

## Andrew M. Smith

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Department of Bioengineering, University of Illinois at Urbana-Champaign  
3114 Micro and Nanotechnology Laboratory, 208 N Wright St, M/C 249, Urbana, IL 61801  
[Tel]: (404) 642-1303, [Fax]: (217) 265-0246, [Email]: smi@illinois.edu

### EDUCATION

- 2008 **Ph.D. Bioengineering**  
Georgia Institute of Technology, Atlanta, GA
- 2002 **B.S. Chemistry**  
Georgia Institute of Technology, Atlanta, GA

### RESEARCH POSITIONS AND EMPLOYMENT

- 2017- **Assistant Professor of Technology Entrepreneurship**  
University of Illinois at Urbana-Champaign
- 2017- **Assistant Professor and Associate Course Director**  
Carle Illinois College of Medicine
- 2016- **Research Theme Faculty of Omics Nanotechnology for Cancer Precision Medicine (ONC-PM)**  
Carl R. Woese Institute for Genomic Biology (IGB)  
University of Illinois at Urbana-Champaign
- 2016- **Associate Head of Undergraduate Programs, Department of Bioengineering** (Interim 2016-2017)  
University of Illinois at Urbana-Champaign
- 2013- **Full-Time Resident Faculty of the Micro and Nanotechnology Laboratory (MNTL)**  
University of Illinois at Urbana-Champaign
- 2013- **Affiliate Faculty of Materials Science and Engineering**  
University of Illinois at Urbana-Champaign
- 2012- **Assistant Professor of Bioengineering**  
University of Illinois at Urbana-Champaign
- 2010-2012 **NIH/NCI K99/R00 Postdoctoral Fellow in Cancer Nanotechnology**  
Emory University, Atlanta, GA and Yeshiva University Albert Einstein College of Medicine, Bronx, NY  
Research mentor: Professor Shuming Nie, Collaborator John Condeelis
- 2008-2012 **Distinguished CCNE Postdoctoral Fellow**  
Emory University Center for Cancer Nanotechnology Excellence (CCNE)  
Research mentor: Professor Shuming Nie
- 2002-2008 **Graduate Research Assistant**  
Georgia Institute of Technology Department of Bioengineering, Atlanta, GA  
Research advisor: Professor Shuming Nie
- 2000-2002 **Undergraduate Research Scholars (URS) Internship**  
NSF Georgia Tech/Emory Center for the Engineering of Living Tissues (GTEC)  
Research advisors: Professor Athanassios Sambanis and Professor Robert Nerem
- 2000-2001 **Undergraduate Research Assistant**  
Georgia Institute of Technology Department of Chemistry and Biochemistry  
Research advisor: Professor James Powers

### PUBLICATIONS (\*indicates corresponding author)

#### Journal articles

1. **Smith AM**, Nie SM\*. Chemical analysis and cellular imaging with quantum dots. *Analyst*, 129: 672-677 (2004). [Cover article]
2. Bailey RE, **Smith AM**, Nie SM\*. Quantum dots in biology and medicine. *Physica E*, 25: 1-12 (2004).
3. **Smith AM**, Gao XH, Nie SM\*. Quantum dot nanocrystals for in vivo molecular and cellular imaging. *Photochemistry and Photobiology*, 80: 377-385 (2004). [Cover article]
4. **Smith AM**, Ruan G, Rhyner MN, Nie SM\*. Engineering luminescent quantum dots for in vivo molecular and cellular imaging. *Annals of Biomedical Engineering*, 34: 3-14 (2006).
5. **Smith AM**, Dave S, Nie SM, True L, Gao XH\*. Multicolor quantum dots for molecular diagnostics of cancer. *Expert Review of Molecular Diagnostics*, 6: 231-244 (2006).
6. Rhyner MN, **Smith AM**, Gao XH, Mao H, Yang L, Nie SM\*. Quantum dots and multifunctional nanoparticles: new contrast agents for tumor imaging. *Nanomedicine*, 1: 209-217 (2006).

