Daniel Alan Heller

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Appointments

9/2018-pres. *Bristol-Myers Squibb/James D. Robinson III Junior Faculty Chair*, Memorial Sloan-Kettering Cancer Center, New York, New York

7/2018-pres. *Associate Professor*, Louis V. Gerstner, Jr. Graduate School of Biomedical Sciences, Memorial Sloan-Kettering Cancer Center, New York, New York

7/2018-pres. *Associate Professor*, Physiology, Biophysics, & Systems Biology Graduate Program, Weill Cornell Medical College, Cornell University, New York, New York

7/2018-pres. *Associate Professor*, Department of Pharmacology, Weill Cornell Medical College, Cornell University, New York, New York

7/2018-pres. *Associate Member*, Molecular Pharmacology & Chemistry Program, Memorial Sloan-Kettering Cancer Center, New York, New York

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

12/2012-7/2018 *Assistant Professor*, Physiology, Biophysics, & Systems Biology Graduate Program, Weill Cornell Medical College, Cornell University, New York, New York

8/2012-7/2018 *Assistant Professor*, Department of Pharmacology, Weill Cornell Medical College, Cornell University, New York, New York

8/2012-pres. *Faculty Member*, Tri-Institutional PhD Program in Chemical Biology, New York

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

6/2012-7/2018 *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

6/2012-7/2018 *Assistant Member*, Molecular Pharmacology & Chemistry Program, Memorial Sloan-Kettering Cancer Center, New York, New York

7/2010-5/2012 *Damon Runyon Fellow*, Robert Langer Group, Koch Institute for Integrative Cancer Research, 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*, Robert Curl Group, Department of Chemistry, Rice University, Houston, Texas

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

8/2000-5/2002 *Science Teacher*, 7th and 8th 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

2018 CRS Nanomedicine and Nanoscale Drug Delivery Focus Group Junior Faculty Award
2018 American Cancer Society Research Scholar
2018 CAREER Award, National Science Foundation
2017 Cycle for Survival Equinox Innovation Award in Rare Cancers
2017 Pershing Square Sohn Prize, Pershing Square Sohn Cancer Research Alliance
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 (* = Corresp author)

Online: http://orcid.org/0000-0002-6866-0000
https://scholar.google.com/citations?hl=en&user=ADhgjaQAAAAJ&view_op=list_works&safe=active
https://www.ncbi.nlm.nih.gov/myncbi/browse/collection/41227773/?sort=date&direction=descending

(67) J Budhathoki-Uprety, J Shah, JA Korsen, AE Wayne, TV Galassi, JR Cohen, JD Harvey, PV Jena, LV Ramanathan, EA Jaimes, **DA Heller***. "Synthetic Molecular Recognition Nanosensor Paint for Microalbuminuria." *Nature Communications* 10 (2019) 3605.

(66) H Kodama, Y Shamay, Y Kimura, J Shah, SB Solomon, **D Heller**, G Srimathveeravalli*. "Electroporation-induced changes in tumor vasculature and microenvironment can promote the delivery and increase the efficacy of sorafenib nanoparticles". *Bioelectrochemistry* 130 (2019) 107328.

(65) JD Harvey, RM Williams, KM. Tully, HA Baker, Y Shamay, **DA Heller***. "An in Vivo Nanosensor Measures Compartmental Doxorubicin Exposure." *Nano Letters* 19 (2019) 4343-4354.

(64) JD Harvey, HA Baker, MV Ortiz, A Kentsis, **DA Heller***. "HIV Detection via a Carbon Nanotube RNA Sensor." *ACS Sensors* 4 (2019) 1236-1244.

(63) TV Galassi, PV Jena, J Shah, G Ao, E Molitor, Y Bram, A Frankel, J Park, J Jessurun, DS Ory, A Haimovitz-Friedman, D Roxbury, J Mittal, M Zheng, R E Schwartz, **DA Heller***. "An Optical Nanoreporter of Endolysosomal Lipid Accumulation Reveals Enduring Effects of Diet on Hepatic Macrophages In Vivo." *Science Translational Medicine* 10 (2018) eaar2680.

