

## CURRICULUM VITAE – MAIKEN H. MIKKELSEN

*Nortel Networks Assistant Professor of Electrical and Computer Engineering*  
*Assistant Professor of Physics, Duke University*

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### EDUCATION

<b>University of California, Santa Barbara</b>	<b>Ph.D., Physics</b>	<b>12/2009</b>
<u>Research Areas:</u> Experimental Condensed Matter Physics, Spintronics		
<u>Thesis:</u> “ <i>Optical detection and manipulation of single electron spin coherence in a semiconductor quantum dot</i> ”		
<u>Committee:</u> Profs. David D. Awschalom (chair), Leon Balents & Andrew Cleland		
<b>University of California, Santa Barbara</b>	<b>M.A., Physics</b>	<b>12/2007</b>
<b>University of Copenhagen, Denmark</b>	<b>B.S., Physics</b>	<b>06/2004</b>

### APPOINTMENTS

July 2015 – present	Nortel Networks Assistant Professor, Duke University, Durham, NC
Sep. 2012 – present	Assistant Professor, Duke University, Department of Electrical & Computer Engineering (50%); Department of Physics (50%)
Apr. 2010 – July 2012	Postdoctoral Fellow, University of California, Berkeley. Advisor: Prof. Xiang Zhang
Sep. 2004 – Dec. 2009	Graduate Student Researcher, University of California, Santa Barbara. Advisor: Prof. David Awschalom
Jan. 2004 – July 2004	Undergraduate Student Researcher, University of California, Santa Barbara. Advisor: Prof. David Awschalom

### RESEARCH INTERESTS

Experimental investigations of quantum nanophotonics, plasmonics, light-matter interactions in artificially structured nanoscale materials, hybrid molecular-scale materials and spin phenomena in the solid state.

### SELECTED AWARDS

1. Young Investigator Program (YIP) Award from the Office of Naval Research (2017)
2. Maria Goeppert Mayer Award from the American Physical Society (2017)
3. Early Career Achievement Award, Academic focus, from SPIE – the international society for optics and photonics (2017)
4. Young Investigator Program (YIP) Award from the Army Research Office (2016)
5. Cottrell Scholar Award from the Research Corporation for Science Advancement (2016)
6. Scialog Fellow, Research Corporation for Science Advancement (2016)
7. CAREER Award from the National Science Foundation (2015)

8. Young Investigator Program (YIP) Award from the Air Force Office of Scientific Research (2015)
9. Nortel Networks Chair, Duke University (2015)
10. Ralph E. Powe Junior Faculty Award (2014)
11. European Physical Society's Ph.D. Thesis prize, Quantum Electronics and Optics, Fundamental aspects (2011)
12. NSF ADVANCE Award, workshop for Women in Science & Engineering (2009)
13. Center for Nanoscience Innovation for Defense (CNID) Graduate Fellowship (2007-2008)

## PEER-REVIEWED PUBLICATIONS

†: corresponding author; \*: equal contributors

### *Publications from Independent Career at Duke University*

1. J. J. Baumberg, J. Aizpurua, M. H. Mikkelsen & D. R. Smith, “*Extreme nanophotonics in ultrathin metallic junctions: Nanogap plasmonics*,” **Nature Materials**, invited review (*in preparation*)
2. T. B. Hoang, G. M. Akselrod, A. Yang, T. W. Odom, and M. H. Mikkelsen†, “*Millimeter-Scale Spatial Coherence from a Plasmon Laser*”, **Nano Letters**, Article ASAP (2017), DOI: 10.1021/acs.nanolett.7b02677
3. M. E. Sykes, J. W. Stewart, G. M. Akselrod, X.-T. Kong, Z. Wang, D. J. Gosztola, A. B. F. Martinson, D. Rosenmann, M. H. Mikkelsen†, A. O. Govorov† & G. P. Wiederrecht†, “*Enhanced generation and anisotropic Coulomb scattering of hot electrons in an ultra-broadband plasmonic nanopatch metasurface*”, **Nature Communications** 8, 986 (2017)
4. G. M. Akselrod & M. H. Mikkelsen, “*Controlled Radiative Dynamics Using Plasmonic Nanocavities*” (book chapter) in “*Handbook of Metamaterials and Plasmonics*” (ed O. Hess and S. A. Maier), World Scientific Publishing Co. (2017)
5. J. Huang, T. B. Hoang, T. Ming, J. Kong & M. H. Mikkelsen†, “*Temporal and spatial valley dynamics in two-dimensional semiconductors probed via Kerr rotation*”, **Physical Review B** 95, 075428, (2017)
6. J. W. Stewart, G. M. Akselrod, D. R. Smith & M. H. Mikkelsen†, “*Toward Multispectral Imaging with Colloidal Metasurface Pixels*”, **Advanced Materials** 29, 1602971 (2017), back cover article
7. G. M. Akselrod, D. R. Smith & M. H. Mikkelsen, “*Controlled and enhanced fluorescence using plasmonic nanocavities*” (book chapter) in “*Surface Plasmon Enhanced, Coupled and Controlled Fluorescence*” (ed C. D. Geddes), John Wiley & Sons, Inc., Hoboken, NJ, USA, (2017)
8. G. M. Akselrod, M. C. Weidman, Y. Li, C. Argyropoulos, W. A. Tisdale & M. H. Mikkelsen†, “*Efficient nanosecond photoluminescence from infrared PbS quantum dots coupled to plasmonic nanoantennas*”, **ACS Photonics** 3, 1741–1746 (2016)
9. T. B. Hoang\*, G.M. Akselrod\* & M. H. Mikkelsen†, “*Ultrafast single photon emission from a quantum dot coupled to a plasmonic nanocavity*,” **Nano Letters** 16, 270 (2016)  
*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
10. T. B. Hoang & M. H. Mikkelsen†, “*Broad electrical tuning of plasmonic nanoantennas at visible frequencies*”, **Applied Physics Letters** 108, 183107 (2016)
11. W. Ge, T. B. Hoang, M. H. Mikkelsen, A. D. Stiff-Roberts, “*RIR MAPLE deposition of plasmonic silver nanoparticles*”, **Applied Physics A** 122, 824 (2016)