7. **Smith AM**, Duan HW, Rhyner MN, Ruan G, Nie SM\*. A systematic examination of surface coatings on the optical and chemical properties of semiconductor quantum dots. *Physical Chemistry Chemical Physics*, 8: 3895-3903 (2006).
8. Xing Y, **Smith AM**, Agrawal A, Ruan G, Nie SM\*. Molecular profiling of single cancer cells and clinical tissue specimens with semiconductor quantum dots. *International Journal of Nanomedicine*, 1: 473-481 (2006).
9. Kairdolf BA, Mancini MC, **Smith AM**, Nie SM\*. Minimizing nonspecific cellular binding of quantum dots with hydroxyl-derivitized surface coatings. *Analytical Chemistry*, 80: 3029 (2008).
10. **Smith AM**, Duan HW, Mohs AM, Nie SM\*. Bioconjugated quantum dots for in vivo molecular and cellular imaging. *Advanced Drug Delivery Reviews*, 60: 1226-1240 (2008).
11. Mancini MC, Kairdolf BA, **Smith AM**, Nie SM\*. Oxidative quenching and degradation of polymer encapsulated quantum dots: new insights into the long term fate of semiconductor nanocrystals in vivo. *Journal of the American Chemical Society*, 130: 10836-10837 (2008).
12. **Smith AM**, Nie SM\*. Minimizing the hydrodynamic size of quantum dots with multifunctional multidentate polymer ligands. *Journal of the American Chemical Society*, 130: 11278-11279 (2008).
13. Kairdolf BA, **Smith AM**, Nie SM\*. One-pot synthesis, encapsulation, and solubilization of size-tuned quantum dots with amphiphilic multidentate ligands. *Journal of the American Chemical Society*, 130: 12866-12867 (2008).
14. **Smith AM**, Nie SM\*. Nanocrystal synthesis in an amphibious bath: spontaneous generation of hydrophilic and hydrophobic surface coatings. *Angewandte Chemie*. 47: 9916-9921 (2008). [Featured in *Nature Nanotechnology Research Highlights*]
15. **Smith AM**, Mohs AM, Nie SM\*. Tuning the electronic and optical properties of colloidal nanocrystals by lattice strain. *Nature Nanotechnology*. 4: 56-63 (2009). [Featured in *Nature Nanotechnology New and Views*, *ScienceDaily*, *NanotechWire*, and other news sources]
16. Mohs AM, Duan, HW, Kairdolf BA, **Smith AM**, Nie SM\*. Proton-resistant quantum dots: stability in gastrointestinal fluids and implications for oral delivery of nanoparticle agents. *Nano Research*. 2: 500-508 (2009).
17. **Smith AM** and Nie SM\*. Next-generation quantum dots, *News and Views* article in *Nature Biotechnology*. 27: 732-733 (2009).
18. **Smith AM**, Mancini MC, Nie SM\*. Bioimaging: second window for in vivo imaging, *News and Views* article in *Nature Nanotechnology*. 4: 710-711 (2009).
19. **Smith AM** and Nie SM\*. Semiconductor nanocrystals: structure, properties, and bandgap engineering. *Accounts of Chemical Research*. 43: 190-200 (2010). [No.1 most accessed article in *Accounts of Chemical Research* in 2010 (ACS)]
20. **Smith AM**, Wen MM, and Nie SM\*. Imaging dynamic cellular events with quantum dots. *The Biochemist*. 32:12-17 (2010).
21. **Smith AM** and Nie SM\*. Bright and compact alloyed quantum dots with broadly tunable near-infrared absorption and fluorescence spectra through mercury cation exchange. *Journal of the American Chemical Society*. 133: 24-26 (2011).
22. **Smith AM** and Nie SM\*. Compact quantum dots for single-molecule imaging in living cells. *Journal of Visualized Experiments*. 68: e4236 (2012). [Invited]
23. Kairdolf BA, **Smith AM**, Stokes TD, Wang MD, Young AN, and Nie SM\*. Semiconductor quantum dots for bioimaging and biodiagnostic applications. *Annual Review of Analytical Chemistry*. 6: 143 (2013). [Invited]
24. Ma L, Kohli M and **Smith AM**\*. Nanoparticles for combination drug therapy. *ACS Nano*. 7: 9518-9525 (2013). [Invited]
25. Lim SJ, **Smith AM**\*, and Nie SM\*. The more exotic shapes of semiconductor nanocrystals: emerging applications in bioimaging. *Current Opinion in Chemical Engineering*. 4: 137-143 (2014). [Invited]
26. **Smith AM**\*, Lane LA, and Nie SM\*. Mapping the spatial distribution of charge carriers in quantum-confined heterostructures. *Nature Communications*. 5: 4506 (2014).
27. Cai E, Ge P, Lee SH, Jeyifous O, Wang Y, Liu Y, Wilson KM, Lim SJ, Baird MA, Stone JE, Lee KY, Davidson MW, Chung HJ, Schulten K, **Smith AM**, Green WN, Selvin PR\*. Stable small quantum dots for synaptic receptor tracking on live neurons. *Angewandte Chemie, International Edition*. 53: 12484-12488 (2014). [Press: *Laser Focus World*]
28. Lane LA, **Smith AM**, and Nie SM\*. Compact and blinking-suppressed quantum dots for single-particle tracking in live cells. *Journal of Physical Chemistry B*. 118: 14140-14147 (2014).
29. Wang Y, Cai E, Rosenkranz T, Ge P, Teng K, Lim SJ, **Smith AM**, Chung HJ, Sachs F, Green WN, Gottlieb P, Selvin PR\*. Small quantum dots conjugated to nanobodies as immunofluorescence probes for nanometric microscopy. *Bioconjugate Chemistry*. 25: 2205-2211 (2014).
30. Lane LA, Qian XM, **Smith AM**, and Nie SM\*. Physical chemistry of nanomedicine: understanding the complex behaviors of nanoparticles in vivo. *Annual Review of Physical Chemistry*, 66: 521-547 (2015). [Invited]
31. Dobrucki W, Pan D, and **Smith AM**\*. Multiscale imaging of nanoparticle drug delivery. *Current Drug Targets*, 16: 560-570 (2015). [Invited]
32. Chung EY, Ochs CJ, Wang Y, Lei L, Qin Q, **Smith AM**, Strongin AY, Kamm R, Qi Y-X, Lu SY, and Wang YX\*. Activatable and cell-penetrable multiplex nanosensors for profiling MT1-MMP activity in single cancer cells. *Nano Letters*, 15: 5025-5032 (2015).

33. Grolman JM, Zhang D, **Smith AM**, Moore JS, and Kilian KA\*. Rapid extrusion of 3D tumor microenvironments. *Advanced Materials*, 27: 5512-5517 (2015). [Cover article]
34. Lim SJ, Zahid MU, Le P, Ma L, Entenberg D, Harney AS, Condeelis J, and **Smith AM\***. Brightness-equalized quantum dots. *Nature Communications*. 6: 8210 (2015). [Press: *Phys.org*, *Science NewsLine*, *BioOpticsWorld*, *Health Medicinet*, and *Optics & Photonics News*]
35. Lim SJ, McDougle DR, Zahid MU, Das A\*, and **Smith AM\***. Lipoprotein nanoplatelets: fluorescent, zwitterionic probes with rapid cellular entry. *Journal of the American Chemical Society*, 138: 64-67 (2016). [Press: *Phys.org*, *Health Medicinet*, *Science Daily*, *Technology.org*, *Medical News*, *MRS Bulletin*, and *Optics & Photonics News*]
36. Ma L, Tu C, Le P, Chitoor SN, Lim SJ, Zahid MU, Teng KW, Ge P, Selvin PR, and **Smith AM\***. Multidentate polymer coatings for compact and homogeneous quantum dots with efficient bioconjugation. *Journal of the American Chemical Society*, 138: 3382-3394 (2016).
37. Lim SJ, Ma L, Schleife A, and **Smith AM\***. Quantum dot surface engineering: toward inert fluorophores with compact size and bright, stable emission. *Coordination Chemistry Reviews*, 320-321: 216-237 (2016). [Invited]
38. Ma L, Liu T-W, Wallig MA, Dobrucki IT, Dobrucki LW, Nelson ER, Swanson KS\*, and **Smith AM\***. Efficient targeting of adipose tissue macrophages in obesity with polysaccharide nano-carriers. *ACS Nano*, 10: 6952-6962 (2016).
39. Wan Y, Carson JA, Kesler BA, Peng W, Su P, Al-Mulla SA, Lim SJ, **Smith AM**, Dallesasse JM, and Cunningham BT\*. Compact characterization of liquid absorption and emission spectra using linear variable filters integrated with a CMOS imaging camera. *Scientific Reports*, 6: 29117 (2016).
40. Mukherjee P, Lim SJ, Wrobel T, Bhargava R\*, and **Smith AM\***. Measuring and predicting the internal structure of semiconductor nanocrystals through Raman spectroscopy. *Journal of the American Chemical Society*, 138: 10887-10896 (2016).
41. Lim SJ, Schleife A, and **Smith AM\***. Optical determination of crystal phase in semiconductor nanocrystals. *Nature Communications*, 8:14849 (2017). [Press: *Phys.org*, *Nanowerk*, *Science Daily*, *AZoOptics*, *The Science Times*, and *Nano Alerta* in Brazil (television)]
42. Chitoor SN, Le P, and **Smith AM\***. Molecular profiling of single cells with quantum dots. *Methods in Molecular Biology* (accepted). [Invited]
43. **Smith AM\***, Swanson KS, and Nelson ER. Treating obesity with nanomedicine (in revision; *Adipocyte*). [Invited]
44. Zahid MU, Ma L, Lim SJ, **Smith AM\***. Multidimensional analysis of single quantum dot tracks reveals the impact of nanoparticle surface on intracellular state. (minor revisions; *Nature Communications*).
45. Race CM, Kwon LE, Foreman MT, Huang Q, Inan H, Kesiraju S, Le P, Lim SJ, **Smith AM**, Zangar RC, Demirci U, Anderson KS, Cunningham BT\*. An automated microfluidic assay for photonic crystal enhanced detection and analysis of an antiviral antibody cancer biomarker in serum. (in press; *IEEE Sensors Journal*).
46. Ganguli A, Ornob A, Spegazzini N, Liu Y, Damhorst G, Ghonge T, Thornton B, Konopka CJ, Dobrucki W, Clare S, **Smith AM**, Bhargava R, Kosari F, Bashir R\*. Pixelated spatial gene expression analysis for molecular histopathology. (minor revisions; *Nature Communications*).
47. Sheung J, Ge P, Lim SJ, **Smith AM**, Selvin PR\*. Fluorescence correlation spectroscopy of size-minimized quantum dots. (in revision; *Journal of Physical Chemistry B*).
48. Liu Y, Ma L, Le P, Sarkar S, Cheville J, Murphy S, **Smith AM\***. Accurate mRNA FISH with compact quantum dots. (submitted; *Nature Methods*).
49. Le P, Lim SJ, Baculis BC, Chung HJ, Kilian KA, **Smith AM\***. Counting growth factors in single cells with near-infrared quantum dots. (submitted; *Nature*).

