

Lane A. Baker

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Education and Appointments

2006 – present	Assistant Professor Analytical and Materials Chemistry Department of Chemistry	<i>Indiana University</i>
2004 - 2006	Postdoctoral Associate Department of Chemistry Research Advisor: Charles R. Martin	<i>University of Florida</i>
2001 - 2004	National Research Council Postdoctoral Associate Surface Nanoscience and Sensor Technology Section Research Advisor: Lloyd J. Whitman	<i>Naval Research Laboratory</i>
1996 - 2001	Ph.D., Chemistry Research Advisor: Richard M. Crooks Dissertation title: Endgroup Interactions in Poly(amido amine) and Modified Poly(propylene imine) Dendrimers	<i>Texas A&M University</i>
1996	B.S., Chemistry Research Advisor: Shujun Su	<i>Missouri State University</i>

Research Interests

Analytical and materials chemistries using components or principles derived from biological systems in combination with synthetic platforms at the nanometer scale. Research interests include electrochemistry, bioanalytical chemistry, chemical sensing, chemistry at interfaces, scanned probe microscopies and polymer chemistry.

Professional Activities

Memberships	American Chemical Society, Society for Electroanalytical Chemistry, Biophysical Society, Electrochemical Society, Materials Research Society, American Association for the Advancement of Science
Reviewer	<i>Nature Nanotechnology, Nature Protocols, Proceedings of the National Academy of Science, Journal of the American Chemical Society, Analytical Chemistry, Macromolecules, Journal of Physical Chemistry B, Langmuir, NanoLetters, Thin Solid Films, Nanotechnology, Chemistry of Materials, Electroanalysis, Journal of Electroanalytical Chemistry, Nanomedicine, Trends in Analytical Chemistry, Sensors and Actuators B, The Analyst, Journal of Materials Science, ACS Nano</i>
Reviewer	NSF; NIH (Ad hoc); ASEE Fellowship Program; AHA Biomedical Engineering Study Section (2009); Department of Energy, Research Corporation

Awards and Honors

2009	Cottrell Scholar Award, Research Corporation for Science Advancement
2009	National Science Foundation CAREER Award
2008	Society of Analytical Chemists of Pittsburgh Starter Grant Awardee
2001	National Research Council Postdoctoral Associate; Naval Research Laboratory

2001 Celanese Outstanding Graduate Student; Texas A&M University
1996 Hyperchem Hypercube Scholar; Missouri State University
1996 Outstanding Undergraduate in Inorganic Chemistry; Missouri State University

Publications and Presentations

32 journal publications (**0**) submitted; **2** book chapters; **2** invited commentaries **43** scientific presentations

