

Sean J. Bentley

Adelphi Univ., Dept. of Physics, 1 South Ave, Garden City, NY 11530
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Academic Positions:

Adelphi University, Department of Physics

- Associate Professor, September 2009-Present
- Assistant Professor, September 2003-August 2009

Stony Brook University, Department of Physics

- Mentor, Laser Teaching Center, Summer 2016

Administrative Positions:

American Institute of Physics

-Director, Society of Physics Students & Sigma Pi Sigma, July 2014-January 2016

- Worked closely with leadership and staff of AIP Member Societies
- Wrote six editorials for *The SPS Observer*: “My Successful Null Result” (Winter 2015); “The Physics- Engineering Debate” (Fall 2015); “SPS is Your Village” (Summer 2015); “Physics Needs Research and Balance” (Spring 2015); “Freedom and Physics for All” (Winter 2014); “SPS, Diversity, and You” (Fall 2014)
- Wrote four editorials for *Radiations*: “Impacting Lives” (Spring 2016); “A Few Good Mentors” (Fall 2015); “A Force for Good” (Spring 2015); “You are a Physicist” (Fall 2014)
- Wrote five guest columns for *AIP Matters*: “Student leaders aim for impact at SPS Council Meeting” (11/2/2015); “SPS internships shape future leaders” (9/14/2015); “SPS goes to Washington” (4/13/2015, with Aline McNaull); “Light and inspiration for a better world” (2/23/2015); “Beyond the walls of classrooms” (9/22/2014)
- Wrote a book review for *Physics Today: Networking for Nerds* by Alaina Levine (December 2015; portions of review reprinted in “Five books that stood out in 2015” segment)
- Led staff of seven full-time, two part-time, and twelve summer interns
- Planned and managed \$2M annual budget and worked actively on development
- Liaised between elected leadership, membership, and staff
- Developed and implemented strategies for memberships, communications, programs, and all aspects of operations to promote undergraduate physics education

Education:

Ph.D. in Optics, University of Rochester, Rochester, NY, 2004

Thesis: Transverse Effects in Nonlinear and Quantum Optics

M.S. in Electrical Engineering, University of Missouri-Rolla*, Rolla, MO, 1997

Thesis: Optical Time-of-Flight Magnetic Field Sensor; GPA: 4.0

B.S. in Electrical Engineering with minor in Physics, University of Missouri-Rolla*, 1995
Divisional Honors Scholar; *Magna Cum Laude*

*(Now the Missouri University of Science and Technology)

Patent:

U.S. Patent No. 7,859,646 B2, Sean J. Bentley, “Interferometric Method for Improving the Resolution of a Lithographic System,” (December 28, 2010).

Honors & Awards:

- Academy of Electrical & Computer Engineering, Missouri University of Science and Technology (2016)
- Adelphi Teaching Excellence Award, 2013 (Nominee: 2008 & 2009)
- Adelphi Excellence in Faculty Service Award Nominee, 2010 & 2011
- Adelphi Excellence in Faculty Scholarship & Creative Work Award Nominee, 2010
- Chancellor's Fellow, 1995-1997
- IEEE Region 5 Paper Contest—Third Place, 1995
- IEEE UMR Student Branch Outstanding Member, 1994-1995
- Chancellor's Scholar, 1991-95; Curator's Scholar, 1991-95; Miner's Scholar, 1991-95
- National Merit Scholar, 1991

Book:

S. J. Bentley, *Principles of Quantum Imaging: Ghost Imaging, Ghost Diffraction, and Quantum Lithography*, Taylor & Francis/CRC Press, Boca Raton, FL, (ISBN 1-42-008582-4; in progress).

Book Contributions:

1. S. J. Bentley, "The Photon Picture of Light," *Encyclopedia of Modern Optics*, edited by Robert D. Guenther, Duncan G. Steel and Leopold Bayvel, Elsevier, Oxford, 2004 (ISBN 0-12-227600-0).
2. E. M. Nagasako, S. J. Bentley, R. W. Boyd, and G. S. Agarawal, "Nonclassical, Two-Photon Interferometry and Lithography with High-Gain Optical Parametric Amplifiers," *Coherence and Quantum Optics VIII*, edited by N. P. Bigelow, J. H. Eberly, C. R. Stroud, Jr., and I. A. Walmsley, Springer (Kluwer Academic/Plenum), New York, 2004 (ISBN 0-30-648116-2).