### Conference proceedings

1. Bhargava R, Pool M, **Smith AM**, Carney PS, Pan DJ. Works in progress: a challenge-inspired undergraduate experience. *Proceedings of the American Society for Engineering Education*, 13407 (2015).
2. **Smith AM**, Lim SJ. Brightness-equalized quantum dots: Engineering strategies derived from spectral trends. *Proceedings of the SPIE*, 933810 (2015).
3. Pool M, Bhargava R, Carney PS, Pan DJ **Smith AM**. Implementing a challenge-inspired undergraduate experience. *Proceedings of the American Society for Engineering Education*, 16477 (2016).
4. Jensen K, Li Y, Zahid MU, Groundwater ES, Ritter KA, Carney PS, Elliott CM, **Smith AM**, Trinkle D. Work in Progress: Design of a First-Year Rhetoric Course for Engineering Students, *American Society for Engineering Education* [submitted].
5. Amos JR, Pool M, Cross K, Herman G, **Smith AM**. Creating a Clinical Needs-Based Curriculum by infusing bioengineering grand challenges and clinical immersive experiences into a Bioengineering Curriculum. *American Society for Engineering Education* [accepted].

### Book chapters

1. **Smith AM** and Nie SM\*. Semiconductor quantum dots for molecular and cellular imaging, chapter in *Biomedical Engineering Handbook*, 3<sup>rd</sup> edition, CRC Press (2006).
2. Ruan G, Agrawal A, **Smith AM**, Gao XH, Nie SM\*. Quantum dots as fluorescent labels for molecular and cellular imaging, chapter in *Reviews in Fluorescence*, Springer (2006).

3. Rhyner MN, **Smith AM**, Gao XH, Mao H, Lily L, Nie SM\*. Quantum dots and targeted nanoparticle probes for in vivo tumor imaging, chapter in *Nanoparticles in Biomedical Imaging*, Springer (2007).
4. **Smith AM**, Wen MW, Wang MD, Nie SM\*. Size-minimized quantum dots for molecular and cellular imaging, chapter in *Single Molecule Spectroscopy in Chemistry, Physics, and Biology*, Springer (2009).
5. Zahid MU and **Smith AM\***. Single-molecule imaging with quantum dots, chapter in *Optical Nanoscopy and Novel Microscopy Techniques*, CRC Press (2014).
6. Ma L, Le P, Kohli M, and **Smith AM\***. Nanomedicine in Cancer, chapter in *Nanotheranostics for Cancer Applications*, Springer (submitted, invited chapter).