12. J. Huang, T. B. Hoang & M. H. Mikkelsen†, “Probing the origin of excitonic states in monolayer WSe<sub>2</sub>,” **Scientific Reports** 6, 22414 (2016)
13. T. B. Hoang, J. Huang & M. H. Mikkelsen†, “Colloidal synthesis of nanopatch antennas for applications in plasmonics and nanophotonics,” **Journal of Visualized Experiments**, 111, e53876 (2016)
14. G. M. Akselrod, J. Huang, T. B. Hoang, P. T. Bowen, L. Su, D. R. Smith & M. H. Mikkelsen†, “Large-area metasurface perfect absorbers from visible to near infrared,” **Advanced Materials**, 27, 7897 (2015), front cover article
15. T. B. Hoang\*, G. M. Akselrod\*, C. Argyropoulos, J. Huang, D. R. Smith & M. H. Mikkelsen†, “Ultrafast spontaneous emission source using plasmonic nanoantennas,” **Nature Communications** 6, 7788 (2015)  
*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
16. G. M. Akselrod, T. Ming, C. Argyropoulos, T. B. Hoang, Y. Lin, X. Ling, D. R. Smith, J. Kong & M. H. Mikkelsen†, “Leveraging Nanocavity Harmonics for Control of Optical Processes in 2D Semiconductors,” **Nano Letters** 15, 3578 (2015)  
*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
17. A. Baron, T. B. Hoang, C. Fang, M. H. Mikkelsen & D. R. Smith, “Ultrafast self-action of surface plasmon polaritons at an air/metal interface,” **Physical Review B** 91, 195412 (2015)
18. A. Yang, T. B. Hoang, M. Dridi, C. Deeb, M. H. Mikkelsen, G. C. Schatz & T. W. Odom, “Real-time Tunable Lasing from Plasmonic Nanocavity Arrays,” **Nature Communications**, 6, 6939 (2015)  
*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
19. G. M. Akselrod, C. Argyropoulos, T. B. Hoang, C. Ciraci, C. Fang, J. Huang, D. R. Smith & M. H. Mikkelsen†, “Probing the mechanisms of large Purcell enhancement in plasmonic nanoantennas,” **Nature Photonics** 8, 835 (2014)  
*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
20. A. Rose, T. B. Hoang, F. McGuire, J. J. Mock, C. Ciraci, D. R. Smith & M. H. Mikkelsen†, “Control of radiative processes using tunable plasmonic nanopatch antennas,” **Nano Letters** 14, 4797 (2014)
21. J. B. Lassiter, X. Chen, X. Liu, C. Ciraci, T. B. Hoang, S. Larouche, S.-H. Oh, M. H. Mikkelsen & D. R. Smith, “Third-Harmonic Generation Enhancement by Film-Coupled Plasmonic Stripe Resonators,” **ACS Photonics** 1, 1212 (2014)

#### **Submitted**

22. W. M. Wilson, J. W. Stewart & M. H. Mikkelsen†, “Surpassing Single-Linewidth Active Tuning with Photochromic Molecules Coupled to Plasmonic Nanoantennas,” **Nano Letters** (under review)
23. J. Huang, G. M. Akselrod, T. Ming & J. Kong & M. H. Mikkelsen†, “Tailored emission spectrum of 2D semiconductors using plasmonic nanocavities,” **ACS Photonics** (under review)

#### **Publications from Prior Groups**

24. P. Kolchin\*, N. Pholchai\*, M. H. Mikkelsen\*, J. Oh, S. Ota, M. S. Islam, X. Yin, and X. Zhang, “High Purcell Factor Due To Coupling of a Single Emitter to a Dielectric Slot Waveguide,” **Nano Letters** 15, 464 (2015)

25. T. Zentgraf\*, Y. Liu\*, M. H. Mikkelsen\*, J. Valentine & X. Zhang, “*Plasmonic Luneburg and Eaton lenses*,” **Nature Nanotechnology** 6, 151 (2011)
26. M. H. Mikkelsen, J. Berezovsky & D. D. Awschalom, “Ultrafast optical manipulation of single electron spins in quantum dots,” invited article, **Solid State Communications** 149, 1451, (2009)
27. J. Berezovsky\*, M. H. Mikkelsen\*, N. G. Stoltz, L. A. Coldren & D. D. Awschalom, “*Picosecond coherent optical manipulation of a single electron spin in a quantum dot*,” **Science** 320, 349 (2008), cover article  

*“Highly Cited Paper” by Thomson Reuters — top 1% of highest cited papers in Physics.*
28. R. C. Myers, M. H. Mikkelsen, J.-M. Tang, A. C. Gossard, M. E. Flatté & D. D. Awschalom, “*Zero-field optical manipulation of magnetic ions in semiconductors*,” **Nature Materials** 7, 203 (2008)
29. M. H. Mikkelsen, R. C. Myers, G. D. Fuchs & D. D. Awschalom, “*Single spin coherence in semiconductors*,” (book chapter) in *Spintronics*, **Elsevier**, pp. 1 – 44 (2008)
30. M. H. Mikkelsen, J. Berezovsky, N. G. Stoltz, L. A. Coldren & D. D. Awschalom, “*Optically detected coherent spin dynamics of a single electron in a quantum dot*,” **Nature Physics** 3, 770 (2007)
31. J. Berezovsky, M. H. Mikkelsen, O. Gywat, N. G. Stoltz, L. A. Coldren & D. D. Awschalom, “*Nondestructive optical measurements of a single electron spin in a quantum dot*,” **Science** 314, 1916 (2006)