Peer-Reviewed Articles (undergraduate authors in bold):

1. **A. Pizzuto**, **A. Gifford**, and S. J. Bentley, "Diffraction by two non-coplanar cylinders," (in preparation).
2. S. J. Bentley, A. Agelarakis, and **M. Mohacsi**, "Physical analysis of bone penetration from spear wounds," (in preparation).
3. **Justin Dove**, Sean J. Bentley, and **Sajan Shresthra**, "Double-slit quantum-eraser experiment using momentum-entangled photons," (in preparation).
4. S. J. Bentley and **D. Sofferman**, "High-resolution nonlinear pattern formation," (in preparation).
5. S. J. Bentley, "Quantum optics for the 21st century electrical engineer," *The Bridge*, **110**, 18-23 (2014; <http://online.qmags.com/TB0314#pg18&mode2>).
6. E. de Freitas and S. J. Bentley, "Material encounters with mathematics: The case for museum based crosscurricular integration," *International Journal of Educational Research*, **55**, 36-47 (2012).
7. S. E. Watkins, M. A. Huggans, and S. J. Bentley, "Pre-college outreach at a technical conference," *International Journal of Engineering Education*, **25** (3), 436-443, (2009).
8. S. J. Bentley, "Nonlinear interferometric lithography for arbitrary two-dimensional patterns," *Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3)* **7**, 013004 (2008).
9. S. J. Bentley, **C. V. Anderson**, and J. P. Doohar, "Three-photon absorption for

- nanosecond excitation in cadmium selenide quantum dots,” *Optical Engineering* **46**, 128003 (2007); also selected for inclusion in the *Virtual Journal of Nanoscale Science & Technology*.
10. S. J. Bentley, J. E. Heebner, and R. W. Boyd, “Transverse instabilities and pattern formation in two-beam-excited nonlinear optical interactions in liquids,” *Optics Letters* **31**, 951 (2006).
 11. R. W. Boyd and S. J. Bentley, “Recent progress in quantum and nonlinear optical lithography,” *Journal of Modern Optics* **53**, 713 (2006).
 12. S. J. Bentley and R. W. Boyd, “Nonlinear optical lithography for ultra-high sub-Rayleigh resolution,” *Optics Express* **12**, 5735 (2004).
 13. R. W. Boyd, R. S. Bennink, S. J. Bentley, and J. C. Howell, “Image formation using quantum- entangled photons,” *Optics & Photonics News, Optics in 2004* December Issue, 39 (2004).
 14. J. C. Howell, R. S. Bennink, S. J. Bentley, and R. W. Boyd, “Realization of the Einstein-Podolsky-Rosen paradox using momentum- and position-entangled photons from spontaneous parametric down conversion,” *Physical Review Letters* **92**, 210403 (2004).
 15. R. S. Bennink, S. J. Bentley, R. W. Boyd, and J. C. Howell, “Quantum and classical coincidence imaging,” *Physical Review Letters* **92**, 033601 (2004).
 16. R. S. Bennink, S. J. Bentley, and R. W. Boyd, “‘Two-photon’ coincidence imaging with a classical source,” *Physical Review Letters* **89**, 113601 (2002).
 17. E. M. Nagasako, S. J. Bentley, R. W. Boyd, and G. S. Agarwal, "Parametric downconversion vs. optical parametric amplification: A comparison of their quantum statistics," *Journal of Modern Optics* **49**, 529 (2002).
 18. E. M. Nagasako, S. J. Bentley, R. W. Boyd, and G. S. Agarwal, “Nonclassical two-photon interferometry and lithography with high-gain optical parametric amplifiers”, *Physical Review A* **64**, 043802 (2001).
 19. S. J. Bentley, R. W. Boyd, W. E. Butler, and A. C. Melissinos, "Spatial patterns induced in a laser beam by thermal nonlinearities," *Optics Letters* **26**, 1084 (2001).
 20. G. S. Agarwal, R. W. Boyd, E. M. Nagasako, and S. J. Bentley, *Physical Review Letters* **86**, 1389 (2001)[comment].
 21. S. J. Bentley, R. W. Boyd, W. E. Butler, and A. C. Melissinos, “Measurement of the thermal contribution to the nonlinear refractive index of air at 1064 nm,” *Optics Letters* **25**, 1192 (2000).