## INVITED LECTURES AND INVITED CONFERENCE PRESENTATIONS

1. "Near-infrared quantum dot probes for biological detection," *SPIE Optics East*, Philadelphia, PA 2004.
2. "Bioconjugated quantum dot nanoparticles: molecular imaging, profiling, and in vivo imaging," *BioJapan 2004*, Tokyo, Japan, 2004. **Keynote Lecture.**
3. "Bioconjugated quantum dots for molecular and cellular imaging: bandgap and surface engineering," *Biomedical Engineering Society Annual Fall Meeting*, Chicago, IL 2006.
4. "Bioconjugated quantum dots for molecular and cellular imaging: bandgap and surface engineering," *AVS Symposium*, Anaheim, CA 2006.
5. "Characterization of semiconductor quantum dots for use in biological imaging," *Harvard Center for Nanoscale Systems*, Cambridge, MA 2008.
6. "Engineering semiconductor quantum dots for molecular, cellular, and in vivo imaging," *Oregon State University School of Chemical, Biological, and Environmental Engineering*, Corvallis, OR 2009.
7. "Engineering semiconductor nanocrystals for live cell imaging," *Microscopy and Microanalysis 2009 Meeting*, Richmond, VA 2009.
8. "Size-minimized quantum dots for molecular and cellular imaging," *American Chemical Society Fall 2009 National Meeting and Exposition*, Washington, D.C. 2009.
9. "Size-minimized quantum dots for molecular and cellular imaging," *ChinaNano 2009*, Beijing, China 2009. **Keynote Lecture.**
10. "Engineering semiconductor quantum dots for molecular, cellular, and in vivo imaging," *Chinese Academy of Sciences Key Lab for Biomedical Effects of Nanomaterials and Nanosafety*, Beijing, China 2009.
11. "Engineering semiconductor quantum dots for molecular and cellular imaging," *Harvard Center for Nanoscale Systems*, Cambridge, MA 2010.
12. "Engineering quantum dots for molecular and cellular imaging," *University of Illinois at Urbana-Champaign Department of Bioengineering*, Urbana, IL 2011.
13. "Next-generation quantum dots for molecular and cellular imaging," *East China University Department of Chemistry*, Shanghai, China 2011.
14. "Next-generation quantum dots for molecular and cellular imaging," *MAF 12 Conference: Methods and Applications of Fluorescence*, Strasbourg, France 2011.
15. "Semiconductor quantum dots," *NSF Nanoscale Science and Engineering Grantees Conference*, Arlington, VA 2011. **Keynote Lecture.**
16. "Imaging semiconductor nanocrystals in living cells and living animals," *University of Florida Department of Biomedical Engineering*, Gainesville, FL 2012.
17. "Engineering quantum dots for live-cell single-molecule imaging," *American Chemical Society National Meeting and Exposition*, Philadelphia, PA 2012.
18. "Discrete nanoparticle drug conjugates," *Beckman-Coulter Life Science*, Indianapolis, IN 2012.
19. "Next generation quantum dots for in vivo imaging of cancer," *Annual NCI Alliance for Nanotechnology in Cancer Investigators' Meeting*, Houston, TX 2012.
20. "Engineering quantum dots for multispectral imaging," *University of Illinois at Urbana-Champaign Department of Bioengineering*, Urbana, IL 2013.
21. "Next-generation quantum dots for single-molecule imaging," *MRS International Conference on Materials for Advanced Technologies*, Singapore 2013.
22. "Brightness-equalized quantum dots for quantitative molecular imaging," *Annual NCI Alliance for Nanotechnology in Cancer Investigators' Meeting*, Washington, D.C., 2013.
23. "The evolution of quantum dots in bioimaging," *UIUC Center for the Physics of Living Cells Seminar Series*, 2013.
24. "Next generation quantum dots for molecular and cellular imaging," *UIUC iOptics SPIE Seminar Series*, 2013.
25. "Quantum dot engineering," *University of Iowa Department of Biomedical Engineering*. Iowa City, IA 2014.
26. "Quantitative Molecular Imaging in Complex Microenvironments," *Annual NCI Alliance for Nanotechnology in Cancer Investigators' Meeting*, Rockville, MD, 2014.
27. "Engineering Quantum Dots for Multispectral Imaging of Cancer," *University of California Merced Department of Bioengineering*, Merced, CA, 2014.

28. "Engineering Quantum Dots for Quantitative Molecular imaging," *EMBS Micro and Nanotechnology in Medicine Conference*, Oahu, HI, 2014.
29. "Interfacing Quantum Dots with Cells," Soft Materials Seminar Series, Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, IL, 2015.
30. "Brightness equalized quantum dots," *SPIE Photonics West BIOS*, San Francisco, CA, 2015.
31. "Nanoparticle targeting of inflamed tissues," *4th Annual ASME meeting on Nanoengineering for Medicine and Biology (NEMB)*, Minneapolis, MN, 2015. [Featured in *Reuters Health, Gastrointestinal Health Foundation*]
32. "New Quantum Dot Technologies for Quantitative Molecular Analysis," *Faculty Seminar Series, University of Arkansas for Medical Sciences Department of Biochemistry and Molecular Biology*, Little Rock, AR, 2015.
33. "Fluorescent Quantum Dots for Quantitative Molecular Imaging in Cells and Tissues," *Fall Semester Seminar Series, Department of Chemistry, Central Michigan University*, Mt. Pleasant, MI, 2015.
34. "Efficient targeting of inflammation-associated macrophages," *The 9<sup>th</sup> IEEE International Conference on Nano/Molecular Medicine and Engineering*, Waikiki Beach, HI, 2015.
35. "Fluorescent quantum dots for single-molecule imaging of living cells and tissues," *Vanderbilt Institute of Nanoscale Science and Engineering (VINSE)*, Nashville, TN, 2016.
36. "Fluorescent Quantum Dots for Quantitative Molecular Imaging in Cells and Tissues," *Syracuse University Department of Chemistry Spring Colloquium*, Syracuse, NY, 2016.
37. "Nanoparticle Targeting to Inflamed Tissues," *6<sup>th</sup> International NanoBio Conference (NanoBio China 2016)*, Nanjing, China, 2016.
38. "New Quantum Dot Technologies and Therapeutics for Inflammatory Diseases," *Shanghai Jiaotong University Department of Chemistry*, Shanghai, China, 2016.
39. "New Quantum Dot Technologies for Quantitative Molecular and Cellular Imaging," *ShanghaiTech University School of Physical Science and Technology Seminar*, Shanghai, China, 2016.
40. "Semiconductor Nanoplatelets for Fluorescence Bioimaging," *9<sup>th</sup> Singapore International Chemical Conference (SICC-9)*, Department of Chemistry at the National University of Singapore (NUS), Singapore, 2016.
41. "Therapeutic Targeting of Pro-Inflammatory Macrophages," *MRS International Conference on Materials for Advanced Technologies (ICMAT)*, Singapore, 2017.
42. "Quantitative Molecular Imaging with Quantum Dots," *Shanghai Jiaotong University School of Biomedical Engineering*, China, 2017.
43. "Quantitative Molecular Imaging with Quantum Dots," *Suzhou University Institute of Functional Nano and Soft Materials*, China, 2017.
44. "Targeting Macrophages with Multimodal Nanomaterials," *American Chemical Society National Meeting and Exposition*, Washington, DC, 2017.
45. "Quantum Dots: Light-Emitting Nanoparticles for Imaging Biological Processes and Clinical Diagnostic Tests," *University of Maryland Baltimore County, Department of Mechanical Engineering Seminar Series*, Baltimore, MD, 2017.
46. "Accurate Molecular Imaging with Next-Generation Quantum Dots," *International Conference on Molecular Imaging and Minimally Invasive Therapy (MIMIT)*, Beijing, China. **Keynote Lecture.**
47. "Next-Generation Quantum Dots for Quantitative Molecular Imaging in Living Cells and Clinical Biospecimens," *2<sup>nd</sup> International Biophotonics Conference*, Singapore. **Keynote Lecture.**
48. "Next-Generation Quantum Dots for Accurate Molecular Imaging," *5<sup>th</sup> NanoToday Conference*, Kona, HI. [To be given in December 2017]
49. "Counting Molecules in Cells and Tissues using Next-Generation Quantum Dots and Quantitative Fluorescence Imaging," *Northwestern University Department of Biomedical Engineering Seminar Series* [To be given in January 2018].