(62) RM Williams, C Lee, **DA Heller***. "A Fluorescent Carbon Nanotube Sensor Detects the Metastatic Prostate Cancer Biomarker uPA." *ACS Sensors* 3 (2018) 1838–1845.

(61) JD Harvey, GH Zerze, KM Tully, J Mittal, **DA Heller***. "Electrostatic Screening Modulates Analyte Binding and Emission of Carbon Nanotubes." *Journal of Physical Chemistry C* 19 (2018) 10592–10599.

(60) RM Williams, C Lee, TV Galassi, JD Harvey, R Leicher, M Sirenko, M Dorso, J Shah, N

Olvera, F Dao, DA Levine, **DA Heller***. "Non-Invasive Ovarian Cancer Biomarker Detection via an Optical Nanosensor Implant." *Science Advances* 4 (2018) eaaq1090.

(59) Y Shamay, J Shah, DF Tschaharganeh, D Roxbury, J Budhathoki-Uprety, M Işık, A Mizrachi, K Nawaly, JL Sugarman, E Baut, MR Neiman, DC Johnson, R Sridharan, KL Chu, VK Rajasekhar, JD Chodera, SW Lowe, **DA Heller**[*], "Quantitative Self-Assembly Prediction Yields Targeted Nanomedicines" *Nature Materials* 17 (2018) 361-368.

(58) RM Williams, J Shah, HS Tian, Xi Chen, F Geissman, EA Jaimes, **DA Heller***, "Selective Nanoparticle Targeting of the Renal Tubules." *Hypertension* 71 (2018) 87-94. [Highlighted in *Hypertension* Perspective, Yap, et. al., 2018]

(57) JD Harvey, HA. Baker, E Mercer, J Budhathoki-Uprety, **DA Heller*,** "Control of carbon nanotube solvatochromic response to chemotherapeutic agents." *ACS Applied Materials & Interfaces* 9 (2017) 37947-37953.

(56) CM Sims*, SK Hanna, **DA Heller**, CP Horoszko, ME Johnson, AR Montoro Bustos, V Reipa, KR Riley, BC Nelson*, "Redox-Active Nanomaterials for Nanomedicine Applications." *Nanoscale* 9 (2017) 15226-15251.

(55) PV Jena, D Roxbury, TV Galassi, L Akkari, CP Horoszko, DB Iaea, J Budhathoki-Uprety, NH Pipalia, AS. Haka, JD Harvey, J Mittal, FR Maxfield, JA Joyce, **DA Heller***: "A Carbon Nanotube Optical Reporter Maps Endolysosomal Lipid Flux." *ACS Nano* 11 (2017) 3875-3882. [Highlighted in *ACS Nano* Perspective, Farrera, et.al., 2017]

(54) J Budhathoki-Uprety, JD Harvey, E Isaac, RM Williams, TV Galassi, RE Langenbacher, **DA Heller**[*]: "Polymer Cloaking Modulates the Carbon Nanotube Protein Corona and Delivery into Cancer Cells." *Journal of Materials Chemistry B* 5 (2017) 6637-6644.

(53) PV Jena, MM Safaee, **DA Heller**, D Roxbury[*]: "DNA-Carbon Nanotube Complexation Affinity and Photoluminescence Modulation are Independent." *ACS Applied Materials & Interfaces* 9 (2017) 21397-21405.

(52) J Budhathoki-Uprety, RE Langenbacher, PV Jena, D Roxbury, **DA Heller**[*]: "A Carbon Nanotube Optical Sensor Reports Nuclear Entry via a Noncanonical Pathway." *ACS Nano* 11 (2017) 3875-3882.

(51) JD Harvey, PV Jena, HA Baker, GH Zerze, RM Williams, TV Galassi, D Roxbury, J Mittal, **DA Heller**[*]: "A Carbon Nanotube Reporter of miRNA Hybridization Events In Vivo." *Nature Biomedical Engineering* 1 (2017) 0041.

(50) A Mizrachi, Y Shamay, J Shah, S Brook, J Soong, V Rajasekhar, J Humm, J Healey, S Powell, J Baselga, **DA Heller**[*], A Haimovitz-Friedman[*], M Scaltriti[*]: "Tumor-specific PI3K inhibition via nanoparticle delivery in head and neck squamous cell carcinoma." *Nature Communications* 8 (2017) 14292.

