Curriculum Vitae — Rashid Zia

1. Name, Position, and Department

Rashid Zia
Associate Professor of Engineering and Physics
School of Engineering, Brown University
Box D, 182 Hope St, Providence, RI 02912
Phone: +1(401)863-6315 Email: rashid_zia@brown.edu Website: http://zia-lab.com

2. Program Eligibility

United States Citizen and Rhode Island Resident
Home Address: 66 Benevolent St, Providence, RI 02906
Phone: +1(401)932-5068 Email: rashid.zia@gmail.com

3. Education

Ph.D. (Electrical Engineering, minor: Materials Science & Engineering), Stanford University, 2006

M.S. (Electrical Engineering), Stanford University, 2002

Sc.B. (Engineering with Honors), Brown University, 2001

A.B. (English and American Literature), Brown University, 2001

4. Professional Appointments

2014 – present **Brown University**
Associate Professor of Engineering and Physics

2013 – 2014 **Brown University**
Manning Assistant Professor of Engineering and Physics

2010 – 2013 **Brown University**
Manning Assistant Professor of Engineering

2007 – present **Brown University**
Director, Brown Microelectronics Central User Facility

2006 – 2010 **Brown University**
Assistant Professor of Engineering

2006 **Universite de Bourgogne**
Postdoctoral Researcher, Laboratoire de Physique

5. Academic Honors, Fellowships, and Societies

a. Faculty Honors

- Member, Harvard Higher Education Leaders Forum, 2015
- American Physical Society, Outstanding Referee, 2014
- Henry Merritt Wriston Fellowship, Brown University, 2012
- Lead PI, Department of Defense Multidisciplinary University Research Initiative (MURI), 2012
- Dow Foundation Distinguished Lecturer at the University of California, Santa Barbara, 2012
- School of Engineering Dedicated Faculty Award, 2011
- Manning Assistant Professor, Brown University, 2010
- Fellow, National Forum on the Future of Liberal Education, 2010
- Presidential Early Career Award for Scientists and Engineers (PECASE), 2010
- National Science Foundation CAREER Award, 2009

B. Graduate Honors

- National Defence Science and Engineering (NDSEG) Fellow, 2001-2004
- Honorary Stanford Graduate Fellow, 2001-2004
- Tau Beta Pi Fellow, 2001

C. Undergraduate Honors

- Domenico A. Ionata Award, presented for creativity and imagination in research
- Magna Cum Laude
- Phi Beta Kappa, liberal arts honor society
- Sigma Xi, scientific research society
- Tau Beta Pi, engineering honor society

D. Professional Society Memberships

- American Physical Society (APS)
- Materials Research Society (MRS)
- Optical Society of America (OSA)
- Registered Patent Agent with the U.S. Patent and Trademark Office

6. Publications

A. Chapters in books

1. **"Optical Frequency Magnetic Dipole Transitions"**
   Sinan Karaveli and Rashid Zia.
   In *Encyclopedia of Nanotechnology*, edited by Bharat Bhushan, pg. 1942–1950, (Springer: Dordrecht, Netherlands, 2012), DOI:10.1007/978-90-481-9751-4_30.
2. **"Nanoplasmonics: Components, Devices, and Circuits"**
   Mark L. Brongersma, Jon A. Schuller, Justin White, Young Chul Jun, Sergey I. Bozhevolnyi, Thomas Sondergaard, and Rashid Zia.
   In *Plasmonics Nanoguides and Circuits*, edited by Sergey I. Bozhevolnyi, pg. 405–438, (Pan Stanford Publishing: Singapore, 2008).
3. **"Metal Stripe Surface Plasmon Waveguides"**
   Rashid Zia and Mark L. Brongersma.
   In *Plasmonics Nanoguides and Circuits*, edited by Vladimir Shalaev and Satoshi Kawata, pg. 191, (Elsevier: Amsterdam, Netherlands, 2007), DOI:10.1016/S1871-0018(06)02007-3.
4. **"Development and Near-Field Characterization of Surface Plasmon Waveguides"**
   Jean-Claude Weeber, Anne-Laure Baudrion, Maria U. Gonzalez, Alain Dereux, Rashid Zia, and Mark L. Brongersma.
   In *Surface Plasmon Nanophotonics*, edited by Mark L. Brongersma and Pieter G. Kik, pg. 39–54, (Springer: Dordrecht, Netherlands, 2007), DOI:10.1007/978-1-4020-4333-8_4.

B. Refereed journal publications

1. **"Dynamic control of light emission faster than the lifetime limit using VO_2 phase-change"**
   Sébastien Cueff, Dongfang Li, You Zhou, Franklin J. Wong, Jonathan A. Kurvits, Shriram Ramanathan, and Rashid Zia.
   Nature Communications, **6** (2015), 8636, DOI:10.1038/ncomms9636.

2. **"Comparative analysis of imaging configurations and objectives for Fourier microscopy"**
   Jonathan A. Kurvits, Mingming Jiang, and Rashid Zia.
   J. Opt. Soc. Am. A, **32** (2015), 2082–2092, DOI:10.1364/JOSAA.32.002082.