Professional Presentations (undergraduate authors in bold):

1. **A. Gifford, A. Pizzuto**, M. G. Cohen, and Sean J. Bentley, “Diffraction by Cylinders Offset Parallel to Laser Beam Propagation,” Symposium on Undergraduate Research, Laser Science APS/DLS, Rochester, NY, October 2016.
2. **M. Stanley, J. Rutledge, M. Lo**, M. G. Cohen, and S. J. Bentley, “Generation and Conversion of Transverse Gaussian Laser Modes,” Symposium on Undergraduate Research, Laser Science APS/DLS, Rochester, NY, October 2016.
3. **G. Richmond, J. Kurlander**, M. G. Cohen, and S. J. Bentley, “Broad-Spectrum Measurement of Retardation,” Symposium on Undergraduate Research, Laser Science APS/DLS, Rochester, NY, October 2016.
4. S. J. Bentley, “Quantum Entanglement: The Future is Now,” Keynote Address, Western Pennsylvania American Association of Physics Teachers Spring 2015 Meeting, Grove City, PA, March 2015.

5. S. J. Bentley, "Basic Science Behind the Headlines," 2013 American Association of Physics Teachers Winter Meeting, New Orleans, LA, January 2013.
6. **D. Soffer** and S. J. Bentley, "High-Resolution Interference in Quantum Dot Thin-Films," Symposium on Undergraduate Research, Laser Science APS/DLS, Rochester, NY, October 2012.
7. **S. Shrestha** and S. J. Bentley, "Double-Slit Quantum-Eraser Using Momentum-Entangled Photons," Symposium on Undergraduate Research, Laser Science APS/DLS, Rochester, NY, October 2012.
8. S. J. Bentley and E. de Freitas, "Increasing Problem-Solving Skills in Introductory High School Physics," 2012 American Association of Physics Teachers Summer Meeting, Philadelphia, PA, July 2012.
9. S. J. Bentley, "Real-World Projects for Electronics Courses" workshop, Beyond the First Year Conference, Philadelphia, PA, July 2012.
10. S. J. Bentley, E. de Freitas, and L. Stemkoski, "Enhanced Problem-based Freshman Physics through High School-Museum Partnerships," 2011 American Association of Physics Teachers Winter Meeting, Jacksonville, FL, January 2011.
11. S. J. Bentley, "Complementarity, source coherence, and joint uncertainty," Optical Society of America 92nd Annual Meeting, Rochester, NY, October 2008.
12. S. J. Bentley, "Quantum optics round-table teaching," Quantum Optics/Quantum Engineering for Undergraduates Symposium, Optical Society of America 92nd Annual Meeting, Rochester, NY, October 2008.
13. S. J. Bentley, "Arbitrary 2-D pattern formation beyond the Rayleigh limit," Optical Society of America 91st Annual Meeting, San Jose, CA, September 2007.
14. S. J. Bentley, "Testing complementarity with quantum entangled photons," Optical Society of America 90th Annual Meeting, Rochester, NY, October 2006.
15. R. Hixon, S. E. Watkins, S. J. Bentley, and M. A. Huggans, "Student robotics competition using Robolab and Lego Bricks," Proceedings of the 2006 ASEE Midwest Section Annual Conference, 13-15 September 2006, Kansas City, MO.
16. S. J. Bentley, **C. V. Anderson**, and J. P. Dooher, "Three-photon absorption in cadmium selenide quantum dots," Conference on Lasers and Electro-Optics (CLEO), Long Beach, CA, May 2006, CWA6.
17. S. J. Bentley, **C. V. Anderson**, and J. P. Dooher, "Third-order nonlinearities of CdSe quantum dots," Optical Society of America 89th Annual Meeting, Tucson, AZ, October 2005.
18. R. W. Boyd, R. S. Bennink, S. J. Bentley, M. N. O'Sullivan-Hale, I. Ali Khan, and J. C. Howell, "Progress in quantum lithography and ghost imaging," The Physics of Quantum Electronics XXXV, Snowbird, Utah, January 2-6, 2005. (Invited Talk)
19. R. W. Boyd, R. S. Bennink, S. J. Bentley, M. N. O'Sullivan-Hale, I. Ali Khan, and J. C. Howell, "Image formation using quantum-entangled photons," Imaging at the Limits, Cargese, Corsica, France, September 5-11, 2004. (Invited Talk)
20. R. W. Boyd, R. S. Bennink, S. J. Bentley, M. N. O'Sullivan-Hale, I. Ali Khan, and J. C. Howell, "Image formation using quantum-entangled photons," International Quantum Electronics Conference, San Francisco, CA, May 16-20, 2004.
21. S. J. Bentley and R. W. Boyd, "Coherent control of four-wave mixing gain," Laser Science XIX, Tucson, AZ, October 2003.
22. M. S. Bigelow, S. J. Bentley, A. M. Marino, and R. W. Boyd, "Polarization properties