(49) DA Scheinberg*, J Grimm, **DA Heller**, EP Stater, M Bradbury, MR McDevitt: "Advances in the clinical translation of nanotechnology." *Current Opinion in Biotechnology* 46 (2017) 66-73.

(48) PV Jena, TV Galassi, D Roxbury, **DA Heller**[*]: "Review—Progress toward Applications of Carbon Nanotube Photoluminescence." *ECS Journal of Solid State Science and Technology* 6 (2017) M3075-M3077.

(47) TV Galassi, PV Jena, D Roxbury, **DA Heller**[*]: "Single nanotube spectral imaging to determine molar concentrations of isolated carbon nanotube species." *Analytical Chemistry* 89 (2017) 1073-1077.

(46) Y Shamay, M Elkabets, H Li, J Shah, S Brook, F Wang, K Adler, E Baut, M Scaltriti, PV Jena, EE Gardner, JT Poirier, CM Rudin, J Baselga, A Haimovitz-Friedman, **DA Heller**[*]: "P-selectin is a Nanotherapeutic Delivery Target to the Tumor Microenvironment." *Science Translational Medicine* 8 (2016) 345ra87. [Highlighted in *Science Translational Medicine* 8 (2016) 374fs11, *Nature Reviews Clinical Oncology* (2016), and *Cancer Discovery* (2016).]

(45) RM Williams, EA Jaimes*, **DA Heller**[*]: "Nanomedicines for Kidney Diseases." *Kidney International* 90 (2016) 740-745.

(44) D Roxbury, PV Jena, Y Shamay, CP Horoszko, **DA Heller**[*]: "Cell Membrane Proteins Modulate the Carbon Nanotube Optical Bandgap via Surface Charge Accumulation." *ACS Nano* 10 (2016) 499-506.

(43) PV Jena, Y Shamay, J Shah, D Roxbury, N Paknejad, **DA Heller**[*]: "Photoluminescent Carbon Nanotubes Interrogate the Permeability of Multicellular Tumor Spheroids." *Carbon* 97 (2016) 99-109.

(42) D Roxbury, PV Jena, RM Williams, E Balazs, P Niethammer, S Marcet, M Verhaegen, S Blais-Ouellette, **DA Heller**[*]: "Hyperspectral Microscopy of Near-Infrared Fluorescence Enables 17-Chirality Carbon Nanotube Imaging." *Scientific Reports* 5 (2015) 14167.

(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* 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. [Highlighted in *Science* 339 (2013) 374-375.]

(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.

(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.

(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.

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 and Patent Applications

1. MS Strano, **DA Heller**, GW Pratt, J Zhang: "Optical Nanosensors Comprising Photoluminescent Nanostructures." US Patent 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 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 9,664,677 issued May 30, 2017.
4. MS Strano**, DA Heller**: "Spectral Imaging of Photoluminescent Materials." Patent 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.
6. **DA Heller**, J Budhathoki-Uprety: "Helical Polycarbodiimide Polymers and Associated Imaging, Diagnostic, and Therapeutic Methods." Patent appl. US20160067362A1 filed March 10, 2016.
7. **DA Heller**, PV Jena, D Roxbury: "Compositions and methods for monitoring lipid" Patent Application PCT/US2015/032891, filed May 28, 2015.
8. **DA Heller**, Y Shamay: "Fucoidan nanogels and methods of their use and manufacture." US Patent 9,737,614 issued July 7, 2016.
9. **DA Heller**, Y Shamay: "Dye-Stabilized Nanoparticles and Methods of their Manufacture and Therapeutic Use." PCT patent application US16/17153 filed February 9, 2016.
10. **DA Heller**, RM Williams: "Mesoscale Nanoparticles for Selective Targeting to the Kidney and Methods of their Therapeutic Use." Patent application PCT/US16/22879 filed March 17, 2016.
11. **DA Heller**, J Massague, L Norton, S Solomon, Y Shamay, G Srimathveeravalli, R Frederiksen**:** "Capture Device for Detection of Malignant Cells in Blood and Methods Thereof." Patent application PCT/US2016/050916 filed September 9, 2016.
12. **DA Heller**, J Harvey, PV Jena: "Sensors for Nucleic Acid Biomarkers." Patent application PCT/US2017/026592 filed April 7, 2017.
13. **DA Heller**, RM Williams: "SWCNT-DNA-Antibody Conjugates, Related Compositions, and Systems, Methods and Devices for their Use." Patent application PCT/US2017/026563 filed April 7, 2017.