## PATENTS

1. G. M. Akselrod, R. A. Hyde, M. Y. Ishikawa, J. T. Kare, M. H. Mikkelsen, T. S. Pan, D. R. Smith, C. T. Tegreene, Y. A. Urzhumov, C. Whitmer, L. L. Wood, Jr., V. Y. H. Wood, “*Magnetic plasmonic nanoparticle positioned on a magnetic plasmonic substrate*,” US 14/853,370 (2017)
2. G. M. Akselrod, R. A. Hyde, M. Y. Ishikawa, J. T. Kare, M. H. Mikkelsen, T. S. Pan, D. R. Smith, C. T. Tegreene, Y. A. Urzhumov, C. Whitmer, L. L. Wood, Jr., V. Y. H. Wood, “*Magnetic plasmonic nanoparticle dimer*,” US 14/853,410 (2017)
3. G. M. Akselrod, R. A. Hyde, M. Y. Ishikawa, J. T. Kare, M. H. Mikkelsen, T. S. Pan, D. R. Smith, C. T. Tegreene, Y. A. Urzhumov, C. Whitmer, L. L. Wood, Jr., V. Y. H. Wood, “*Enhanced photoluminescence from plasmonic apparatus with two resonant cavity wavelengths*,” US 15/434,914 (2017)
4. G. M. Akselrod, R. A. Hyde, M. Y. Ishikawa, J. T. Kare, M. H. Mikkelsen, T. S. Pan, D. R. Smith, C. T. Tegreene, Y. A. Urzhumov, C. Whitmer, L. L. Wood, Jr., V. Y. H. Wood, “*Enhanced photoluminescence*,” US 15/193,282 (2017)
5. J. Stewart, J. Goldsmith, M. H. Mikkelsen & J. Vella, “*Spectrally selective near-infrared detection using a self assembled integrated plasmonic near-perfect absorber-pyroelectric sensor*”, provisional patent pending (2017)
6. M. H. Mikkelsen, D. R. Smith & G. M. Akselrod, “*Nanopatch Antennas and Related Methods for Tailoring the Properties of Optical Materials and Metasurfaces*,” PCT/US15/55033 (2015)

## INVITED TALKS & SEMINARS

1. “*Hybrid Nanomaterials for Tailored Light-Matter Interactions*”, Purdue University, Seminar, October 23, 2017

2. “*Molecular scale plasmonics*”, Summer School On Plasmonics 4, Porquerolles, France, September 7, 2017
3. “*Plasmonic pixels and colors using silver nanocubes*”, International Conference on Enhanced Spectroscopies (ICES), Munich, Germany, September 5, 2017
4. “*Large-scale plasmonic pixels and combinatorial colors*”, 2017 International Conference on Optical MEMS and Nanophotonics (OMN2017), Santa Fe, NM, August 15, 2017
5. “*Ultrafast spontaneous emission from single quantum dots coupled to plasmonic nanocavities*”, SPIE Optics + Photonics, San Diego, CA, August 7, 2017
6. “*Ultrafast single photon sources and enhanced nonlinear generation using plasmonic nanocavities*”, Quantum Nanophotonics, Benasque, Spain, March 3, 2017 (presented by postdoc Andrew Traverso)
7. “*Film-Coupled Nanocubes: From Ultrafast Spontaneous Emission to Perfect Absorbers*”, American Chemical Society (ACS) National Meeting, San Francisco, April 5 2017 (presented by graduate student Jon Stewart)
8. “*Hybrid Molecular-Scale Materials for Tailored Light-Matter Interactions*”, Seminar, Tsinghua University, China, October 14, 2016
9. “*Tailored and reconfigurable optical properties using plasmonics*”, SPIE/COS Photonics Asia 2016, Beijing, China, October 13, 2016
10. “*Control of radiative processes of quantum dots using colloidal silver nanoparticles*”, NC Photochem 2016 symposium, Raleigh, NC, October 1, 2016
11. “*Ultrafast single photon source using plasmonics*”, Single Photons Single Spins (SPSS) workshop, Oxford, UK, September 13, 2016.
12. “*Ultrafast light sources: Spontaneous and stimulated emission*”, OSA Incubator on the Science and Application of Nanolasers, Washington, DC, September 8, 2016
13. “*Plasmonic colloidal nanoparticles: Gateway to extreme radiative decay engineering*”, American Chemical Society (ACS) National Meeting, Philadelphia, PA, August 24, 2016
14. “*Hybrid Molecular-Scale Materials for Tailored Light-Matter Interactions*”, Physics Seminar, University of Sydney, Sydney, Australia, August 15, 2016
15. “*Hybrid Molecular-Scale Materials: From Ultrafast Spontaneous Emission to Perfect Absorbers*”, Seminar, Department of Physics, Imperial College London, U.K., July 22, 2016
16. “*Radiative decay engineering using optical antennas*”, 12th Conference on Photonic and Electromagnetic Crystal Structures (PECS-XII), York, UK, July 20, 2016
17. “*Extreme radiative decay engineering using nanopacth antennas*”, 2016 Gordon Research Conference on Plasmonics and Nanophotonics, Sunday River Resort, Newry, ME, July 10-15, 2016
18. “*Hybrid Molecular-Scale Materials: From Ultrafast Spontaneous Emission to Perfect Absorbers*”, 2016 Young Investigator Research Program (YIP) Annual Meeting, Air Force Office of Scientific Research, Arlington, VA, June 20-24, 2016
19. “*Large Purcell enhancement: From dye molecules to single quantum dots*”, Plasmonics Workshop, Center for Metamaterials and Integrated Plasmonics, Duke University, Durham, NC, June 14-15, 2016
20. “*Hybrid Molecular-Scale Materials*”, Department of Chemistry Seminar, Duke University, April 12, 2016

