

Adam Mock

Assistant Professor
Central Michigan University
Department of Engineering and Technology
ET 100
Mt. Pleasant MI 48859
mock1ap@cmich.edu

Office: (989) 774-7702
Cell: (323) 630-9648
Fax: (989) 774-4900

Education

Ph.D. Electrical Engineering, University of Southern California - 2003-2009
Thesis title: "Analysis of photonic crystal double heterostructure resonant cavities"
School of Engineering Doctoral Fellowship (2003-2007), Magna Cum Laude, GPA 3.9

B.S. Electrical Engineering, Columbia University - 2003
Tau Beta Pi, Dean's List, Magna Cum Laude, GPA 3.9

Research Experience

Research Assistant 2004-2009
Advisor: John O'Brien University of Southern California
Parallelized finite-difference time-domain numerical simulation of nanophotonic devices.

Undergraduate Research Assistant 2003
Advisor: Tony Heinz Columbia University
Numerical analysis of optical phase spectrum in short pulses.

REU Summer Researcher 2002
Advisor: Steve Rand University of Michigan
Statistical analysis of coherence length in random powder lasers.

Summer Researcher 2001
Advisor: Patrick McCann University of Oklahoma
Absorption spectroscopy for real-time measurements of biomarkers in human breath.

Professional Activities

Professional Membership: Optical Society of America; Institute of Electrical and Electronics Engineers; IEEE Photonics Society; Applied Computational Electromagnetics Society

Technical Reviewer for the following journals: Photonics Research, Journal of Modern Optics, World Scientific Journal, IEEE Transactions on Antennas and Propagation, Journal of Lightwave Technology, Journal of Mechanical Engineering Science, Crystals, Journal of Mechanical Engineering Science, CRC Press, Optical Materials, Applied Physics Letters, IEEE Photonics Journal, Applied Computational Electromagnetics Society Journal, Applied Optics, IEEE Journal of Quantum Electronics, IEEE Journal of Selected Topics in Quantum Electronics, Optics Letters, Progress in Electromagnetics Research, Optics Express

Journal Publications (Total: 25, H-index: 9, Citations: 318, I.F. = Impact Factor)

Adam Mock, “Low-power all-optical switch based on time-reversed microring laser,” IEEE Photonics Journal **4**(6) 2229-2235 (2012). *I.F. 2.36, cited 2 times*

Adam Mock, “Padé approximant spectral fit for FDTD simulation of graphene in the near infrared,” Optical Materials Express, **2**(6) 771-781 (2012). *One of the top ten most downloaded papers from Optical Materials Express in June 2012. I.F. 2.32, cited 7 times*

Adam Mock and Waylin Wing, “Confined and propagating modes of microstructured optical fibers with three dimensional geometry variation,” IEEE Journal of Lightwave Technology **30**(13) 2134-2142 (2012). *I.F. 2.78, cited 0 times*

Ling Lu, Adam Mock and John O’Brien, “Efficient coupling between a photonic crystal nanocavity and a waveguide with directional end-facet emission,” Journal of Optics **14**(5) 055502 (2012). *I.F. 1.92, cited 0 times*

Adam Mock, “Modal analysis of nanoplasmonic multilayer spherical resonators,” IEEE Photonics Journal **3**(4) 765-776 (2011). *I.F. 2.32, cited 2 times*

Adam Mock, “Compact FDTD formulation for structures with spherical invariance,” IEEE Transactions on Antennas and Propagation **59**(3) 987-993 (2011). *I.F. 2.15, cited 3 times*

Adam Mock, “First principles derivation of microcavity semiconductor laser threshold condition and its application to FDTD active cavity modeling,” Journal of the Optical Society of America B **27**(11) 2262-2272 (2010). *I.F. 2.19, cited 8 times*

Adam Mock, Ling Lu and John O’Brien, “Space group theory and Fourier space analysis of two-dimensional photonic crystal waveguides,” Physical Review B **81** 155115 (2010). *I.F. 3.69, cited 8 times*

Adam Mock and John O’Brien, “Strategies for reducing the out-of-plane radiation in photonic crystal heterostructure microcavities for continuous wave laser applications,” IEEE Journal of Lightwave Technology **28**(7) 1142-1150 (2010). *I.F. 2.78, cited 8 times*

Ling Lu, Adam Mock, Eui Hyun Hwang, John O’Brien and P. Danial Dapkus, “High peak power efficient edge-emitting photonic crystal nanocavity lasers,” Optics Letters **34**(17) 2646-2648 (2009). *I.F. 3.38, cited 3 times*