3. **"Reusable inorganic templates for electrostatic self-assembly of individual quantum dots, nanodiamonds, and lanthanide-doped nanoparticles"**
   Mingming Jiang, Jonathan A. Kurvits, Yao Lu, Arto V. Nurmikko, and Rashid Zia.
   Nano Letters, **15** (2015), 5010–5016, DOI:10.1021/acs.nanolett.5b01009.

4. **"Magnetic dipole emission of Dy^{3+}:Y_2O_3 and Tm^{3+}:Y_2O_3 at near-infrared wavelengths"**
   Christopher M. Dodson, Jonathan A. Kurvits, Dongfang Li, Mingming Jiang, and Rashid Zia.
   Opt. Mater. Express, **4** (2014), 2441–2450, DOI:10.1364/OME.4.002441.

5. **"Wide-angle energy-momentum spectroscopy"**
   Christopher M. Dodson, Jonathan A. Kurvits, Dongfang Li, and Rashid Zia.
   Opt. Lett., **39** (2014), 3927–3930, DOI:10.1364/OL.39.003927.

6. **"Quantifying and controlling the magnetic dipole contribution to 1.5-μm light emission in erbium-doped yttrium oxide"**
   Dongfang Li, Mingming Jiang, Sébastien Cueff, Christopher M. Dodson, Sinan Karaveli, and Rashid Zia.
   Phys. Rev. B, **89** (2014), 161409, DOI:10.1103/PhysRevB.89.161409.

7. **"Electroluminescence efficiencies of erbium in silicon-based hosts"**
   Sebastien Cueff, Joan Manel Ramirez, Jonathan A. Kurvits, Yonder Berencen, Rashid Zia, Blas Garrido, Richard Rizk, and Christophe Labbe.
   Applied Physics Letters, **103** (2013), 191109, DOI:10.1063/1.4829142.

8. **"Surface phonon-polariton enhanced optical forces in silicon carbide nanostructures"**
   Dongfang Li, Nabil M. Lawandy, and Rashid Zia.
   Optics Express, **21** (2013), 20900–20910, DOI:10.1364/OE.21.020900.

9. **"Time-resolved energy-momentum spectroscopy of electric and magnetic dipole transitions in Cr^{3+}:MgO"**
   Sinan Karaveli, Shutong Wang, Gang Xiao, and Rashid Zia.
   ACS Nano, **7** (2013), 7165–7172, DOI:10.1021/nn402568d.

10. **"Direct modulation of lanthanide emission at sub-lifetime scales"**
    Sinan Karaveli, Aaron J. Weinstein, and Rashid Zia.
    Nano Letters, **13** (2013), 2264–2269, DOI:10.1021/nl400883r.

11. **"Orientation of luminescent excitons in layered nanomaterials"**
    Jon A. Schuller, Sinan Karaveli, Theanne Schiros, Keliang He, Shyuan Yang, Ioannis Kymissis, Jie Shan, and Rashid Zia.
    Nature Nanotechnology, **8** (2013), 271–276, DOI:10.1038/nnano.2013.20.
    ——Featured in the *Materials Today* podcast on "Energy-Momentum Spectroscopy".

12. **"Bright white scattering from protein spheres in color changing, flexible cuttlefish skin"**
    Lydia M. Mathger, Stephen L. Senft, Meng Gao, Sinan Karaveli, George R. R. Bell, Rashid Zia, Alan M. Kuzirian, Patrick B. Dennis, Wendy J. Crookes-Goodson, Rajesh R. Naik, George W. Kattawar, and Roger T. Hanlon.
    Advanced Functional Materials, **23** (2013), 3980–3989, DOI:10.1002/adfm.201203705.

13. **"Magnetic dipole and electric quadrupole transitions in the trivalent lanthanide series: Calculated emission rates and oscillator strengths"**
    Christopher M. Dodson and Rashid Zia.
    Physical Review B, **86** (2012), 125102, DOI:10.1103/PhysRevB.86.125102.

14. **"Quantifying the magnetic nature of light emission"**
Tim H. Taminiau, Sinan Karaveli, Niek F. van Hulst, and Rashid Zia.
Nature Communications, **3** (2012), 979, DOI:10.1038/ncomms1984.
——Featured in the Research Highlights of *Nature Physics*, **8** (2012), 637.
——Featured in the Research Highlights of *Nature Photonics*, **6** (2012), 636.

15. **"Spectral tuning by selective enhancement of electric and magnetic dipole emission"**
Sinan Karaveli and Rashid Zia.
Physical Review Letters, **106** (2011), 193004, DOI:10.1103/PhysRevLett.106.193004.

16. **"Strong enhancement of magnetic dipole emission in a multilevel electronic system"**
Sinan Karaveli and Rashid Zia.
Optics Letters, **35** (2010), 3318–3320, DOI:10.1364/OL.35.003318.

17. **"Subwavelength silicon microcavities"**
Jeffrey Shainline, Stuart Elston, Zhijun Liu, Gustavo Fernandes, Rashid Zia, and Jimmy Xu.
Optics Express, **17** (2009), 23323–23331, DOI:10.1364/OE.17.023323.