Journal Publications

32. Morris, C.; Friedman, A. K.; Baker, L. A.; Applications of Nanopipettes in the Analytical Sciences, *Analyst*, **2010**, *in press*.
31. Thakar, R.; Baker, L. A. Lithography-free Production of Stamps for Microcontact Printing, *Anal. Meth.*, **2010**, *in press*.
30. Basore, J. R.; Lavrik, N. V.; Baker, L. A.; Single-Pore membranes Gated by Microelectromagnetic Traps. *Adv. Mat.*, **2010**, *in press*.
29. Petrovykh, D.; Sullivan, J.; Clark, T.; Baker, L. A.; Whitman, L. J. Self-Assembled Monolayers of Alkanethiols on InAs. *Langmuir* **2009**, *25*, 12185-12194. ([http:// dx.doi.org/10.1021/la804314j](http://dx.doi.org/10.1021/la804314j))
28. Fu, Y.; Tokuhisa, H.; Baker, L. A. Nanopore DNA sensors based on dendrimer-modified nanopipettes. *Chem Comm.* **2009**, *32*, 4877-4879. (<http://dx.doi.org/10.1039/b910511e>)
27. Chen, C.; Derylo, M.; Baker, L. A. Measurement of Ion Currents through Porous Membranes with Scanning Ion Conductance Microscopy. *Anal. Chem.*, **2009**, *81*, 4742-4751. (<http://dx.doi.org/10.1021/ac900065p>)
26. Burgan, D. A.; Baker, L. A. Investigating Self-Assembly with Macaroni. *J. Chem. Ed.* **2009**, *86*, 704A.
25. Tokuhisa, H.; Liu, J.; Omori, K.; Kanetsato, M.; Baker, L. A. Efficient Biosensor Interfaces Based on Space-Controlled Self-Assembled Monolayers. *Langmuir*, **2009**, *25*, 1633-1637. (<http://dx.doi.org/10.1021/la8033148>)
24. Laracuente, A. R.; Baker, L. A.; Whitman, L. J. UHV Characterization of Ambient-Dosed Hydrogen-Terminated Si(001). *Surf. Sci.* **2008**, *602*, 3-8. (<http://dx.doi.org/10.1016/j.susc.2007.09.032>)
23. Sexton, L. T.; Horne, L. P. Sherrill, S. S.; Bishop, G. W.; Baker, L. A.; Martin, C. R. Resistive-Pulse Studies of Proteins and Protein/Antibody Complexes Using a Conical Nanotube Sensor. *J. Am. Chem. Soc.* **2007**, *129*, 13144-13152. (<http://dx.doi.org/10.1021/ja0739943>)
22. Harrell, C. C.; Choi, Y.; Baker, L. A.; Siwy, Z.; Martin, C. R. Resistive-Pulse DNA Detection with a Conical Nanopore Sensor. *Langmuir*, **2006**, *22*, 10837-10843. (<http://dx.doi.org/10.1021/la061234k>)
21. Choi, Y.; Baker, L. A.; Hillebrenner, H.; Martin, C. R. Biosensing with conically shaped nanopores and nanotubes. *Phys. Chem. Chem. Phys.*, **2006**, *8*, 4976-4988. (<http://dx.doi.org/10.1039/b607360c>)
20. Ervin, E. N.; White, H. S.; Baker, L. A.; Martin, C. R. Alternating Current Impedance Imaging of High-Resistance Membrane Pores Using a Scanning Electrochemical Microscope. Application of Membrane Electrical Shunts to Increase Measurement Sensitivity and Image Contrast. *Anal. Chem.* **2006**, *78*, 6535-6541. (<http://dx.doi.org/10.1021/ac060577k>)
19. Scopece, P.; Baker, L. A.; Ugo, P.; Martin, C. R. Conical Nanopores: Solvent Shaping of Nanopores. *Nanotechnology*, **2006**, 3951-3956. (<http://dx.doi.org/10.1088/0957-4484/17/15/057>)
18. Baker, L. A.; Choi, Y.; Martin, C. R. Nanotube Membranes for Biomaterials Synthesis, Bioseparations, and Biosensors. *Current Nanoscience* **2006**, *2*, 243-255.

