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Education

1998 B.A., Chemistry, Macalester College, St. Paul, MN
1999 M.S., Chemistry, Northwestern University, Evanston, IL
2003 Ph.D., Chemistry, Northwestern University, Evanston, IL
 Thesis: Fundamentals and Applications of Nanoparticle Optics and Surface-Enhanced Raman Scattering

Employment

2019 – Distinguished McKnight University Professor
2015 – 2019 Elmore H. Northey Professor of Chemistry
2014 – Professor at the University of Minnesota, Department of Chemistry
2010 - 2014 Associate Professor at the University of Minnesota, Department of Chemistry
2007 - 2009 McKnight Land-Grant Assistant Professor at the University of Minnesota, Department of Chemistry
2005 - 2010 Assistant Professor at the University of Minnesota, Department of Chemistry and in the Graduate Faculty of Chemical Physics
2003 - 2005 NRSA Post-Doctoral Fellow at the University of North Carolina at Chapel Hill, Department of Chemistry. Advisor: R. Mark Wightman
1998 - 2003 Graduate Student and Teaching Assistant at Northwestern University, Department of Chemistry. Advisor: Richard P. Van Duyne

Awards and Recognition

2021 “Big 10” Academic Leadership Program
2020 University of Minnesota Women’s Leadership Institute
2019 Finalist for 2019 Blavatnik National Awards for Young Scientists
 Analytical Scientist’s Power List
 University of Minnesota Women’s Leadership Institute
2018 Guggenheim Fellow

Theophilus Redwood Award from the Royal Society of Chemistry

Craver Award from the Coblenz Society

Finalist for 2018 Blavatnik National Awards for Young Scientists

2017 Finalist for 2017 Blavatnik National Awards for Young Scientists

Top 10 “Giants of Nano” on *Analytical Scientist’s* Power List

2016 *Analytical Scientist’s* Power List

2015 Advising and Mentoring Award from the UMN Graduate and Professional Student Assembly

Sara Evans Faculty Woman Scholar/Leader Award

One of the Top 100 Inspiring Women in STEM from "Insight into Diversity" magazine

2014 Taylor Award for Distinguished Research from the University of Minnesota

Featured on *Analytical Scientist's* “Top 40 Under 40” Power List

2013 Kavli Foundation Emerging Leader in Chemistry Lecture

University of Minnesota “Outstanding Postdoctoral Mentor”

2012 Pittsburgh Conference Achievement Award

One of “Brilliant 10” chosen by *Popular Science* magazine

2011 Joseph Black Award from the Royal Society of Chemistry

2010 Alfred P. Sloan Fellow

Arthur F. Findeis Award for Achievements by a Young Analytical Scientist from the American Chemical Society Division of Analytical Chemistry

2009 Society for Electroanalytical Chemistry Young Investigator Award

Camille and Henry Dreyfus Teacher-Scholar Award

2008 NIH New Innovator

3M Nontenured Faculty Grant

2007 Delegate for Japan-U.S. Young Researchers Exchange on Nanotechnology

University of Minnesota McKnight Land-Grant Assistant Professor

3M Nontenured Faculty Grant

2006 Kinship Foundation Searle Scholar

3M Nontenured Faculty Grant

National Science Foundation CAREER Award

2005 Victor K. LaMer Award from the American Chemical Society Division of Colloid and Surface Science

2004 Ruth L. Kirschstein National Research Service Award Postdoctoral Fellowship from the National Institutes of Health

Nobel Laureate Signature Award for Graduate Education in Chemistry from the American Chemical Society

2003 Award for Excellence in Graduate Research from Northwestern University

NSEC International Travel Grant from Northwestern University
2002 Kirkbright Bursary from the Association of British Spectroscopists
Presidential Fellowship from Northwestern University
Graduate Student Gold Award from the Materials Research Society

Peer-Reviewed Publication List (207), h-index = 59

207. NGen2021: Electrochemistry is Everywhere, Cabana, J.; Alaan, T.; Crabtree, G.; Hatzell, M.; Manthiram, K.; Steingart, D.; Zenyuk, I.; Jiao, F.; Vojvodic, A.; Yang, J.; Balsara, N.; Persson, K.; Siegel, D.; Haynes, C.L.; Mauzeroll, J.; Shen, M.; Venton, B.; Balke, N.; Rodríguez-López, J.; Rolison, D.; Shahbazian-Yassar, R.; Srinivasan, V.; Chaudhuri, S.; Couet, A.; Hatrick-Simpers, J.; *ACS Energy Lett.*, accepted.
206. Surface-enhanced Raman Spectroscopy, Han, X.X.; Rodriguez, R.S.; Haynes, C.L.; Ozaki, Y.; Zhao, B.; *Nature Rev. Methods Primers*, in press.
205. Characterization of the Presence and Function of Platelet Opioid Receptors, Gruba S.M.; Fancis, D.; Meyer, A.F.; Spanolios, E.; He, J.; Meyer, B.M.; Kim, D.; Xiong-Hang, K.; Haynes, C.L.; *ACS Measurement Science Au*, in press.
204. Investigation of the Post-Synthetic Confinement of Fluorous Liquids Inside Mesoporous Silica Nanoparticles, Lee, A.; Lee, S.-H.; Nguyen, H.; Cahill, M.; Kappel, E.; Pomerantz, W.C.K.; Haynes, C.L.; *Langmuir*, 37(17) 5222-5231 (2021).
203. *Plasmodium chabaudi* Affects Mast Cell Degranulation as Measured by Carbon-Fiber Microelectrode Amperometry, Xiong-Hang, K.; Haynes, C.L.; *ACS Infect. Dis.*, 7(6) 1650-1656 (2021).
202. Silica nanoparticle dissolution rate controls the suppression of Fusarium wilt of watermelon (*Citrullus lanatus*), Kang, H.; Elmer, W.; Shen, Y.; Zuverza-Mena, N.; Ma, C.; Botella, P.; White, J.; Haynes, C.L.; *Environ. Sci. Tech.*, 55(20) 13513-13522 (2021).
201. Multicolor Polymeric Carbon Dots: Synthesis, Separation and Polyamide-supported Molecular Fluorescence, Zhi, B.; Yao, X.; Wu, M.; Mensch, A.; Cui, Y.; Deng, J.; Duchimaza-Heredia, J.J.; Trerayapiwat, K.J.; Niehaus, T.; Nishimoto, Y.; Frank, B.P.; Zhang, Y.; Lewis, R.E.; Kappel, E.A.; Hamers, R.J.; Fairbrother, H.D.; Orr, G.; Murphy, C.J.; Cui, Q.; Haynes, C.L.; *Chem. Sci.*, 12 2441-2455 (2021).
200. Multiplex Surface-enhanced Raman Scattering Detection of Deoxynivalenol and Ochratoxin A with a Linear Polymer Affinity Agent, Rodriguez, R.S.; Szlag, V.; Reineke, T.; Haynes, C.L.; *Mat. Adv.*, 1 3256-3266 (2020).
199. Sensing Food Contaminants: Advances in Analytical Methods and Techniques, Rodriguez, R.S.; O'Keefe, T.; Froehlich, C.; Lewis, R.; Sheldon, T.; Haynes, C.L.; *Anal. Chem.*, 93(1) 23-40 (2021).
198. Optimization of Film over Nanosphere Substrate Fabrication for SERS Sensing of the Allergen Soybean Agglutinin, Rodriguez, R.S.; Styles, M.; Szlag, V.; Bryson, S.; Gao, Z.; Jung, S.; Reineke, T.; Haynes, C.L.; *J. Raman Spec.*, 52(2) 482-490 (2021).
197. Nanoscale Battery Cathode Materials Induce DNA Damage in Bacteria, Qiu, T.A.; Guidolin, V.; Hoang, K.L.N.; Pho, T.; Carra', A.; Villalta, P.W.; He, J.; Yao, X.; Hamers, R.J.; Balbo, S.; Feng, Z.V.; Haynes, C.L.; *Chem. Sci.*, 11 11244-11258 (2020).
196. Novel Quasi-Emulsion Solvent Diffusion-Based Spherical CocrySTALLIZATION Strategy for Simultaneously Improving the Manufacturability and Dissolution of Indomethacin, Chen, H.; Xu, H.; Wang, C.; Kang, H.; Haynes, C.L.; Mahanthappa, M.; Sun, C. *Cryst. Growth & Des.*, 20(10) 6752-6762 (2020).