## PATENTS AND PATENT APPLICATIONS

1. Smith AM, Nie SM, Kairdolf, BA. *Quantum Dots, Methods of Making Quantum Dots, and Methods of Using Quantum Dots*. United States Patent Number 9,073,751.
2. Smith AM, Nie SM. *Lattice-Mismatched Core-Shell Quantum Dots*. United States Patent Number 9,303,205.
3. Rhyner MN, Nie SM, Smith AM. *Micellar Structures, Methods of Making Micellar Structures, Methods of Imaging, and Methods of Delivering Agents*. Provisional Patents Numbers WO2008137733-A2, WO2008137733-A3.
4. Smith AM, Lim SJ. *Brightness-equalized quantum dots*. Patent application US 2016/0200974 A1.
5. Smith AM, Lim SJ, Das A. *Lipoprotein Nanoplatelets: Fluorescent, Zwitterionic Probes for Molecular and Cellular Imaging*. Patent application US 15/244,026.
6. Smith AM, Ma L, Tu C. *Compact and Homogeneous Quantum Dots and Methods of Making the Same*. Patent application US 15/648,485.
7. Smith AM, Swanson KS, Ma L, Liu T-W. *Efficient Targeting of Adipose Tissue Macrophages in Obesity*. Provisional patent application by UIUC Office of Technology Management.

## RESEARCH GRANTS

### Current

- **NSF I-Corps 1745812**, \$50,000 Smith (PI) 7/1/2017 – 12/31/2017  
*I-Corps: Fluorescent Probes for Molecular Diagnostics*  
Role: PI, 0.0 months
- **NIH R01 NS10019**, \$1,393,826 Selvin (PI) 7/1/2017 – 6/30/2021  
*Super-Resolution Microscopy of Neuronal Synapses with Small Quantum Dots and Advanced Imaging Tools*  
Role: Co-I, 0.5 months
- **NCSA Fellowship**, \$50,000 Johnson, Leal, Ondrejcek, Schleife, Smith (Multi-PI) 7/1/2017 – 6/30/2018  
*Computational Infrastructure for Collaborative Design of Semiconductor Nanocrystals*  
Role: PI, 1.0 months
- **NIH R01 DK112251**, \$2,573,293 Smith, Swanson (Multi-PI) 9/1/2016 – 8/31/2021  
*Targeted Drug Delivery to Adipose Tissue Macrophages in Obesity*  
Role: PI, 1.0 months
- **UIUC Faculty Entrepreneurial Fellows Program**, \$50,000 Smith (PI) 7/1/2016 – 12/31/2017  
*Brightness Equalized Quantum Dots for Biomolecular Analysis*  
Role: PI, 9.0 months
- **NIH R33 CA196458**, \$1,144,014 Bhargava (PI) 6/1/2016 – 5/30/2019  
*Translational Molecular and Cellular Imaging Technologies for Quantitative Prostate Tumor Pathology*  
Role: Co-I, 1.0 months
- **NIH R01 NS097610**, \$2,740,622 Smith, Selvin, Chung (Multi-PI) 5/15/2016 – 4/30/2021  
*Super-Resolution Microscopy of Small Quantum Dots to Elucidate the Mechanisms of Alzheimer's Disease*  
Role: PI, 0.5 months

### Completed

- **Mayo Clinic/Illinois Collaboration**, \$220,000 Smith, Kohli (Multi-PI) 1/1/2016 – 12/31/2016  
*A Feasibility Study for Ultrasensitive Detection of Target micro-RNAs (miRs) in Small Volume Blood Samples in Advanced Stages of Prostate and Kidney Cancer*  
Role: PI; 0.0 months.
- **Mayo-Illinois Alliance Seed Award**, \$80,000 Bhargava, Chevillie, Smith, Karnes, Murphy (MPI) 7/7/2014 – 7/6/2016  
*Translational Molecular Imaging Technologies for Quantitative Prostate Tumor Pathology*  
Role: Co-PI; 0.0 months.
- **UIUC College of Engineering Strategic Research Initiatives Program**, \$150,000 Gong (PI) 5/15/2014 – 5/14/2016  
*High-Throughput Single-Molecule Biophysics and Biomolecular Sensing*  
Role: Co-PI, 0.0 months
- **University of Illinois Cancer Center Pilot Grant**, \$49,995 Dobrucki (PI) 2/1/2014 – 1/31/2015  
*Targeted Imaging of Receptor for Advanced Glycation End-Products (RAGE) in Prostate Cancer*  
Role: Co-I; 0.5 months
- **NIH R21 NS087413**, \$402,277 Selvin (PI) 1/1/2014 – 12/31/2015  
*Small Quantum Dots for Super-Resolution of Neuronal Sub-Synaptic Structures*  
Role: Co-I; 0.5 months
- **Diabetes Complications Consortium Pilot Grant**, \$87,803 Dobrucki (PI) 7/1/2013 – 6/30/2014  
*Molecular Imaging of Stem Cell-Induced Reversal of Vascular Complications and Functions in Diabetes Mellitus*  
Role: Co-PI; 0.18 months.
- **UIUC College of ACES FIRE Award**, \$40,000 Swanson (PI) 4/15/2013 – 4/14/2015  
*Targeted Delivery of Anti-Inflammatory Prodrugs to Adipose Macrophages for Preventative Treatment of Obesity-Induced Insulin Resistance*  
Role: Co-I; 0.0 months
- **NIH R00 CA153914**, \$716,488 Smith (PI) 8/1/2012 – 7/31/2015  
*Next-Generation Quantum Dots for Molecular and Cellular Imaging of Cancer*  
Role: PI; 1.0 months

- **NIH K99CA153914**, \$175,019 Smith (PI) 7/1/2010 – 7/31/2012  
*Next-Generation Quantum Dots for Molecular and Cellular Imaging of Cancer*  
Role: PI; 11.40 calendar months.

### Pending

- **NIH R01 CA227699** [6.0 percentile], \$2,337,541 Smith (PI) 4/1/2017 – 3/31/2022  
*Daily Quantification of Cancer-Associated Exosomal miRNA in Patient Blood by Photonic Crystal-Enhanced Quantum Dot Emission*  
Role: PI
- **NIH S10**, \$TBA Sutton (PI) 2/1/2018 – 1/31/2019  
*Preclinical 7 T MRI scanner*  
Role: Minor User
- **DOD PCRP PC170278P1**, \$TBA Smith, Kohli, Cunningham (Multi-PI) 8/1/2018 – 7/31/2021  
*Blood-Based Molecular Predictors of Treatment Outcome in Metastatic Castrate Resistant Prostate Cancer using Ultrasensitive Fluorescent Quantum Dot Detection*  
Role: PI