17. Heins, E. S.; Baker, L. A.; Siwy, Z. S.; Mota, M. O.; Martin, C. R. Effect of Crown Ether on Ion Currents through Synthetic Membranes Containing a Single Conically Shaped Nanopore. *J. Phys. Chem. B*, **2005**, *109*, 18400-18407. (<http://dx.doi.org/10.1021/jp052341a>)
16. Odom, D. J.; Baker, L. A.; Martin, C. R. Solvent-Extraction and Langmuir-Adsorption-Based Transport in Chemically Functionalized Nanopore Membranes. *J. Phys. Chem. B*, **2005**, *109*, 20877-20894. (<http://dx.doi.org/10.1021/jp0524983>)
15. Heins, E. S.; Siwy, Z. S.; Baker, L. A.; Martin, C. R. Detecting Single Porphyrin Molecules in a Conically Shaped Synthetic Nanopore. *Nano Lett.* **2005**, *5*, 1824-1829. (<http://dx.doi.org/10.1021/nl050925i>)
14. Ervin, E. N.; White, H. S.; Baker, L. A. Alternating Current Impedance Imaging of Membranes Pores Using Scanning Electrochemical Microscopy. *Anal. Chem.* **2005**, *77*, 5564-5569. (<http://dx.doi.org/10.1021/ac050453s>)
13. Baker, L. A.; Jin, P.; Martin, C. R. Biomaterials and Biotechnologies Based on Nanotube Membranes. *Crit. Rev. Solid State Mater. Sci.* **2005**, *30*, 1-22 (invited review). (<http://dx.doi.org/10.1080/10408430500198169>)
12. Baker, L. A.; Laracuent, A. R.; Whitman, L. J. Hydrogen Termination Following Cu Depositin on Si(001). *Phys. Rev. B* **2005**, *71*, 153302. (<http://dx.doi.org/10.1103/PhysRevB.71.153302>)
11. Siwy, Z.; Trofin, L.; Kohli, P.; Baker, L. A.; Trautmann, C.; Martin, C. R. Protein Biosensors Based on Biofunctionalized Conical Gold Nanotubes. *J. Am. Chem. Soc.* **2005**, *127*, 5000-5001. (<http://dx.doi.org/10.1021/ja043910f>)
10. Kooi, S. E.; Baker, L. A.; Sheehan, P. E.; Whitman, L. J. Dip-Pen Nanolithography of Chemical Templates on Silicon Oxide. *Adv. Mater.* **2004**, *16*, 1013-1016. (<http://dx.doi.org/10.1002/adma.200306468>)
9. Oh, S. -K.; Baker, L. A.; Crooks, R. M. Electrochemical Rectification Using Mixed Monolayers of Redox-Active Ferrocenyl Dendrimers and *n*-Alkanethiols. *Langmuir* **2002**, *18*, 6981-6987. (<http://dx.doi.org/10.1021/la020382h>)
8. Baker, L. A.; Sun, L.; Crooks, R. M. Synthesis and Catalytic Properties of Imidazole-Functionalized Poly(propylene imine) Dendrimers. *Bull. Kor. Chem. Soc.* **2002**, *23*, 647-654 (invited feature article).
7. Baker, L. A.; Crooks, R. M. Photophysical Properties of Pyrene-Functionalized Poly (Propylene Imine) Dendrimers. *Macromolecules* **2000**, *33*, 9034-9039. (<http://dx.doi.org/10.1021/ma001379c>)
6. Baker, L. A.; Zamborini, F. P.; Sun, L.; Crooks, R. M. Dendrimer-Mediated Adhesion between Vapor-Deposited Gold and Glass or Si Wafers. *Anal. Chem.* **1999**, *71*, 4403-4406. (<http://dx.doi.org/10.1021/ac990495e>)
5. Smith, D. D.; Yoon, Y.; Boyd, R. W.; Campbell, J. K.; Baker, L. A.; Crooks, R. M.; George, M. z-Scan Measurement of the Nonlinear Absorption of a Thin Gold Film. *J. Appl. Phys.* **1999**, *86*, 6200-6205. (<http://dx.doi.org/10.1063/1.371675>)
4. Garcia, M. E.; Baker, L. A.; Crooks, R. M. Preparation and Characterization of Dendrimer-Gold Colloid Nanocomposites. *Anal. Chem.* **1999**, *71*, 256-258. (<http://dx.doi.org/10.1021/ac980588g>)
3. Hierlemann, A.; Campbell, J. K.; Baker, L. A.; Crooks, R. M.; Ricco, A. J. Structural Distortion of Dendrimers on Gold Surfaces: A Tapping Mode AFM Investigation. *J. Am. Chem. Soc.* **1998**, *120*, 5323-5324. (<http://dx.doi.org/10.1021/ja974283f>)
2. Tokuhisa, H.; Zhao, M. Q.; Baker, L. A.; Phan, V. T.; Dermody, D. L.; Garcia, M. E.; Peez, R. F.; Crooks, R. M.; Mayer, T. M. Preparation and Characterization of Dendrimer Monolayers and Dendrimer-

Alkanethiol Mixed Monolayers Adsorbed to Gold. *J. Am. Chem. Soc.* **1998**, *120*, 4492-4501. (<http://dx.doi.org/10.1021/ja9742904>)

1. Baker, L. A.; Su, S. J. An *ab initio* Molecular Orbital Study of the Reaction $\text{NH}_2 + \text{NO} \rightarrow \text{H}_2 + \text{N}_2\text{O}$. *Chem. Phys.* **1998**, *228*, 9-16. ([http://dx.doi.org/10.1016/S0301-0104\(97\)00319-4](http://dx.doi.org/10.1016/S0301-0104(97)00319-4))

Book Chapters

2. Baker, L. A.; Martin, C. R. Nanotube Membranes for Biotechnology. In *NanoBioTechnology: bioinspired devices and materials of the future*, **2007**, I. Levy; O. Shoseyov Eds. Humana Press, NJ.
1. Baker, L. A.; Martin, C. R. Nanotube-Based Membrane Systems. In *Nanotechnology for Biology and Medicine: Methods, Devices and Applications*; **2007**, 9/1 – 9/24, Tuan, V. –D., Ed.; CRC Press: Boca Raton, FL.