21. "*Plasmonics: Fine-tuning the interaction between light and matter*", Invited Lecture, Plasmonics and Its Applications, nanoBIO NODE, Workshop Series, Renewable and Sustainable Energy Institute, University of Colorado Boulder, March 22, 2016
22. "*Hybrid Molecular-Scale Materials*", Invited Lecture, Plasmonics and Its Applications, nanoBIO NODE, Workshop Series, Renewable and Sustainable Energy Institute, University of Colorado Boulder, March 21, 2016
23. "*Control of radiative processes of quantum dots and 2D materials using plasmonics*", Winter School of the Nanosystems Initiative Munich (NIM), Invited Lecture, Kirchberg, Austria, March 15, 2016
24. "*Control of radiative processes of quantum dots and 2D materials using plasmonics*", Nanolight 2016 Winter School, Invited Lecture, Benasque, Spain, March 10, 2016
25. "*Tailored radiative processes of quantum dots and 2D materials*", Condensed Matter seminar, Case Western Reserve University, Cleveland, OH, February 29, 2016
26. "*Plasmonics for tailored radiative processes of quantum dots and 2D materials*", U.S. Naval Research Laboratory, Invited Research Seminar, Washington, DC, February 25, 2016
27. "*Ultrafast and directional spontaneous emission*", Invited Research Seminar, Connectivity Lab at Facebook, Menlo Park, CA, February 19, 2016
28. "*Ultrafast spontaneous emission from semiconductor quantum dots coupled to plasmonic nanoantennas*", Photonics West, San Francisco, CA, February 18, 2016
29. "*Tailored radiative processes of quantum dots and 2D materials*", Virginia Polytechnic Institute and State University, Condensed Matter seminar, Department of Physics, February 8, 2016
30. "*Tailored radiative processes of quantum dots and 2D materials*", University of Washington, Electrical Engineering Colloquium, Seattle, WA, February 2, 2016
31. "*Strongly Enhanced Light-Matter Interactions using Plasmonic Nanocavities*," University of Texas at Austin, Center for Nano- and Molecular Science seminar, Austin, TX, January 20, 2016
32. "*A plasmonic platform for tailored radiative properties of quantum dots and 2D semiconductors*", Southeast Ultrafast conference, North Carolina State University, Raleigh, NC, January 14, 2016
33. "*Spatial and temporal coherence properties of tunable lattice plasmon lasers*," 46th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, UT, January 4, 2016
34. "*Ultrafast Spontaneous Emission from Quantum Dots Using Plasmonic Nanoantennas*," Materials Research Society's (MRS) Fall Meeting, Boston, MA, December 4, 2015
35. "*Strongly Enhanced Light-Matter Interactions using Plasmonic Nanocavities*," Caltech, Materials Research Lecture Seminar, Pasadena, CA, November 18, 2015
36. "*Strongly Enhanced Light-Matter Interactions using Colloidally Synthesized Plasmonic Nanocavities*," Frontiers in Optics and Laser Science Conference, San Jose, CA, October 22, 2015
37. "*Ultrafast single photon emission from quantum dots coupled to plasmonic nanocavities*," Quantum Information on a Chip, NSF sponsored workshop, Universita Degli Studi di Padova, Padua, Italy, October 13, 2015
38. "*Film-coupled plasmonic stripe resonators for enhanced third-harmonic generation*," OSA Nonlinear Metamaterials Incubator, Washington, DC, October 2, 2015
39. "*Fluorescence enhancement and control using plasmonics*," Wright-Patterson Air Force Base, Invited Seminar, Dayton, Ohio, September 29, 2015

40. “*Ultrafast spontaneous emission source using plasmonic nanoantennas*,” Technical University of Denmark (DTU), Invited Lecture, Lyngby, Denmark, September 21, 2015
41. “*Emission rate control with plasmonic nanoantennas*,” Ninth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials 2015, Oxford, United Kingdom, September 8, 2015
42. “*Strongly Enhanced Light-Matter Interactions using Plasmonic Nanocavities*,” META’15 - The 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, City College of New York, New York City, NY, August 5, 2015
43. “*Control of Radiative Processes using Colloidally Synthesized Plasmonic Nanocavities*,” Metamaterials Science & Technology Workshop, San Diego, CA, July 22, 2015
44. “*Strongly Enhanced Light-Matter Interactions using Plasmonic Nanocavities*,” Nanoscience & Technology Division Colloquium, Argonne National Laboratory, Lemont, IL, July 8, 2015
45. “*Strongly Enhanced Light-Matter Interactions using Plasmonic Nanocavities*,” Niels Bohr Institute, University of Copenhagen, Quantum Optics Seminar, Copenhagen, Denmark, June 23, 2015
46. “*Radiative Decay Engineering Using Plasmonic Nanostructures*,” 2015 Young Investigator Research Program (YIP) Annual Meeting, Air Force Office of Scientific Research, Arlington, VA, June 16, 2015
47. “*Radiative Decay Engineering Using Plasmonic Nanostructures*,” CMOS Emerging Technologies Research Symposium, Vancouver, Canada, May 20, 2015
48. “*Strongly Enhanced Light-Matter Interactions using Colloidally Synthesized Plasmonic Nanocavities*,” Harvard University, Electrical Engineering Seminar, Boston, MA, May 1, 2015
49. “*Large spontaneous emission rate enhancement in directional and efficient plasmonic nanoantennas*,” Materials Research Society’s (MRS) Spring Meeting, San Francisco, CA, April 9, 2015
50. “*Artificially structured materials for tailored optical properties*,” University of Michigan, Department of Physics, AMO/CM Seminar, Ann Arbor, MI, March 31, 2015
51. “*Artificially structured materials for tailored optical properties*,” Assistant Secretary of Defense for Research and Engineering, ASD(R&E), Basic Research Forum Colloquium, Arlington, VA, January 29, 2015
52. “*Control of Radiative Processes Using Tunable Plasmonic Nanoantennas*,” Southeast Ultrafast Conference, Tallahassee, FL, January 16, 2015
53. “*Tunable light-matter interactions in a solid-state platform*,” 45th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, UT, January 6, 2015
54. “*Film-Coupled Nanocubes for Enhancing Photodynamic and Nonlinear Processes*,” 45th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, UT, January 6, 2015
55. “*Opportunities with Optical Metamaterials*,” Materials Research Society’s (MRS) Fall Meeting, Boston, MA, December 3, 2014
56. “*On-demand optical properties of quantum emitters using plasmonic nanoantennas*,” IEEE Photonics Conference (IPC), San Diego, CA, October 15, 2014
57. “*Control of Radiative Processes Using Tunable Plasmonic Nanopatch Antennas*,” Los Alamos National Laboratory, Los Alamos, NM, September 19, 2014