195. Influence of Spatial Distribution of Cationic Functional Groups at Nanoparticle Surfaces on Bacterial Viability and Membrane Interactions, Zhang, Y.; Hudson-Smith, N.; Frand, S.; Cahill, M.; Davis, L.; Feng, Z.V.; Haynes, C.L.; Hamers, R.J. *J. Amer. Chem. Soc.*, 142(24) 10814-10823 (2020).
194. Assessing the Regulatory Requirements of Lead-Based Perovskite Photovoltaics, Moody, N.; Sesena, S.; deQuillettes, D.W.; Dak Dou, B.; Swartwout, R.; Buchman, J.T.; Johnson, A.; Eze, U.; Brenes, R.; Johnston, M.; Haynes, C.L.; Bulovic, V.; Bawendi, M.G. *Joule*, 4(5) P970-P974 (2020).
193. Antimalarial Drugs Impact Chemical Messenger Secretion by Blood Platelets, Xiong-Hang, K.; He, J.; Kemnetz-Ness, K.; Haynes, C.L. *Biochem. Biophys. Rep.*, 22 100758 (2020).
192. Wall Teichoic Acids Govern Cationic Gold Nanoparticle Interaction with Gram-Positive Bacterial Cell Walls, Caudill, E.R.; Tapia Hernandez, R.; Johnson, K.P.; O'Rourke, J.T.; Zhu, L.; Haynes, C.L.; Feng, Z.V.; Pedersen, J.A. *Chem. Sci.*, 11 4106-4118 (2020).
191. Photochemical Transformations of Carbon Dots in Aqueous Environments, Frank, B.; Sigmon, L.; Deline, A.; Lankone, R.; Gallagher, M.; Zhi, B.; Haynes, C.L.; Fairbrother, D.H. *Environ. Sci. & Tech.*, 54(7) 4160-4170 (2020).
190. Cobalt Release from a Nanoscale Multiphase Lithiated Cobalt Phosphate Dominates Interaction with *Shewanella oneidensis* MR-1 and *Bacillus subtilis* SB491, Clement, P.; Kuether, J.; Borgatta, J.; Buchman, J.; Cahill, M.; Qiu, T.; Hamers, R.; Feng, Z.; Haynes, C.L. *Chem. Res. Tox.*, 33(3) 806-816 (2020).
189. Multidimensional Nanoparticle Characterization through Ion Mobility-Mass Spectrometry, Li, C.; Lee, A.; Chen, X.; Pomerantz, W.C.P.; Haynes, C.L.; Hogan, C. *Anal. Chem.*, 92(3) 2503-2310 (2020).
188. Nickel Enrichment of Next-generation NMC Nanomaterials Alters Material Stability, Causing Unexpected Dissolution Behavior and Observed Toxicity to *S. oneidensis* MR-1 and *D. magna*, Buchman, J.; Bennett, E.; Wang, C.; Abbaspour Tamijani, A.; Bennett, J.; Hudson, B.; Green, C.; Clement, P.; Zhi, B.; Henke, A.; Laudadio, E.; Mason, S.; Hamers, R.; Klaper, R.; Haynes, C.L. *Environ. Sci.: Nano*, 7 571-587 (2020).
187. A Molecular Fluorophore in Citric-Acid/Ethylenediamine Carbon Dots Identified and Quantified by Multinuclear Solid-state NMR, Duan, P.; Zhi, B.; Coburn, L.; Haynes, C.L.; Schmidt-Rohr, K. *Mag. Res. Chem.*, 1-9 (2020).
186. Microstructures and Pharmaceutical Properties of Ferulic Acid Agglomerates Prepared by Different Spherical Crystallization Methods, Chen, H.; Wang, C.; Kang, H.; Zhi, B.; Haynes, C.L.; Aburub, A.; Sun, C. *International J. Pharmaceut.*, 574 118914 (2020).
185. Chitosan-coated Mesoporous Silica Nanoparticle Treatment of *Citrullus lanatus* (Watermelon): Enhanced Fungal Disease Suppression and Modulated Expression of Stress-related Genes, Buchman, J.; Elmer, W.; Ma, C.; Landy, K.; White, J.; Haynes, C.L. *ACS Sus. Chem. & Eng.*, 7(24) 19649-19659 (2019).
184. Preparation of Scalable Silica-Coated Iron Oxide Nanoparticles for Nanowarming, Gao, Z.; Ring, H.L.; Sharma, A.; Namsrai, B.; Tran, N.; Finger, E.B.; Garwood, M.; Haynes, C.L.; Bischof, J.C. *Adv. Sci.*, 7, 1901624.
183. Synthesis, Applications and Potential Photoluminescence Mechanism of Spectrally Tunable Carbon Dots, Zhi, B.; Yao, X.; Cui, Y.; Orr, G.; Haynes, C.L. *Nanoscale*, 11 20411-20428 (2019).
182. Interactions between Silica-Coated Gold Nanorods Substrates and Hydrophobic Analytes in Colloidal Surface-Enhanced Raman Spectroscopy, Kang, H.; Haynes, C.L. *J. Phys. Chem. C*, 123(40) 24685-24697 (2019).
181. Present and Future of Surface Enhanced Raman Scattering, Langer, J.;... Haynes, C.L.;... Liz-Marzan, L.M. *ACS Nano*, 14(1) 28-117 (2019).

180. Chronic Exposure to Complex Metal Oxide Nanoparticles Elicits Rapid Resistance in *Shewanella oneidensis* MR-1, Mitchell, S.; Hudson-Smith, N.; Cahill, M.; Reynolds, B.; Frand, S.; Green, C.; Wang, C.; Hang, M.; Hernandez, R.; Hamers, R.; Feng, Z.V.; Haynes, C.L.; Carlson, E. *Chem. Sci.*, 10 9768-9781 (2019).
179. Coating Iron Oxide Nanoparticles with Mesoporous Silica Reduces their Interaction and Impact on *S. oneidensis* MR-1, Buchman, J.; Pho, T.; Rodriguez, R.; Feng, Z.V.; Haynes, C.L. *Chemosphere*, 237 124511 (2019).
178. Bacterial Toxicity of Germanium Nanocrystals Induced by Doping with Boron and Phosphorous, Zhi, B.; Yang, Y.; Hudson-Smith, N.V.; Kortshagen, U.; Haynes, C.L. *ACS Appl. Nano Mater.*, 2(8) 4744-4755 (2019).
177. Optimizing Linear Polymer Affinity Agent Properties for Surface-enhanced Raman Scattering Detection of Aflatoxin B1, Szlag, V.M.; Rodriguez, R.S.; Jung, S.; Bourgeois, M.R.; Bryson, S.; Purchel, A.; Schatz, G.C.; Haynes, C.L.; Reineke, T.M. *Molec. Sys. Design & Eng.*, 4 1019-1031 (2019).
176. A Macroscale Model for Hands-On Activities Demonstrating Transmission Electron Microscopy, Hudson-Smith, N.V.; Cahill, M.; Klein, N.; Krause, M.; Haynes, C.L. *J. Chem. Ed.*, 96(7) 1377-1382 (2019).
175. A Facile Benchtop Reactor Design using Dendrimer-templating Technology for the Fabrication of PEI-coated CuO Nanoparticles on the Gram Scale, Ethridge, A.; Gallagher, M.J.; Hudson-Smith, N.V.; Finley, D.; Ahsan, A.; Fairbrother, D.H.; Haynes, C.L.; Hamers, R.J.; Curry, M.L. *J. Vac. Sci. Tech. A*, 37 041402 (2019).
174. Preparation of Colloidally Stable Positively Charged Hollow Silica Nanoparticles: Effect of Minimizing Hydrolysis on Zeta Potentials, Kang, H.; Long, D.; Haynes, C.L. *Langmuir*, 35 7985-7994 (2019).
173. Understanding Nanoparticle Toxicity Mechanisms to Inform Redesign Strategies to Reduce Environmental Impact, Buchman, J.; Hudson-Smith, N.; Landy, K.; Haynes, C.L. *Accounts Chem. Res.*, 52(6) 1632-1642 (2019).
172. Molecular Surface Functionalization of Carbon Materials via Radical-induced Grafting of Terminal Alkenes, Zhang, Y.; Tamijani, A.A.; Taylor, M.E.; Zhi, B.; Haynes, C.L.; Mason, S.E.; Hamers, R.J. *J. Am. Chem. Soc.*, 141(20) 8277-8288 (2019).
171. Insight into the Effects of *Plasmodium chabaudi* on Platelets Using Carbon-Fiber Microelectrode Amperometry, Xiong-Hang, K.; Kemnetz-Ness, K.; Krieger, A.; Haynes, C.L. *ACS Infectious Diseases*, 5(4) 592-597 (2019).
170. Effect of Silica Supports on Plasmonic Heating of Molecular Adsorbates as Measured by Ultrafast Surface-Enhanced Raman Thermometry, Keller, E.; Kang, H.; Haynes, C.L.; Frontiera, R. *ACS Appl. Mater. Inter.*, 10(47) 40577-40584 (2018).
169. Isothermal Titration Calorimetry for the Screening of Aflatoxin B1 Surface-enhanced Raman Scattering Sensor Affinity Agents, Szlag, V.; Jung, S.; Rodriguez, R.; Bourgeois, M.; Bryson, S.; Schatz, G.; Reineke, T.; Haynes, C.L. *Anal. Chem.*, 90(22) 13409-13418 (2018).
168. Linking Nanomaterial Properties to Biological Outcomes: Analytical Chemistry Challenges in Nanotoxicology for the Next Decade, Qiu, T.A.; Clement, P.; Haynes, C.L. *ChemComm*, 54 12787-12803 (2018).
167. Stabilization of Silver and Gold Nanoparticles: Preservation and Improvement of Plasmonic Functionalities, Kang, H.; Buchman, J.; Rodriguez, R.; Ring, H.; He, J.; Bantz, K.; Haynes, C.L. *Chem. Rev.*, 199(1) 664-669 (2019).
166. Copper Based Nanomaterials Suppress Root Fungal Disease in Watermelon (*Citrullus lanatus*): Role of Particle Morphology, Composition and Dissolution Behavior, Borgatta, J.; Ma, C.; Hudson-Smith, N.; Elmer, W.; Plaza Pérez, C.; De La Torre-Roche, R.; Zuverza-Mena, N.; Haynes, C.L.; White, J.C.; Hamers, R. *ACS Sus. Chem. Eng.*, 6(11) 14847-14856 (2018).