Ling Lu, Adam Mock, Mahmood Bagheri, Jiang-Rong Cao, Sang-Jun Choi, John O’Brien and P. Danial Dapkus, “Gain compression and thermal analysis of a sapphire-bonded photonic crystal microcavity laser,” IEEE Photonics Technology Letters **21**(17) 1166-1168 (2009). *I.F. 2.04, cited 4 times*

Adam Mock, Ling Lu, Eui Hyun Hwang, John D. O’Brien and P. Daniel Dapkus, “Modal analysis of photonic crystal double heterostructure laser cavities,” IEEE Journal on Special Topics in Quantum Electronics **15**(3) 892-900 (2009). *I.F. 4.08, cited 12 times*

Ling Lu, Adam Mock, Tian Yang, Min Hsiung Shih, Eui Hyun Hwang, Mahmood Bagheri, Andrew Stapleton, Stephen Farrell, John O’Brien and P. Daniel Dapkus, “Hundred micro-watts peak output power from an edge-emitting photonic crystal double-heterostructure laser,” Applied Physics Letters **94**(11) 111101 (2009). *Featured on the cover of the March 16, 2009 issue of Applied Physics Letters. Awarded University of Southern California Electrical Engineering best student paper, May 2009. I.F. 3.79, cited 11 times*

Adam Mock and John D. O'Brien, "Direct extraction of large quality factors and resonant frequencies from Padé interpolated resonance spectra," *Optical and Quantum Electronics* **40**(14) 1187-1192 (2009). *I.F. 0.99, cited 8 times*

Ling Lu, Adam Mock, Mahmood Bagheri, Eui Hyun Hwang, John D. O'Brien and P. Daniel Dapkus, "Double-heterostructure photonic crystal lasers with lower thresholds and higher slope efficiencies obtained by quantum well intermixing," *Optics Express* **16**(22) 17342-17347 (2008). *I.F. 3.55, cited 6 times*

Adam Mock, Ling Lu and John O'Brien, "Spectral properties of photonic crystal double heterostructure cavities," *Optics Express* **16**(13) 9391-9397 (2008). *I.F. 3.55, cited 17 times*

M. H. Shih, Mahmood Bagheri, Adam Mock, S. J. Choi, J. D. O'Brien, P. D. Dapkus, Wan Kuang, "Identification of modes and single mode operation of sapphire-bonded photonic crystal lasers under continuous-wave room temperature operation," *Applied Physics Letters* **90** 121116 (2007). *I.F. 3.79, cited 10 times*

Tian Yang, Adam Mock, John D. O'Brien, Samuel Lipson, Dennis G. Deppe, "Lasing characteristics of InAs quantum dot microcavity lasers as a function of temperature and wavelength," *Optics Express* **15**(12) 7281-7289 (2007). *I.F. 3.55, cited 6 times*

Tian Yang, Adam Mock, John D. O'Brien, Samuel Lipson, Dennis G. Deppe, "Edge-emitting photonic crystal double-heterostructure nanocavity lasers with InAs quantum dot active material," *Optics Letters* **32**(9) 1153-1155 (2007). *I.F. 3.38, cited 19 times*

M. H. Shih, Adam Mock, M. Bagheri, N.-K. Suh, S. Farrell, S.-J. Choi, J. D. O'Brien, P. D. Dapkus, "Photonic crystal lasers in InGaAsP on a SiO₂/Si substrate and its thermal impedance," *Optics Express* **15**(1) 227-232 (2007). *I.F. 3.55, cited 8 times*

John O'Brien, Wan Kuang, Jiang-Rong Cao, Min-Hsiung Shih, Po-Tsung Lee, Mahmood Bagheri, Adam Mock, W. K. Marshall, "Photonic crystal microcavity lasers," *Journal of Physics D* **40**(9) 2671-2682 (2007). *(Invited) I.F. 2.53, cited 5 times*

M. H. Shih, Wan Kuang, Adam Mock, Mahmood Bagheri, E. H. Hwang, J. D. O'Brien, P. D. Dapkus, "High-quality-factor photonic crystal heterostructure laser," *Applied Physics Letters* **89** 101104 (2006). *I.F. 3.79, cited 28 times*