### **EDUCATIONAL GRANTS**

#### Current

- **NSF 1623141**, \$1,998,057 Bashir (PI) 6/1/2016 – 5/30/2021  
*IUSE/PFE:RED: Defining the Frontiers of Bioengineering Education at Illinois at Beyond*  
Role: Co-I, 0.0 months
- **NIH T32EB019944**, \$3,229,436 Bhargava (PI) 4/1/2016 – 3/31/2021  
*Tissue Microenvironment (TiMe) Training Program*  
Role: Research Project Leader, 0.0 months
- **NSF Research Experience for Undergraduates (REU) Site**, \$356,716 Boppart (PI) 1/1/2015 – 12/31/2017  
*REU Site: Discoveries in Bioimaging*  
Role: Co-PI; 0.2 summer months

#### Completed

- **Roy J. Carver Charitable Trust**, \$500,000 Bashir, Smith, Perez-Pinera, Pool, Amos (Multi-PI) 12/1/2016  
*The Carver Microscale Biofabrication Laboratory (Educational Equipment Grant)*  
Role: Co-PI, 0.0 months
- **UIUC iFoundry Strategic Instructional Initiatives Program (SIIP)**, \$29,230 Jensen (PI) 6/1/2016 – 5/31/2017  
*Developing Instruction in Technical Writing for Freshman Engineering Students.*  
Role: Co-PI, 0.0 months
- **UIUC College of Engineering GATE Program Award**, \$19,637 Smith (PI) 5/15/2014 – 7/31/2015  
*A New Lab on Statistical Mechanics of Molecules and Cells*  
Role: PI, 0.0 months
- **NSF Research Experience for Teachers Site**, \$500,000 Li (PI) 5/1/2014 – 4/30/2017  
*nano@illinois RET: Research Experience for Teachers Site in Nanotechnology*  
Role: Research Project Leader, 0.0 months
- **UIUC iFoundry Strategic Instructional Initiatives Program (SIIP)**, \$92,540 Bhargava (PI) 5/15/2014 – 5/14/2016  
*Purpose-Inspired Learning: A Flipped Apprenticeship Model for Biomedical Education*  
Role: Co-PI, 0.0 months

#### Pending

- **NIH T32**, \$TBA Cunningham (PI) 1/1/2018 – 3/31/2023  
*Training Grant - Omics Nanotechnology for Cancer Precision Medicine*  
Role: Theme Leader and Project Leader
- **NSF Research Experience for Undergraduates (REU) Site**, \$360,000 Smith (PI) 1/1/2018 – 12/31/2020  
*REU Site: Frontiers in Biomedical Imaging*  
Role: PI; 0.2 summer months

## **Mentorship for Trainee Fellowships and Grants**

- T32: Tissue Microenvironment Training program, **Phuong Le**, \$23,376 per year, 8/16/2016 – 7/15/2018
- National Science Foundation Cellular and Molecular Mechanics and BioNanotechnology (CMMB) Integrative Graduate Education and Research Traineeship (IGERT), **Phuong Le**, \$30,000 per year, 8/1/2014 – 7/31/2016
- Center for the Physics of Living Cells (CPLC) 10K Pilot Project Program, **Haden Duke** (with members of the Paul Selvin Lab, Physics), \$10,000, 1/13/2014
- Interdisciplinary Environmental Toxicology Program (IETP) Scholarship, **Liang Ma**, \$11,000 per year, 6/20/2013 – 6/19/2015
- UIUC Graduate College Dissertation Completion Fellowship, **Liang Ma**, \$20,000 per year, 5/16/2017 – 5/15/2018
- UIUC SURGE Fellowship, **Natalia Gonzalez**, \$38,000 total, 8/16/2017 – 8/15/2022

## **AWARDS AND HONORS**

1997-2002	Georgia's HOPE Scholarship
1999	Outstanding Rising Junior Award in Computer Science
2001	Biomedical Engineering Society Undergraduate Research Award
2002	Lubrizol Scholarship for Excellence in Chemistry
2002	Graduate with Highest Honor
2000-2002	Scholarship for NSF Undergraduate Research Scholars Internship
2002-2006	Whitaker Foundation Graduate Research Fellowship
2005	<i>Photochemistry and Photobiology</i> 2004 Best Review Paper of the Year
2006	Outstanding Poster Award, Emory-Georgia Tech Frontiers of Cancer Nanotechnology Symposium
2007	<i>Annals of Biomedical Engineering</i> 2006 Best Review Paper of the Year
2008-2012	Emory University Distinguished CCNE Fellowship
2014	IEEE EMBS Micro and Nanotechnology in Medicine Conference New Innovators Lectureship
2016-2017	UIUC Lists of Teachers Ranked as Excellent (Spring 2016, 2017)
2016-2018	UIUC Faculty Entrepreneurial Fellow

## **PROFESSIONAL SERVICE**

### ***Ad Hoc* Journal Review**

Reviewer (~20 per year) for *ACS Applied Materials & Interfaces*, *ACS Biomaterials Science and Engineering*, *ACS Nano*, *ACS Photonics*, *Acta Biomaterials*, *Advanced Biosystems*, *Advanced Drug Delivery Reviews*, *Bioengineering & Translational Medicine*, *Biomaterials*, *Biophysical Journal*, *Cancer Research Frontiers*, *Chem*, *Chemical Communications*, *Chemical Society Reviews*, *Coordination Chemistry Reviews*, *Drug Discovery Today*, *Future Science Group eBooks*, *Journal of the American Chemical Society*, *Journal of Biomedical Nanotechnology*, *Journal of Materials Chemistry B & C*, *Journal of NanoBiotechnology*, *Biotechnology & Bioengineering*, *Journal of Photochemistry and Photobiology B*, *Journal of Physical Chemistry*, *Langmuir*, *Nano Letters*, *Nano Today*, *Nanomaterials*, *Nanomedicine*, *Nanoscale*, *Nature Communications*, *New Journal of Chemistry*, *Optics Express*, *Proceedings of the National Academy of Sciences*, *RSC Advances*, *Science Advances*, *Scientific Reports*, *Small*, and *WIREs Nanomedicine & Nanobiotechnology*.

### ***Ad Hoc* Grant Proposal Review**

- UIUC Campus Research Board (2013)
- UIUC M-CNTC Training Program (2014).
- Research Corporation for Science Advancement (2014).
- NIH NCI Special Emphasis Panel ZCA1 TCRB-Q (O1) R (2015).
- NIH Neuroscience and Ophthalmic Imaging (NOIT) Study Section (2015).
- Canada Council for the Arts Killam Research Fellowships (2016).
- NIH I/START R03 Special Emphasis Panel 2016/05 ZRG1 ETTN-L (54) R (2016).
- NIH NCI Special Emphasis Panel ZCA1-TCRB-6 (M3) R (2016).
- German Research Foundation (2017).
- NIH NCI Special Emphasis Panel ZCA1-TCRB-W (O1) B (2017).
- European Research Council (2017).
- NIH NCI Special Emphasis Panel ZCA1 SRB-X (J1) S (2017).