58. "*Large enhancements of fluorescence and spontaneous emission using a tunable plasmonic platform*," Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, CA, June 16, 2014
59. "*Manipulating Light with MesoPhotonic Metamaterials*," Mesoscale Science Frontiers, 34th Annual Center for Nonlinear Studies Annual Conference, Santa Fe, NM, May 16, 2014
60. "*Single Quantum Dots as Building Blocks for Quantum Information Applications*," New Faculty Lecture series, Pratt School of Engineering, Duke University, Durham, NC, April 26, 2013
61. "*Single Quantum Dots as Building Blocks for Quantum Information Applications*," Condensed Matter Seminar, Department of Physics, North Carolina State University, Raleigh, NC, April 23, 2013
62. "*Enhanced light-matter interactions of a single emitter coupled to a slot waveguide*," Fitzpatrick Institute for Photonics Annual Meeting, Durham, NC, March 12, 2013
63. "*Plasmonics and enhanced light-matter interactions of a single emitter*," University of North Carolina Wilmington, Department of Physics, Wilmington, NC, February 8, 2013
64. "*Single quantum dots as building blocks for quantum information applications*," The 16th Annual Southeast Ultrafast Conference, Georgia Institute of Technology, Atlanta, GA, January 11, 2013
65. "*Plasmonics and enhanced light-matter interactions of a single emitter*," Optics and Photonics Seminar Series, Duke University, Durham, NC, October 31, 2012
66. "*Spintronics & Nanophotonics for Quantum Information Science*," Annual Meeting of the Danish Physical Society, Nyborg, Denmark, June 19, 2012
67. "*Spintronics & Nanophotonics for Quantum Information Science*," Delft University of Technology, Department of Quantum Nanoscience, Delft, the Netherlands, March 26, 2012
68. "*Spintronics & Nanophotonics for Quantum Information Science*," Duke University, Department of Electrical and Computer Engineering, Durham, NC, March 13, 2012
69. "*Spintronics & Nanophotonics for Quantum Information Science*" University of Massachusetts Amherst, Department of Physics, Amherst, MA, March 6, 2012
70. "*Spintronics & Nanophotonics for Quantum Information Science*," University of Oregon, Department of Physics, Eugene, OR, February 23, 2012
71. "*Spintronics & Nanophotonics for Quantum Information Science*," MIT, Department of Physics, Chez Pierre Condensed Matter Physics Seminar Series, Boston, MA, February 21, 2012
72. "*Spintronics & Nanophotonics for Quantum Information Science*," Washington University in St. Louis, Department of Physics, St. Louis, MO, February 15, 2012
73. "*Spintronics & Nanophotonics for Quantum Information Science*," University of Utah, Department of Physics, Salt Lake City, UT, February 8, 2012
74. "*Spintronics & Nanophotonics for Quantum Information Science*," University of Waterloo, Department of Physics and Institute for Quantum Computing, Waterloo, Canada, February 2, 2012
75. "*Spintronics & Nanophotonics for Quantum Information Science*," ICFO, Institute of Photonic Sciences, Barcelona, Spain, January 17, 2012
76. "*Spintronics & Nanophotonics for Quantum Information Science*," FOM Institute AMOLF, Amsterdam, the Netherlands, December 22, 2011
77. "*Spintronics & Nanophotonics for Quantum Information Science*," University College London, Department of Physics, London, United Kingdom, November 22, 2011



78. “*Single quantum dots as building blocks for quantum information applications*,” University of Stuttgart, Department of Physics, Stuttgart, Germany, November 10, 2011
79. “*Ultrafast coherent control of a single electron spin in a quantum dot*,” March Meeting of the American Physical Society, Pittsburgh, PA, March 18, 2009
80. “*Manipulating single electron spins and coherence in a quantum dot*,” (plenary presentation), Conference on Excitonic Processes in Condensed Matter, Kyoto, Japan, June 23, 2008
81. “*Manipulating single electron spins and coherence in a quantum dot*,” Meeting of the APS Division of Atomic, Molecular, and Optical Physics, State College, PA, May 30, 2008
82. “*Optical detection and manipulation of single spin coherence in a quantum dot*,” SPIE Photonics West, San Jose, CA, January 24, 2008
83. “*Time-resolved measurements of single electron spin coherence in a quantum dot*,” Materials Research Society’s Fall Meeting, Boston, MA, November 26, 2007

### CONTRIBUTED PRESENTATIONS

1. “*Probing and controlling large Purcell enhancement in plasmonic nanoantennas*”, SPIE – Optics and Photonics, San Diego, CA, August 18, 2015
2. “*Control of radiative processes of molecules and quantum dots using plasmonic structures*”, SPIE - Photonics West, San Francisco, CA, February 11, 2015
3. “*Giant fluorescence enhancement of molecules coupled to plasmonic nanoscale patch antennas*”, Frontiers in Optics, Tucson, AZ, October 23, 2014
4. “*Probing and controlling large Purcell enhancement in plasmonic nanoantennas*”, The Sixth International Workshop on Electromagnetic Metamaterials, Santa Fe, NM, September, 2014
5. “*Spectrally matched plasmonic cavities for giant fluorescence enhancement*”, Eighth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics – Metamaterials 2014, Copenhagen, Denmark, August 2014
6. “*A plasmonic platform for greatly enhanced light-matter interactions of single quantum dots*”, Gordon Research Conference – Quantum Science, Easton, MA, July 2014
7. “*Strongly Enhanced Light-Matter Interactions using Colloidally Synthesized Plasmonic Nanoantennas*”, Gordon Research Conference – Plasmonics, Newry, ME, July 2014
8. “*Tunable plasmonic platform for giant fluorescence enhancement*”, CLEO, San Jose, June 2014
9. “*Giant fluorescence enhancement of fluorophores coupled to nanopatch antennas*”, APS March Meeting, Denver, CO, March 2014
10. “*Enhanced light-matter interactions of a single emitter coupled to a slot waveguide*”, March Meeting of the American Physical Society, Boston, MA, February 2012
11. “*Experimental demonstration of gradient index plasmonics*”, March Meeting of the American Physical Society, Dallas, TX, March 2011
12. “*Ultrafast coherent optical manipulation of a single electron spin in a quantum dot*”, March Meeting of the American Physical Society, New Orleans, LA, March 2008
13. “*Kerr rotation studies of single electron spin dynamics in a quantum dot*”, School and Conference on Spintronics and Quantum Information Technology, Maui, HI, June 2007

14. “*Kerr rotation studies of single electron spin dynamics in a quantum dot*”, March Meeting of the American Physical Society, Denver, CO, March 2007