165. Quaternary Amine-Terminated Quantum Dots Induce Structural Changes to Supported Lipid Bilayers, Mensch, A.; Buchman, J.; Haynes, C.L.; Pedersen, J.; Hamers, R. *Langmuir*, 34(41) 12369-12378 (2018).
164. Molecular Affinity Agents for Intrinsic Surface-enhanced Raman Scattering (SERS) Sensors, Szlag, V.; Rodriguez, R.; He, J.; Hudson-Smith, N.; Kang, H.; Le, N.; Reineke, T.M.; Haynes, C.L. *ACS Appl. Mater. & Int.*, 10(38) 31825-31844 (2018).
163. Toxicity Evaluation of Boron- and Phosphorous-Doped Silicon Nanocrystals towards *Shewanella oneidensis* MR-1, Zhi, B.; Mishra, S.; Hudson-Smith, N.; Kortshagen, U.; Haynes, C.L. *ACS Appl. Nano Mater.*, 1(9) 4884-4893 (2018).
162. Adverse Interactions of Luminescent Semiconductor Quantum Dots with Liposomes and *Shewanella oneidensis*, Williams, D.; Pramanik, S.; Brown, R.; Zhi, B.; McIntire, E.; Hudson-Smith, N.; Haynes, C.L.; Rosenzweig, Z. *ACS Appl. Nano Mater.*, 1(9) 4788-4800 (2018).
161. Lipid Corona Formation from Nanoparticle Interactions with Bilayers, Olenick, L.A.; Troiano, J.M.; Vartanian, A.; Melby, E.S.; Mensch, A.C.; Zhang, L.; Qiu, T.A.; Bozich, J.; Lohse, S.; Zhang, X.; Kuech, T.R.; Millevolte, A.; Gunsolus, I.L.; McGeachy, A.C.; Dogangün, M.; Hu, D.; Walter, S.R.; Mohaimani, A.; Schmoldt, A.; Torelli, M.D.; Hurley, K.R.; Dalluge, J.; Chong, G.; Feng, Z.V.; Haynes, C.L.; Hamers, R.J.; Pedersen, J.A.; Cui, Q.; Hernandez, R.; Klaper, R.; Orr, G.; Murphy, C.J.; Geiger, F.M. *Chem*, 4(11) 2709-2723 (2018).
160. Size Dependent Oxidative Stress Response of the Gut of *Daphnia magna* to Functionalized Nanodiamond Particles, Gustavo, A.D.; Torelli, M.D.; Buchman, J.T.; Haynes, C.L.; Hamers, R.J.; Klaper, R.D. *Environ. Res.*, 167 267-275 (2018).
159. Comparative Toxicity Assessment of Novel Si Quantum Dots and their Traditional Cd-based Counterparts using Bacteria Models *Shewanella oneidensis* and *Bacillus subtilis*, Pramanik, S.; Hill, S.; Zhi, B.; Hudson-Smith, N.; Wu, J.; White, J.; McIntire, E.; Kondeti, S.; Lee, A.; Bruggeman, P.; Kortshagen, U.; Haynes, C.L. *Environ. Sci.: Nano*, 5(8) 1890-1901 (2018).
158. Malic Acid Carbon Dots: from Super-Resolution Live-Cell Imaging to Highly Efficient Separation, Zhi, B.; Cui, Y.; Wang, S.; Frank, B.; Williams, D.; Brown, R.; Melby, E.; Hamers, R.; Rosenzweig, Z.; Fairbrother, D.H.; Orr, G.; Haynes, C.L. *ACS Nano*, 12(6) 5741-5752 (2018).
157. Release, Detection and Toxicity of Fragments Generated during Artificial Accelerated Weathering of CdSe/ZnS and CdSe Quantum Dot Polymer Composites, Gallagher, M.; Buchman, J.; Qiu, T.; Zhi, B.; Lyons, T.; Landy, K.; Rosenzweig, Z.; Haynes, C.L.; Fairbrother, D.H. *Environ. Sci.: Nano*, 5(7) 1694-1710 (2018).
156. Expanding the Educational Toolset for Chemistry Outreach: Providing a Chemical View of Climate Change through Hands-on Activities and Demonstrations Supplemented with TED-Ed Videos, Finkenstaedt-Quinn, S.; Hudson-Smith, N.V.; Styles, M.; Maudal, M.; Juelfs, A.; Haynes, C.L. *J. Chem. Ed.*, 95(6) 985-990 (2018).
155. HDL-AuNPs-BMS Nanoparticle Conjugates as Molecularly Targeted Therapy for Leukemia, Shen, N.; Yan, F.; Pang, J.; Gao, Z.; Al-Kali, A.; Haynes, C.L.; Litzow, M.R.; Liu, S. *ACS Appl. Mater. Interfaces*, 10(17) 14454-14462 (2018).
154. Influence of Nanoparticle Morphology on Ion Release and Biological Impact of Nickel Manganese Cobalt Oxide (NMC) Complex Oxide Nanomaterials, Hang, M.; Hudson-Smith, N.v.; Clement, P.; Zhang, Y.; Wang, C.; Haynes, C.L.; Hamers, R.J. *ACS Appl. Nanomater.*, 1(4) 1721-1730 (2018).
153. Structure-Property Relationships of Amine-Rich and Membrane-Disruptive Poly(oxonorbornene)-Coated Gold Nanoparticles, Zheng, Z.; Saar, J.; Zhi, B.; Qiu, T.A.; Gallagher, M.J.; Fairbrother, D.H.; Haynes, C.L.; Lienkamp, K.; Rosenzweig, Z. *Langmuir*, 34(15) 4614-4625 (2018).

152. Using an Environmentally-relevant Panel of Gram-negative Bacteria to Assess the Toxicity of Polyallylamine Hydrochloride-wrapped Gold Nanoparticles, Buchman, J.T.; Rahnamoun, A.; Landy, K.M.; Zhang, X.; Vartanian, A.M.; Jacob, L.M.; Murphy, C.J.; Hernandez, R.; Haynes, C.L. *Environ. Sci.: Nano*, 5 279-288 (2018).
151. Investigation of Phosphorous Doping Effect on Polymeric Carbon Dots: Fluorescence, Photo Stability and Environmental Impact, Zhi, B.; Gallagher, M.J.; Frank, B.P.; Lyons, T.Y.; Qiu, T.A.; Da, J.; Mensch, A.C.; Hamers, R.J.; Rosenzweig, Z.; Fairbrother, D.H.; Haynes, C.L. *Carbon*, 129 438-449 (2018).
150. Optically Detected Magnetic Resonance for Selective Imaging of Diamond Nanoparticles, Robinson, M.E.; Ng, J.D.; Zhang, H.; Buchman, J.T.; Shenderova, O.A.; Haynes, C.L.; Ma, Z.; Goldsmith, R.H.; Hamers, R.J. *Anal. Chem.*, 90(1) 769-776 (2018).
149. Carbon Dots: A Modular Activity to Teach Fluorescence and Nanotechnology at Multiple Levels, Pham, S.; Kuether, J.; Gallagher, M.; Hernandez, R.; Williams, D.; Zhi, B.; Mensch, A.; Hamers, R.; Rosenzweig, Z.; Fairbrother, D.; Krause, M.; Feng, Z.; Haynes, C.L. *J. Chem. Ed.*, 94(8) 1143-1149 (2017).
148. Establishing the Overlap of IONP Quantification with Echo and Echoless MR Relaxation Mapping, Ring, H.L.; Zhang, J.; Klein, N.D.; Eberly, L.; Haynes, C.L.; Garwood, M. *Magn. Res. Med.*, doi:10.1002/mrm.26800 (2017).
147. The Effect of Filtered Nanoparticles on Changing Gas Filtration Efficiency of Granular Activated Carbons, Kim, C.; Lee, H.; Juelfs, A.; Haynes, C.L.; Pui, D.Y.H. *Carbon*, 121 63-71 (2017).
146. Oxygen Sensing with Perfluorocarbon-Loaded Ultraporous Mesostructured Silica Nanoparticles, Lee, A.; Gee, C.; Weegman, B.; Einstein, S.; Juelfs, A.; Ring, H.; Hurley, K.; Egger, S.; Swindlehurst, G.; Garwood, M.; Pomerantz, W.; Haynes, C.L. *ACS Nano*, 11(6) 5623-5632 (2017).
145. Stereochemistry- and Concentration-Dependent Effects of Phosphatidylserine Enrichment on Platelet Function, Meyer, A.F.; Gruba, S.M.; Kim, D.; Meyer, B.M.; Koseoglu, S.; Dalluge, J.J.; Haynes, C.L. *Biochim. Biophys. Acta – Biomem.*, 1859(8) 1381-1387 (2017).
144. Improved Tissue Cryopreservation using Inductive Heating of Magnetic Nanoparticles, Manuchehrabadi, N.; Gao, Z.; Zhang, J.; Ring, H.L.; Shao, Q.; Liu, F.; McDermott, M.; Fok, A.; Rabin, Y.; Brockbank, K.G.M.; Garwood, M.; Haynes, C.L.; Bischof, J. *Science Trans. Med.*, 9, eaah4586 (2017).
143. A Versatile Microfluidic Platform for the Study of Cellular Interactions between Endothelial Cells and Neutrophils, Wu, X.; Newbold, M.A.; Gao, Z.; Haynes, C.L. *Biochim. Biophys. Acta – Gen. Subj.*, 1861(5) 1122-1130 (2017).
142. A Finite-element Model of Granular Serotonin Exocytosis, Datta, A.; Haynes, C.L.; Barocas, V. *Integrat. Bio.*, 9 248-256 (2017).
141. Influence of Nickel Manganese Cobalt Oxide Nanoparticle Composition on Toxicity toward *Shewanella oneidensis* MR-1: Redesigning for Reduced Biological Impact, Gunsolus, I.L.; Hang, M.N.; Hudson-Smith, N.V.; Buchman, J.T.; Bennett, J.W.; Conroy, D.; Mason, S.E.; Hamers, R.J.; Haynes, C.L.; *Env. Sci.:Nano*, 4 636-646 (2017).
140. A Growth-based Bacterial Viability Assay for Interference-free and High-throughput Toxicity Screening of Nanomaterials, Qiu, T.A.; Nguyen, T.; Hudson-Smith, N.V.; Clement, P.; Forester, D.-C.; Frew, H.; Hang, M.; Murphy, C.J.; Hamers, R.J.; Feng, Z.V.; Haynes, C.L.; *Anal. Chem.*, 89(3) 2057-2064 (2017).
139. Quantification of Free Polyelectrolytes Present in Colloidal Suspension Reveals Source of Toxic Responses for Polyelectrolyte-wrapped Gold Nanoparticles, Qiu, T.A.; Torelli, M.; Vartanian, A.; Rackstraw, N.; Buchman, J.; Jacob, L.; Murphy, C.J.; Hamers, R.J.; Haynes, C.L.; *Anal. Chem.*, 89(3) 1823-1830 (2017).
138. Research Highlights: Speciation and Transformations of Silver Released from Ag NPs in Three Species, Hudson-Smith, N.V.; Clement, P.L.; Brown, R.P.; Krause, M.O.P.; Pedersen, J.S.; Haynes, C.L. *Env. Sci.: Nano*, 3 1236-1240 (2016). *Not peer reviewed
137. A Mechanistic Study of TiO₂ Nanoparticle Toxicity on *Shewanella oneidensis* MR-1 with UVA Illumination: Bacterial Growth, Riboflavin Secretion, and Gene Expression, Qiu, T.A.; Meyer, B.M.; Christenson, K.G.; Klaper, R.D.; Haynes, C.L.; *Chemosphere*, 168 1158-1168 (2017).

