Daniel Alan Heller

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Appointments

1/2014-pres. *Faculty Member* and *Executive Committee*, Center for Molecular Imaging & Nanotechnology, Memorial Sloan-Kettering Cancer Center, New York, New York

12/2012-pres. *Assistant Professor*, Physiology, Biophysics, & Systems Biology Graduate Program, Weill Cornell Medical College, Cornell University, New York, New York

8/2012-pres. *Assistant Professor*, Tri-Institutional Training Program in Chemical Biology, New York, New York

8/2012-pres. *Assistant Professor*, Department of Pharmacology, Weill Cornell Medical College, Cornell University, New York, New York

8/2012-pres. *Faculty Member*, Experimental Therapeutics Center, Memorial Sloan-Kettering Cancer Center, New York, New York

6/2012-pres. *Assistant Professor,* Louis V. Gerstner, Jr. Graduate School of Biomedical Sciences, Memorial Sloan-Kettering Cancer Center, New York, New York

6/2012-1/2014 *Faculty Member*, Nanotechnology Center, Memorial Sloan-Kettering Cancer Center, New York, New York

6/2012-pres. *Assistant Member*, Molecular Pharmacology & Chemistry Program, Memorial Sloan-Kettering Cancer Center, New York, New York

7/2010-5/2012 *Damon Runyon Fellow*, Koch Institute for Integrative Cancer Research, Robert Langer Group, Massachusetts Institute of Technology, Boston, Massachusetts

2/2010-6/2010 *Postdoctoral Research Associate*, Koch Institute for Integrative Cancer Research, Robert Langer Group, Massachusetts Institute of Technology, Boston, Massachusetts

6/2006-8/2006 *Visiting Scientist/CESRI Fellow*, Jörg Langowski Group, German Cancer Research Center, Heidelberg, Germany

8/2003-2/2010 *Graduate Researcher*, Departments of Chemistry, Chemical Engineering, Michael Strano Group, University of Illinois at Urbana-Champaign, Urbana, Illinois

9/2002-6/2003 *Researcher*, Visigen Biotechnologies, Houston, Texas

5/2002-6/2003 *Visiting Scientist*, Rice Quantum Institute, Robert Curl Group, Rice University, Houston, Texas

4/2002-6/2003 *Visiting Scientist*, Department of Chemistry, T. Randall Lee Group, University of Houston, Houston, Texas

8/2000-5/2002 *Science Teacher*, 7^{th} and 8^{th} grades, The Kinkaid School, Houston, Texas

Education

5/2010 PhD. in Chemistry, University of Illinois at Urbana-Champaign
Advisor: Michael S. Strano; Thesis link: http://hdl.handle.net/2142/16052

5/2000 B.A. in History, Rice University, Houston, Texas

Awards and Honors

2015 Kavli Fellow, National Academy of Sciences

2012 NIH Director's New Innovator Award

2012 Louis V. Gerstner Jr. Young Investigator Award

2012 Frank A. Howard Scholar, Memorial Sloan-Kettering Cancer Center

2010 Damon Runyon Cancer Research Foundation Postdoctoral Fellowship

2009 Materials Research Society Graduate Student Silver Award

2006 Walter Brown Fellowship, Department of Chemistry, University of Illinois

2006 Beckman Institute Graduate Fellowship, University of Illinois
2006 Collaboration Success Award, Council of Chemical Research
2006 NSF/IIE CESRI Fellowship
2003 Roger Adams Fellowship, Department of Chemistry, University of Illinois

Peer-Reviewed Publications

Published and in Press

(41) RM Williams, J Shah, BD Ng, DR Minton, LJ Gudas, C Park, **DA. Heller***: "Mesoscale Nanoparticles Selectively Target the Renal Proximal Tubule Epithelium." *Nano Letters* (2015) 15 (2015) 2358-2364.

(40) J Budhathoki-Uprety, PV Jena, D Roxbury, **DA Heller***: "Helical Polycarbodiimide Cloaking of Carbon Nanotubes Enables Inter-Nanotube Exciton Energy Transfer Modulation." *Journal of the American Chemical Society* 136 (2014) 15545-15550.

(39) J Zhang, S Kruss, AJ Hilmer, S Shimzu, Z Schmois, FDL Cruz, PW Barone, NF Reuel, **DA Heller**, MS Strano*: "A Rapid, Direct, Quantitative, and Label-Free Detector of Cardiac Biomarker Troponin T Using Near Infrared Fluorescent Single-walled Carbon Nanotube Sensors." *Advanced Healthcare Materials* 3 (2014) 412-423.