18. **"Dielectric metamaterials based on electric and magnetic resonances of silicon carbide particles"**
Jon A. Schuller, Rashid Zia, Thomas Taubner, and Mark L. Brongersma.
Physical Review Letters, **99** (2007), 107401, DOI:10.1103/PhysRevLett.99.107401.
——Selected as PRL Editors' Suggestions.

19. **"Surface plasmon polariton analogue to Young's double-slit experiment"**
Rashid Zia and Mark L. Brongersma.
Nature Nanotechnology, **2** (2007), 426–429, DOI:10.1038/nnano.2007.185.

20. **"Efficient surface plasmon field confinement in one-dimensional crystal line-defect waveguides"**
Jean-Claude Weeber, Anne-Laure Baudrion, Alexandre Bouhelier, Aurelien Bruyant, Gerard Colas des Francs, Rashid Zia, and Alain Dereux.
Applied Physics Letters, **89** (2006), 211109, DOI:10.1063/1.2392998.

21. **"Near-field characterization of guided polariton propagation and cutoff in surface plasmon waveguides"**
Rashid Zia, Jon A. Schuller, and Mark L. Brongersma.
Physical Review B, **74** (2006), 165415, DOI:10.1103/PhysRevB.74.165415.

22. **"Dielectric waveguide model for guided surface polaritons"**
Rashid Zia, Anu Chandran, and Mark L. Brongersma.
Optics Letters, **30** (2005), 1473–1475, DOI:10.1364/OL.30.001473.

23. **"Leaky and bound modes of surface plasmon waveguides"**
Rashid Zia, Mark D. Selker, and Mark L. Brongersma.
Physical Review B, **71** (2005), 165431, DOI:10.1103/PhysRevB.71.165431.

24. **"Geometries and materials for subwavelength surface plasmon modes"**
Rashid Zia, Mark D. Selker, Peter B. Catrysse, and Mark L. Brongersma.
Journal of the Optical Society of America A, **21** (2004), 2442–2449, DOI:10.1364/JOSAA.21.002442.

25. **"Omnidirectional resonance in a metal–dielectric–metal geometry"**
Hocheol Shin, Mehmet Fatih Yanik, Shanhui Fan, Rashid Zia, and Mark L. Brongersma.
Applied Physics Letters, **84** (2004), 4421–4423, DOI:10.1063/1.1758306.

C. Non-refereed journal articles

1. **"Dielectric metasurfaces: Transparent design"**
   Rashid Zia.
   Nature Nanotechnology, **10** (2015), 913–914, DOI:10.1038/nnano.2015.205.
   ——Invited *News & Views* piece.
2. **"Metasurfaces for informed optics"**
   Christopher M. Dodson and Rashid Zia.
   Nature Nanotechnology, **10** (2015), 11–12, DOI:10.1038/nnano.2014.314.
   ——Invited *Focus Feature* contribution.
3. **"Optical antennas: Redirecting single molecules"**
   Rashid Zia.
   Nature Photonics, **2** (2008), 213–214, DOI:10.1038/nphoton.2008.42.
   ——Invited *News & Views* piece.
4. **"Plasmonics – the missing link between nanoelectronics and microphotonics"**
   Mark L. Brongersma, Rashid Zia, and Jon A. Schuller.
   Applied Physics A, **89** (2007), 221–223, DOI:10.1007/s00339-007-4151-1.
5. **"Plasmonics: the next chip-scale technology"**
   Rashid Zia, Jon A. Schuller, Anu Chandran, and Mark L. Brongersma.
   Materials Today, **9** (2006), 20–27, DOI:10.1016/S1369-7021(06)71572-3.
   ——Invited review article featured as cover story.

D. Invited lectures, panels, and seminars

1. Worcester Polytechnic Institute, Department of Physics
   Worcester, MA, October 2015.
2. Raytheon BBN Technologies
   Cambridge, MA, September 2015.
3. Osram Sylvania, Central Research and Services Laboratory
   Beverly, MA, August 2015.
4. International Conference on Materials for Advanced Technology (ICMAT/MRS-Singapore)
   Singapore, July 2015.
5. Science Foo Camp, an invitation-only gathering at the Googleplex organized by Digital Science, O'Reilly Media, and Google, with support from Nature
   Mountain View, CA, June 2015.
6. University of Pennsylvania
   Philadelphia, PA, May 2015.
7. Yale University, Department of Applied Physics
   New Haven, CT, April 2015.
8. Spring Meeting of the Materials Research Society
   San Francisco, CA, April 2015.
9. Global Phosphor Summit
   San Francisco, CA, March 2015.
10. NSF Nanoscale Science and Engineering Conference
    Arlington, VA, December 2014.
11. Department of Defense, Tri-Services Metamaterials Review
    Durham, NC, November 2014.
12. Office of the Secretary of Defense (OSD) MURI Program Review
    Arlington, VA, July 2014.