## FUNDING

### *Awarded:*

1. **Title:** Metasurface-Based Perfect Absorbers for Robust and Adaptable Coatings  
**Source of Support:** Office of Naval Research Young Investigator Program  
**Level of Effort:** 1 academic month  
**Role:** PI  
**Total Period of Performance:** 06/01/2017 – 05/31/2020  
**Total Award:** \$510,000
2. **Title:** Gift to support research in novel photodetectors for future applications of optical wireless communications  
**Source of Support:** Connectivity Lab, Facebook  
**Level of Effort:** 5%  
**Role:** PI  
**Total Gift Amount:** \$165,000
3. **Title:** EFRI ACQUIRE: Integrated Nanophotonic Transmitter for Quantum Communication  
**Source of Support:** National Science Foundation  
**Level of Effort:** 1 academic month  
**Role:** Co-PI (PI: Kai-Mei Fu [University of Washington], Co-PIs: Arka Majumdar [University of Washington], Alejandro Rodriguez [Princeton])  
**Total Period of Performance:** 09/01/2016 – 08/31/2020  
**Total Award:** \$2,000,000
4. **Title:** CAREER: Light-Matter Control of Single Defects in Diamond Using Plasmonic Nanocavities  
**Source of Support:** National Science Foundation  
**Role:** PI  
**Level of Effort:** 1 summer month  
**Total Period of Performance:** 07/01/2015 – 06/30/2020  
**Total Award Amount:** \$570,000
5. **Title:** Exploring the interplay between nanoscale design and optical properties of materials: A research and educational approach  
**Source of Support:** Cottrell Scholar Award, Research Corporation for Science Advancement  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 03/01/2016 – 02/28/2019  
**Total Award Amount:** \$100,000
6. **Title:** YIP: Tailoring Radiative Processes by Nanoengineering for Ultrafast Optoelectronic Devices  
**Source of Support:** Air Force Office of Scientific Research, Young Investigator Program (YIP)  
**Level of Effort:** 1 summer month  
**Role:** PI  
**Total Period of Performance:** 07/15/2015 – 07/14/2018  
**Total Award Amount:** \$360,000

7. **Title:** Gift to support research in spintronics, quantum information science, nanophotonics, plasmonics, and quantum optics  
**Source of Support:** Connectivity Lab, Facebook  
**Level of Effort:** 5%  
**Role:** PI  
**Total Gift Amount:** \$50,000
8. **Title:** YIP: Reconfigurable Optical Properties in the Near-IR Enabled by Bottom-Up Assembly of Nanoengineered Materials  
**Source of Support:** Army Research Office, Young Investigator Program (YIP)  
**Level of Effort:** 0.5 summer month  
**Role:** PI  
**Total Period of Performance:** 08/10/16 – 08/09/19  
**Total Award Amount:** \$150,000
9. **Title:** CAREER: Light-Matter Control of Single Defects in Diamond Using Plasmonic Nanocavities – *Career-Life Balance Supplement*  
**Source of Support:** National Science Foundation  
**Role:** PI  
**Level of Effort:** 5% (no PI salary support)  
**Total Period of Performance:** 04/01/2017 – 07/31/2017 (completed)  
**Total Award Amount:** \$23,767
10. **Title:** YIP: Tailoring Radiative Processes by Nanoengineering for Ultrafast Optoelectronic Devices – *Additional Funding*  
**Source of Support:** Air Force Office of Scientific Research  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 09/30/2016 – 07/14/2017 (completed)  
**Total Award Amount:** \$15,000
11. **Title:** Plasmonic enhanced Förster resonance energy transfer in nanoscale materials  
**Source of Support:** Office of the Vice Provost for Research, Duke University  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 03/15/2016 – 03/14/2017 (completed)  
**Total Award Amount:** \$6,500
12. **Title:** MRSEC-Seed: Mesophotonic Materials for Tailored Light-Matter Interactions  
**Source of Support:** Research Triangle Materials Research Science and Engineering Center (RT-MRSEC), National Science Foundation  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 09/01/15 – 08/31/16 (completed)  
**Total Award Amount:** \$99,690
13. **Title:** Large-Area Infrared Nanoplasmonic Tunable Surfaces for Photodetectors and Spectral Signature Engineering  
**Source of Support:** Intelligence Communities Postdoctoral Research Fellowship Program  
**Level of Effort:** 5% (no PI salary support)

**Role:** Co-PI (PI: David Smith [Duke])  
**Total Period of Performance:** 08/04/14 – 08/03/16 (completed)  
**Total Award Amount:** \$240,000

14. **Title:** Plasmonic-Enhanced Tunnel Junctions for Organic Solar Cells  
**Source of Support:** Energy Research Seed Grant, Duke University Energy Initiative  
**Level of Effort:** 5% (no PI salary support)  
**Role:** Co-PI (PI: Adrienne Stiff-Roberts [Duke])  
**Total Period of Performance:** 07/01/14 – 06/30/15 (completed)  
**Total Award Amount:** \$36,000 (Stiff-Roberts \$18,000; Mikkelsen \$18,000)
  
15. **Title:** Tunable Light-Matter Interactions of Single Quantum Dots  
**Source of Support:** Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 06/01/14 – 05/31/15 (completed)  
**Total Award Amount:** \$5,000
  
16. **Title:** Plasmonic Platform for Tunable Light-Matter Interactions of Single Quantum Dots  
**Source of Support:** Pratt School of Engineering, Seed Grant, Duke University  
**Level of Effort:** 10% (no PI salary support)  
**Role:** PI (Co-PI: David Smith [Duke])  
**Total Period of Performance:** 10/15/13 – 10/14/14 (completed)  
**Total Award Amount:** \$27,716

*Pending:*

17. **Title** Plasmonic Enhanced Printable Immunoassays for Ultrasensitive Point-of-Care Detection  
**Source of Support:** National Institute of Health  
**Level of Effort:** 1 academic month  
**Role:** PI  
**Total Period of Performance:** 09/01/2018 - 08/31/2020  
**Total Award Requested:** \$614,609
  
18. **Title:** Efficient emitters and modulators at 50 GHz and beyond  
**Source of Support:** DARPA Young Investigator Proposal  
**Level of Effort:** 1 academic month  
**Role:** PI  
**Total Period of Performance:** 02/01/2019 - 01/31/2022  
**Total Award Requested:** \$1,000,000
  
19. **Title:** Ultrafast Spectroscopic Investigation of Enhanced and Suppressed Fluorescence from Solid State Emitters using Plasmonic Nanostructures  
**Source of Support:** Army Research Office (supplement to ARO YIP)  
**Level of Effort:** 5% (no PI salary support)  
**Role:** PI  
**Total Period of Performance:** 01/01/2018 - 12/31/2020  
**Total Award Requested:** \$291,262

20. **Title:** Ultrafast, multispectral plasmonic photodetection from hot electrons to thermoelectricity  
**Source of Support:** Air Force Office of Scientific Research  
**Level of Effort:** 1 academic month  
**Role:** PI  
**Total Period of Performance:** 07/01/2018 - 06/30/2021  
**Total Award Requested:** \$540,000