(38) JJ Mulvey, EN Feinberg, S Alidori, MR McDevitt, **DA Heller**, DA Scheinberg*: "Synthesis, pharmacokinetics, and biological use of lysine-modified single-walled carbon nanotubes." *International Journal of Nanomedicine* 9 (2014) 4245-4255.

(37) J Zhang, MP Landry, PW Barone, J-H Kim, S Lin, ZW Ulissi, D Lin, B Mu, AA Boghossian, AJ Hilmer, A Rwei, AC Hinckley, S Kruss, MA Shandell, N Nair, S Blake, F Sen, S Sen, RG Croy, D Li, K Yum, J-H Ahn, H Jin, **DA Heller**, JM Essigmann, D Blankschtein, MS Strano*: "Corona Phase Molecular Recognition Using Nanotube-Adsorbed Polymer Complexes." *Nature Nanotechnology* 8 (2013) 959-968.

(36) Y Zhang, JM Pelet, **DA Heller**, J Wallas, BJ Joseph, Y Dong, D Chen, Z Gu, DG Anderson*: "Lipid-Modified Aminoglycoside Derivatives for in vivo siRNA Delivery." *Advanced Materials* 25 (2013) 4641-4645.

(35) AA Boghossian, F Sen, BM Gibbons, S Sen, SM Faltermier, JP Giraldo, CT Zhang, J Zhang, **DA Heller**, MS Strano*: "Application of Nanoparticle Antioxidants to Enable Hyperstable Chloroplasts for Solar Energy Harvesting." *Advanced Energy Materials* 3 (2013) 881-893.

(34) A Sharei, J Zoldan, A Adamo, WY Sim, N Cho, E Jackson, S Mao, S Schneider, M-J Han, A Lytton-Jean, PA Basto, S Jhunjhunwala, J Lee, **DA Heller**, JW Kang, GC Hartoularos, K-S Kim, DG Anderson, R Langer*, KF Jensen*: "A vector-free microfluidic platform for intracellular delivery." *Proceedings of the National Academy of Sciences* 110 (2013) 2082-2087.

(33) **DA Heller**, Y Levi, JM Pelet, JC Doloff, J Wallas, GW Pratt, S Jiang, G Sahay, A Schroeder, JE Schroeder, Y Chyan, C Zurenko, W Querbes, M Manzano, DS Kohane, R Langer, DG Anderson*: "Modular 'Click-in-Emulsion' Bone-Targeted Nanogels." *Advanced Materials* 25 (2013) 1449-1454.

(32) JW Kang, FT Nguyen, N Lue, RR Dasari, **DA Heller***: "Measuring Uptake Dynamics of Multiple, Identifiable Carbon Nanotube Species via High-Speed Confocal Raman Imaging of Live Cells." *Nano Letters* 12 (2012) 6170-6174.

(31) AA Kayani, K Khoshmanesh, TG Nguyen, G Kostovski, AF Chrimes, M Nasabi, **D Heller**, A Mitchell, K Kalantar-Zadeh*: "Dynamic manipulation of modes in an optical waveguide using dielecrophoresis." *Electrophoresis* 33 (2012) 2075-2085.

(30) AJ Hilmer, TP McNicholas, S Lin, J Zhang QH Wang, JD Mendenhall, C Song, **DA Heller**, PW Barone, D Blankschtein, MS Strano*: "The Role of Adsorbed Surfactant in the Reaction of

Aryl Diazonium Salts with Single-Walled Carbon Nanotubes." *Langmuir* 28 (2012) 1309-1321.

(27) **DA Heller**, GW Pratt, J Zhang, N Nair, AJ Hansborough, AA Boghossian, NF Reuel, PW Barone, MS Strano*: "Peptide Secondary Structure Modulates Single-Walled Carbon Nanotube Fluorescence as a Chaperone Sensor for Nitroaromatics." *Proceedings of the National Academy of Sciences* 108 (2011) 8544-8549.

(26) J Zhang, AA Boghossian, PW Barone, A Rwei, J-H Kim, D Lin, **DA Heller**, AJ Hilmer, N Nair, NF Reuel, MS Strano*. "Single Molecule Detection of Nitric Oxide Enabled by $d(AT)_{15}$ DNA Adsorbed to Near Infrared Fluorescent Single-Walled Carbon Nanotubes." *Journal of the American Chemical Society* 133 (2010) 567-581.