Wan Kuang, Woo Jun Kim, Adam Mock, John O'Brien, "Propagation loss of line-defect photonic crystal slab waveguides," *IEEE Journal on Selected Topics in Quantum Electronics* **12**(6) 1183-1195 (2006). *I.F. 4.08, cited 20 times*

S. M. Redmond, S. L. Oliveira, G. L. Armstrong, H.-Y. Chan, E. Mattson, Adam Mock, B. Li, J. R. Potts, S. C. Rand, J. Marchal, T. Hinklin, R. M. Laine, "Electrical Generation of Stationary Light in Random Scattering Media", *Journal of the Optical Society of America B* **21**(1) 214-222 (2004). *I.F. 2.19, cited 14 times*

Chad Roller, Khosrow Namjou, James D. Jeffers, Mark Camp, Adam Mock, Patrick J. McCann, Joe Grego, "Nitric Oxide Breath Testing Using Tunable Diode Laser Absorption Spectroscopy: Application in Respiratory Inflammation Monitoring," *Applied Optics* **41** 6018 (2002). *I.F. 1.69, cited 82 times*

Conference Presentations (*Total: 29, 7 Invited*)

Adam Mock "Electrodynamic modeling of graphene photonic devices," to be presented at Energy Materials Nanotechnology Fall Meeting, Orlando, FL, USA December 2013 (*Invited*).

Adam Mock, “Dynamic material response of graphene for FDTD simulation of passive modelocking,” 13th International Conference on Numerical Simulation of Optoelectronic Devices, Presentation TuB3, Vancouver, Canada, August 2013.

Adam Mock, “FDTD simulation of passively mode-locked lasers using a dynamic saturable absorption model for graphene,” OSA Photonics Congress: Integrated Photonics Research, Silicon and Nano-Photonics, Presentation IM2B.5, Rio Grande, Puerto Rico, July 2013.

Adam Mock, “Nanophotonic device analysis using time-domain methods,” 14th International Conference on Mathematical Methods in Electromagnetic Theory, Plenary Session 1, p. 23-28, Kharkiv, Ukraine, August 2012 (*Invited*).

Adam Mock and Waylin Wing, “FDTD modal analysis of microstructured optical fiber with longitudinal geometry variation,” 28th Annual Review of Progress in Applied Computational Electromagnetics, Session 20, p. 629-633, Columbus, OH, April 2012.

Adam Mock, “Subgridding scheme for FDTD in cylindrical coordinates,” Progress in Electromagnetics Research Symposium, Session 3P1b, Suzhou, China, September 2011.

Adam Mock and Paul Trader, “Photonic crystal fiber analysis using cylindrical FDTD with Bloch boundary conditions,” Progress in Electromagnetics Research Symposium, Session 2A6, Cambridge, MA, July 2010.

John O’Brien, Adam Mock and Ling Lu, “Modeling Photonic Crystal Microcavity Lasers,” Progress in Electromagnetics Research Symposium, Session 2P5, Cambridge, MA, July 2010 (*Invited*).

Adam Mock, “Compact FDTD formulation for structures with spherical invariance,” 26th Annual Review of Progress in Applied Computational Electromagnetics, Session 10, Tampere, Finland, April 2010.

Adam Mock and John D. O’Brien, “Quality factor dependence on vertical slab structure in photonic crystal double heterostructure resonant cavities,” Integrated Photonics and Nanophotonics Research and Applications Topical Meeting, July 2009, Honolulu, HI, USA, Paper IMF2.

Adam Mock and John D. O’Brien, “Photonic crystal laser threshold analysis using 3-D FDTD with a material gain model,” Integrated Photonics and Nanophotonics Research and Applications Topical Meeting, July 2009, Honolulu, HI, USA, Paper ITuD6.

Ling Lu, Adam Mock, Eui Hyun Hwang, John D. O’Brien and Paul Daniel Dapkus, “High peak power efficient edge-emitting photonic crystal nanocavity lasers,” Integrated Photonics and Nanophotonics Research and Applications Topical Meeting, July 2009, Honolulu, HI, USA, Paper ITuB3.

J. O’Brien, L. Lu, Adam Mock, M. Bagheri, “Photonic crystal heterostructure lasers,” International Conference on Transparent Optical Networks, June 2009, Azores, Portugal Paper We.D1.3 (*Invited*).

Ling Lu, Mahmood Bagheri, Adam Mock, Jiang-Rong Cao, Sang-Jun Choi, John D. O’Brien and P. Daniel Dapkus, “Gain compression and thermal analysis of a sapphire-bonded photonic crystal microcavity laser under various duty cycles,” Conference on Lasers and Electro-Optics, May 2009, Baltimore, MA, USA, Paper CTuH2.