13. LUMINET Workshop
    Wroclaw, Poland, July 2014.
14. Plenary Talk, International Conference on Luminescence and Optical Spectroscopy (ICL2014)
    Wroclaw, Poland, July 2014.
15. NSF Workshop for CAREER Awardees in Photonics
    San Jose, CA, June 2014.
16. University of Massachusetts Lowell, Physics Colloquium
    Lowell, MA, April 2014.
17. 3rd International Conference on Frontiers of Plasmonics (FOP3)
    Xiamen, China, March 2014.
18. Tutorial on Energy-Momentum Spectroscopy
    Xiamen, China, March 2014.
19. US-French Nano-Optics Workshop, Universite de Technologie de Troyes
    Troyes, France, November 2013.
20. Massachusetts Institute of Technology, Mechanical Engineering Micro-Nano Seminar Series
    Cambridge, MA, October 2013.
21. Harvard University, Applied Physics Colloquium
    Cambridge, MA, October 2013.
22. Complex Nanophotonics Science Camp
    Berkshire, United Kingdom, August 2013.
23. International Quantum Electronics Conference (IQEC / CLEO Europe)
    Munich, Germany, May 2013.
24. Universitat Stuttgart, Physikalisches Institut
    Stuttgart, Germany, May 2013.
25. Princeton University, Nanotechnology for Clean Energy IGERT Seminar
    Princeton, NJ, April 2013.
26. NSF Workshop of US-Czech Frontiers in Photonics
    Prague, Czech Republic, April 2013.
27. FOM Institute AMOLF
    Amsterdam, Netherlands, April 2013.
28. Spring Meeting of the Materials Research Society (MRS)
    San Francisco, CA, April 2013.
29. Yale University, Connecticut Microelectronics and Optoelectronics Consortium Symposium
    New Haven, CT, March 2013.
30. Brown University, Institute for Molecular & Nanoscale Innovation
    Providence, RI, February 2013.
31. International Meeting on Nanophotonics and Metamaterials (NanoMeta)
    Seefeld, Austria, January 2013.
32. University of Pennsylvania, Department of Chemistry
    Philadelphia, PA, December 2012.
33. Metamaterials 2012: 6th International Congress on Advanced Electromagnetic Materials
    St. Petersburg, Russia, September 2012.
34. SPIE Optics and Photonics Conference
    San Diego, CA, August 2012.
35. Gordon Research Conference on Plasmonics
    Colby, ME, June 2012.

36. Conference on Lasers and Electro-Optics (CLEO)
San Jose, CA, May 2012.
37. SPIE Photonics Europe
Brussels, Belgium, April 2012.
38. University of California, Berkeley
Berkeley, CA, March 2012.
39. University of California, Santa Barbara
Santa Barbara, CA, March 2012.
40. SPIE Photonics West
San Francisco, CA, January 2012.
41. ICFO-Institute of Photonic Sciences
Barcelona, Spain, November 2011.
42. University of Exeter, Department of Physics and Astronomy
Exeter, United Kingdom, October 2011.
43. Advanced DPG Physics School on Nanoantennas and Hybrid Quantum Systems
Bad Honnef, German, September 2011.
44. SPIE Optics and Photonics Conference
San Diego, CA, August 2011.
45. CMOS Emerging Technologies Conference
Whistler, Canada, June 2011.
46. 5th International Conference of Surface Plasmon Photonics
Busan, South Korea, May 2011.
47. Stanford University, Optics and Electronics Seminar
Stanford, CA, April 2011.
48. University of Minnesota, Electrical and Computer Engineering Colloquium
Minneapolis, MN, March 2011.
49. California Institute of Technology, Applied Physics Seminar
Pasadena, CA, March 2011.
50. SPIE Photonics West (2 invited talks)
San Francisco, CA, January 2011.
51. Molecular Foundry, Lawrence Berkeley National Laboratory
Berkeley, CA, January 2011.
52. University of Colorado Boulder, Optical, Electronic, and Quantum Systems Seminar
Boulder, CO, October 2010.
53. Columbia University, Optics Seminar
New York, NY, October 2010.
54. Princeton Instruments Spectroscopy Seminar, Massachusetts Institute of Technology (MIT)
Cambridge, MA, August 2010.
55. WITec Users Meeting, University of Minnesota
Minneapolis, MN, October 2009.
56. University of Massachusetts Lowell, Physics and Applied Physics Colloquium
Lowell, MA, September 2009.
57. Spring Meeting of the Materials Research Society (MRS)
San Francisco, CA, April 2009.
58. March Meeting of the American Physical Society (APS)
Pittsburgh, PA, March 2009.

59. University of Rhode Island, Department of Chemistry
Kingston, RI, November 2008.
60. Osram Sylvania, Central Research and Services Laboratory
Beverly, MA, August 2008.
61. Gordon Research Conference on Plasmonics
Tilton, NH, July 2008.
62. A*STAR Institute of High Performance Computing (2 invited talks)
Singapore, March 2008.
63. Boston University, Nanophotonics Symposium
Boston, MA, May 2007.
64. U.S. Department of Energy, Workshop on Basic Research Needs for Solid State Lighting
Bethesda, MD, May 2006.
65. Agilent Laboratories
Palo Alto, CA, June 2005.
66. Max-Planck Institut fur Biochemie
Munich, Germany, May 2005.
67. Universitat Basel, Institut fur Physik
Basel, Switzerland, May 2005.
68. Universite de Bourgogne, Laboratoire de Physique
Dijon, France, May 2005.
69. Brown University, Division of Engineering
Providence, RI, April 2005.