(25) J-H Han, GLC Paulus, R Maruyama, **DA Heller**, W-J Kim, PW Barone, CY Lee, JH Choi, M-H Ham, C Song, C Fantini, MS Strano*. "Exciton antennas and concentrators from core–shell and corrugated carbon nanotube filaments of homogeneous composition." *Nature Materials* 9 (2010) 833-839.

(24) M-H Ham, JH Choi, AA Boghossian, ES Jeng, RA Graff, **DA Heller**, AC Chang, A Mattis, TH Bayburt, YV Grinkova, AS Zeiger, KJ Van Vliet, EK Hobbie, SG Sligar, CA Wraight, MS Strano*: "Photoelectrochemical complexes for solar energy conversion that chemically and autonomously regenerate." *Nature Chemistry* 2 (2010) 929-936.

(23) H Jin, **DA Heller**, M Kalbacova, J-H Kim, J Zhang, AA Boghossian, N Maheshri, MS Strano*: "Detection of single-molecule H_2O_2 signalling from epidermal growth factor receptor using fluorescent single-walled carbon nanotubes." *Nature Nanotechnology* 5 (2010) 302-309.

(22) J-H Kim, J-H Ahn, PW Barone, H Jin, J Zhang, **DA Heller**, MS Strano*: "A Luciferase/Single-Walled Carbon Nanotube Conjugate for Near-Infrared Fluorescent Detection of Cellular ATP." *Angewandte Chemie* 49 (2010) 1456-1459.

(21) J-H Kim, **DA Heller**, H Jin, PW Barone, C Song, J Zhang, LJ Trudel, GN Wogan, SR Tannenbaum, MS Strano*: "The rational design of nitric oxide selectivity in single-walled carbon nanotube near-infrared fluorescence sensors for biological detection." *Nature Chemistry* 1 (2009) 473-481.

(20) **DA Heller**, H Jin, BM Martinez, D Patel, BM Miller, T-K Yeung, PV Jena, C Höbartner, T Ha, SK Silverman, MS Strano*: "Multi-modal optical sensing and analyte specificity via single-walled carbon nanotubes." *Nature Nanotechnology* 4 (2009) 114-120.

(19) H Jin, **DA Heller**, R Sharma, MS Strano*: "Size-Dependent Cellular Uptake and Expulsion of Single-Walled Carbon Nanotubes: Single Particle Tracking and a Generic Uptake Model for Nanoparticles." *ACS Nano* 3 (2009) 149-158.

(18) MS Strano, AA Boghossian, W-J Kim, PW Barone, ES Jeng, **DA Heller**, N Nair, H Jin, R Sharma, CY Lee: "The Chemistry of Single-Walled Nanotubes." *MRS Bulletin* 34 (2009) 950-961.

(17) H Jin, **DA Heller**, J-H Kim, MS Strano*: "A Stochastic Analysis of Stepwise Fluorescence Quenching Reactions on Single-Walled Carbon Nanotubes." *Nano Letters* 8 (2008) 4299-4304.

(16) H Jin, **DA Heller**, MS Strano*: "Single-Particle Tracking of Endocytosis and Exocytosis of Single-Walled Carbon Nanotubes in NIH-3T3 Cells." *Nano Letters* 8 (2008) 1577-1585.

(15) A Rajan, MS Strano, **DA Heller**, T Hertel, K Schulten*: "Length-Dependent Optical Effects in Single Walled Carbon Nanotubes." *Journal of Physical Chemistry B* 112 (2008) 6211-6213.

(14) H Jin, ES Jeng, **DA Heller**, PV Jena, R Kirmse, J Langowski, MS Strano*: "Divalent Ion and Thermally Induced DNA Conformational Polymorphism on Single-Walled Carbon Nanotubes." *Macromolecules* 40 (2007) 6731-6739.

(13) JH Choi, FT Nguyen, PW Barone, **DA Heller**, AE Moll, D Patel, SA Boppart, MS Strano*: "Multimodal Biomedical Imaging with Asymmetric Single-Walled Carbon Nanotube/Iron Oxide Nanoparticle Complexes." *Nano Letters* 7 (2007) 861-867.

(12) **DA Heller,** ES Jeng, T Yeung, BM Martinez, AE Moll, JB Gastala, MS Strano*: "Optical Detection of DNA Conformational Polymorphism on Single-Walled Carbon Nanotubes." *Science* 311 (2006) 508-511.