136. Checkpoints for Preliminary Identification of Small Molecules found Enriched in Autophagosomes and Activated Mast Cell Secretions Analyzed by Comparative UPLC/MSe, Satori, C.P.; Ramezani, M.; Koopmeiners, J.S.; Meyer, A.F.; Rodriguez-Navarro, J.A.; Kuhns, M.M.; Taylor, T.H.; Haynes, C.L.; Dalluge, J.J.; Arriaga, E.A. *Anal. Methods*, 9, 46-54 (2017).
135. Ion Mobility based Quantification of Surface Coating Dependent Binding of Serum Albumin to Superparamagnetic Iron Oxide Nanoparticles, Jeon, S.; Obberreit, D.; Van Schooneveld, G.; Gao, Z.; Bischof, J.; Haynes, C.L.; Hogan Jr., C. *ACS Appl. Mat. Inter.*, 8(37), 24482-24490 (2016).
134. Analysis of Neuropeptide-Induced Mast Cell Degranulation and Characterization of Signaling Modulation in Response To IgE Conditioning, Manning, B.; Gruba, S.; Meyer, A.F.; Haynes, C.L. *ACS Chem. Bio.*, 11(11), 3077-3083 (2016).
133. Quantifying Intra- and Extracellular Aggregation of Iron Oxide Nanoparticles and its Influence on Specific Absorption Rate, Jeon, S.; Hurley, K.R.; Bischof, J.C.; Haynes, C.L.; Hogan, C.J. *Nanoscale*, 8 16053-16064 (2016).
132. Research Highlights: Unveiling the Mechanisms Underlying Nanoparticle-induced ROS Generation and Oxidative Stress, Qiu, T.A.; Gallagher, M.J.; Hudson-Smith, N.V.; Wu, J.; Krause, M.O.P.; Fortner, J.D.; Haynes, C.L. *Environ. Sci.: Nano*, 3 940-945 (2016). *Not peer reviewed
131. Super-Resolution Imaging for Monitoring Cytoskeleton Dynamics, Finkenstaedt-Quinn, S.; Qiu, T.A.; Shin, K.; Haynes, C.L. *Analyst*, 141, 5674-5688 (2016).
130. Quantification and Biodistribution of Iron Oxide Nanoparticles in the Primary Clearance Organs of Mice using T1 Contrast for Heating, Zhang, J.; Ring, H.L.; Hurley, K.R.; Shao, W.; Carlson, C.S.; Idiyatullin, D.; Haynes, C.L.; Bischof, J.C.; Garwood, M. *Mag. Res. in Med.*, 78(2) 702-712 (2017).
129. In Solution SERS Sensing using Mesoporous Silica-coated Gold Nanorods, Gao, Z.; Burrows, N.D.; Valley, N.A.; Schatz, G.C.; Murphy, C.J.; Haynes, C.L. *Analyst*, 141 5088-5095 (2016).
128. Surface-Enhanced Raman Spectroscopy Detection of Ricin B Chain in Human Blood, Campos, A.R.; Gao, Z.; Blaber, M.G.; Huang, R.; Schatz, G.C.; Van Duyne, R.P.; Haynes, C.L. *J. Phys. Chem. C*, 120(37) 20961-20969 (2016).
127. SERS Detection of Ricin B-Chain via N-Acetyl-Galactosamine Glycopolymers, Szlag, V.M.; Styles, M.; Madison, L.; Campos, A.; Wagh, B.; Sprouse, D.; Schatz, G.C.; Reineke, T.M.; Haynes, C.L. *ACS Sensors*, 1(7) 842-846 (2016).
126. Predictable Heating and Positive MRI Contrast from a Mesoporous Silica-Coated Iron Oxide Nanoparticle, Hurley, K.R., Ring, H.L., Etheridge, M., Zhang, J., Gao, Z., Shao, Q., Klein, N., Szlag, V.M., Chung, C., Reineke, T.M., Garwood, M., Bischof, J., Haynes, C.L. *Molec. Pharm.*, 13(7) 2172-2183 (2016).
125. Impact of Nanoscale Lithium Nickel Manganese Cobalt Oxide (NMC) on the Bacterium *Shewanella oneidensis* MR-1, Hang, M., Gunsolus, I., Wayland, H., Melby, E., Mensch, A., Hurley, K., Pedersen, J., Haynes, C.L., Hamers, R. *Chem. Mater.*, 28(4) 1092-1100 (2016).
124. Variations in Fusion Pore Formation in Cholesterol-Treated Platelets, Finkenstaedt-Quinn, S., Gruba, S., and Haynes, C.L. *Biophys. J.*, 110(4) 922-929 (2016).
123. Quantifying Gold Nanoparticle Concentration in a Dietary Supplement Using Smartphone Colorimetry and Google Applications, Campos, A.R., Knutson, C.M., Knutson, T.R., Mozzetti, A.R., Haynes, C.L., Penn, R.L. *J. Chem. Ed.*, 93(2) 318-321 (2016).
122. Analytical Aspects of Nanotoxicology, Gunsolus, I.L. and Haynes, C.L. *Anal. Chem.*, 88(1) 451-479 (2016).
121. Characterization of Magnetic Nanoparticles in Biological Matrices, Hurley, K., Ring, H., Kang, H., Klein, N., and Haynes, C.L. *Anal. Chem.*, 87(23) 11611-11619 (2015).

120. 2D-IR Spectroscopy of Porous Silica Nanoparticles: Measuring the Distance Sensitivity of Spectral Diffusion, Huber, C., Egger, S., Spector, I., Juelfs, A., Haynes, C.L., Massari, A. *J. Phys. Chem. C*, 119(45) 25135-25144 (2015).
119. Gene Expression Response of the Gram-negative Bacterium *Shewanella oneidensis* and the Water Flea *Daphnia magna* Exposed to Functionalized Gold Nanoparticles, Qiu, T. A., Bozich, J. S., Lohse, S. E., Vartanian, A. M., Jacob, L. M., Meyer, B. M., Gunsolus, I. L., Niemuth, N. J., Murphy, C. J., Haynes, C. L., Klaper, R. D. *ES:Nano*, 2 615-629 (2015).
118. Dynamic Silver Speciation as Studied with Fluorous-phase Ion-selective Electrodes: Effect of Natural Organic Matter on the Toxicity and Speciation of Silver, Mousavi, M.P.S., Gunsolus, I., Perez de Jesus, C.E., Lancaster, M., Hussein, K., Haynes, C.L., Buhlmann, P. *Sci. Total Environ.*, 537 453-461 (2015).
117. Lipopolysaccharide Density and Structure Governs the Extent and Distance of Nanoparticle Interaction with Actual and Model Bacterial Outer Membranes, Jacobson, K., Gunsolus, I., Kuech, T., Troiano, J., Melby, E., Lohse, S., Hu, D., Chrisler, W., Murphy, C., Orr, G., Geiger, F., Haynes, C.L., Pedersen, J.A. *ES & T*, 49(17) 10642-10650 (2015).
116. Are We There Yet? Biases in Hiring Women Faculty Candidates [editorial], Haynes, C.L. and Sweedler, J. *Anal. Chem.*, 87(14) 6989-6989 (2015).
115. Impacts of Gold Nanoparticle Charge and Ligand Type on Surface Binding and Toxicity to Gram-Negative and Gram-Positive Bacteria, Feng, Z.V., Gunsolus, I.L., Qiu, T.A., Hurley, K.R., Nyberg, L.H., Frew, H., Johnson, K.P., Vartanian, A.M., Jacob, L.M., Lohse, S.E., Torelli, M.D., Hamers, R.J., Murphy, C.J., and Haynes, C.L. *Chem. Sci.*, 6 5186-5196 (2015).
114. Recapitulation of in vivo-like Neutrophil Transendothelial Migration using a Microfluidic Platform, Wu, X., Newbold, M. and Haynes, C.L. *Analyst*, 140 5055-5064 (2015).
113. Effects of Humic and Fulvic Acids on Silver Nanoparticle Stability, Dissolution, and Toxicity, Gunsolus, I.L., Mousavi, M.P.S., Hussein, K., Buhlmann, P., and Haynes, C.L. *ES & T*, 49(13) 8078-8086 (2015).
112. Biological Responses to Engineered Nanomaterials: Needs for the Next Decade, Murphy, C.J., Vartanian, A., Geiger, F.M., Hamers, R.J., Pedersen, J., Cui, Q., Haynes, C.L., Carlson, E.E., Hernandez, R., Klaper, R., Orr, G., and Rosenzweig, Z. *ACS Central Sci.*, 1(3) 117-123 (2015).
111. Single-Cell Analysis of Mast Cell Degranulation Induced by Airway Smooth Muscle-Secreted Chemokines, Manning, B.M., Meyer, A.F., Gruba, S.M., and Haynes, C.L. *Biochim. Biophys. Acta - General Subjects*, 1850(9) 1862-1868 (2015).
110. Ultraporous Mesoporous Silica Nanoparticles, Egger, S.M., Hurley, K.R., Datt, A., Swindlehurst, G., and Haynes, C.L. *Chem. Mat.*, 27(9) 3193-3196 (2015).
109. Platelet Membrane Variations and their Effects on δ -Granule Secretion Kinetics and Aggregation Spreading among Different Species, Gruba, S.M., Koseoglu, S., Meyer, A.F., Meyer, B.M., Maurer-Jones, M.A., and Haynes, C.L. *Biochim. Biophys. Acta - Biomembranes*, 1848(7) 1609-1618 (2015).
108. Dark Field Transmission Electron Microscopy as a Tool for Identifying Inorganic Nanoparticles in Biological Matrices, Klein, N.D., Hurley, K.R., Feng, Z.V., and Haynes, C.L. *Anal. Chem.*, 87(8) 4356-4362 (2015).
1076. A Fresh Look at the Crystal Violet Lab with Handheld Camera Colorimetry, Knutson, T., Knutson, C., Mozzetti, A., Campos, A., Haynes, C.L., Penn, R.L. *J. Chem. Ed.*, 92(10) 1692-1695 (2015).
106. Imaging Cytoskeleton Dynamics in Drug-treated Platelets, Finkenstaedt-Quinn, S.A., Ge, S., and Haynes, C.L. *Anal. Bioanal. Chem.*, 407(10) 2803-2809 (2015).
105. Analytical Characterization of the Role of Phospholipids in Platelet Adhesion and Secretion, Koseoglu, S., Meyer, A.F., Kim, D., Meyer, B.M., Wang, Y., Dalluge, J., Haynes, C.L. *Anal. Chem.*, 87(1) 413-421 (2015).
104. Enhancing Graduate Student Communication to General Audiences through Blogging about Nanotechnology and Sustainability, Bishop, L., Tillman, A., Geiger, F., Haynes, C.L., Klaper, R., Murphy, C.J., Orr, G., Pedersen, J., DeStefano, L., and Hamers, R. *J. Chem. Ed.*, 91(10) 1600-1605 (2014).