### **Working Group Contributions**

- NCI Nano Alliance Communications and Integration Working Group (CIWG) (2010-2014).
- NCI Nano Alliance Cancer Nanof ormulation and Nanosynthesis Working Group (2012-2014).



- Contributor to response to White House Office of Science and Technology Policy RFI on National Nanotechnology Initiative (NNI) Nanotechnology for Sensors and Sensors for Nanotechnology Signature Initiative (Sensors NSI), compiled by UIUC Center for Nanoscale Science and Technology (CNST).
- Contributor to response to NIH RFI on Directions and Needs for Cancer Nanotechnology Research and Development (NOT-CA-13-017), compiled by UIUC Midwest Cancer Nanotechnology Training Center (M-CNTC).

## CONFERENCE AND SYMPOSIUM SERVICE

### Chair Service

- Session Co-Chair in Drug Delivery Technologies, BMES Annual Fall Meeting (2012)
- Session Chair in Nanomaterials and Nano-Objects, MRS International Conference on Materials for Advanced Technologies (2013)
- Session Chair, BioNanotechnology Summer Institute, UIUC (2014)
- Session Chair in Drug Delivery, IEEE EMBS Micro and Nanotechnology in Medicine Conference (2014)
- Session Chair in Targeted Drug Delivery, BMES (2015)
- Technical Program Session Chair, IEEE-NANOMED (2015)
- Keynote Session Chair, IEEE-NANOMED (2015)
- Session Chair, BioNanotechnology Summer Institute, UIUC (2015)
- Session Chair, 2<sup>nd</sup> International Biophotonics Conference (2017)

### Judging and Reviewing

- Poster Session Judge, BioNanotechnology Summer Institute, UIUC (2013, 2014)
- Poster Session Judge, Illinois-Tsinghua/CNST Nanotechnology Workshop, UIUC (2014)
- Technical abstract reviewer, BMES (2015)
- Oral Presentation Judge, Bioengineering Graduate Student Symposium, UIUC (2017)

### Organization

- Symposium organizer: Frontiers in Super-Resolution Imaging and Ultra-Sensitive Detection, UIUC (2015)
- EMBS Micro and Nanotechnology in Medicine Conference Program Committee (2016)
- Institute for Genomic Biology Theme Symposium: Omics Nanotechnology for Cancer Precision Medicine (2017)

## ACADEMIC SERVICE

### Appointments

- UIUC Department of Bioengineering **Associate Head of Undergraduate Programs** (2016-Present)
- Carle Illinois College of Medicine **Associate Course Director of Hematology/Oncology** (2017-Present)

### Student Service

- UIUC Cancer Scholars Program Co-Leader (2014-Present)
- UIUC Department of Bioengineering oral qualifier committee: Shamira Sridharan, Olivia Cangellaris, Katrina Keller, Yanfen Li, Si Chen, Benjamin Lew, Sunmin Kim, Aaron Schartz-Duvall, Yang Zhu, Fatemeh Ostadhossein
- Doctoral Thesis Committee: Peiwen Wu (Biochemistry, UIUC), Douglas Zhang (MatSE, UIUC), Joanne Li (Bioengineering, UIUC), Sisi He (Molecular and Cellular Biology, UIUC), Jonathan George (Nuclear, Power, and Radiological Engineering, UIUC), Stacie Chen (Bioengineering, UIUC), Shachi Mittal (Bioengineering, UIUC), Caitlin Race (Bioengineering, UIUC), Anurup Ganguli (Bioengineering, UIUC), Aaron Schwartz-Duval (Bioengineering, UIUC).

### Committee Service

- UIUC College of Engineering
  - Subcommittee for Major and New Course Review: MEng in Bioinstrumentation with BIOE courses 571/572/573/574 (2012-2013)
  - Review of Proposal Subcommittee: Establish Graduate Concentration in "Cancer Nanotechnology" in BIOE (2014)
  - Growth Task Force (2015-2016)
- Carle Illinois College of Medicine
  - Admissions Committee (2017-Present)
  - Admissions Committee Subcommittee on Diversity (2017-Present)
  - Admissions Committee Subcommittee on Pre-requisites and Competencies (2017-Present)
  - Admissions Committee Subcommittee on Core Competencies (2017-Present)
- UIUC Department of Bioengineering
  - Committee on Everitt Reconstruction (2013)
  - Undergraduate Curriculum Committee (2013-Present)
  - Faculty Search Committee (2013-2014)

- Search Committee for Bioengineering Lecturer/Senior Lecturer (2013-2014)
- Ad hoc committee on Bioengineering Ph.D. qualification exam format (2014-2015)
- Graduate Admissions Committee (2014-Present)
- Subcommittee for Everitt Lab Animal Facilities (2014-Present)
- Graduate Curriculum Committee, Imaging Subcommittee (2015-Present)
- Graduate Curriculum Committee, Micro/Nano Subcommittee, Chair (2015-Present)
- Executive Committee (2015-2016)
- Graduate Program Awards Committee (2015-Present)
- Teaching Evaluation Committee (2017-Present)
- Search Committee for Research Scientist (2017)
- UIUC Institutes and Centers
  - MNTL BioNano Laboratory Safety Committee (2014-2015)
  - MNTL Search Committee for Visiting Research Scientist (2015)
  - Center for Nanoscale Science and Technology (CNST) Organizing Committee (2015-2016)

## TEACHING

- **Hematology and Oncology** (Carle Illinois College of Medicine, *in development* 2017-present)
- **BIOE 199: Introduction to Bioengineering** (UIUC, Fall 2017), redeveloped
- **BIOE 298/220: Bioenergetics** (UIUC, Spring 2013, Spring 2014, Spring 2015, Fall 2016), redeveloped
- **BIOE 498/473: Cancer Nanotechnology** (UIUC, Fall 2014, Fall 2015, Spring 2016, Spring 2017)
- **Bioimaging Bootcamp** (UIUC REU Site: Discoveries in Bioimaging, 2015, 2016, 2017), developed
- Course guest lectures:
  - **BIOE 120: Introduction to Bioengineering** (UIUC, 2013, 2014, 2017)
  - **BIOE 199: Introduction to Bioengineering** (UIUC, 2016)
  - **BIOE 199: Frontiers in Cancer Research** (UIUC, 2014, 2015, 2016, 2017)
  - **BIOE 206: Cellular Bioengineering** (UIUC, 2016)
  - **BIOE 360: Transport and Flow in Bioengineering** (UIUC, 2017)
  - **BIOE/ECE 416: Biosensors** (UIUC, 2017)
  - **ECE 564: Modern Light Microscopy** (UIUC, 2016)
- **General Chemistry** (Georgia Tech, Undergraduate Teaching Assistant, 2001)