(11) A Jorio, C. Fantini, MA Pimenta, **DA Heller**, MS Strano, MS Dresselhaus, Y Oyama, J Jiang, R Saito*: "Carbon nanotube population analysis from Raman and photoluminescence intensities." *Applied Physics Letters* 88 (2006) 023109s.

(10) **DA Heller**, S Baik, TE Eurell, MS Strano*: "Single-Walled Carbon Nanotube Spectroscopy in Live Cells: Towards Long-Term Labels and Optical Sensors." *Advanced Materials* 17 (2005) 2793-2799.

(9) EK Lewis, WC Haaland, FT Nguyen, **DA Heller**, MJ Allen, RR MacGregor, CS Berger, B Willingham, LA Burns, GBI Scott, C Kittrell, BR Johnson, RF Curl, ML Metzker*: "Color-Blind Fluorescence Detection for Four-Color DNA Sequencing." *Proceedings of the National Academy of Sciences* 102 (2005) 5346-5351.

(8) RA Graff, JP Swanson, PW Barone, S Baik, **DA Heller**, MS Strano: "Achieving Individual Nanotube Dispersion at High Loading in Single-Walled Carbon Nanotube Composites." *Advanced Materials* 17 (2005) 980-984.

(7) **DA Heller**, PW Barone, MS Strano*: "Sonication-induced changes in chiral distribution: A complication to the use of single-walled carbon nanotube fluorescence for determining species distribution." *Carbon* 43 (2005) 651-653.

(6) PW Barone, S Baik, **DA Heller**, MS Strano*: "Near-infrared optical sensors based on single-walled carbon nanotubes." *Nature Materials* 4 (2005) 86-92.

(5) **DA Heller**, V Garga, KJ Kelleher, T-C Lee, S Mahbubani, LA Sigworth, TR Lee*, MA Rea*: "Patterned networks of mouse hippocampal neurons on peptide-coated gold surfaces." *Biomaterials* 26 (2005) 883-889.

(4) **DA Heller**, RM Mayrhofer, S Baik, YV Grinkova, ML Usrey, MS Strano*: "Concomitant length and diameter separation of single-walled carbon nanotubes." *Journal of the American Chemical Society* 126 (2004) 14567-14573.

(3) **DA Heller**, PW Barone, JP Swanson, RM Mayrhofer, MS Strano*: **"**Using Raman spectroscopy to elucidate the aggregation state of single-walled carbon nanotubes." *Journal of Physical Chemistry B* 108 (2004) 6905-6909.

(2) MS Strano*, M Zheng, A Jagota, GB Onoa, **DA Heller**, PW Barone, ML Usrey: "Understanding the nature of the DNA-assisted separation of single-walled carbon nanotubes using fluorescence and Raman spectroscopy." *Nano Letters* 4 (2004) 543-550.

(1) SK Doorn, **DA Heller**, PW Barone, ML Usrey, MS Strano*: "Resonant Raman excitation profiles of individually dispersed single walled carbon nanotubes in solution." *Applied Physics A-Materials Science & Processing* 78 (2004) 1147-55.

Submitted and Under Review

(42) D Roxbury, PV Jena, RM Williams, E Balazs, P Niethammer, S Marcet, M Verhaegen, S Blais-Ouellette, **DA Heller***: "Carbon Nanotube Hyperspectral Imaging Enables 17 Color Imaging." (Under review)

Reviews and Commentaries

(29) A Schroeder, **DA Heller**, MM Winslow, JE Dahlman, GW Pratt, R Langer*, T Jacks*, DG Anderson*: "Treating metastatic cancer with nanotechnology." *Nature Reviews Cancer* 12 (2012) 39-50.

(28) AA Boghossian, J Zhang, PW Barone, NF Reuel, J-H Kim, **DA Heller**, J-H Ahn, AJ Hilmer, A Rwei, JR Arkalgud, CT Zhang, MS Strano*: "Near-Infrared Fluorescent Sensors based on Single-Walled Carbon Nanotubes for Life Sciences Applications." *ChemSusChem* 4 (2011) 848-863.