103. Accounting for Biological Aggregation in Heating and Imaging of Magnetic Nanoparticles, Etheridge, M.L., Hurley, K.R., Zhang, J., Jeon, S., Hogan, C., Haynes, C.L., Garwood, M., and Bischof, J.C. *Technology*, 2(3) 1-15 (2014).
102. Exploring Inflammatory Disease Drug Effects on Neutrophil Function, Wu, X., Kim, D., Young, A.T., and Haynes, C.L. *Analyst*, 139(16) 4056-4063 (2014).
101. Facile Method to Stain the Bacterial Cell Surface for Super-Resolution Fluorescence Microscopy, Gunsolus, I.L., Hu, D., Mihai, C., Lohse, S.E., Lee, C.-S., Torelli, M.D., Hamers, R.J., Murphy, C.J., Orr, G., and Haynes, C.L. *Analyst*, 139(12) 3174-3178 (2014).
100. Microfluidic-SERS Devices for One Shot Limit-of-Detection, Kim, D., Campos, A.R., Datt, A., Gao, A., Rycenga, M., Burrows, N.D., Greeneltch, N.G., Mirkin, C.A., Murphy, C.J., Van Duyne, R.P., and Haynes, C.L. *Analyst*, 139(13) 3227-3234 (2014).
99. Rapid and Sensitive in situ SERS Detection using Dielectrophoresis, Cherukulappurath, S., Lee, S., Campos, A., Haynes, C.L., and Oh, S.-H. *Chem. Mat.*, 26(7) 2445-2452 (2014).
98. Microfluidics-based in vivo Mimetic Systems for the Study of Cellular Biology, Kim, D., Wu, X., Young, A.T., and Haynes, C.L. *Acc. Chem. Res.*, 47(4) 1165-1173 (2014).
97. Time- and Concentration-Dependent Effects of Exogenous Serotonin and Inflammatory Cytokines on Mast Cell Function, Gruba, S.M., Meyer, A.F., Manning, B.M., Wang, Y., Thompson, J.W., Dalluge, J.J., and Haynes, C.L. *ACS Chem. Bio.*, 9(2) 503-509 (2014).
96. Activities for Middle School Students To Sleuth a Chemistry “Whodunit” and Investigate the Scientific Method, Meyer, A.F., Knutson, C.M., Finkenstaedt-Quinn, S. A., Gruba, S. M., Meyer, B.M., Thompson, J.W., Maurer-Jones, M.A., Halderman, S., Tillman, A.S., DeStefano, L., Haynes, C.L. *J. Chem. Ed.*, 91(3) 410-413 (2014).
95. Death and Axes': Unexpected Ca^{2+} Entry Phenologs Predict New Anti-Schistosomal Agents, Chan, J.D., Agbedanu, P.N., Zamanian, M., Gruba, S.M., Haynes, C.L., Day, T.A., Marchant, J.S. *PLoS Pathogens*, 10(2): e1003942.
94. Analytical Toxicology of Nanoparticles, Haynes, C.L. *Analyst*, 139(5) 868-869 (2014).
93. On-Chip Evaluation of Platelet Adhesion and Aggregation upon Exposure to Mesoporous Silica Nanoparticles, Kim, D., Finkenstaedt-Quinn, S., Hurley, K., Buchman, J.T., and Haynes, C.L. *Analyst*, 139(5) 906-913 (2014).
92. On-Chip Evaluation of Neutrophil Activation and Neutrophil-Endothelial Cell Interaction during Neutrophil Chemotaxis, Kim, D. and Haynes, C.L. *Anal. Chem.*, 85(22) 10787-10796 (2013).
91. Re-Examining the Size/Charge Paradigm: Differing In Vivo Characteristics of Size and Charge-Matched Mesoporous Silica Nanoparticles, Townson, J., Lin, Y.-S., Agola, J., Carnes, E., Leong, H.S., Lewis, J., Haynes, C.L., and Brinker, C.J. *J. Am. Chem. Soc.*, 135(43), 16030-16033 (2013).
90. The Role of p38 MAPK in Neutrophil Functions: Single Cell Chemotaxis and Surface Marker Expression, Kim, D. and Haynes, C.L. *Analyst*, 138, 6826-6833 (2013).
89. Isotope-Dilution UPLC-MS/MS Determination of Cell-Secreted Bioactive Lipids, Meyer, A.F., Thompson, J.T., Wang, Y., Koseoglu, S., Dalluge, J.J., and Haynes, C.L. *Analyst*, 138(19), 5697 - 5705 (2013).
88. Impact of TiO_2 Nanoparticles on Growth, Biofilm Formation, and Flavin Secretion in *Shewanella oneidensis*, Maurer-Jones, M.A., Gunsolus, I., Meyer, B., Christenson, C., and Haynes, C.L. *Anal. Chem.*, 85(12) 5810-5818 (2013).
87. Effects of Mesoporous Silica Coating and Post-Synthetic Treatment on the Transverse Relaxivity of Iron Oxide Nanoparticles, Hurley, K., Lin, Y.-S., Zhang, J., Egger, S., Haynes, C.L. *Chem. Mat.*, 25(9) 1968-1978 (2013).
86. Characterization of Silver Ion Dissolution from Silver Nanoparticles using Fluorous-phase Ion-Selective Electrodes and Assessment of Resultant Toxicity to *Shewanella oneidensis*, Maurer-Jones, M.A., Mousavi, M.P.S., Chen, L.D, Bühlmann, P., and Haynes, C.L. *Chem. Sci.*, 4(6) 2564-2572 (2013)

85. Toxicity of Engineered Nanoparticles in the Environment, Maurer-Jones, M.A., Gunsolus, I.L., Murphy, C.J., and Haynes, C.L. *Anal. Chem.*, 85(6) 3036-3049 (2013).
84. Self-assembled Plasmonic Nanoring Cavity Arrays for SERS and LSPR Biosensing, Im, H., Bantz, K.C., Lee, S., Johnson, T.W., Haynes, C.L., and Oh, S.-H. *Adv. Mater.*, 25(19) 2678-2685 (2013).
83. Dynamin-related Protein-1 Controls Fusion Pore Dynamics during Platelet Granule Exocytosis, Koseoglu, S., Dilks, J.R., Peters, C.G., Fitch, J.L., Fadel, N.A., Jusuja, R., Italiano, J.E., Haynes, C.L., and Flaumenhaft, R. *Atheroscler., Thromb., and Vasc. Bio.*, 33 481-485 (2013).
82. Toxicity of Nanoparticles to Brine Shrimp: An Introduction to Nanotoxicity and Interdisciplinary Science, Maurer-Jones, M.A., Love, S.A., Meierhofer, S., Marquis, B.J., Liu, Z., and Haynes, C.L. *J. Chem. Ed.*, 90(4) 475-478 (2013).
81. TiO₂ Nanoparticle-Induced ROS Correlates with Modulated Immune Cell Function, Maurer-Jones, M.A., Christenson, J. R., and Haynes, C.L. *J. Nano. Res.*, 14 1291-1303 (2012).
80. Toward Correlation in In Vivo and In Vitro Nanotoxicology Studies, Maurer-Jones, M.A. and Haynes, C.L., *J. Law, Medicine, and Ethics*, 40(4) 795-801 (2012).
79. Recommendations for Nanomedicine Human Subjects Research Oversight: An Evolutionary Approach for an Emerging Field, Fatehi, L., Wolf, S. M., McCullough, J., Hall, R., Lawrenz, F., Kahn, J.P., Jones, C., Campbell, S.A., Dresser, R. S., Erdman, A. G., Haynes, C.L., Hoerr, R.A., Hogle, L.F., Keane, M.A., Khushf, G., King, N.M.P., Kokkoli, E., Marchant, G., Maynard, A.D., Philbert, M., Ramachandran, G., Siegel, R.A., and Wickline, S. *J. Law, Medicine, and Ethics*, 40(4) 716-750 (2012).
78. Neutrophil Chemotaxis within a Competing Gradient of Chemoattractants, Kim, D. and Haynes, C.L. *Anal. Chem.*, 84(14) 6070-6078 (2012).
77. The Big Picture on Nanomedicine: The State of Investigational and Approved Nanomedicine Products, Etheridge, M.L., Campbell, S.A., Erdman, A.G., Haynes, C.L., Wolf, S.M., and McCullough, *J. Nanomedicine: Nanotechnology, Biology, and Medicine*, 9(1) 1-14 (2013).
76. Examining Changes in Cellular Communication in Neuroendocrine Cells after Noble Metal Nanoparticle Exposure, Love, S.A., Liu, Z., and Haynes, C.L. *Analyst*, 137(13) 3004-3010 (2012)
75. Development of Screening Assays for Nanoparticle Toxicity Assessment in Human Blood: Preliminary Studies with Charged Au Nanoparticles, Love, S.A., Thompson, J.W., and Haynes, C.L. *Nanomed.*, 7(9) 1355-1364 (2012).
74. Plasmon-Enabled Study of Self-Assembled Alkanethiol Ordering on Roughened Ag Substrates, Bantz, K.C., Nelson, H., and Haynes, C.L. *J. Phys. Chem. C*, 116(5) 3585-3593 (2012).
73. Carbon-fiber Microelectrode Amperometry Reveals Sickle Cell-induced Inflammation and Chronic Morphine Effects on Single Mast Cells, Manning, B., Hebbel, R., Gupta, K., and Haynes, C.L., *ACS Chem. Bio.*, 7(3) 543-551 (2012).
72. Critical Considerations in the Biomedical Use of Mesoporous Silica Nanoparticles, Lin, Y.S., Hurley, K. R., and Haynes, C. L., *J. Phys. Chem. Lett.*, 3 364-374 (2012).
71. Assessing Nanoparticle Toxicity, Love, S.A., Maurer-Jones, M.A., Thompson, J., Lin, Y.-S., and Haynes, C.L. *Ann. Rev. Anal. Chem.*, 5 181-205 (2012).
70. Ultrastable, Redispersible, Small, and Highly Organo-Modified Mesoporous Silica Nanotherapeutics, Lin, Y.-S., Abadeer, N., Hurley, K. R., and Haynes, C. L., *J. Am. Chem. Soc.*, 133(50) 20444-20457 (2011).
69. On-Chip Evaluation of Shear Stress Effect on Cytotoxicity of Mesoporous Silica Nanoparticles, Kim, D., Lin, Y.-S., and Haynes, C. L., *Anal. Chem.*, 83(22) 8377-8382 (2011).
68. Quantal Regulation and Exocytosis of Platelet Dense-Body Granules, Ge, S., Woo, E., and Haynes, C. L., *Biophys. J.*, 101(10) 2351-2359 (2011).
67. Cytoskeletal F-actin, Not the Circumferential Coil of Microtubules, Regulates Platelet Dense-body Granule Secretion, Ge, S., White, J. G., and Haynes, C. L., *Platelets*, 23(4) 259-263 (2012).