Invited Talks

7/2019 – 2019 Controlled Release Society Annual Meeting
6/2019 - Gordon Research Conference in Cancer Nanotechnology
6/2019 - Parseghian Scientific Conference for Niemann-Pick Type C Research

5/2019 – 235th Electrochemical Society Meeting
4/2019 – DeWitt Goodman Seminar Series, New York Obesity Nutrition Research Center, Columbia University
3/2019 - New York University Nanoscience Discussion Group, NYU Chemistry Department
2/2019 – 11th AACR-JCA Joint Conference on Breakthroughs in Cancer Research
11/2018 – Meinig School of Biomedical Engineering, Cornell University
11/2018 – BUnano Symposium, Boston University
11/2018 – Vienna BioCenter PhD symposium, Vienna, Austria
11/2018 – Department of Pharmacological Sciences, Icahn School of Medicine at Mount Sinai
10/2018 – American Institute of Chemical Engineers 2018 Annual Meeting
9/2018 – Distinguished Scientist Lecture Series, Institute for Research in Immunology and Cancer**,** University of Montréal
9/2018 – Bob Langer 70th Birthday Symposium, Cambridge, MA
8/2018 – Nanomedicine Symposium, 256th American Chemical Society National Meeting
7/2018 – 9th Symposium on Carbon Nanomaterials Biology, Medicine & Toxicology, Beijing, China
7/2018 – 15th US-Korea Nanoforum, Seoul, Korea
7/2018 – 7th Workshop on Nanotube Optics and Nanospectroscopy, Hakone, Japan
5/2018 – 233rd Electrochemical Society Meeting
4/2018 - Modern Optics Seminar, Massachusetts Institute of Technology
3/2018 - Nanoscale Science Seminar, Dept. of Chemistry, University of North Carolina, Charlotte
3/2018 - Department of Biomedical Engineering, New Jersey Institute of Technology
3/2018 - National Science Foundation (NSF) - Funding Opportunities for Nano-Biosensing and Early Career Investigators, The Pittsburgh Conference
2/2018 - Department of Biomedical Engineering, City College of New York
2/2018 - Orthopaedic Soft Tissue Research Program, Hospital for Special Surgery
1/2018 - Molecular Engineering & Sciences Institute, University of Washington
12/2017 - 14th US-Japan Symposium on Drug Delivery Systems (Plenary)
12/2017- Department of Biochemistry, University of Vermont Larner College of Medicine
10/2017 - Helene Ross Bogutz Early Detection Ovarian Cancer Symposium, University of Pennsylvania
10/2017 - Biodesign Institute, Arizona State University
9/2017 - Tri-Institutional Chemical Biology Graduate Program Symposium
8/2017 – Cellular Biology and Anatomy Seminar Series, Georgia Health Sciences University
8/2017 - Biomedical Engineering Department, Carnegie Mellon University
8/2017 - Multimodal Imaging with Colloids Symposium, 254th ACS National Meeting
7/2017 - TSRC Workshop on Defect Chemistry and Physics of Low Dimensional Materials, Telluride
5/2017 - 231st Electrochemical Society Meeting
5/2017 - Tissue Microenvironment Seminar Series, University of Illinois at Urbana-Champaign
5/2017 - Canadian Society of Nephrology, Montreal, Canada
2/2017 - Polymer Program Seminar, Institute of Materials Science, University of Connecticut
12/2016 - Center for Targeted Therapeutics and Translational Nanomedicine (CT^3N) 2016 Symposium, University of Pennsylvania
11/2016 - Nanotubes and Related Nanostructures Symposium, 2016 Materials Research Society Fall Meeting, Boston
11/2016 - National Cancer Institute/INCa/Aviesan Next Gen Nano Cancer Symposium, Paris
10/2016 - Materials Science & Technology 2016 Conference, Salt Lake City
8/2016 - Seventeenth International Conference on the Science and Applications on Nanotubes and Low-Dimensional Materials, Vienna
8/2016 - 7th Symposium on Carbon Nanomaterials Biology, Medicine, & Toxicology, Vienna