## TEACHING

Fall 2016: ECE 340L / PHYS 320L – Optics and Photonics  
Spring 2015: PHY 151 – Introductory Mechanics  
Fall 2014: ECE 521 – Quantum Mechanics  
Spring 2014: PHY 151 – Introductory Mechanics  
Fall 2013: ECE 521 – Quantum Mechanics

### *Guest Lectures*

- BME 555/CHEM 630 - “Photonics at the Nanoscale and Ultrafast Spectroscopy”  
Department of Biomedical Engineering, Duke University, March 24, 2016
- BME 555/CHEM 630 - “*Photonics at the Nanoscale and Ultrafast Spectroscopy*”  
Department of Biomedical Engineering, Duke University, March 19, 2015
- PHY 766S - Physics Research Seminar, “*Light-matter interactions at the nanoscale*”  
Department of Physics, Duke University, October 1, 2014
- PHY 131S - Intro Seminar on Big Questions, “*Playing with spins and light at the nanoscale*”  
Department of Physics, Duke University, September 29, 2014
- Physics Open House, Prospective Graduate Student Visit Day, “*The Quantum World and Strong Correlations in Condensed Matter*”  
Department of Physics, Duke University, March 21, 2014
- PHY 766S - Physics Research Seminar, “*Light-matter interactions at the nanoscale*”  
Department of Physics, Duke University, September 18, 2013
- PHY 766S - Physics Research Seminar, “*Playing with spins and light at the nanoscale*”  
Duke University, September 26, 2012

## STUDENTS AND POSTDOCS SUPERVISED

### *Postdocs*

Thang B. Hoang, 03/2013 – 08/2016

(*Assistant Professor of Physics and Materials Science, Univ. of Memphis*)

Gleb M. Akselrod, 09/2013 – 09/2016

(*Intellectual Ventures, declined tenure-track faculty positions at University of California, San Diego and Rensselaer Polytechnic Institute*)

Andrew Traverso, 03/2016 – present

Jiani Huang, 09/2017 – present

### *PhD Students*

Jiani Huang (physics), 08/2012 – 09/2017

Qixin Shen (physics), 11/2014 – present

Daniela Cruz (BME), 06/2015 – present  
Jon Stewart (ECE), 07/2015 – present  
Wade Wilson (ECE), 05/2016 – present  
Andrew Boyce (ECE), 06/2016 – present  
Nathan Wilson (physics), 08/2017 – present

***Master students***

Chao Fang, 01/2014 – 12/2014 (Currently: Ph.D. student at Duke)

***Undergraduate students***

Tamra Nebabu, 04/2015 – present  
Zhetao Jia, 01/2016 – 05/2016 (Currently: Undergraduate student at Duke)  
Andrew Walsworth, 06/2015 – 05/2016 (Currently: Undergraduate student at Duke)  
Logan Su, 01/2014 – 05/2015 (Currently: Ph.D. student at Stanford, ECE)  
Mack Yi, 11/2012 – 12/2013 (Currently: Software Engineer at Airbnb)

***High school students***

Alexander Allen (North Carolina School of Science and Math), 04/2016 – present

***Awards & Honors won by students and postdocs supervised***

1. National Defense Science and Engineering Graduate (NDSEG) Fellowship (Jon Stewart, 2017)
2. Fitzpatrick Foundation Scholar award (Andrew Boyce, 2017)
3. Most Outstanding Student Speaker of the Fitzpatrick Institute for Photonics seminar series (Jiani Huang, 2017)
4. 1st place poster prize, *Southeast Ultrafast conference*, North Carolina State University (Jon Stewart, 2016)
5. 1st place poster prize, *2016 Fitzpatrick Institute for Photonics Symposium*, Duke (Jon Stewart, 2016)
6. NSF Graduate Fellowship, Honorable Mention (Jon Stewart, 2016)
7. Pratt Research Fellowship, Duke (Tamra Nebabu, 2016)
8. Fritz London Postdoctoral Fellowship, Duke (Andrew Traverso, 2016)
9. John T. Chambers Scholar, Fitzpatrick Institute for Photonics, Duke (Jiani Huang, 2015)
10. Pratt-Gardner Graduate Fellowship, Duke (Jon Stewart, 2015)
11. John T. Chambers Fellowship, Fitzpatrick Institute for Photonics, Duke (Jon Stewart, 2015)
12. NSF Research Triangle MRSEC Graduate Fellowship (Qixin Shen, 2015)
13. NSF Research Triangle MRSEC Graduate Fellowship (Daniela Cruz, 2015)
14. SMIF Undergraduate User Program Award, Duke (Tamra Nebabu, 2015)
15. SMIF Undergraduate User Program Award, Duke (Andrew Walsworth, 2015)
16. Intelligence Communities Postdoctoral Research Fellowship (Gleb M. Akselrod, 2014)
17. Pratt Research Fellowship, Duke (Logan Su, 2014)
18. University Scholar Award, University Scholars Program, Duke (Tamra Nebabu, 2013)
19. NSF Graduate Fellowship (Daniela Cruz, 2013)
20. Nanoscience Graduate Program Fellowship, Duke (Jiani Huang, 2013)

## OUTREACH ACTIVITIES

### *To broaden participation of groups underrepresented in STEM fields*

1. Organizer and chair of “*Power Hour: Committed to inclusion and the professional development of women in science*” at the Gordon Research Conference on Plasmonics in Newry, ME (7/2016).
2. “*Women in Physics Group*,” Duke University, Faculty Coordinator (2012–present). Restarted group with the goal of increasing the retention and recruitment of graduate and undergraduate students. Organized lunches, meetings with female colloquium speakers, and recruitment events for prospective graduate students with a focus on minorities.
3. “*2015 Conference for Undergraduate Women in Physics*” (CUWiP). Local application and planning committee, organized as part of American Physical Society (APS), (2013–2015).
4. Organizer and instructor for “*Females Excelling More in Math, Engineering, and Science*” (FEMMES). Outreach activities for 4-6th grade girls from ethnically diverse backgrounds in Durham, NC (2014–present).
5. Mentor meetings with small groups of female graduate and undergraduate students during visits at universities in the United States (2014–present).
6. Participated in the “*2016-17 SPIE Women in Optics Planner*” to offer advice and encouragement to those considering a career in science, technology, engineering, and mathematics.
7. Host of “*Women in Engineering Lunch Series*” for Duke graduate students (10/2017)