Invited Commentaries

2. Baker, L. A.; Bird, S. P. A Makeover for Nanopore Membranes. *Nature Nanotechnology*, **2008**, *3*, 73-74 (invited commentary). (<http://dx.doi.org/10.1038/nnano.2008.13>)
1. Martin, C. R.; Baker, L. A. Expanding the Molecular Electronics Toolbox. *Science* **2005**, *309*, 67-68 (invited commentary). (<http://dx.doi.org/10.1126/science.1114663>)

Presentations

*invited conference presentation

54. Baker, L. A. “Scanned Probe Studies of Nanopores and Nanospaces” DOE Contractors Meeting, Baltimore, MD (April 2010).
53. Baker, L. A. “Applications of Nanopores: Gating and Imaging” Georgia State University, Atlanta, GA (April 2010).
52. Baker, L. A. “Applications of Nanopores: Gating and Imaging” University of Florida, Gainesville, FL (April 2010).
51. Baker, L. A. “Applications of Nanopores: Gating and Imaging” Michigan State University, East Lansing, MI (March 2010).
50. Baker, L. A. “Scanning Ion Conductance Microscopy of Nanometer Pores” (poster) Gordon Research Conference on Electrochemistry, Ventura, CA (January 2010).
49. Baker, L.A. “Magnetically-Gated Membranes” Midwest Universities Analytical Chemistry Conference, Michigan State University, East Lansing, MI (December 2009).
48. Baker, L. A. “Ion Conductance Microscopy of Nanometer Pores” OSA 93rd Annual Meeting, San Jose, CA (October 2009).
47. Baker, L.A. “Ion Conductance Microscopy of Nanometer Pores” Potter’s Lodge Meeting, Blue Mountain Lake, NY (September 2009).
46. Baker, L. A. “Measuring Spaces and Gaps with Scanning Ion Conductance Microscopy” (poster) Gordon Research Conference on Cell Contact and Adhesion, Waterville, NH (June 2009).
45. Baker, L. A. “Applications of Nanopores in Analytical Chemistry” Department of Chemistry, University of Louisville, Louisville, KY (April 2009).
44. Baker, L. A. “Applications of Nanopores in Analytical Chemistry” Department of Chemistry, Northern Kentucky University, Highland Heights, KY (April 2009).

43. Baker, L. A. “*Scanning Ion Conductance Microscopy for Analytical and Bioanalytical Measurements*” Pittcon 2009, Chicago, IL (March 2009).
42. Baker, L. A. “*Nanopipettes for Molecular Sensing and Scanning Ion Conductance Microscopy*” Departments of Biology and Chemistry, IUPUI, Indianapolis, IN (February 2009).
41. *Baker, L. A. “*Scanning Ion Conductance Microscopy for Analytical and Bioanalytical Measurement*” Lab Automation, Palm Spring, CA (January 2009).
40. Baker, L. A. “*Applications of Nanopores in Analytical Chemistry*” Department of Chemistry, Southern Illinois University, Carbondale, IL (November 2008).
39. Baker, L. A. “*Applications of Nanopores in Analytical Chemistry*” Department of Chemistry, Rose-Hulman Institute of Technology, Terre Haute, IN (October 2008).
38. Baker, L. A. “*Applications of Nanopores in Analytical Chemistry*” Department of Chemistry, Valparaiso University, Valparaiso, IN (September 2008).
37. *Baker, L. A.; Fu, Y.; Chen, C.; Derylo, M. “*Scanning Ion Conductance Microscopy of Ion-tracked Membranes*” 20th International Conference on Application of Accelerators in Research and Industry, Fort Worth, TX (August 2008).
36. *Baker, L. A.; Fu, Y.; Chen, C.; Forsythe, Z. “*Chemistry and Analytical Applications of Nanopipette Electrodes*” HPLC2008, Baltimore, MD (May 2008).
35. Baker, L. A.; Fu, Y.; Chen, C.; Forsythe, Z. “*Scanning Ion Conductance Microscopy: Imaging Cells and Synthetic Membranes*” Pittcon 2008, New Orleans, LA (March 2008).
34. Baker L. A. “*Nanopores for Sensors and Imaging*” Department of Chemistry, Wright State University, Dayton, OH (February 2008).
33. Baker, L. A. “*Nanopores in Analytical Chemistry: Sensing and Chemical Imaging*” Nanoarchitectonics Research Center, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan (December 2007).
32. Baker, L. A. “*Nanopores for Sensors and Imaging.*” Department of Chemistry, Eastern Kentucky University, Richmond, KY (December 2007).
31. Baker, L. A. “*Nanopores for Sensors and Imaging.*” Department of Chemistry, Western Kentucky University, Bowling Green, KY (November 2007).
30. Baker, L. A. “*Nanopores for Sensors and Imaging.*” Department of Chemistry, Benedictine College, Atchison, KS (November 2007).
29. Baker, L. A. “*SICM: Imaging Pores with Pores.*” Midwest Universities Analytical Chemistry Conference, University of Illinois, Urbana, IL (November 2007).
28. Baker, L. A. “*Nanopores for Analytical Chemistry.*” Department of Chemistry, Indiana State University, Terre Haute, IN (April 2007).
27. Baker, L. A.; Heins, E.; Siwy, Z. S.; Harrell, C. C.; Martin, C. R. “*Conical nanopores as platforms for biosensing.*” (poster) Pittcon 2006, Orlando, FL (March 2006).
26. Baker, L. A. “*Conical nanopores as platforms for bio/chemical sensors.*” Department of Chemistry, University of Kansas, Lawrence, KS (February 2006).
25. Baker, L. A. “*Conical nanopores as platforms for bio/chemical sensors.*” Department of Chemistry, The Ohio State University, Columbus, OH (February 2006).
24. Baker, L. A. “*Conical nanopores as platforms for bio/chemical sensors.*” Department of Chemistry, Virginia Polytechnic Institute; Blacksburg, VA (January 2006).

23. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, Indiana University; Bloomington, IN (January 2006).
22. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, Florida State University; Tallahassee, FL (January 2006).
21. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, University of California; Riverside, CA (December 2005).
20. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, University of Massachusetts; Amherst, MA (December 2005).
19. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, University of Delaware; Newark, DE (December 2005).
18. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Materials Science and Engineering, University of Florida; Gainesville, FL (December 2005).
17. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, University of Texas; Austin, TX (November 2005).
16. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, Rensselaer Polytechnic Institute; Troy, NY (November 2005).
15. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, Auburn University; Auburn, AL (November 2005).
14. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Chemistry, Wayne State University; Detroit, MI (November 2005).
13. Baker, L. A. "*Conical nanopores as platforms for bio/chemical sensors.*" Department of Materials Engineering, University of Kentucky; Lexington, KY (October 2005).
12. Baker, L. A. "*Analytical and materials chemistry of conical nanopore membranes.*" (poster) 230th National American Chemical Society Meeting in the Academic Employment Initiative; Washington, DC (August 2005).
11. Baker, L. A.; Heins, E.; Siwy, Z. S.; Harrell, C. C.; Martin, C. R. "*Conical nanopores as platforms for biosensing.*" 230th National American Chemical Society Meeting in the Analytical Chemistry Division; Washington, DC (August 2005).
10. Baker, L. A.; Heins, E.; Siwy, Z. S.; Harrell, C. C.; Martin, C. R. "*Conical nanopores as platforms for biochemical sensing.*" 229th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division; San Diego, CA (March 2005).
9. Baker, L. A.; Harrell, C. C.; Siwy, Z. S.; Heins, E.; Martin, C. R. "*Conical nanopore membranes for stochastic detection of DNA.*" Pittcon 2005, Orlando, FL (March 2005).
8. Baker, L. A.; Laracuente, A. R.; Whitman, L. J. "*UHV characterization of adsorbates deposited in ambient from solution onto Si(001):H-(2x1).*" AVS 50th International Symposium, Baltimore, MD (November, 2003).
7. Baker, L. A.; Laracuente, A. R.; Whitman, L. J. "*Cu-induced nanostructures on Si(001) as templates for nanocrystal growth.*" 226th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division; New York, NY (September 2003).
6. Baker, L. A.; Laracuente, A. R.; Whitman, L. J.; "*Cu-induced nanostructures on Si(001) as templates for nanocrystal growth.*" 2003 Physical Electronics Conference, Ithaca, NY (June 2003).

5. Baker, L. A.; Sun, L.; Crooks, R. M.; “*Cooperative effects among terminal groups of modified poly (propylene imine) dendrimers.*” 221st National American Chemical Society Meeting in the Polymer Materials Science and Engineering Division; San Diego, CA (April 2001).
4. Baker, L. A.; Crooks, R. M.; “*Generation-Dependent Fluorescence Properties of Dendritic Polymers*” Chemistry Department, Missouri State University; Springfield, MO (October 1999).
3. Baker, L. A.; Crooks, R. M.; “*Generation-Dependent Fluorescence Properties of Dendritic Polymers*” 218th National American Chemical Society Meeting in the Organic Chemistry Division; New Orleans, LA (August 1999).
55. Baker, L. A.; Tokuhisa, H.; Lackowski, W. M.; Peez, R. P.; Crooks, R. M. “*Surface Confined Electroactive Dendrimers*” (poster) 215th National American Chemical Society Meeting in the Colloid and Surface Chemistry Division; Dallas, TX (March, 1998).
1. Baker, L.A.; Su, S. “*Ab initio Molecular Orbital Study of the Reaction $NH_2+NO \rightarrow H_2+N_2O$* ” (poster) Midwest Regional ACS Meeting in the Physical Chemistry Division; Joplin, MO (March, 1996).