- of photons generated by two-beam excited conical emission,” Laser Science XIX, Tucson, AZ, October 2003.
23. S. J. Bentley and R. W. Boyd, “Super-resolution by nonlinear optical lithography,” Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, June 2003, CMH4.
 24. R. S. Bennink, S. J. Bentley, R. W. Boyd, and J. C. Howell, “Quantum and classical aspects of coincidence imaging,” Quantum Electronics and Laser Science Conference (QELS), June 1-6, 2003, QMH2.
 25. S. J. Bentley, J. E. Heebner, and R. W. Boyd, “High-order spatial modulation instability,” Optical Society of America 86th Annual Meeting, Orlando, FL, October 2002.
 26. S. J. Bentley and R. W. Boyd, “Reducing the effect of laser beam filamentation,” OPTO-Canada, Ottawa, Canada, May 2002.
 27. E. M. Nagasako, S. J. Bentley, R. W. Boyd, and G. S. Agarwal, “Nonclassical, two-photon interferometry and lithography with high-gain optical parametric amplifiers,” Eighth Rochester Conference on Coherence and Quantum Optics, Rochester, NY, June 13-16, 2001.
 28. S. J. Bentley, R. W. Boyd, E. M. Nagasako, and G. S. Agarwal, “Quantum entanglement for optical lithography and microscopy beyond the Rayleigh limit,” Quantum Electronics and Laser Science Conference (QELS), May 6-11, 2001, QTuD2.
 29. S. J. Bentley, R. W. Boyd, W. E. Butler, and A. C. Melissinos, “Thermal nonlinearities and pattern formation in high-finesse Fabry-Perot cavities,” Optical Society of America 84th Annual Meeting, Providence, RI, October 2000.
 30. S. J. Bentley, R. W. Boyd, W. E. Butler, and A. C. Melissinos, “Measurement of the thermal refractive index of air at 1.064 microns using a cw laser,” Nonlinear Optics: Materials, Fundamentals, and Applications, 391-393 (2000).
 31. S. J. Bentley and S. E. Watkins, “Simulation of a coherent heterodyne array imaging system,” Optical Society of 80th Annual Meeting, Rochester, NY, October 1996.
 32. S. E. Watkins, R. Gopisetty, S. J. Bentley, and R. A. Anderson, “Target velocity measurements from speckled images,” Image Reconstruction and Restoration, Proc. SPIE 2302, 26-35 (1994).

Grant Proposals Submitted:

Awarded to Date (PI or Co-PI*): \$346,958 (\$335,658 external)

Total Applications (PI or Co-PI*): \$9,106,222

* Additional Awards as Senior Personnel and Sub-Contractor also Listed Below

1. *IUSE: Easing Adoption of Evidence Based Practices in Foundational Science Courses*, \$406,195, National Science Foundation (Co-PI).
2. *MSP: Science and Math Applied Real-problem Teaching (SMART)*, \$1,499,101, National Science Foundation.
3. *CLEAN (Composite-Layered-Enhanced-Adjustable-Nanoparticle) Solar Cells: From Fundamental Properties to Working Prototype*, \$100,000, Research Corporation Scialog.
4. *i3 Development: Science & Math Applied Real-problem Teaching (SMART)*, \$4,518,748, U. S. Department of Education.
5. *Titanium dioxide/semiconducting nanoparticle/conducting polymer nanowire composites: electrical and optical properties*, \$100,000, Research Corporation Scialog.
6. *MSP-Start: Science and Math Applied Real-problem Teaching (SMART)*, \$299,012, National Science Foundation (**awarded**).
7. *CCLI-Phase II: Diverse Partnership for Teaching Quantum Mechanics and Modern*