66. Electroanalytical Eavesdropping on Single Cell Communications, Kim, D., Koseoglu, S., Manning, B. M., Meyer, A. F., and Haynes, C. L., *Anal. Chem.*, 83(19) 7242-7249 (2011).
65. Gb5-RGS Complexes are Gatekeepers of Hyperactivity involved in Control of Multiple Neurotransmitter Systems, Xie, K., Ge, S., Collins, V., Haynes, C. L., Renner, K., Meisel, R., Lujan, R., and Martemyanov, K., *Psychopharm*, 219 (3) 823-834 (2012).
64. Cytotoxicity of Graphene Oxide and Graphene in Human Erythrocytes and Skin Fibroblasts, Liao, K.-H., Lin, Y.-S., Macosko, C. W., and Haynes, C.L., *ACS App. Mat. Interfaces*, 3(7) 2607-2615 (2011).
63. Aptamer-based Surface-Enhanced Raman Scattering Detection of Ricin in Liquid Foods, He, L., Lamont, E., Veeregowda, B., Sreevatsan, S., Haynes, C. L., Diez-Gonzalez, F., and Labuza, T. P., *Chem. Sci.*, 2 1579-1582 (2011).
62. Cholesterol Effects on Vesicle Pools in Chromaffin Cells Revealed by Carbon-Fiber Microelectrode Amperometry, Koseoglu, S., Love, S.A., and Haynes, C. L., *Anal. Bioanal. Chem.*, 400 (9) 2963-2971 (2011).
61. Rapid Detection of Ricin in Milk using Immunomagnetic Separation Combined with Surface-Enhanced Raman Spectroscopy, He, L., Deen, B., Rodda, T., Ronningen, I., Blasius, T., Haynes, C. L., Diez-Gonzalez, F., and Labuza, T. P., *J. Food Sci.*, 76 (5) N49-N53 (2011).
60. Effect of Polymer Deposition Method on Thermoresponsive Polymer Films and Resulting Cellular Behavior, Reed, J., Love, S.A., Lucero, A., Haynes, C. L., Canavan, H., *Langmuir*, 28 (4) 2281-2287 (2012).
59. Electrochemical Measurement of Endogenous Serotonin Release from Human Blood Platelets, Ge, S., Woo, E., White, J. G., and Haynes, C. L., *Anal. Chem.*, 83 (7) 2598-2604 (2011).
58. Recent Progress in SERS Biosensing, Bantz, K., Meyer, A.F., Wittenberg, N.J., Im, H., Kurtulus, O., Lee, S., Lindquist, N., Oh, S.-H., and Haynes, C.L., *PCCP*, 13 (24) 11551-11567 (2011).
57. Rapid Detection of a Foreign Protein in Milk using Surface-Enhanced Raman Spectroscopy Coupled with Antibody-Modified Silver Dendrites, He, L., Rodda, T., Haynes, C.L., Deschaines, T., Strother, T., Diez-Gonzalez, F., and Labuza, T., *Anal. Chem.*, 83 (5) 1510-1513 (2011).
56. The Bench Scientist's Perspective on the Unique Considerations in Nanoparticle Regulation, Marquis, B. J., Maurer-Jones, M. J., Ersin, O. H., Lin, Y.-S., and Haynes, C.L., *J. Nanoparticle Res.*, 13, 1389-1400 (2011).
55. Rapid Detection of a Foreign Protein in Milk using IMS-SERS, He, L., Haynes, C.L., Diez-Gonzalez, F., and Labuza, T.P., *J. Raman Spec.*, 42 (6) 1428-1434 (2011).
54. Investigation of Noble Metal Nanoparticle Zeta-potential Effects on Single-Cell Exocytosis Function In Vitro with Carbon-Fiber Microelectrode Amperometry, Marquis, B. J., Liu, Z., Braun, K. L. and Haynes, C. L., *Analyst*, 136 (17) 3478-3486 (2011).
53. Stability of Small Mesoporous Silica Nanoparticles in Biological Media, Lin, Y.-S., Abadeer, N. and Haynes, C. L., *Chem. Comm.*, 47, 532-534 (2011).
52. Evaluating the Effects of Immunotoxicants using Carbon-Fiber Microelectrode Amperometry, Marquis, B. J. and Haynes, C. L., *Anal. Bioanal. Chem.*, 398 (7-8) 2979-2985 (2010).
51. Critical Role of Membrane Cholesterol in Exocytosis Revealed by Single Platelet Study, Ge, S., White, J. G., and Haynes, C. L., *ACS Chem. Bio.*, 5 (9) 819-828 (2010).
50. Vertically Oriented Sub-10 nm Plasmonic Nanogap Arrays, Im, H., Bantz, K. C., Lindquist, N. Haynes, C. L., and Oh, S.-H., *Nano Lett.*, 10 (6) 2231-2236 (2010).
49. Bioanalytical Tools for Single Cell Study of Exocytosis, Ge, S., Koseoglu, S. and Haynes, C. L., *Anal. Bioanal. Chem.*, 398 (8) 3281-3304 (2010).
48. Functional Assessment of Metal Oxide Nanoparticle Toxicity in Immune Cells, Maurer-Jones, M. A., Lin, Y.-S. and Haynes, C. L., *ACS Nano*, 4 (6) 3363-3373 (2010).

47. Assessment of Functional Changes in Nanoparticle-Exposed Neuroendocrine Cells with Amperometry: Exploring the Generalizability of Nanoparticle-Vesicle Matrix Interactions, Love, S. A. and Haynes, C. L., *Anal. Bioanal. Chem.*, 398 (2) 677-688 (2010).
46. Impacts of Mesoporous Silica Nanoparticle Size, Pore Ordering, and Pore Integrity on Hemolytic Activity, Lin, Y.-S. and Haynes, C. L., *J. Am. Chem. Soc.*, 132 (13) 4834-4842 (2010).
45. Coffee Cup Atomic Force Microscopy, Ashkenaz, D. E., Hall, W. P., Haynes, C. L., Hicks, E. M., McFarland, A. D. Sherry, L. J., Stuart, D. A., Wheeler, K. E., Yonzon, C. R., Zhao, J., Godwin, H. A., and Van Duyne, R. P., *J. Chem. Ed.*, 87, 306-307 (2010).
44. Self-Assembled Plasmonic Nanohole Arrays, Lee, S.H., Bantz, K.D., Lindquist, N.C., Oh, S.-H., and Haynes, C.L., *Langmuir*, 25, 13685-13693 (2009).
43. Amperometric Assessment of Functional Changes in Nanoparticle-Exposed Immune Cells: Varying Au Nanoparticle Exposure Time and Concentration, Marquis, B.J., Maurer-Jones, M.J., Braun, K.L., and Haynes, C.L., *Analyst*, 134, 2293-2300 (2009).
42. Synthesis and Characterization of Biocompatible and Size-Tunable Multifunctional Porous Silica Nanoparticles, Lin, Y.-S. and Haynes, C.L., *Chem. Mater.*, 21(17), 3979-3986 (2009).
41. Partition Layer-Modified Substrates for Reversible Surface-Enhanced Raman Scattering Detection of Polycyclic Aromatic Hydrocarbons, Jones, C. J., Bantz, K. C., and Haynes, C. L., *Anal. Bioanal. Chem.*, 394 (1), 303-311 (2009).
40. Quantal Release of Serotonin from Platelets, Ge, S., White, J. G., and Haynes, C. L., *Anal. Chem.*, 81 (8), 2935-2943 (2009).
39. Analytical Methods to Assess Nanoparticle Toxicity, Marquis, B. J., Love, S. A., Braun, K. L., and Haynes, C. L., *Analyst*, 134 (3), 425-439 (2009).
38. Toxicity of Therapeutic Nanoparticles, Maurer-Jones, M. A., Love, S. A., Bantz, K. C., Marquis, B. J., and Haynes, C. L., *Nanomed.*, 4 (2), 219-241 (2009).
37. Recent Advances in Nanomaterial Plasmonics: Fundamental Studies and Applications, Love, S. A., Marquis, B. J. and Haynes C. L., *Appl. Spec.*, 62 (12), 346A-362A (2008).
36. Using Nanoparticles to Push the Limits of Detection, Wittenberg, N. J. and Haynes, C. L., *Wiley Interdisciplinary Reviews: Nanomedicine*, 1 (2), 237-254 (2009).
35. The Effects of Co-Culture of Fibroblasts on Mast Cell Exocytotic Release Characteristics as Evaluated by Carbon-Fiber Microelectrode Amperometry, Marquis, B. J. and Haynes, C. L., *Biophys. Chem.*, 137, 63-69 (2008).
34. Surface-Enhanced Raman Scattering Detection and Discrimination of Polychlorinated Biphenyls, Bantz, K. C. and Haynes, C. L., *Vib. Spec.*, 50, 29-35 (2009).
33. Quantitative and Real-Time Detection of Chemical Messenger Secretion from Platelets, Ge, S., Wittenberg, N. J. and Haynes, C. L., *Biochem.*, 47, 7020-7024 (2008).
32. Surface-Enhanced Raman Scattering Substrates Fabricated using Electroless Plating on Polymer-Templated Nanostructures, Bantz, K. C. and Haynes, C. L., *Langmuir*, 24, 5862-5867 (2008).
31. Dynamic Measurement of Altered Chemical Messenger Secretion after Cellular Uptake of Nanoparticles using Carbon-Fiber Microelectrode Amperometry, Marquis, B. M., McFarland, A. D., Braun, K. L., and Haynes, C. L., *Anal. Chem.*, 80, 3431-3437 (2008).
30. Catecholamine Exocytosis is Diminished in R6/2 Huntington's Disease Model Mice, Johnson, M. A., Villanueva, M., Haynes, C. L., and Wightman, R. M., *J. Neurochem.*, 103, 2101-2110 (2007).
29. Amperometric Studies of Functional Differences between Readily Releasable and Reserve Pool Vesicles, Haynes, C. L., Siff, L. N., and Wightman, R. M., *Biochim. et Biophys. Acta*, 1773, 728-735 (2007).