Workshops/Funding Agency Meetings

Cottrell Scholar’s Conference, Tucson, AZ (July 2010)

National Science Foundation (NSF) Nanoscale Science and Engineering Grantee Conference, Arlington, VA (December 2004) (Poster presentation).

Defense Advanced Research Projects Agency/Defense Sciences Office (DARPA/DSO) Engineered Molecular Nano Devices/Systems (MOLDICE) Program Principal Investigators Meeting, Savannah, GA (October 2004).

Conferences/Meetings

2010 Electrochemical Society: Symposium Organizer (with Takashi Ito) October 2010

2009 Lab Automation: Session Chair *Nanopores* January 2009

2008 Midwest Analytical Universities Chemistry Conference, Indiana University, Bloomington Indiana Meeting Organizer (with Stephen Jacobson) November 2008

2008 Pittcon, New Orleans, LA: Organized Symposium and Organized Contributed Session *Fluidics at the Nanoscale: Pores, Pipettes, and Channels* (with Stephen Jacobson) March 2008

Extramural Funding

Current

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|----------------|--|
| 6/2010-6/2012 | Agency: National Institutes of Health R21 (NIDDK)
Title: “ <i>Electrochemical Imaging of in vitro Tight Junctions with Scanning Ion Conductance</i> ”
Role: PI |
| 6/2009-6/2010 | Agency: Research Corporation
Title: <i>Cottrell Scholars Award 2009</i>
Role: PI |
| 1/2009-12/2012 | Agency: National Science Foundation
Title: “ <i>Gated Conical Nanopores</i> ”
Role: PI |
| 1/2009-12/2012 | Agency: American Heart Association Scientist Development Grant |

Title: *“Application and Development of Ion-Selective Scanning Ion Conductance Microscopy”*

Role: PI

8/2009 – 8/2012

Agency: National Science Foundation

Title: *“Mimicking the Nuclear Pore Complex with Protein Hydrogels”*

Role: PI

8/2009 – 8/2012

Agency: National Science Foundation

Title: *“MRI: Acquisition of a Focused Ion Beam Instrument”*

Role: Co-PI

Completed

6/2008 – 6/2009

Agency: Society of Analytical Chemists of Pittsburgh Starter Grant Award

Title: *“Ion Conductance Feedback for Scanning Electrochemical Microscopy”*

Role: PI

1/2006 - 03/2007

Agency: New Energy and Industrial Technology Development Organization (Japan)

Title: *“Creation of Single Molecule Biochip Arrays Using Nanopipette Microscopy”*

Role: Co-PI (50%)

Teaching

A315 Chemical Measurements Laboratory (Undergraduate)

C611 Electroanalytical Chemistry (Graduate)

C117 Principles of Chemistry and Biochemistry (Laboratory, Undergraduate)

C117 Principles of Chemistry and Biochemistry (Lecture, Undergraduate)

Research Directed

Postdoctoral

Dr. Jeremy Wilburn (2010-present)

Dr. Yaqin Fu (2006 – 2009)

Dr. Vish Bhakthavatsalam (2007 – 2008)

Graduate Students

Mr. Sean Bird (2007 – present)

Mr. Maksymillian Derylo (2007 – present)

Mr. Joseph Basore (2007 – present)

Mr. Rahul Thakar (2007 – present)

Ms. Chiao-Chen Chen (2007 – present)

Mr. Rashid Zakeri (2008 – present)

Ms. Sa Niya (2008 – present)

Ms. Celeste Morris (2008 – present)

Ms Alicia Friedman (2009 – present)

Ms. Yi Zhuo (2009 – present)

Ms. Kirstin Morton (2010-present)

Undergraduate Students

Ms. Kyuwon Kim, 2008 – (IU undergraduate)

Mr. Joe Saffa, 2008 – (IU undergraduate)

Mr. Ryan Kapp, 2008 – (IU undergraduate)

Mr. Jihoon Son, 2006 – 2007 (IU undergraduate)

Ms. Carrie VanLue, 2007 (IU undergraduate)