Adam Mock, Ling Lu, Eui Hyun Hwang, John D. O’Brien and P. Daniel Dapkus, “Numerical investigation of multiple bound states in photonic crystal double heterostructure resonant cavities,” Lasers and Electro-Optics Society Annual Meeting, November 2008, Newport Beach, CA, USA, Paper TuDD4.

John O'Brien, Mahmood Bagheri, Ling Lu, Stephen Farrell and Adam Mock, "Photonic Crystal Device Components for Integrated Optics," Pacific Rim Meeting on Electrochemical and Solid-State Science, October 2008, Honolulu, HI, USA, Abstract #2036.

Adam Mock and John D. O'Brien, "Convergence analysis of Padé interpolation for extracting large quality factors in photonic crystal double heterostructure resonant cavities," Conference on Numerical Simulation of Optoelectronic Devices, September 2008, Nottingham, England, Paper TuB3.

Adam Mock and John D. O'Brien, "Dependence of silicon-on-insulator waveguide loss on lower oxide cladding thickness," Integrated Photonics and Nanophotonics Research and Applications Topical Meeting, July 2008, Boston, MA, USA, Paper IWG4.

John D. O'Brien, M. Bagheri, L. Lu, T. Yang, M.-H. Shih, Adam Mock and P. D. Dapkus, "Photonic crystal microcavity lasers," International Conference on Transparent Optical Networks, June 2008, Athens, Greece, Paper We.A2.1 (*Invited*).

Adam Mock and John D. O'Brien, "Strategies for reducing out of plane radiation in photonic crystal double heterostructure resonant cavities," Conference on Lasers and Electro-Optics, May 2008, San Jose, California, USA, Paper CThCC6.

Ling Lu, Tian Yang, Adam Mock, M. H. Shih, E. H. Hwang, Mahmood Bagheri, Andrew Stapleton, Stephen Farrell, J. D. O'Brien, P. D. Dapkus, "60 microWatts of fiber-coupled peak output power from an edge-emitting photonic crystal heterostructure laser," Conference on Lasers and Electro-Optics, May 2007, Baltimore, Maryland, USA, Paper CMV3.

Adam Mock, Wan Kuang, M. H. Shih, E. H. Hwang, J. D. O'Brien, P. D. Dapkus, "Spectral Properties of Photonic Crystal Double-Heterostructure Resonant Cavities," Laser and Electro-Optics Society Annual Meeting, October 2006, Montreal, Canada, Paper ML4.

J. O'Brien, M. H. Shih, T. Yang, M. Bagheri, Adam Mock, W. K. Marshall, P. D. Dapkus, D. Deppe, "Photonic Crystal Devices," IEEE Nano, July 2006, Cincinnati, OH, USA, Paper S2.1 (*Invited*).

M. H. Shih, Adam Mock, E. H. Hwang, W. Kuang, J. D. O'Brien, P. D. Dapkus, "Photonic Crystal Heterostructure Laser with Lattice-Shifted Cavity," Conference on Lasers and Electro-Optics, May 2006, Long Beach, California, USA, Paper CMKK3.

M. H. Shih, Wan Kuang, Mahmood Bagheri, Adam Mock, S. J. Choi, J. D. O'Brien, P. D. Dapkus, "High Side-Mode-Suppression-Ratio Sapphire-Bonded Photonic Crystal Laser under Continuous-Wave Operation," Integrated Photonics Research and Applications Topical Meeting, April 2006, Uncasville, Connecticut, USA, Paper ItuC4 (*Invited*).

Tian Yang, Samuel Lipson, Adam Mock, John D. O'Brien and Dennis G. Deppe, "Lasing Behavior of InAs Quantum Dot Micro-Cavities as a Function of Wavelength and Temperature," Integrated Photonics Research and Applications Topical Meeting, April 2006, Uncasville, Connecticut, USA, Paper ItuE4.

M. H. Shih, W. Kuang, M. Bagheri, Adam Mock, E. H. Hwang, J. D. O'Brien, P. D. Dapkus, "Photonic Crystal Heterostructure Laser Cavity," Laser and Electro-Optics Society Annual Meeting, October 2005, Sydney, Australia, Paper TuJ7.