7. Research Grants

a. Current grants

1. **"RII Track-2 FEC: Low-cost, efficient next-generation solar cells for the coming clean energy revolution"**
National Science Foundation, NSF-OIA-1538893 (8/2015 – 7/2019).
Senior Personnel (Lead PI: Nitin Padture), $4,000,000.
2. **"DURIP: Time-resolved energy-momentum spectroscopy system for characterizing quantum emitters and high-speed photonic devices"**
Air Force Office of Scientific Research (9/2015 – 9/2017).
Sole PI, $278,702, awarded as supplement to MURI.
3. **"Direct electrical modulation of light emission at sub-lifetime scales"**
National Science Foundation (6/2014 – 5/2017).
Sole PI, $375,000.
4. **"Core Infrastructure Award for a reactive co-sputtering system"**
Office of Vice President for Research, Brown University (4/2014).
Sole PI as Facility Director, $200,000.
5. **"Quantum Metaphotonics and Metamaterials MURI: From single emitters to strongly correlated systems"**
Air Force Office of Scientific Research, AFOSR-FA9550-12-1-0488 (9/2012 – 9/2017).
Lead PI (9 Co-PIs from Brown, CalTech, MIT, Stanford, UC Berkeley, UPenn, and UT Austin), $7,500,000 (including $3,000,000 two-year renewal option that was awarded in 2015).

B. Completed grants

1. **"PECASE: Resonantly-enhanced lanthanide emitters for subwavelength-scale, active photonics"**
   Air Force Office of Scientific Research, AFOSR-FA-9550-10-1-0026 (12/2009 – 12/2014).
   Sole-PI, $1,000,000.
2. **"REU: Supplements to CAREER"**
   National Science Foundation, NSF-ECCS-0846466 (06/2009 – 02/2015).
   Sole PI, $11,000.
3. **"CAREER: Optical frequency, quantum magnetic resonances for photonics devices"**
   National Science Foundation, NSF-ECCS-0846466 (03/2009 – 02/2015).
   Sole PI, $400,000.
4. **"Core Facility Fund Request for a new research-grade, variable-angle, spectroscopic ellipsometer"**
   Office of Vice President for Research, Brown University (9/2012).
   Sole PI as Facility Director, $150,000.
5. **"Materials Facilities Research Network (MFRN) supplement to MRSEC"**
   National Science Foundation, NSF-DMR-0520651 (09/2009 – 07/2014).
   Co-PI (Lead PI: William Curtin), $30,000.
6. **"Proteinaceous light diffusers and dynamic 3-D skin texture in cephalopods"**
   Air Force Office of Scientific Research, AFOSR-FA9550-09-0346 (4/2009 – 3/2014).
   Co-PI (Lead PI: Roger T. Hanlon from Marine Biological Lab), $106,549 subaward.
7. **"Cavity-free, matrix-addressable quantum dot architectures for on-chip optical switching"**
   Air Force Office of Scientific Research, AFOSR-FA9550-10-1-0211 (5/2010 – 4/2013).
   Lead PI (with Co-PI: Arto V. Nurmikko), $580,813.
8. **"MRI-R2: Acquisition of conformal-oxide processing module for microfabrication central user facility"**
   National Science Foundation, NSF-ECCS-0958785 (3/2010 – 2/2012).
   Lead PI (with 11 Co-PIs), $450,000.
9. **"Direct write synthesis of epitaxial graphene"**
   Jointly sponsored by the Nanoelectronics Research Initiative of the Semiconductor Research Corpotation and the National Science Foundation, NRI-NSF (7/2009 – 6/2012).
   Co-PI (Lead PI: Rod Beresford), $400,000.
10. **"Direct laser-writing of epitaxial graphene: Exploiting resonant light-matter interactions in SiC"**
    Office of Vice President for Research, Brown University, Salomon Award (12/2008 – 6/2009).
    Sole PI as Facility Director, $15,000.
11. **"MRI: Acquisition of a dual focused ion/electron beam imaging and nanofabrication tool"**
    National Science Foundation, NSF-DMR-0821008 (9/2008 – 8/2011).
    Co-PI (Lead PI: David Paine with 11 additional co-PIs), $810,000.
12. **"Curricular development grants for new course on "The Art + Science of Light""**
    Supported by the Wayland Collegium, the Dean of the College, and the Creative Arts Council (6/2007 – 5/2009).
    Jointly submitted with Paul Myoda (Visual Arts Department), $6,000.

