Sabers, Non-Zebras, and Other Fun with Nonlinear Optics., **Bethany J. Little**, April 2016, Science Colloquium, Houghton College, Houghton, NY (invited).

Bell Experiment with Classical Fields, **Bethany J. Little**, Xiao-Feng Qian, John C. Howell, and J. H. Eberly, March 2016, March Meeting of the APS, Baltimore, MD.

Teaching

Awards

- Edward Peck Curtis Award for Excellence in Teaching by a Graduate Student — 2012
- American Association of Physics Teachers Award — 2010

Instructor, University of Rochester, Rochester, NY — 2010

- Oversaw all aspects of Electricity and Magnetism course, including lectures, grading, and creation of assignments and tests.

Teaching Assistant, University of Rochester, Rochester, NY — 2009-12

- TA for: Electricity and Magnetism, Waves and Modern Physics, Mechanics, 20th Century Physics

Professional Activities

Co-Founder, Quantum Optics Journal Club, Rochester, NY — 2015

Referee for Optics Letters, Optics Express and others — 2015-present

Prospective Student Recruitment for graduate student weekend, Rochester, NY — 2010-15

Panelist and lab tour provider for PREP, a pre-physics outreach program for young women, Rochester, NY — 2011, 2016

Conference Organizer, Cross Border Workshop, Rochester, NY — 2011

Conference Volunteer, Frontiers in Optics/Laser Science, Rochester, NY — 2010