5/2016 - European Materials Research Society, Lille
2/2016 - Department of Chemistry, Clemson University
10/2015 - Institute of Chemical Sciences and Engineering, Ecole Polytechnique Federale de Lausanne
10/2015 - Chemistry Department Seminar, Fort Lewis College
5/2015 - 227th Electrochemical Society Meeting, Chicago
5/2015 - National Institute of Nutrition, Hyderabad
4/2015 - Bombay College of Pharmacy, Mumbai
3/2015 - Department of Chemistry and Biochemistry, Queens College, City University of New York
2/2015 - Plenary speaker, Israel Institute of Chemical Engineers 50th Anniversary Conf., Tel-Aviv
2/2015 - Kavli Frontiers of Science Israeli-American Symposium, Jerusalem
2/2015 - Keynote speaker, Nanoscience NY Symposium, CUNY Advanced Science Research Center
9/2014 - Department of Chemical and Biomolecular Engineering, Lehigh University
9/2014 - Department of Physics, Universidad de los Andes, Bogota
7/2013 - International Symposium on Integrated Functionalities, Materials Research Society
5/2013 - 223rd Electrochemical Society Meeting, Toronto, Canada, May 2013
4/2013 - Integrated Cancer Research Seminar Series, Georgia Institute of Technology
6/2012 - Gordon Research Seminar in Bioanalytical Sensors
4/2012 - Cancer Community at Illinois Symposium, University of Illinois at Urbana-Champaign
11/2011 - ICB Seminar Series, Institute for Chemical and Biological Engineering, ETH Zurich
11/2011 - Fassberg Seminar Series, Max Planck Institute for Biophysical Chemistry, Göttingen
11/2011 - Institut für Physikalische u. Theoretische Chemie, Universität Würzburg
7/2011 - Advanced Technology Institute, University of Surrey
8/2009 - 238th American Chemical Society National Meeting
8/2008 - Universidad Nacional de Colombia, Bogota
8/2008 - Universidad de Los Andes, Bogota
12/2007 - Indian Institute of Technology - Bombay
6/2006 - Semmelweis University, Budapest, Hungary

Leadership, Service, Outreach, and Professional Activities

2019	Organizer - 10th Symposium on Carbon Nanomaterials Biology, Medicine & Toxicology
2019-pres.	*Co-Organizer* – In Vivo Biosensing Network
2018-pres.	*Standing Member,* Venture Philanthropy Fund Review Committee, Crohn's & Colitis Foundation
2017	*Session Co-Chair*, Biomedical Engineering Society Annual Meeting
2017-pres.	*Member,* NIH NCIP Nanomedicine Data Reporting Working Group
2017-pres.	*Member*, Junior Faculty Search Committee, Memorial Sloan Kettering
2017-2019	*Member*, NIDDK Review Panels, Developmental Centers in Benign Urology (P20), NIDDK ZDK1 GRB-3 O2, ZDK1 GRB-M O5
2017-pres.	*Lead Symposium Organizer,* Carbon Nanostructures in Medicine and Biology Symposium, Nanocarbons Division, The Electrochemical Society
2017-pres.	*Founding Director*, Engineering Summer Program, Memorial Sloan Kettering
2017-pres.	*Co-Founder and Executive Committee Member*, Technology and Engineering Group, Memorial Sloan Kettering Cancer Center
2017	*Pharmacology Task Force Member*, Research Strategic Vision and Planning, Sloan Kettering Institute
2016-2019.	*Advisory Board Member*, International Conference on the Science and Application of Nanotubes and Low-Dimensional Materials
2016	*Ad Hoc Reviewer*, NIH Study Section: Enabling Bioanalytical and Imaging Technologies (EBIT)