8. Service

a. to the University

2016 – present	**Member, Search Committee for Dean of the Graduate School**
2015	**Member, OVPR Mock Peer Review Panel for NSF CAREER Proposals**
2014 – 2015	**Director of Undergraduate Studies, Engineering**
2014 – present	**Member, Cleanroom Design Working Group for new building**
2014 – present	**Member, Laboratory Strategy & Design Committee for new building**
2013 – 2014	**Lead, Electrical Engineering ABET Self-Study and Accreditation Visit**
2013 – present	**Electrical Engineering Concentration Advisor**
2013 – present	**Member, Academic Technology Steering Committee**
2013 – 2014	**Member, Campus Safety Task Force**
2013	**Capstone Panel Member, Brown-RISD Dual Degree Program**
2013 – present	**Member, School of Engineering Corporate Development Committee**
2011	**Engineering Representative, Visit Team to the University of Exeter**
2010 – 2012	**Co-Chair, Engineering Honors Program**
2010	**Lead Organizer, Brown Nanoscale Fabrication & Characterization Workshops**
2008 – present	**Advisor for Brown-RISD Dual Degree Program**
2008 – 2010	**Engineering Representative on the University Laser Safety Committee**
2008	**Assisted with Electrical Engineering Self-Study for ABET Accreditation**
2008 – present	**Faculty Advisor, Tau Beta Pi (Engineering Honor Society)**
2008 – present	**Second-Year Advisor for Undergraduate Students**
2007 – present	**First-Year Advisor for Undergraduate Students**
2007 – present	**Director, Brown Microelectronics Central User (Cleanroom) Facility**
2006 – 2009	**Seminar Organizer, Electrical Sciences and Computer Engineering**
2007 – present	**Faculty Speaker at Admissions, Advising, and Mentoring Events, including:** STEM Panel for A Day on College Hill, April 2015. Engineering Open House, November 2014. Engineering Orientation, September 2014. BEARCORE Ethical & Responsible Conduct of Research Education program, June 2013. NSF CAREER Workshop, March 2012.

b. to the Profession

2015 – present	**Editorial Advisory Board, ACS Photonics**
2015 – present	**Member, Harvard Higher Education Leaders Forum**
2013 – 2015	**Associate Editor, Nanophotonics (De Gruyter Publishing)**
2011 – present	**Conference Programming Committee Member:** Nano-Optics and Plasmonics Subcommittee, CLEO:QELS, San Jose, June 2016 Light-Matter Interactions at Nanoscale Subcommittee, CLEO-Europe:EQEC, Munich, June 2015 Nano-Optics and Plasmonics Subcommittee, CLEO:QELS, San Jose, May 2015 Nano-Optics and Plasmonics Subcommittee, CLEO:QELS, San Jose, June 2014 Surface Plasmon Photonics (SPP5), Busan, South Korea, May 2011
2010 – 2014	**Fellow, National Forum on the Future of Liberal Education**
2008 – 2015	**Conference and Symposium Organizer:** Co-Organizer, Special Focus Session on "Nanostructures and Metamaterials"

March Meeting of the American Physical Society (APS), San Antonio, March 2015

Co-Organizer, "Symposium II: Emerging Nanophotonic Materials and Devices"
Spring Meeting of the Materials Research Society (MRS), San Francisco, April 2014

Lead Organizer, "Symposium M: Resonant Optical Antennas"
Fall Meeting of the Materials Research Society (MRS), Boston, Nov–Dec. 2010

Co-Organizer, Joint Meeting of the New Sections of the American Physical Society and the American Association of Physics Teachers (NES-APS/AAPT)
Brown University, Providence RI, October 2010

2006 – present **Reviewer for Government Funding Agencies, including:**
Department of Defense, Air Force Office of Scientific Research
Department of Defense, Army Research Office
Department of Energy, Office of Basic Energy Sciences
Department of Energy, Solid State Lighting Program
Engineering and Physical Sciences Research Council (U.K.)
National Science Foundation
Swiss National Science Foundation
U.S. Civilian Research and Development Foundation

2006 – present **Reviewer for Peer-Reviewed Journals, including:**
ACS Nano, ACS Photonics, Applied Optics, Applied Physics Letters,
IEEE J. Quantum Electronics, J. Lightwave Technology, Nano Letters,
Nature, Nature Communications, Nature Materials, Nature Nanotechnology,
Nature Photonics, Optics Express, Optics Letters, Physical Review B,
Physical Review Letters, Physical Review X, Science.

c. to the Community

- Selection Committee, Brown University 250th: "Research Matters!" Celebration
  Providence, RI, September 2014
- Co-Organizer, TEDxBrownUniversity 2012: "Life, Learning, and Liberal Education"
  Providence, RI, October 2012
- Co-Organizer, Lantern Festival Public Exhibition at the Granoff Art Center
  Providence, RI, May 2012
- Speaker at the Spira Engineering Camp for Female High School Students
  Providence, RI, July 2011, July 2012, July 2013, July 2014
- Speaker at the Martin Luther King, Jr. Elementary School Science Conference
  Providence, RI, June 2011
- Advisor for Anthony Fascia, a chemistry teacher at Central High School, through the Brown MRSEC Research Experience for Teachers (RET) Program, Summer 2010
- Speaker at the Vartan Gregorian Elementary School Science Conference
  Providence, RI, June 2009, June 2010
- Professional Development Session for Local High School Teachers, June 2009