- Physics with Photon Counting Instrumentation*, \$486,360, National Science Foundation (Senior Personnel; **awarded**).
8. *Confocal Laser Microscope & Optical Tweezers*, \$1,900, Adelphi University, 2009 President's Faculty Development Award (**awarded**).
 9. *MSP-Start: Science and Math Applied Real-problem Teaching (SMART)*, \$299,904, National Science Foundation.
 10. *RUI: Development of a Low-Cost, High-Efficiency, Multi-Spectrum Solar Cell (MSSC)*, \$299,476, National Science Foundation (Co-PI).
 11. *The Opportunity Program (TOP)*, \$620,000, National Science Foundation, 2007-2012 (Senior Personnel; **awarded**).
 12. *CAREER: Optical Nonlinearities of Semiconductor Nanoparticle/Polymer Composites*, \$530,231, National Science Foundation.
 13. *RUI: Quantification of Nonlocality by Conditioned Positive-Operator-Valued Measurements*, \$234,861, National Science Foundation (Co-PI).
 14. *CAREER: Optical Nonlinearities of Quantum Dot-Based Composites: From Fundamental Quantum Mechanics to Applications in Ultra-high Resolution Lithography*, \$414,596, National Science Foundation.
 15. *Implementation of Positive Operator-Valued Measurements on Photon Polarization States*, \$331,876, National Science Foundation (Co-PI).
 16. *Nonlinear and Quantum Optical Properties of Quantum Dots for Generation of New Sources of Quantum States of Light*, \$31,146, Research Corporation Cottrell College Science Award (**awarded**).
 17. *Precollege Outreach in GLOBECOM 2005*, \$5,500 of \$28,000 total for program, National Science Foundation (Sub-Contract as Pre-college Program Administrator; **awarded**).
 18. *Fundamental Analysis of Quantum Microdots for Potential Applications*, \$4,900, Adelphi University, 2005 President's Faculty Development Award. (Co-Investigator; **awarded**)
 19. *Collaborative Research for Quantum Optics Teaching Laboratory--Preparation for the Age of Quantum Information*, multi-university proposal with \$15,000 dedicated to Adelphi University, National Science Foundation.
 20. *Exploring the Quantum-Classical Boundary: Undergraduate Research in Classical and Quantum Teleportation*, \$29,776, Research Corporation Cottrell College Science Award.
 21. *Exploring the Quantum-Classical Boundary: Undergraduate Research in Classical and Quantum Teleportation*, \$4,500, Adelphi University, 2004 President's Faculty Development Award. (**awarded**)

Service & Professional Activities:

- Faculty Committee on Retention, Tenure, and Promotion (FCRTP) (2017-)
- Lotze Scholarship Committee, American Association of Physics Teachers (2016-)
- College of Arts & Sciences Academic Affairs Committee (2007-14; 2016-17); Chair (1/10-8/13)
- Laser Safety Officer (2017-)
- Faculty Senate, Physics Departmental Rep. (Sp 2004; Sp 2009; Sp 2010; Sp 2017-)
- University Safety Committee (2016-); Laser Safety Sub-Committee (2017-)

- Pre-Medical Council (2006-14; 2016-)
- Physics Unit Peer Review Committee (2009-14; 2016-)
- Math/CS Unit Peer Review Committee (2016)
- National Selection Committee (NSC) for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST), administered by the National Science Foundation (2010, 2011, 2017—panel chair)
- Faculty Advisor, Adelphi Physics Club (2003-2014); Co-Advisor (2016-)
-*Outstanding Chapter* of the Society of Physics Students ('06, '07, '08, '09, '10, '11, '12, '13, '16)
- STEP Steering Committee (2009-14; 2016-)
- Executive Planning Committee, American Association of Physics Teachers (2014-15)
- Nominating Committee, Association of College Honor Societies (2015)
- Adelphi Research Conference Organizing Committee (2004-2014); Co-Chair (2006-2011)
- Faculty Senate Academic Affairs Committee (Spring 2008-Fall 2009)
- College of Arts & Sciences Strategic Planning Committee (2010-2013)
- Senate Mapping Learning Goals Task Force (2011-2013); Chair (8/12-12/13)
- Society of Physics Students Zone 2 (NY, Ontario, Quebec) Councilor (2010-2014)
 - Committee Phi: Physics Career Opportunities (2013, Chair)
 - Committee A: Careers for Physics Baccalaureate Degree Holders (2012, Chair)
 - Committee C: Automating Sigma Pi Sigma (2011); Sigma Pi Sigma Issues (2010)
- Intellectual Property Committee (2006-14)
- NSF TOP Physics Mentor (2007-12)
- Environmental Studies Unit Peer Review Committee (2010-14)
- Bettelheim Award Review Committee (2010-14)
- Quantitative Reasoning General Education Assessment Committee (2006-14)
- Advisory Committee, University of Missouri-Rolla Electrical Engineering Reaccreditation (2007)
- Student & Pre-College Activities Chair, GLOBECOM 2005 (international conference of Communications Society of IEEE)
- Organized outreach to secondary school science classes (2005-14)
- Science Instructor for summer middle school outreach through Groundworks (a youth support organization in Brooklyn, NY—Summer 2006 and 2007)
- Junior Science & Humanities Symposium, LI Regional Reader & Judge (04, 05, 06, 07, 08)
- Rohm and Haas Electronic Materials Invitational Science Fair Judge (2006)
- Guided two Oceanside High School students in research projects (2005-06)
- Faculty Senate Admissions & Retention Committee Member (Spring 2004)
- Authored primary proposal to reinstate M.S. program in physics
- Reviewer for *Physical Review Letters* (a journal of the APS)
- Reviewer for *Physical Review A* (a journal of the APS)
- Reviewer for *Optics Express* (a journal of the OSA)
- Reviewer for *Optics Letters* (a journal of the OSA)
- Reviewer for *The Physics Teacher* (a journal of the AAPT)
- Reviewer for *IEEE Transactions on Education*
- Various recruitment & promotional activities—Update and development of departmental website; assistance in creation of departmental flyer and brochure; participation in university & departmental open houses and accepted student days.