Books/Book Chapters

1. PW Barone, ES Jeng, **DA Heller**, MS Strano: "Biosensors based on single-walled carbon nanotube fluorescence." in *Handbook of Biosensors and Biochips* (Chichester: John Wiley & Sons, 2007.)
2. SK Doorn, **DA Heller**, ML Usrey, PW Barone, MS Strano: "Raman Spectroscopy of Single-Walled Carbon Nanotubes: Probing Electronic and Chemical Behavior." in *Carbon Nanotubes: Properties and Applications* (Boca Raton: Taylor & Francis Group, 2006.)
3. MS Strano, ML Usrey, PW Barone, **DA Heller**, S. Baik: "The Selective Chemistry of Single Walled Carbon Nanotubes." in *Applied Physics of Carbon Nanotubes* (Berlin: Springer-Verlag, 2005.)

Patents

Issued Patents and Applications (MIT)

1. MS Strano, **DA Heller**, GW Pratt, J Zhang: "Optical Nanosensors Comprising Photoluminescent Nanostructures." US Patent Number 8,486,709, Issued July 16, 2013.
2. MS Strano, **DA Heller**, GW Pratt, J Zhang: "Systems and Methods Related to Optical Nanosensors Comprising Photoluminescent Nanostructures." US Patent Number 8,460,608, Issued June 11, 2013.
3. MS Strano, J Zhang, PW Barone, **DA Heller**, J-H Kim: "Polymer-Nanostructure Composition for Selective Molecular Recognition." US patent application 20110257033, filed April 19, 2011.
4. MS Strano**, DA Heller**: "Spectral Imaging of Photoluminescent Materials." PCT International Application PCT/US10/59897, US20110204258 filed December 10, 2010.
5. RS Langer, A Jaklenec, **DA Heller**, DG Anderson, MS Strano: "Degradable Polymer Nanostructure Materials." US Patent Application 20110280912, filed December 15, 2010.

Provisional Patent Applications (MSKCC)

1. **DA Heller**, J Wallas, Y Levi, GW Pratt, DG Anderson, R Langer: "Modular Polymer Hydrogel Nanoparticles and Methods of Their Manufacture." US provisional patent application 61/733,366 filed December 4, 2013.
2. **Heller DA**, Budhathoki-Uprety J: "Helical Polycarbodiimide Polymers and Associated Imaging, Diagnostic, and Therapeutic Methods." US provisional patent application 62/038,235 filed August 16, 2014.
3. **Heller DA**, Jena PV, Roxbury D: "Fluorescent Reporter for Endocytic Cholesterol and Other Lipids." US provisional patent application 62/004,122 filed May 28, 2014.
4. **Heller DA**, Shamay Y: "P-Selectin-Targeting Nanoparticles." US provisional patent application 61/980,643 filed April 17, 2014.
5. **Heller DA**, Shamay Y: "Dye-Stabilized Nanoparticles and Methods of their Manufacture and Therapeutic Use." US provisional patent application 62/114,507 filed February 10, 2015.
6. **Heller DA**, Williams, RM: "Mesoscale Nanoparticles for Selective Targeting to the Kidney and Methods of their Therapeutic Use." US provisional patent application 62/136,104 filed March 20, 2015.

Invited Talks

"Nanotechnologies for Biomedical Imaging and Optical Sensors." Queens College, March, 2015

"Nanotechnologies for Biomedical Imaging and Optical Sensors." Plenary speaker, Israel Institute of Chemical Engineers 50th Anniversary Conference, Tel-Aviv, Israel, February 2015.

"Nanotechnologies for Biomedical Imaging and Optical Sensors." Keynote speaker, Nanoscience NY,

CUNY Advanced Science Research Center, New York, NY, February 2015.

"Nanotechnologies for Biomedical Imaging and Optical Sensors." Department of Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, September 2014.

"Advanced Nanotechnologies for Biomedical Sensors." Department of Physics, Universidad de los Andes, Bogota, Colombia, September 2014.

"Advanced Nanotechnologies for Biomedical Sensors." International Symposium on Integrated Functionalities, Materials Research Society, July 2013

"Measuring Uptake Dynamics of Multiple, Identifiable Carbon Nanotube Species Via High-Speed Confocal Raman Imaging of Live Cells." 223rd ECS Meeting, Toronto Canada, May 2013

"Carbon Nanotube-Based Optical Bioanalytical Sensors." Integrated Cancer Research Seminar Series, Georgia Institute of Technology, Atlanta, GA, April, 2013

"Carbon Nanotube-Based Optical Biosensors for Genotoxins and Nitroaromatics." Gordon Research Seminar in Bioanalytical Sensors, Salve Regina University, Newport, RI, June 2012

"Materials Science vs. Metastasis." Cancer Community at Illinois Symposium, University of Illinois at Urbana-Champaign, Urbana, IL, April 2012

"Carbon Nanotube Optical Biosensors for ROS and Explosives." ICB Seminar Series, Institute for Chemical and Biological Engineering, ETH Zurich, Switzerland, November 2011.