## OUTREACH AND PUBLIC ENGAGEMENT

- **Girls Adventures in Mathematics, Engineering, and Science (GAMES) Camp**  
Role: Module developer and presenter (2013, 2015, 2016, 2017)
- **BioNanotechnology Summer Institute: Cancer Nanotechnology and Cellular Mechanics**  
Role: Module developer and presenter (2013, 2014).
- **NSF Research Experience for Teachers (RET) Site: Nano@Illinois**  
Role: Faculty Mentor (2014)
- **NSF Research Experience for Undergraduates (REU) Site: Discoveries in Bioimaging**  
Role: Co-PI and Faculty Mentor (2015, 2016, 2017)
- **Society for Women Engineers (SWE) Introduce a Girl to Engineering Day (IGED)**  
Role: Design Challenge Judge (2016, 2017)
- Career and Education Panels and Seminars
  - Speaker for BMES 2013 Midwest Biomedical Engineering Career Conference (2013)
  - Speaker for 2017 BMES Annual Meeting Special Session, *Defining Educational Goals of Bioengineering in the 21<sup>st</sup> Century* (2017)
  - Speaker for University of Maryland Baltimore County Meyerhoff Scholars Program (2017)

## INDUSTRY RELATIONSHIPS

- Invitrogen (NDA 2011-2012)
- Beckman-Coulter (NDA 2013-2014)
- AstraZeneca (MTA 2014-2016)

## SUPERVISION OF STUDENTS AND POSTDOCTORAL FELLOWS

### Visiting Scholars

- |           |  |
|-----------|--|
| 2015-2015 | Yunfeng Shi, Ph.D. (Shanghai Jiao Tong University, Chemistry, China)                 |
| 2016-2017 | Gangsheng Tong, Ph.D. (Shanghai Jiao Tong University, Chemistry, China)              |
| 2017-2017 | Guolin Li, Ph.D. (The First Affiliated Hospital of Harbin Medical University, China) |

## Postdoctoral Fellows

- 2012-2016 Sung Jun Lim, Ph.D. (Chemistry), currently at Daegu Gyeongbuk Institute of Science and Technology
- 2014-2015 Chunlai Tu, Ph.D. (Materials Science and Engineering), currently at ShanghaiTech University
- 2016- Yang Liu, Ph.D. (Pharmaceutics)
- 2016- Hongping Deng, Ph.D. (Chemistry)
- 2016- Junlong Geng, Ph.D. (Chemical & Biomolecular Engineering): Beckman Institute Postdoctoral Fellow
- 2017- Suresh Sarkar, Ph.D. (Chemistry)
- 2017- Taylor Canady, Ph.D. (Chemistry), IGB Fellow, co-advised with Brian Cunningham

## Graduate Students

- 2012-2015 Shweta Chitoor, M.S., doctoral student, Bioengineering
- 2012- Mohammad Zahid, B.S., doctoral student, Bioengineering
- 2013-2017 Liang Ma, M.S., doctoral student, Materials Science & Engineering
- 2013-2014 Haden Duke, B.S., masters student, Mechanical Science & Engineering
- 2014- Phuong Le, M.S., doctoral student, Bioengineering
- 2014- Lucas Smith, M.S., doctoral student, Bioengineering  
*M.S. Thesis:* Ultrasensitive Quantification of Circulating Disease Biomarkers through Enzymatic Labeling and Single Molecule Counting
- 2014-2015 Andrew Zhao, masters student, Materials Science & Engineering (M.S., currently BME Ph.D. student at GT) *M.S. Thesis:* Engineering Semiconductor Quantum Dots for Quantitative Imaging of Cell Motility & Invasion
- 2017- Natalia Gonzalez Medina, doctoral student, Bioengineering
- 2017- Zhiyuan Han, doctoral student, Materials Science & Engineering

## Undergraduate Students

- 2012-2014 Andrew Zhao, Materials Science & Engineering
- 2013-2015 Elliot Tague, Bioengineering (current BME PhD student at Boston University)
- 2013-2014 Karthik Balakrishnan, Bioengineering
- 2013-2014 Ashley Peterson, Bioengineering
- 2013-2014 Gillian Smith, Bioengineering (current Epidemiology PhD student at Emory U)
- 2013-2015 Victoria Ho, Bioengineering
- 2013-2014 Joe Kim, Bioengineering (current BME PhD student at U Penn)
- 2014-2015 Mudassir Ali, Chemical & Biomolecular Engineering
- 2014-2015 Fangruo Zhao, Physics
- 2014-2015 Byung Hui Yoon, Bioengineering and Physics (current BIOE MS student at UIUC)
- 2014-2016 Julia Hardy, Materials Science & Engineering (current BME PhD student at UCSD)
- 2014-2017 Abhishek Deshpande, Bioengineering
- 2014- Cassidy Zhou, Bioengineering and Cancer Scholars Program
- 2014- Madelyn O'Gorman, Bioengineering and Cancer Scholars Program
- 2015- Boeun Hwang, Bioengineering
- 2017- Jessica Cook, Bioengineering
- 2017- Tarun Nagarajan, Bioengineering
- 2017- Shrey Maheshwari, Bioengineering

## Undergraduate Design Team Mentorship

- 2013-2014 BIOE Senior Design Team (Vyriad): Michelle Baik, Rodrigo Cotrim Chaves, Jeremy Kembal, Joe Kim
- 2014 BIOE Freshman Design: Lauren Sargeant, Madelyn O'Gorman, Mia Sales, Henry Magnuson
- 2014-2015 BIOE Senior Design Team (Stropical): Neil Bruyere, Victoria Ho, Daniel Shuh, Alyssa Zimmer
- 2015-2016 BIOE Senior Design Team (Dryson): Kara Leslie, Brett Barry, Vivian Chu, and Emily Cullum

## Summer Trainees

- 2014 Aubrey Wachtel, NSF Nano@Illinois RET
- 2015 Mikayle Holm, NSF Discoveries in Bioimaging REU
- 2015 Yuhang Zhang, Shanghai Jiao Tong University Scholar
- 2016 Sophie Xie, NSF Discoveries in Bioimaging REU
- 2016 Jonathan Wang, ResearchHStart Program
- 2017 Prerana Jaikumar, NSF Discoveries in Bioimaging REU