Professional Registration and Societies:

- American Physical Society (APS)
 - Division of Laser Science (DLS)
- Optical Society of America (OSA)
- American Association of Physics Teachers (AAPT)
- American Association for the Advancement of Science (AAAS)
- Society of Physics Students (SPS)
- SPIE—The International Society for Optical Engineering
- Sigma Pi Sigma—Physics Honor Society
- Omicron Delta Kappa—Leadership Honor Society
- Tau Beta Pi—Engineering Honor Society
- Eta Kappa Nu—Electrical Engineering Honor Society
- Advanced Laboratory Physics Association (ALPhA)
- Institute of Electrical and Electronics Engineers (IEEE)
 - Photonics Society (formerly LEOS)
- Registered Engineer-in-Training, Missouri, 1995

Student Research Advised:

Allan Delarosa (Spring 2017-)—Senior in Physics
-McDonnell Scholar, Summer 2017

Muhammad Aziz (Spring 2017-)—Senior in Physics

Hamid Jalili (Summer 2017-)—Junior in Physics

Chloe Ong (Summer 2017-)—Sophomore in Physics

Amandeep Kaur (Spring 2017-)—Sophomore in Physics

Kasey Hernandez (Spring 2017-)—Sophomore in Physics

Zoya Shafique (Summer 2017-)—Sophomore in Physics

Egla Ochoa-Madrid (Spring 2017)—B.S. Physics 2017
-Acoustics research

Xiang Hua (Summer 2016)—B.S. Physics (Stony Brook) 2016
-LTC student; broadband waveplate study

Grant Richmond (Summer 2016)—Senior in Physics (Stony Brook)
-LTC student; broadband waveplate study

Jessica Kurlander (Summer 2016)—Junior in Physics (Stony Brook)
-LTC student; broadband waveplate study

Angela Pizzuto (Summer 2016)—B.S. Physics (Stony Brook) 2016
-LTC student; cylindrical diffraction study

Alex Gifford (Summer 2016)—Senior in Physics (Stony Brook)
-LTC student; cylindrical diffraction study

Max Stanley (Summer 2016)—Junior in Physics (Stony Brook)
-LTC student; Gaussian mode study

Jay Rutledge (Summer 2016)—Junior in Physics (Stony Brook)
-LTC student; Gaussian mode study

Marcus Lo (Summer 2016)—Senior in Physics (Stony Brook)
-LTC student; Gaussian mode study

Hannah Pell (Summer 2015)—B.S. Physics/B.A. Music (Lebanon Valley College) 2016
-SPS SOCK Intern; acoustics educational project