28. Vesicular Calcium-Induced Secretion Promoted by Intracellular pH-gradient Disruption, Haynes, C. L., Buhler, L. A. and Wightman, R. M., *Biophys. Chem.*, 123, 20-24 (2006).
27. Surface-Enhanced Raman Spectroscopy, Haynes, C. L., McFarland, A. D., and Van Duyne, R. P., *Anal. Chem.*, 77, 338A-346A (2005).
26. Towards Advanced Chemical and Biological Nanosensors - An Overview, Stuart, D. A., Yonzon, C. R., Zhang, X., McFarland, A. D., Haynes, C. L., and Van Duyne, R. P., *Talanta*, 67, 438-448 (2005).
25. Optimized Surface-Enhanced Raman Scattering for Quantitative Biowarfare Agent and Biomolecule Detection, Haynes, C. L., Yonzon, C. R., Zhang, X., and Van Duyne, R. P., *J. Raman Spec.*, 36, 471-484 (2005).
24. Nanopatterning with Lithography, Haynes, C. L., McFarland, A.D., Van Duyne, R. P., and Godwin, H. A., *J. Chem. Ed.*, 82, 768A-768B (2005).
23. Plasmonic Materials for Surface-Enhanced Sensing and Spectroscopy, Haes, A. J., Haynes, C. L., McFarland, A. D., Zou, S., Schatz, G. C., and Van Duyne, R. P., *MRS Bull.*, 30, 368-375 (2005).
22. Nanoparticles with Tunable Localized Surface Plasmon Resonance, Haynes, C. L., Haes, A. J., McFarland, A. D., and Van Duyne, R. P. in *Topics in Fluorescence*, Vol. 8: Radiative Decay Engineering, Geddes, C. D. and Lakowicz, J. R., Eds.; Springer; New York, 2005; pp. 47-99.
21. Color My Nanoworld, McFarland, A. D., Haynes, C. L., Mirkin, C. A., Van Duyne, R. P., and Godwin, H. A., *J. Chem. Ed.*, 81(4), 544A-544B (2004).
20. Synthesis, Structure, and Selected Physical Properties of $CsLnMnSe_3$ ($Ln=Sm, Gd, Tb, Dy, Ho, Er, Tm, Yb, Y$) and $AYbZnQ_3$ ($A=Rb, Cs; Q=Se, Te$), Mitchell, K., Huan, F. Q., Caspi, E. N., McFarland, A. D., Haynes, C. L., Somers, R. C., Jorgenson, J. D., Van Duyne, R. P., and Ibers, J. A., *Inorg. Chem.*, 43, 1082- 1089 (2004).
19. A Glucose Biosensor Based on Surface-Enhanced Raman Scattering: Improved Partition Layer, Temporal Stability, Reversibility, and Resistance to Serum Protein Interactions, Haynes, C. L., Yonzon, C. R., Zhang, X., Walsh, Jr., J. T., and Van Duyne, R. P., *Anal. Chem.*, 76, 78-85 (2004).
18. Dichroic Optical Properties of Extended Nanostructures Fabricated using Angle-Resolved Nanosphere Lithography, Haynes, C. L. and Van Duyne, R. P., *Nano Lett.*, 3, 939-943 (2003).
17. Synthesis, Crystal Structure, and Optical Properties of $CeMn_{0.5}OSe$, Ijjaali, I., Mitchell, K., Haynes, C. L., McFarland, A. D., Van Duyne, R. P., and Ibers, J. A., *J. Solid State Chem.*, 176, 170-174 (2003).
16. The $CsLnMSe_3$ Semiconductors ($Ln=Rare-Earth\ Element, Y; M=Zn, Cd, Hg$), Mitchell, K., Huang, F. Q., McFarland, A.D., Haynes, C. L., Somers, R. C., Van Duyne, R. P., and Ibers, J. A., *Inorg. Chem.*, 42, 4109-4116 (2003).
15. Nanoparticle Optics: The Importance of the Radiative Dipole Coupling in Two-Dimensional Nanoparticle Arrays, Haynes, C. L., McFarland, A.D., Zhao, L., Van Duyne, R. P., Schatz, G. C., Gunnarsson, L., Prikulis, J., Kasemo, B., Käll, M., *J. Phys. Chem. B*, 107, 7337-7342 (2003).
14. Synthesis, Structure, and Optical Properties of the New Lanthanum Copper Oxysulfide $La_3CuO_2S_3$, Ijjaali, I., Haynes, C. L., McFarland, A. D., Van Duyne, R. P., and Ibers, J. A. *J. Solid State Chem.*, 172, 257-260 (2003).
13. Synthesis and Characterization of $La_4MnCu_6S_{10}$, Ijjaali, I., McFarland, A. D., Haynes, C. L., Van Duyne, R. P., and Ibers, J. A. *J. Solid State Chem.*, 172, 127-131 (2003).
12. Plasmon-Sampled Surface-Enhanced Raman Excitation Spectroscopy, Haynes, C. L. and Van Duyne, R. P. *J. Phys. Chem. B*, 107, 7426-7433 (2003).
11. Toward a Glucose Biosensor Based on Surface-Enhanced Raman Scattering, Shafer-Peltier, K. E., Haynes, C. L., Glucksberg, M. R., and Van Duyne, R. P. *J. Am. Chem. Soc.*, 125, 588-593 (2003).
10. Plasmon Scanned Surface-Enhanced Raman Scattering Excitation Profiles, Haynes, C. L. and Van Duyne, R. P. *Mat. Res. Soc. Symp. Proc.*, 728, S10.7.1-S10.7.6 (2002).

9. Tuning of Optical Band Gaps: Syntheses, Structures, Magnetic, and Optical Properties of CsLnZnSe₃ (Ln = Sm, Tb, Dy, Ho, Er, Tm, Yb, and Y), Mitchell, K., Haynes, C. L., McFarland, A.D., Van Duyne, R.P., and Ibers, J.A. *Inorg. Chem.*, 41(5), 1199-1204 (2002).
8. Metal Film Over Nanosphere (MFON) Electrodes for Surface-Enhanced Raman Spectroscopy (SERS): Improvements in Surface Nanostructure Stability and Suppression of Irreversible Loss, Dick, L.A., McFarland, A.D., Haynes, C. L., and Van Duyne, R.P. , *J. Phys. Chem. B*, 106(4), 853-860 (2002).
7. Angle-Resolved Nanosphere Lithography: Manipulation of Nanoparticle Size, Shape, and Interparticle Spacing, Haynes, C. L., McFarland, A.D., Smith, M.T., Hulteen, J.C., and Van Duyne, R.P., *J. Phys. Chem. B*, 106, 1898-1902 (2002).
6. Surface-Enhanced Raman Scattering Detected Temperature Programmed Desorption: Optical Properties, Nanostructure and Stability of Silver Film Over SiO₂ Nanosphere Surfaces, Litorja, M., Haynes, C. L., Haes, A. J., Jensen, T. R., and Van Duyne, R. P., *J. Phys. Chem. B*, 105(29), 6907-6915 (2001).
5. Nanosphere Lithography: A Versatile Nanofabrication Tool for Studies of Size-Dependent Nanoparticle Optics, Haynes, C. L. and Van Duyne, R. P., *J. Phys. Chem. B*, 105(24), 5599-5611 (2001).
4. Nanosphere Lithography: Synthesis and Application of Nanoparticles with Inherently Anisotropic Structures and Surface Chemistry, Haynes, C. L., Haes, A. J., and Van Duyne, R. P., *Mat. Res. Soc. Symp. Proc.*, 635, C6.3/1-C6.3/6 (2001).
3. Nanosphere Lithography: Self-assembled Photonic and Magnetic Materials, Haes, A. J., Haynes, C. L., and Van Duyne, R. P., *Mat. Res. Soc. Symp. Proc.*, 636, D4.8/1-D4.8/6 (2001).
2. "Raman Spectroscopy," Haynes, C. L. and Van Duyne, R. P., in *Encyclopedia of Physical Science and Technology*, Third Edition, A. J. Bard, Ed., San Diego, Academic Press, 2001, Volume 13, 845-866.
1. Nanosphere Lithography: Tunable Localized Surface Plasmon Resonance Spectra of Silver Nanoparticles, Jensen, T. R., Duval Malinsky, M., Haynes, C. L., and Van Duyne, R. P., *J. Phys. Chem. B*, 104, 10549-10556 (2000).

Patents

- "Linear Polymer Affinity Agent Sensor for Surface-enhanced Raman Spectroscopy and Method Using the Same," Rodriguez, R.S., Szlag, V.M., Reineke, T.M., and Haynes, C.L., provisional patent filed 10/29/2020, US utility patent to be filed 10/29/2021.
- "Highly Fluorinated Compounds for ¹⁹F MRI-based Thermometry," Lee, A.L., Haynes, C.L., Pomerantz, W.C.K., Cramer, C., Mandal, M., Chiniforush, S., Pandey, A. disclosure filed 09/24/2020.
- "Application of Mesoporous Silica Nanoparticles to Members of the Family of Cucurbitaceae," Haynes, C.L., Buchman, J. T., Elmer, W., White, J., Application #17/024,489, application filed 09/17/2020.
- "Coupling Surface-Enhanced Raman Spectroscopy and Glycopolymers to Create Bio-Sensors," Haynes, C. L., Reineke, T. M., Szlag, V., Application #62/334,2203, application filed 05/10/2017.
- "Mesoporous Silica-Coated Nanoparticles," Haynes, C.L., Hurley, K., Application # 62/030,383, application filed 07/29/2015.
- "Porous Silica having High Pore Volume and Methods of Making and Using the Same," Haynes, C. L., Egger, S., and Datt, A. Application#13/397,796, application filed 09/26/2014, Publication #: US9943826B2, granted 04/17/2018.
- "Surface-Enhanced Raman Nanobiosensor," Van Duyne, R. P., Glucksberg, M. R., Peltier, K. E., Haynes, C. L., Walsh, J. T., Yonzon, C. R., Shah, N. S., Lyandres, O., Stuart, D. A., Yuen, J. M., Application #: 11/364,978, Publication #: US 2009/0118605 A1, filed 03/01/2006.