"Single-Molecule Optical Detection of Genotoxins and Nitroaromatics with Carbon Nanotubes." Fassberg Seminar Series, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, November 2011.

"Optical Detection of Explosives and Genotoxins with Carbon Nanotubes." Institut für Physikalische u. Theoretische Chemie, Universität Würzburg, Germany, November 2011

"Single-Walled Carbon Nanotube Optical Biosensor Technologies." Advanced Technology Institute, University of Surrey, England, July 2011.

"CESRI: How a Foreign Experience Affects Graduate Research." American Chemical Society National Meeting, Washington, DC, August 2009.

"Single-Walled Carbon Nanotube Optical Biosensors for Genotoxic Agents." Universidad Nacional de Colombia, Bogota, Colombia, August 2008.

"Carbon Nanotube Biosensors for Detection of Genotoxic Agents." Universidad de Los Andes, Bogota Colombia, August 2008.

"Single-Walled Carbon Nanotube Optical Biosensors for Genotoxic Agents." Indian Institute of Technology - Bombay, India, December 2007.

"Optical Sensors for DNA Structural Changes Using Single-Walled Carbon Nanotubes." Semmelweis University, Budapest, Hungary, June 2006.

Other Lectures (Selected)

"Towards Real-Time, Quantitative Bioanalytical Sensors." Nanotechnologies in Cancer Diagnosis, Therapy, and Prevention, New York Academy of Sciences, New York, NY, June, 2013.

"Real-Time Molecular Detection and Identification of ROS Activity via Carbon Nanotube Optical Biosensors." Gordon Research Conference in Cancer Nanotechnology, Waterville, ME, July, 2011.

"Single-Molecule Optical Detection of Nitroaromatic Compounds by Carbon Nanotubes." American Chemical Society National Meeting, Boston, MA, August, 2010.

"Single-Walled Carbon Nanotubes for Optical Biosensing with Multiple Modes." 2nd Carbon Nanotube Biology, Medicine & Toxicology Satellite Symposium, Tenth International Conference on the Science and Application of Nanotubes, Beijing, China, June, 2009.

"Single-walled carbon nanotube multi-modal optical biosensors for genotoxin detection and identification." American Chemical Society National Meeting, Salt Lake City, UT, March, 2009.

"Nanoscale Sensors for Multi-Modal Detection of Genotoxic Agents." American Chemical Society

National Meeting, Philadelphia, PA, August, 2008.

"Optical Detection of DNA-Drug Interactions in Live Cells Using Single-Walled Carbon Nanotubes." Eighth International Conference on the Science and Application of Nanotubes, Ouro Preto, Brazil, June, 2007.

"Single-walled carbon nanotubes as near-infrared optical biosensors of DNA structure." American Chemical Society National Meeting, San Francisco, CA, August, 2006.

"Organic Chemistry for Younger Students." American Chemical Society National Meeting, New Orleans, LA, March, 2003.