- Shauna LeFebvre (Summer 2015)—B.S. Physics (Union College) 2016
 -SPS SOCK Intern; acoustics educational project
- Sajan Shrestha (Summer 12-Summer 13)—B.S. Physics, 2013
 -McDonnell Scholar, Summer 2012
 -Presented at Optical Society of America 96th Annual Meeting, Rochester, NY, October 2012.
- Danielle Sofferman (Summer 11-Summer 13)—B.S. Physics, 2013
 -McDonnell Scholar, Summer 2011
 -Presented at Optical Society of America 96th Annual Meeting, Rochester, NY, October 2012.
- Monika Mohacsi (Fall 12-Spring 13)—B.S. Physics, 2015
 -Honor's Thesis Student
- Chris Coen (Summer 12-Fall 13)—B.S. Physics, 2016
 -Honor's Thesis Student
- Steve Jaycox (Fall 12-Fall 13)—B.S. Physics, 2016
 - Honor's Thesis Student
- Justin Dove (Fall 08-Sum 12)—B.S. Physics & Math, 2012; Honor's research on quantum optics
 - Presented at American Physical Society Annual Meeting, Feb. 2010, Washington, D.C.
 - Presented at 24th National Conference on Undergraduate Research, April 2010, Missoula, MT
 - Awarded 1st Place Physical Science Talk at the 7th Annual Adelphi University Research Conference
 - Presented at the Rochester Symposium for Undergraduate Physics Students, Society of Physics Students Zone 2 Meeting, West Point, NY, April 2009
 - Awarded 1st Place Physical Science Talk at the 6th Annual Adelphi University Research Conference
 - Awarded 2nd Place Poster (with Mijael Damian) at the 2011 Society of Physics Zone 2 Meeting, Ithaca, NY
 - Presented at the 8th Annual Adelphi University Research Conference
- Alyssa Greico (Fall 11-Spring 12)—B.S. Physics, 2012
 -Honor's Thesis Student
- Brian Capozzi (Spring 09-Spring 10)—B.S. Physics, 2010
 - Completed his Honor's Thesis on "Fundamental Origins of Complementarity"
- Mijael Damian (Spring 11-Summer 11)—B.S. Physics, 2012
 - Awarded 2nd Place Poster (with Justin Dove) at the 2011 Society of Physics Zone 2 Meeting, Ithaca, NY
 - Presented at the 8th Annual Adelphi University Research Conference
 - McDonnell Scholar, Summer 2011
- Anthony Kolodzinski (Fall 08-Spr 11)—B.S. Physics, 2012; Honor's research on nonlinear optics
 - Presented at American Physical Society Annual Meeting, Feb. 2010, Washington, D.C.
 - Presented at 24th National Conference on Undergraduate Research, April 2010, Missoula, MT
 - Presented at 7th Annual Adelphi University Research Conference
- Peter Cruz (Fall 08-Spring 11)—B.S. Physics, 2012; research on quantum dots
- Kaitlin O'Neill (Spring 07-Spring 09)—B.S. Physics 2009
 - Presented at the 1st Commission on Independent Colleges and Universities Undergraduate

Research Exposition in Albany, NY

- Work accepted to the 22nd National Conference on Undergraduate Research in Salisbury, MD
- Awarded 1st Place Physical Science Poster at the 5th Annual Adelphi University Research Conference

Nicholas Miceli (Fall 08-Spring 09)—Researched nonlinear optics

Camilo Malagon (Fall 04-Summer 07)—B.S. Physics 2007

- Completed his Honor's Thesis on complementarity with quantum entangled photons
- Will be co-author on journal submission involving thesis project
- Awarded 1st Place Science Talk at the 4th Annual Adelphi University Research Conference

Charles Anderson (Spring 05-Sum 06)—B.S. Physics & Philosophy 2006; researched nonlinearities of quantum dots

- Awarded 1st place student presentation at the New York State Section of the American Physical Society Fall 2005 Symposium
- Co-author on paper published in Optical Engineering (see publications section above)
- Co-author on presentation at QELS 2006 (see presentations section above)
- Presented at the 2005 Annual Meeting of the Optical Society of America in Tucson, AZ
- Presented at the March Meeting of the American Physical Society in Baltimore, MD
- Presented at the 20th National Conference on Undergraduate Research in Asheville, NC
- Awarded 1st Place Science Talk at the 3rd Annual Adelphi University Research Conference

Deanna Nohs (Spring 04-Spring 05)—B.S. Physics 2005; researched quantum entanglement

- Presented at the 19th National Conference on Undergraduate Research in Lexington, VA
- Awarded 1st Place Science Poster at the 2nd Annual Adelphi University Research Conference

Marie Chesaniuk (Fall 05-Spr 06)—B.A. English 2006; researched nonlinearities of quantum dots

Gaurav Kaushik (Spring 05-Spring 07)—Honor's Thesis research on quantum entanglement

Hoda Rifai (Spring 07)—Researched nonlinear optics

- Presented at the 4th Annual Adelphi University Research Conference

George Harrison (Spring 07)— Researched nonlinear optics

- Presented at the 4th Annual Adelphi University Research Conference

Yusuf Yusufov (Summer-Fall 07)—Researched quantum entanglement

Earland Pete (Spring 07)— Researched nonlinear optics

- Presented at the 4th Annual Adelphi University Research Conference

Haralampos (Bob) Psaradellis (Summer 05)—B.S. Physics 2005; researched low noise optical detectors

Alexandre Manov (Fall 03-Spring 05)—B.S. Physics & Math 2005; researched quantum entanglement

- Presented at the 1st Annual Adelphi University Research Conference

Faith Barclay (Spring 04-Summer 04)—B.S. Physics 2004; researched quantum entanglement

Dulce Andrade (Spring 04)—B.S. Physics 2004; researched quantum entanglement

Charles DiGennaro (Fall 03-Summer 04)—B.S. Physics 2005; researched quantum entanglement

Bryan Mytko (Spring 05)—B.S. Physics 2005; researched quantum dots

Vismay Shah (Fall 05-Spring 06)—Researched quantum dots

Courses Taught at Adelphi:

- Physics 111—College Physics I: Lec—Sm 04, 05, 06, 07, 08, 09, 10, 11, 12, 13
Lab—F 03; Sm 04, 05, 06, 07, 08, 09, 10, 11, 12, 13
- Physics 112—College Physics II: Lec—Sm 04, 05, 08, 16, 17
Lab— Sm 04, 05, 08, 16, 17; Sp 06, 07

- Physics 113—Physics for Science Majors I: Lec—Sm 05, 07, 08, 13; F 08, 12, 13, 16
Lab—Sm 04, 05, 06, 07, 08, 13; F 05
- Physics 114—Physics for Science Majors II: Lec—Sm 05, 08, 16, 17; Sp 09, 13, 16, 17
Lab—Sm 04, 05, 08, 16, 17; Sp 07
- Physics 123—Basic Science Behind the Headlines—Sp 10, 11, 12, 13, 17; F 13, 16
- Physics 211—Mathematical Methods in Physics I—F 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13
- Physics 216—Modern Physics—Sm 04
- Physics 243—Analog Circuits: Lec and Lab—F 04, 06, 07, 08, 09, 10, 11, 12, 13, 16 (lec only)
- Physics 244—Digital Circuits: Lec and Lab—Sp 04, 05, 06, 07, 08, 09, 11, 12, 13, 16
- Physics 301—Mathematical Methods in Physics II—Sp 05, 06, 07, 08, 09, 10, 11, 12, 13
- Physics 302—Theoretical Physics—Sp 09
- Physics 322—Advanced Physics: Lecture—Sp 07
Lab—Sp 04, 07
- Physics 390—Special Topics:
Quantum Mechanics II—Sp 06, 12
- Physics 428—Quantum Mechanics—F 05, 06, 10, 16
- Physics 490—Independent Study:
Modern Optical Physics—F 03
Experimental Optical Physics—Sp 04
Introduction to Quantum Optics—Sp 04
Introduction to Thermodynamics, Electronics, and Optics Lab—Sm 04
Engineering Mathematics—F 04
Introduction to Quantum Physics—F 04
Experimental Quantum Physics—Sp 05
Optics—Sp 05
Solid State Physics—Sp 05, 07
Experimental Nonlinear Quantum Dots—Sp 05
Partial Differential Equations—Sp 07
Introduction to Quantum Entanglement—Sp 09
Introduction to Nonlinear Optics—Sp 09
Analog Circuits—Sp 10
Quantum Mechanics II—Sp 10, F 10
Experimental Quantum Optics—F 10
Quantum Mechanics—Sp 11
Physics Internship—Sm 11
Solid State for Chemists—F 11
Applications of Quantum—F 11
Quantum Information—F 11
Particle Physics & Quantum Field Theory—Sp 12
Applied Nonlinear Optics—Sp 12
Thought Experiments—F 16
Physics of Semiconductors—Sp 17 (4 students)
- Education 550—S/T: Science and Math Applied Real-problem Teaching—Sm 10, 11

Previous Experience:

- Graduate Research Assistant, August 1999-August 2003, University of Rochester, Rochester, NY
- Graduate Teaching Assistant, August 1998-May 1999, University of Rochester
- Graduate Teaching Assistant, August 1995-July 1997, University of Missouri-Rolla, Rolla, MO; taught EE 282—Circuits and Machines and seven sections of EE 220—Electronic Circuits Lab
- Graduate Research Assistant, Summer 1995 and Spring 1996, University of Missouri-Rolla
- Student Grader, August 1994-May 1995, University of Missouri-Rolla
- EXCEL Facilitator—Calculus I & II, August 1993-December 1994, University of Missouri-Rolla
- Electrical Engineering Departmental Aid, Summer 1994, University of Missouri-Rolla
- Engineering Intern, Summer 1993, Chillicothe Municipal Utilities, Chillicothe, MO

Previous Activities:

- University of Rochester Tae Kwon Do, 1999-2004; Black Belt 2001
- Optical Society of Greater St. Louis, Secretary, 1995-1997
- Institute of Electrical and Electronics Engineers, UMR Student Branch
 - Secretary, Spring 1995
 - Help Sessions Chair, Spring and Fall 1994
- Eta Kappa Nu—Electrical Engineering Honor Society UMR Student Branch
 - President, Fall 1995
 - Corresponding Secretary, Spring 1995
 - Special Projects Chair, Spring 1996
- UMR TECHS—Teaching, Encouraging, Caring, and Helping Students, Fall 1992-Spring 1993
- Chancellor's Leadership Class, Fall 1991-Spring 1992