9. Teaching and Advising

a. Recent Regular Courses Taught

Semester	Course Number and Title	Enrollment	Eval.*
Fall 2015	On Leave: Sabbatical	N/A	N/A
Spring 2015	ENGN 1690: Photonics and Applications	7	4.57
Fall 2014	ENGN 0510: Electricity and Magnetism	161	4.55
Spring 2014	ENGN 1690: Photonics and Applications	13	4.32
Fall 2013	ENGN 0510: Electricity and Magnetism	114	4.64
Spring 2013	On Leave: Henry Merritt Wriston Fellowship	N/A	N/A
Fall 2012	Teaching Relief	N/A	N/A
Spring 2012	ENGN 1931A: Physics of Solar Cells	19	4.34
Fall 2011	ENGN 0510: Electricity and Magnetism	127	4.60
Spring 2011	ENGN 2911J: Computational Electromagnetics	10	4.88
Fall 2010	ENGN 0510: Electricity and Magnetism	88	4.61
Spring 2010	On Leave: Junior Sabbatical	N/A	N/A
Fall 2009	ENGN 0510: Electricity and Magnetism	112	4.57

* Average Student Evaluation based on a 1-5 scale
(5 = Excellent, 4 = Very Good, 3 = Good, 2 = Fair, 1= Poor)

b. Recent Independent Studies and Workshops

Semester	Course Number and Title	Enrollment
Fall 2015	ENGN 1971 S8: Independent Study in Engineering	2
Fall 2015	PHYS 1990 S1: Senior Conference Course (Senior Thesis)	1
Fall 2015	PHYS 2980 S17: Research in Physics	3
Spring 2015	ENGN 2980 S51: Special Projects, Research & Design	1
Spring 2015	PHYS 2981 S17: Research in Physics	2
Fall 2014	ENGN 2980 S51: Special Projects, Research & Design	1
Fall 2014	PHYS 2980 S17: Research in Physics	2
Spring 2014	ENGN 2980 S51: Special Projects, Research & Design	2
Spring 2013	PHYS 2981 S17: Research in Physics	3
Fall 2013	ENGN 2980 S51: Special Projects, Research & Design	1
Fall 2013	PHYS 2980 S17: Research in Physics	3
Spring 2013	ENGN 1971 S8/S11: Independent Study in Engineering	4
Spring 2013	ENGN 2980 S51: Special Projects, Research & Design	2
Spring 2013	PHYS 2981 S17: Research in Physics	3
Fall 2012	ENGN 1971 S8: Independent Study in Engineering	1
Fall 2012	ENGN 2980 S51: Special Projects, Research & Design	3
Fall 2012	PHYS 2980 S17: Research in Physics	2
Spring 2012	ENGN 1971 S8: Independent Study in Engineering	2
Spring 2012	ENGN 2980 S51: Special Projects, Research & Design	4
Fall 2011	ENGN 1971 S8: Independent Study in Engineering	1
Fall 2011	ENGN 2980 S51: Special Projects, Research & Design	4
Spring 2011	ENGN 2980 S51: Special Projects, Research & Design	5
Fall 2010	ENGN 2980 S51: Special Projects, Research & Design	4
Spring 2010 – Summer 2010	Unlisted: Brown Nanoscale Characterization and Fabrication Workshop	41**
Spring 2010	ENGN 2980 S51: Special Projects, Research & Design	2
Fall 2009	ENGN 2980 S51: Special Projects, Research & Design	2

** Academic participants inc. 3 undergraduates, 25 graduate students,
5 postdoctoral researcher, and 6 faculty members from Brown and URI

c. Advising

2013 – 2014 **Concentration Advisor for Electrical Engineering (23 students)**

2012 – 2013 **External Examiner on the Doctoral Defense Committee of:**
Marta Castro Lopez, ICFO, Spain, 2013. (Advised by Prof. N.F. van Hulst.)
Tim H. Taminiau, ICFO, Spain, 2012. (Advised by Prof. N.F. van Hulst.)

2011 – 2012 **Host for Visiting Scholar:**
Dr. Jon A. Schuller (Columbia University), 2011-2012. (Currently Asst. Prof. at UCSB)

2010 **Host for Visiting Graduate Research Student:**
Tim H. Taminiau (ICFO, Spain), 2010. (Currently Postdoc at TU Delft)

2009 – 2013 **Post-Doctoral Research Advisor for:**
Dr. Sebastien Cueff, 2011-2013. (Currently at Institut des Nanotechnologies de Lyon)
Dr. Padam Jain, 2009. (Currently Senior Engineer at Intel)

2009 – 2010 **Post-Baccalaureate Research Advisor for:**
Aaron J. Weinstein, 2009-2010. (Currently Ph.D. Student at CalTech)

2008 – 2015 **Advisor for Brown-RISD Dual Degree Program (1-3 students per year)**

2008 – 2014 **Faculty Advisor, Tau Beta Pi (Engineering Honor Society)**

2008 – present **Second-Year Advisor for Undergraduate Students (2-10 students per year)**

2007 – present **First-Year Advisor for Undergraduate Students (6-10 students per year)**