### *Mentorship and career advice activities*

8. Panelist, “*Expectations from the Faculty Perspective*”, part of Pratt PhD Plus Program, Pratt (8/2017)
9. Panelist, DOD proposal writing workshop, Duke University (6/2017)
10. Panelist, “*Future of the Field in Academia and Industry*”, career panel discussions at the Gordon Research Seminar on Plasmonics in Newry, ME (7/2016)
11. Panelist, NSF CAREER proposal writing workshop, Duke University (3/2016)
12. Panelist, NSF Graduate Fellowship proposal workshop, part of Pratt PhD Plus Program, Pratt (9/2015)

### *Integration and transfer of knowledge*

13. Deliver lectures at summer & winter schools for graduate students (Summer School On Plasmonics 4, Porquerolles, France, September 7, 2017; Winter School of the Nanosystems Initiative Munich (NIM), Kirchberg, Austria, March 15, 2016)
14. Numerous interviews with the media resulting in articles and web-based videos to convey research results to the general public and the broader scientific community (2012– present).
15. Involvement of undergraduate and high school students in research, Duke University, six students supervised (2012 – present).
16. Innovations in teaching and transfer of knowledge three-day workshop, American Association of Physics Teachers (2013).
17. Presented ~80 invited talks and seminars at international conferences and universities in the US and abroad.

## SERVICE TO SCIENTIFIC COMMUNITY

1. Editorial Advisory Board member for the journal “*ACS Photonics*”.
2. Co-organizer with Prof. Marko Loncar, Harvard University, of the 13th International Symposium on Photonic and Electromagnetic Crystal Structures (PECS-XIII) to be held in 2018.
3. Technical committee member for the “*Nonlinear Nanophotonics, Plasmonics, and Metamaterials*” session at the OSA Nonlinear Photonics conference in Zurich Switzerland, 2018.
4. Technical committee member for the “*Quantum Nanophotonics*” session at the SPIE optics & Photonics conference in San Diego, CA, 2017.
5. Proposal reviewer for the *Department of Energy, the Air Force Office of Scientific Research, the National Science Foundation, the Army Research Office, the Research Corporation for Science Advancement, the Center for Integrated Nanotechnologies (CINT) at Los Alamos and Sandia National Laboratories*, and others.
6. Journal Reviewer for *Science, Nature Photonics, Nature Nanotechnology, Nature Communications, PNAS, Advanced Materials, Advanced Optical Materials, Optics Express, Optica, Nano Letters, Scientific Reports, Journal of the American Chemical Society, Small* and others.
7. Participant in invitation-only workshops and seminars to provide scientific insight and advice to the Department of Defense and the National Science Foundation in the areas of future directions and strategy for Nanomaterials and Quantum Information Science.
  - i. “*Microscale Adaptability*”, Army Science Planning and Strategy Meeting, Aberdeen Proving Ground, Aberdeen, MD, January 11–12, 2016
  - ii. “*Workshop on Quantum Information on a Chip*”, organized by the National Science Foundation and the University of Padova, Padova, Italy, October 12–14, 2015
  - iii. Presentation for the Assistant Secretary of Defense for Research and Engineering, ASD(R&E), Basic Research Forum Colloquium: “*Artificially structured materials for tailored optical properties*,” Arlington, VA, January 29, 2015
  - iv. “*Center for Distributed Quantum Systems Science Technical Workshop*”, Army Research Laboratory, Adelphi Laboratory Center, Adelphi, MD, June 27, 2014

## UNIVERSITY SERVICE

### *Current committees*

1. Provost’s committee on *Future Science Strategy at Duke*, Materials Science & Applied Physics subgroups (4/2017 – present)
2. Faculty Budget Advisory Committee, ECE (8/2015 – present)
3. Fitzpatrick Institute for Photonics Executive Committee (9/2015 – present)
4. Fitzpatrick Institute for Photonics, Award Committee, co-chair (9/2015 – present)
5. Faculty Coordinator, “Women in Physics Group” (11/2012 – present)
6. Instructor, “Females Excelling More in Math, Engineering, and Science”, (2014– present)

### *Past committees*

7. Quantum Science and Technology Faculty Search Committee, ECE and Physics (9/2016 – 6/2017)
8. Physics Faculty Recruitment and Search Committee (8/2015 – 07/2016)
9. ECE Undergraduate Studies Committee (UGSC) (2013 – 4/2016)



10. Research Laser Safety Committee (2013 – 4/2016)
11. Committee for Optics and Photonics Seminar Series (2012 – 4/2016)
12. Shared Materials Instrumentation Facility (SMIF) Advisory Committee, (9/2015 – 4/2016)
13. Panelist, NSF CAREER proposal writing workshop, Duke University (3/2016)
14. Panelist, NSF Graduate Fellowship proposal workshop, part of Pratt PhD Plus Program, Pratt (9/2015)
15. ECE Faculty Search Committee, Optics, Duke University (2012 – 2013)
16. Physics Faculty Search Committee, Experimental Condensed Matter Physics, Duke University (2012 – 2013)
17. Physics Graduate Curriculum Committee, Duke University (2012)

### **PROFESSIONAL DEVELOPMENT**

1. New Laser Scientists Conference, Sponsored by the American Physical Society, Division of Laser Science, Tucson, AZ, October 23-24, 2014
2. National Science Foundation, Grants Conference, Colorado State University, Denver, CO, June 23-24, 2014
3. Workshop for New Physics and Astronomy Faculty focused on innovations in teaching organized by the American Association of Physics Teachers, College Park, MD, November 7-10, 2013
4. Workshop “Duke LEADER: Leadership Development for Researchers,” Duke University, Durham, NC, February 19-21, 2013

### **PROFESSIONAL MEMBERSHIPS**

- American Physical Society (APS), lifetime member
- The Optical Society (OSA), lifetime member
- Society of Photo-Optical Instrumentation Engineers (SPIE), lifetime member
- Materials Research Society (MRS)
- Institute of Electrical and Electronics Engineers (IEEE)
- European Physical Society (EPS)
- American Chemical Society (ACS)