Leadership and Outreach

2015	"To Be a Postdoc or Not to Be a Postdoc", Panelist, Office of Career Services, SKI
2014	"Major Trends in Modern Cancer Research" Lecture for high school and college students, Memorial Sloan Kettering Cancer Center: http://www.mskcc.org/education/high-school-outreach/2014-major-trends-modern-research
2014-pres.	STEM Block Activities, MESA Academy, Bushwick, Brooklyn, NY
2014	Art of Science Program, Ligo Project, New York, NY
2013-pres.	*Member*, Junior Faculty Council, Memorial Sloan-Kettering Cancer Center
2012-2014	*Curator*, Welch Chemistry Hall, Houston Museum of Natural Science, Houston, TX
2012	*Founder and Organizer*, Crossfire Seminar Series, Koch Institute, MIT
2011-2012	*Guest Lecturer*, Museum of Science, Boston, MA
2011	*Speaker*, A Celebration of Innovation in Kendall Square, Cambridge, MA
2011-2012	*Presenter/Volunteer*, Koch Institute Outreach, MIT
2011	*Presenter*, MIT Open House
2009-2012	*Teacher/Volunteer,* MIT Museum
2009, 2011	*Volunteer/Presenter*, Cambridge Science Festival, Cambridge, MA
2006-2008	*Founder and President*, Center for Nanoscale Science and Technology Student Initiative, University of Illinois
2006-2008	*Founder and Organizer*, Graduate Seminar in the Applied Chemical Sciences, School of Chemical Sciences, University of Illinois
2005-2006	*Board of Exhibits,* Orpheum Children's Science Museum, Urbana, IL
2005-2006	*Classroom Instructor*, Educating Tomorrow's Chemists, Department of Chemistry, University of Illinois
2004-2012	*Board of Directors*, *Wizard*, Illinois Renaissance Festival, Danville, IL
2003-2004	*Organizer*, Careers in Academia Seminar Series, Department of Chemistry, University of Illinois
1996-2003	Houston Museum of Natural Science, Houston, TX *Teacher*, Astronomy and Education Departments, 2000-2003 *Exhibits Developer*, Exhibits Department, 1999-2000 *Volunteer,* Chemistry Demonstrations, 1996-2003

Online Media Outreach:

"Major Trends in Modern Cancer Research", Memorial Sloan-Kettering Cancer Center: http://www.mskcc.org/education/high-school-outreach/2014-major-trends-modern-research

"Tiny Solutions for Big Problems: A Visit to the Lab of Daniel Heller", MSKCC http://www.mskcc.org/videos/tiny-solutions-big-problems-visit-lab-daniel-heller

Podcast – Museum of Science Boston: http://www.mos.org/node/99576

Podcast – Museum of Science Boston: http://www.mos.org/node/99612

Video – Celebration of Innovation in Kendall Square: http://techtv.mit.edu/videos/72278d0d3cea6ce7d1ee105e6df5df2166c316d3/private

Video – Nanosensor Discussion, MIT: http://techtv.mit.edu/videos/1497-nanosensors

Teaching and Mentorship

2014-pres. *Course Director*, "From Bench to Bedside: Business Fundamentals for Entrepreneurial Scientists," Tri-Institutional Therapeutics Development Institute
2012-pres. *Supervisor,* Five postdocs and four graduate students, MSKCC, WCMC
2012-pres. *Lecturer*, "Pharmacology I: Chemical Biology," Weill Cornell Medical College
2012-pres. *Lecturer*, "Molecular Pharmacology of Cancer," Weill Cornell Medical College
2012 *Mentor*, Summer Undergraduate Research Program Student, MSKCC
2010-2012 *Supervisor*, Two research technicians, MIT
2008-2012 *Mentor*, Six Undergraduate Research Opportunities Program Scholars, MIT
2005-2006 *Mentor*, Intel/Lockheed Martin Undergraduate Research Scholar, University of Illinois
2003-2008 *Mentor*, Eight Undergraduate Research Assistants, University of Illinois
2003-2004 *Graduate Teaching Assistant*, University of Illinois
Chem 347 "Physical Chemistry Laboratory," Teaching Assistant, Spring 2004
Chem 223 "Analytical Chemistry," Chemistry Merit Program Instructor, Fall 2003
Chemistry Learning Center Instructor, Fall 2003
2000-2002 *Middle School Teacher*, Physical & Life Sciences, The Kinkaid School, Houston, TX

Professional Activities

2014 *Session Co-Chair*, Carbon Nanostructures in Medicine and Biology, 224th ECS Meeting
2013-pres. *Organizer*, Nanocarbons Division, The Electrochemical Society
2013 *Session Chair*, Carbon Nanostructures in Medicine and Biology, 223rd ECS Meeting
2010 *Judge*, Bionanotechnology Graduate Award Session, AIChE Annual Meeting
2010 *Session Co-Chair*, Nanosci. in Polymer Chemistry, POLY Div., ACS National Meeting

Active reviewer for journals: ACS Nano, Advanced Materials, Analytical Chemistry, Carbon, Chemical Physics Letters, Environmental Science & Technology, Journal of Biological Physics, Journal of Nuclear Medicine, Journal of Physical Chemistry, Langmuir, Light: Science & Applications, Nano Letters, PLoS One, PNAS, Small

Professional Associations

American Chemical Society
American Institute of Chemical Engineers
Materials Research Society
American Association for Cancer Research
The Electrochemical Society
Biomedical Engineering Society