2007 – present **Reader on the Dissertation Defense Committee of:**
Kwangdong Rod, Ph.D. Physics, 2015. (Advised by Prof. Nurmikko)
John Raiti, Ph.D. Biomedical Engineering, 2011. (Advised by Prof. Daniels)
Steven Palefsky, Ph.D. Physics, 2011. (Advised by Prof. Xu)
Chih-Hsum Hsu, Ph.D. Electrical Engineering, 2010. (Advised by Prof. Xu)
Jeffrey Shainline, Ph.D. Physics, 2010. (Advised by Prof. Xu)
Cuong Dang, Ph.D. Physics, 2010. (Advised by Prof. Nurmikko)
Yanqiu Li, Ph.D. Physics, 2009. (Advised by Prof. Nurmikko)
Dimitris Kazazis, Ph.D. Electrical Engineering, 2008. (Advised by Prof. Zaslavsky)
John McMurdy, Ph.D. Biomedical Engineering, 2008. (Advised by Prof. Crawford)
Jeffrey Guasto, Ph.D. Mechanical Engineering, 2008. (Advised by Prof. Breuer)
Tolga Atay, Ph.D. Physics, 2008. (Advised by Prof. Nurmikko)
Suraj Gorkhali, Ph.D. Electrical Engineering, 2007. (Advised by Prof. Crawford)

2006 – present **Graduate Research Advisor for:**
Wenaho Li (Physics Ph.D. Program), 2015-present.
Shano Ran Huang (Physics Ph.D. Program), 2015-present.
Yawen Hao (Electrical Engineering M.Sc. Program), 2013-2015.
Jonathan A. Kurvits (Physics Ph.D. Program), 2012-present.
Christopher M. Dodson (Electrical Engineering Ph.D. Program), 2011-2014.
Mingming Jiang (Physics Ph.D. Program), 2010-present.

Dongfang Li (Physics Ph.D. Program), 2010-2014.

Yana Cheng, co-advised with Prof. Beresford (Physics Ph.D. Program), 2009-2011.

Alexandra Witthoft (Electrical Engineering Ph.D. Program), 2008-2009.

Sinan Karaveli, Ph.D. Electrical Engineering, 2006-2013. (Currently Postdoc at MIT)

2006 – present **Undergraduate Research Advisor for:**

Michael Scheer, Mathematical Physics, 2015-present.

Jack Wilson, Engineering-Physics, NSF REU, 2015-present.

Yan Joe Lee, Engineering-Physics, UTRA Fellow, 2014-present.

Haeri Yoon, Engineering, UTRA Fellow, 2014.

Andrea Fernandez Perez, Physics, Univ. de Cantabaria Exchange, Summer 2014.

Yael Gutierrez Vela, Physics, Univ. de Cantabaria Exchange, Summer 2014.

Emily Jensen, Engineering, NSF REU, Summer 2014.

Visarute Pinrod, Engineering-Physics, Seguin and two-time UTRA Fellow, 2011-2013.

Jonathan Hills, Brown-RISD Dual Degree, UTRA Fellow, Summer 2010.

Vaibhav Mathur, Engineering-Physics, two-time UTRA Fellow, 2010-2012.

Anne Oram*****, Engineering and Visual Art, NSF REU, Summer 2009.

David Perlmutter******, Electrical Engineering, Fall 2008.

Erik Abi-Khattar*****, Computer Engineering, UTRA Fellow, Summer 2008.

Aaron Becker*****, Geology and Urban Studies, UTRA Fellow, Summer 2008.

Thomas Dahlberg*****, Visual Art, UTRA Fellow, Summer 2008.

Andrew Raines*****, Environmental Science, UTRA Fellow, Summer 2008.

Ding Ding, Engineering-Physics, DiMase and Seguin Fellow, 2007-2009.

Adam Backer, Engineering-Physics, Royce Fellow, 2006-2008.

Joshua Spechler, Engineering-Physics, UTRA Fellow, 2006-2008.

***** Co-advised with Prof. Paul Myoda (Visual Art)
****** Co-advised with Prof. Rod Beresford (Engineering)

d. Completed Dissertations and Theses

Doctoral Dissertations Directed:

Mingming Jiang, Ph.D. Physics, 2015. (Currently Engineer at KLA-Tencor)

Dongfang Li, Ph.D. Physics, 2014. (Currently Postdoc at Brown)

Christopher M. Dodson, Ph.D. Electrical Engineering, 2014. (Currently Engineer at Apple)

Sinan Karaveli, Ph.D. Electrical Engineering, 2013. (Currently Postdoc at MIT)
——Receipient School of Engineering, Outstanding Thesis Award

Masters Theses Directed:

Yawen Hao, Sc.M. Engineering, 2015. (Currently Software Engineer at Casa Systems)

Senior Honors Theses Directed:

Visarute Pinrod, Sc.B. Engineering-Physics, 2013. (Currently Ph.D. Student at Cornell)

Vaibhav Mathur, Sc.B. Engineering-Physics, 2012. (Currently Analyst at Ampush)

Ding Ding, Sc.B. Engineering-Physics, 2009. (Currently Ph.D. Student at CalTech)

Adam Backer, Sc.B. Engineering-Physics, 2008. (Currently Ph.D. Student at Stanford)
Joshua Spechler, Sc.B. Engineering-Physics, 2008. (Currently Ph.D. Student at Princeton)