Adam Mock, C. Roller, J. Jeffers, K. Namjou, and P. J. McCann, "Real-Time Ground Level Atmospheric Nitric Oxide Measured by Calibrated TDLAS System," (poster) Topical Meeting on Laser Applications to Chemical and Environmental Analysis, February 2002, Boulder, CO, USA, Paper SaC4.

C. Roller, K. Namjou, J. Jeffers, Adam Mock, P. J. McCann J. Grego, "Longitudinal studies of nitric oxide and carbon dioxide in human breath with a single IV-VI mid-IR laser", Topical Meeting on Laser Applications to Chemical and Environmental Analysis, February 2002, Boulder, CO, USA, Paper ThC3.

Book Chapters

Adam Mock, "Modeling graphene plasmonics using the finite-difference time-domain method," in *Handbook of Graphene Science*, CRC Press (under review).

Adam Mock and Ling Lu, "Two-Dimensional Photonic Crystals With Glide-Plane Symmetry for Integrated Photonics Applications," in *Photonic Crystals: Fabrication, Band Structure and Applications*, edited by Venla E. Laine, Chapter 10, pages 209-244, Nova Publishers, 2011.

Adam Mock and Ling Lu, "Two-Dimensional Photonic Crystal Microcavities for Chip-scale Laser Applications," in *Advances in Lasers and Electro Optics* Chapter 2, pages 31-52, IN-TECH, Vienna, Austria, 2010.

Tian Yang, Adam Mock and John D. O'Brien, "Quantum Dot Microcavity Lasers," in *VLSI Micro- and Nanophotonics: Science, Technology, and Applications*, Eds. El-Hang Lee, Louay Eldada, Manijeh Razeghi and Chennupati Jagadish, CRC Press 2010.

Presentations

CMU Science of Advanced Materials (SAM) Seminars March 2011 and April 2013.

CMU Faculty Excellence Exhibition Poster March 2012.

CMU McNair Scholars Seminars February 2010 and February 2011.

SAM 690b: Applied Electrochemistry Short Course Guest Speaker July 2010.

"Photonic crystal devices," Western Michigan University Physics Colloquium, November 2010.

"Analysis of photonic crystal double heterostructure resonant cavities," University of Southern California thesis defense, June 2009.

"Analysis and design of photonic crystal resonant cavities," Sandia National Laboratory Postdoc Candidate Seminar, March 2009.

"Analysis and design of photonic crystal resonant cavities," Oak Ridge National Laboratory Postdoc Candidate Seminar, March 2009.

"Analysis and design of photonic crystal resonant cavities," University of Iowa Faculty Candidate Seminar, March 2009.

"Analysis and design of photonic crystal resonant cavities," Central Michigan University Faculty Candidate Seminar, March 2009.

"Time-domain numerical analysis of photonic crystal resonant cavities," University of Southern California Photonics Seminar, October 2008.

"Including material gain modeling in the simulation of photonic crystal lasers," University of Southern California thesis proposal, March 2008.

“Bound state formation in photonic crystal double heterostructure resonant cavities,” University of Southern California Photonics Seminar, October 2006.

“Calculation of defect modes in photonic crystals using Wannier functions,” University of Southern California Photonics Seminar, June 2005.

Proposals

“REU: Research Experience For Undergraduates in Materials Science and Nanotechnology at Central Michigan University,” National Science Foundation, \$283,960, Senior Personnel. Submitted 8/2013 (pending).

“CAREER: Complete absorption of coherent and incoherent electromagnetic waves,” National Science Foundation, \$400,000, Principal Investigator. Submitted 7/2013 (pending).

“Fast response fiber refractometer,” Ocean Optics, \$10,000, Principle Investigator. Submitted 8/2012 (declined).

“CAREER: Physics and engineering of broadband and omnidirectional coherent perfect absorbers via time-reversed lasing,” National Science Foundation, \$400,001, Principal Investigator. Submitted 7/2012 (declined).

“Nonlinear and surface plasmon optical devices using infiltrated photonic crystal fiber,” National Science Foundation, \$374,075. Principal Investigator. Submitted 2/2012 (declined).

“CMU Early Career Grant: Metal infiltrated microstructured optical fibers,” Central Michigan University, \$15,000. Principal Investigator. 6/1/2012-12/31/2013 (funded).

“REU Site for community college students and pre-service teachers in engineering and applied sciences,” National Science Foundation, \$282,018. Senior personnel. Submitted 8/2011 (declined).

“RET Site on multidisciplinary engineering research for rural Michigan’s future,” National Science Foundation, \$374,546. Senior personnel. Submitted 3/2011 (declined).