2016-pres. *Faculty Advisory Committee*, BioVenture eLab (formerly Dean's Entrepreneurship Laboratory), Weill Cornell Medicine
2016-pres. *Faculty Discussion Leader*, ACCESS Summer Program Journal Club, Weill Cornell
2016 *Participant*, Junior Faculty Emerging Leaders Program, MSKCC
2016 *Organizing Committee*, Bio|Nano|Med Symposium, Advanced Science Research Center, City University of New York
2016-pres *Outreach*, Math, Engineering, and Science Academy (MESA), Bushwick, Brooklyn
2015 *Member*, NCI Special Emphasis Panel, U54 Centers of Cancer Nanotechnology Excellence (CCNE), ZCA1TCRB-Q(M1)
2015-pres. *Board of Directors*, Rice Alumni in Medicine, Rice University
2015-pres. *Oversight Committee*, Molecular Cytology Core Facility, MSKCC
2015-pres. *Artist Residency Host Lab*, "Nano-Paint", Joseph Cohen, Visual Artist
2015-2017. *Artist Residency Host Lab*, "Well Plate Utopias", Matej Vakula, Mixed Media Artist
2015-pres. *Panelist*, Office of Career Services Events, MSKCC
2014-pres. *Executive Committee*, Center for Molecular Imaging & Nanotechnology, MSKCC
2013-2016 *Member*, Junior Faculty Council, Memorial Sloan-Kettering Cancer Center
2013-pres. *Organizer*, Nanocarbons Division, The Electrochemical Society
2013-pres. *Session Chair*, Carbon Nanostructures in Medicine and Biology, The Electrochemical Society Meetings
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
2010 *Judge*, Bionanotechnology Graduate Award Session, AIChE Annual Meeting
2010 *Session Co-Chair*, Nanosci. in Polymer Chemistry, POLY Div., ACS National Meeting
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
2004-2012 *Board of Directors*, *Wizard*, Illinois Renaissance Festival, Danville, IL
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

Active reviewer for journals: Advanced Biosystems, ACS Applied Materials & Interfaces, ACS Nano, ACS Sensors, Advanced Materials, Analytical Chemistry, Carbon, Chemical Physics Letters, eLife, Environmental Science & Technology, Journal of Biological Physics, Journal of Controlled Release, Journal of Materials Chemistry B, Journal of Nuclear Medicine, Journal of Physical Chemistry, Langmuir, Light: Science & Applications, Nano Letters, Nanoscale, Nature Communications, Nature Nanotechnology, PLoS One, PNAS, Small, Science Advances, Science Translational Medicine

Teaching and Mentorship

2017-pres. *Course Director*, "Drug Development from Molecule to Prescription", Weill Cornell Medical College
2016-pres. *Lecturer*, "Next-Generation Methods for Neuroscience and Pharmacology", Weill Cornell Medical College
2015-pres. *Lecturer*, "Essential Principles in Pharmacology and Drug Development", Weill Cornell Medical College
2014-pres. *Course Director*, "From Bench to Bedside: Business Fundamentals for Entrepreneurial Scientists," Weill Cornell Medical College

2014 *Presenter*, "Major Trends in Modern Cancer Research", MSKCC
2012-pres. *Lecturer*, "Pharmacology I: Chemical Biology," Weill Cornell Medical College
2012-pres. *Lecturer*, "Molecular Pharmacology of Cancer," Weill Cornell Medical College
2012-pres. *Mentor*, Summer Undergraduate Research Program Students, MSKCC
2012-pres. *Thesis Advisor*, PhD Students from Weill Cornell Graduate School of Medical Sciences
2008-2012 *Mentor*, Six Undergraduate Research Opportunities Program Scholars, MIT
2005-2006 *Mentor*, Intel/Lockheed Martin Undergraduate Research Scholar, University of Illinois
2005-2006 *Classroom Instructor*, Educating Tomorrow's Chemists, Department of Chemistry, 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 Associations

2019-pres. *Annual Meeting Education Committee*, American Association of Cancer Research
2017-pres. *Editorial Board Member*, Chemistry in Cancer Research, American Association of Cancer Research
2017-pres. *Member*, Biomedical Engineering Society
2015-pres. *Member at Large*, Nanocarbons Division, The Electrochemical Society
2013-pres. *Member*, The Electrochemical Society
2012-pres. *Member*, American Association of Cancer Research
2009-pres. *Member*, Materials Research Society
2002-pres. *Member*, American Chemical Society