“Numerical and experimental study of graphene infiltrated microstructured optical fibers,” National Science Foundation, \$415,087. Principal Investigator. Submitted 2/2011 (declined).

“NUE: Application driven courses and practical senior design projects utilizing nanotechnology,” National Science Foundation, \$200,000. Principal Investigator. Submitted 4/2010 (declined).

“Optical characterization of microstructured optical fibers,” CMU College of Science and Technology Funds for Advancing Research (FAR), \$48,000. Principal Investigator. 5/2010-5/2012 (funded).

“IGERT: Advanced materials by design,” National Science Foundation. Senior personnel. Preproposal submitted 3/2010 (declined).

“Numerical study of microstructured optical fibers with additional longitudinal microstructure,” National Science Foundation, \$318,815. Principal Investigator. Submitted 2/2010 (declined).

Student Research Advising

Sheldon Hewlett, Kasey Saunders, Andrew Fawcett, “Designing and building a direct laser writer for microfabrication,” Research Experiences for Teachers Open House, August 16, 2013.

Waylin Wing and Adam Mock, “Undergraduate experimental research in optics and photonics,”

ASEE North-Central Section Conference, Columbus OH, 2013.

Waylin Wing, "Generating optical angular momentum (OAM) in a free space laser beam," Presented at Student Research and Creative Endeavors Exhibition, Posters at the Capitol, April 2013.

Shu Feng and Jiao Liang, "Laser writer for microfabrication," Presented at Student Research and Creative Endeavors Exhibition, April 2013.

Shu Feng and Jiao Liang, "Laser writer for microfabrication," Undergraduate Research and Creative Endeavors Grant, \$500, November 2012.

Waylin Wing, "Fiber optic ring laser using an erbium doped fiber laser", Presented at Student Research and Creative Endeavors Exhibition, Posters at the Capitol, April 2012.

Waylin Wing, "Solitons in fiber ring laser," Undergraduate Research and Creative Endeavors Grant, \$500, March 2012.

Shu Feng and Jiao Liang, "Laser interferometer for high precision measurement," Presented at Student Research and Creative Endeavors Exhibition, April 2012.

Charles Daubenspeck, Phil Dotzla, Nate Duthie, Kevin Petsch, "Automated parking space locator", Senior Capstone Project, Presented at: Student Research and Creative Endeavors Exhibition, American Society of Engineering Education North Central Section Conference, April 2012.

Charles Daubenspeck, Phil Dotzla, Nate Duthie, Kevin Petsch, "Automated parking space locator", Undergraduate Research and Creative Endeavors Grant, \$500, November 2011.

Kasey Hixson, Chris Romanowski, Paul Trader, "Free-space optical communications", Senior Capstone Project, Presented at: Student Research and Creative Endeavors Exhibition, American Society of Engineering Education North Central Section Conference, April 2011.

Julie Mitchell, "Remote access vehicle data acquisition", Student Research and Creative Endeavors Exhibition, April 2011.

Richard Muysenberg, "Residential wind power: an engineering analysis ", Student Research and Creative Endeavors Exhibition, April 2011.

Kasey Hixson, Chris Romanowski, Paul Trader, "Free-space optical communications", Undergraduate Research and Creative Endeavors Grant, \$350, November 2010.

Paul Trader, "Design and analysis of a photonic crystal fiber", Presented at Student Research and Creative Endeavors Exhibition, Posters at the Capitol, April 2010.

Paul Trader, "Analysis and fabrication of photonic crystal fibers," Undergraduate Research and Creative Endeavors Grant, \$500, November 2009.

Undergraduate Research Alumni

Waylin Wing, graduated 2013, currently pursuing PhD in photonics at University of Alabama at Birmingham.

Shu Feng, graduate 2013, currently pursuing MS at Texas A&M University.

Jiao Liang, graduated 2013, currently pursuing MS at University of Southern California.

Paul Trader, graduated 2011, currently pursuing PhD in photonics at Johns Hopkins University.

Current Student Researchers

Sheldon Hewlett, SAM PhD student; Enhanced optical scattering via nanoparticle dispersions; Microfabrication via direct laser writing; Metal coating in high aspect ratio microstructures.

Taylor Warczensky, senior; 2.4 GHz radar imaging.

Cody Armstrong, junior; Passively mode locked fiber laser.

Alyssa Soltis, sophomore; Optical trapping of biological cells.