Presentations

- 2021 2 Invited Lectures at Pacificchem 2021 (virtual) in Honolulu, Hawaii; one in “Nanostructured Interfaces for Ultrasensitive Biosensing” and co-organizer/speaker in “Frontiers of Plasmon-enhanced Spectroscopy”
- Invited Lecture at 3rd Global Forum for Directors of Tea Research Institute (virtual) in Hangzhou, China
- Invited Lecture at Next Generation Electrochemistry 2021 (virtual) at the University of Illinois, Chicago, IL
- Invited Lecture, ACS Innovations in Measurement Science (virtual)
- Invited Lecture, Pittcon 2021 (virtual)
- 2020 Invited Lecture and Short Course Instructor, 40th Summer School on Chemistry at the Federal University of São Carlos, Brazil
- Invited Lecture, University of Florida, Gainesville, FL
- Dean Martin Lecture, University of South Florida, Tampa, FL
- 2019 Invited Lecture, Merck Research Laboratories, Rahway, NJ
- Plenary Lecture, SciX 2019, Palm Springs, CA
- Jean Dreyfus Lecture, Santa Clara University, Santa Clara, CA
- Fall 2019 National American Chemical Society Meeting, San Diego, CA
- Invited Lecture, Instituto de Tecnología Química, Valencia, Spain
- Invited Lecture, Institut de Biologie Physico-Chimique, Paris, France
- Invited Lecture, Universitat Rovira i Virgili, Tarragona, Spain
- Royal Society of Chemistry Award Lecture, NUI Galway, Galway, Ireland
- Royal Society of Chemistry Award Lecture, Swansea University, Swansea, UK
- Royal Society of Chemistry Award Lecture, University of Bath, Bath, UK
- 2018 Plenary Lecture, Winchell Undergraduate Research Symposium, St. Paul, MN
- Invited Lecture, Rice University, Houston, TX
- Bryant Minor Lecture, University of Utah, Salt Lake, City, UT
- Invited Lecture, National American Chemical Society Meeting, New Orleans, LA
- Invited Lecture, “One Chemistry” Symposium at Johns Hopkins University, Baltimore, MD
- Invited Lecture, Indiana University-Purdue University Indianapolis, Indianapolis, IN
- Invited Lecture, University of Minnesota, Duluth, MN
- Invited Lecture, Humboldt University, Berlin, Germany
- 2017 Keynote Lecture, International Conference on SERS, Xiamen, China
- Invited Lecture, Ecolab, Eagan, MN
- Invited Lecture, Hispanic Engineering, Science, and Technology (HESTEC) Week, Rio Grande Valley, TX
- Invited Lecture, National American Institute of Chemical Engineers Meeting, Minneapolis, MN

Invited Lecture, University of North Carolina, Chapel Hill, NC
Invited Lecture, University of Michigan, Ann Arbor, MI
Invited Lecture, University of Virginia, Charlottesville, VA
Invited Lecture, Eastern Analytical Symposium, Princeton, NJ
Invited Lecture, National American Chemical Society Meeting, Washington, DC
Invited Lecture, University of Rochester, Rochester, NY
Invited Lecture, PittCon 2017, Chicago, IL
Invited Lecture, TEDxEdina, Edina, MN
2016 Invited Lecture, University of Colorado, Denver, CO
4 Invited Lectures, Fall 2016 National American Chemical Society Meeting, Philadelphia, PA
Keynote Lecture, 11th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials, Golden, CO
Invited Lecture, IPrime Annual Meeting, Minneapolis, MN
Invited Lecture, The Ohio State University, Columbus, OH
Invited Lecture, University of Arizona, Tempe, AZ
Invited Lecture, University of Minnesota Department of Integrative Biology and Physiology, Minneapolis, MN
2015 Invited Lecture, Pacificchem 2015, Honolulu, HI
Contributed Lecture, Sustainable Nanotechnology Organization (SNO) 2015, Portland, OR
Invited Lecture, SciX 2015, Providence, RI
Invited Lecture, Hope College, Holland, MI
Contributed Lecture, ACS National Meeting, Fall 2015, Boston, MA
Invited Lecture, 3M Tech Forum, Woodbury, MN
Invited Lecture, American Society of Mechanical Engineers 4th Annual Nanoengineering for Biology and Medicine Conference, Minneapolis, MN
Invited Lecture, Design of Medical Devices, Minneapolis, MN
Invited Lecture, Gustavus Adolphus College, St. Peter, MN
Invited Lecture, University of Pittsburgh, Pittsburgh, PA
Invited Lecture, Nanomaterials for Energy Gordon Research Conference, Santa Barbara, CA
2014 Invited Lecture, IIT Madras, Chennai, India
Invited Lecture, University of Hyderabad, Hyderabad, India
Invited Lecture IIT Delhi, Delhi, India
Invited Lecture, University of Washington, Seattle, WA
Invited Lecture, "Women in Chemical Sciences", University of Washington, Seattle, WA
Invited Lecture, SciX 2014, Reno, NV
Invited Lecture, American Chemical Society Fall 2014 Meeting, San Francisco, CA

Invited Lecture, Nobel Metal Nanoparticles GRC

Invited Lecture, Society for Thermal Medicine Conference, Minneapolis, MN

3M/Mitsch Lectures, Hamline University, St. Paul, MN

Welch Lectures, Concordia College, Moorhead, MN

Invited Lecture, UMN MinneCollege, Naples, FL

Invited Lecture, PittCon 2014, Chicago, IL

Invited Lecture, Society for Thermal Medicine Conference, Minneapolis, MN

2013 Invited Lecture, University of North Carolina, Chapel Hill

Invited Lecture, GlaxoSmithKline, Durham, NC

Invited Lecture, University of Victoria

Invited Lecture, University of British Columbia

Invited Lecture, Simon Frasier University

Invited Lecture, Society of Analytical Chemists of Pittsburgh

Invited Lecture, Cambridge University

Invited Lecture, Plymouth University

Invited Lecture, Strathclyde University

Invited Lecture, UMN "Headliners," St. Paul, MN

Keynote Lecture, Kavli Foundation Emerging Leader in Chemistry Lecture at Spring 2013 ACS

Invited Lecture, Eli Lilly, Indianapolis, IN

Keynote Lecture, New Mexico "Nanoparticle Synthesis and Applications for Cancer Imaging and Therapy" Symposium, Albuquerque, NM

Invited Lecture, University of Minnesota

Keynote Lecture, "Nanoscience and Nanotechnology: Environmental and Health Aspects", Iowa City, IA

Invited Lecture, Macalester College

Contributed Lecture, Sustainable Nanotechnology Organization 2013 Meeting, Santa Barbara, CA

Invited Lecture, University of California, Riverside

2012 Invited Lectures (2), PittCon 2012

Invited Lecture, Bioanalytical Sensors 2012 Gordon Research Conference

Invited Lecture, SciX 2012, Kansas City, MO

Invited Lecture, Institute for Engineering in Medicine 5th Annual Symposium

Invited Lecture, American Chemical Society Fall 2012 Meeting, Philadelphia

2011 Invited Lecture, Symposium on Nanodiagnostics and Nanotherapeutics: Building Research Ethics & Oversight, University of Minnesota

Invited Lectures (2), American Chemical Society Fall 2011 Meeting, Denver

Plenary Lecture, ICAVS, Sonoma, CA

Invited Lectures (2), American Chemical Society Spring 2011 Meeting, Anaheim
 Invited Participant, 2011 German-American Kavli Frontiers of Science Symposium
 Invited Lecture, University of Notre Dame
 Invited Lecture, Northwestern University
 “Speaker of the Year” Invited Lecture, University of Cincinnati
 Invited Lecture, MN ACS Featured Speaker
 2010 Invited Lecture, PittCon 2010 “Reilly Award Symposium”
 Invited Lecture, PittCon 2010 “Bomem-Michelson Symposium”
 Invited Lecture, PittCon 2010 “Benchtop to Bedside Symposium”
 Invited Lecture, Twin Cities Electrochemical Society
 Invited Lecture, Pennsylvania State University
 Invited Lecture, Governing Nanobiotechnology Conference
 Invited Lecture, University of Chicago
 Invited Lecture, Blood Center of Wisconsin
 Invited Lecture, Clemson University
 Invited Lecture, Tongji University, China
 Invited Lecture, Fudan University, China
 Invited Lecture, Shanghai Normal University, China
 Invited Lecture, University of Minnesota Pharmaceuticals Department
 Plenary Lecture, FACSS 2010 “Findeis Award Symposium”
 Invited Lecture, National Institute of Standards and Technology
 Invited Lecture, EcoLab Corporation
 2009 Invited Lecture, Mayo Clinic
 Invited Lecture, University of Illinois
 Invited Lecture, University of Indiana
 Invited Lecture, University of Kansas
 Invited Lecture, University of Texas at Austin
 Invited Lecture, Georgia Tech Department of Chemistry
 Invited Lecture, University of Minnesota Department of Chemistry
 Invited Lecture, University of Minnesota Department of Genetics, Cell Biology, and Development
 Invited Lecture, University of Minnesota Chemical Biology Symposium
 Invited Lecture, “Drug Delivery” Session of Design of Medical Devices Symposium
 Invited Lecture, PittCon 2009
 Invited Lecture, University of St. Thomas

- Contributed Lecture, 4th International Conference on Nanotechnology - Occupational and Environmental Health
 Analytical Seminar, University of Minnesota
 Analytical Seminar, University of Minnesota
- 2008
 Invited Poster, Transatlantic Frontiers of Chemistry
 Invited Lecture, 3M
 Invited Lecture, Spring 2008 American Chemical Society National Meeting
 Pittcon 2008 Poster Session
 Biophysics 2008 Poster Session
- 2007
 Invited Lecture, 2007 Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) Meeting
 Invited Lecture, 5th Potter's Lodge Meeting on Electrochemistry
 Invited Lecture, 3rd International Symposium on Nanotechnology, Occupational and Environmental Health
 Invited Lecture, Fall 2007 American Chemical Society National Meeting
 Invited Lecture, Electrochemistry Gordon Conference
 Biophysics 2007 Poster Session
 Invited Lecture, Japan-U.S. Young Researchers Exchange Kick-off Meeting
 Invited Lecture, St. Olaf College
 Searle Scholar Poster Session
 Invited Lecture, "Nanotox" Session of Design of Medical Devices Symposium
 Invited Lecture, Japan National Institute of Materials Science
 Tohoku University Poster Session
 3M Non-Tenured Faculty Grant Poster Session
- 2006
 Biophysics 2006 Poster Session
 Invited Lecture, 3M Tech Forum
 Invited Speaker, 3rd Annual Minnesota Nanomedicine Workshop
- 2005
 Plenary Lecture, 79th American Chemical Society Division of Colloid and Surface Science Symposium
 Invited Seminar, Northwestern University
 Invited Speaker, National American Chemical Society Spring Meeting
 PittCon 2005, Bioanalytical Electrochemistry Session
- 2004
 Invited Speaker, National American Chemical Society Spring Meeting
- 2003
 Invited Seminar, Chalmers Technical University, Göteborg, Sweden
 Invited Seminar, University of Wisconsin at Madison
 Invited Seminar, University of Illinois at Urbana-Champaign
 Invited Seminar, University of Indiana at Bloomington

2002 Invited Seminar, University of Minnesota.
Invited Seminar, University of California at Irvine
International Conference on Raman Spectroscopy 2002
Northwestern University Physical Chemistry Seminar
Spring Materials Research Society Meeting, Symposium S

Teaching Experience

- Chemical Principles II (CHEM 1022) at the University of Minnesota, Fall 2005, enrollment = 224
- Analytical Spectroscopy (CHEM 8152) at the University of Minnesota, Fall 2006, Fall 2007, Spring 2009, Fall 2009, Fall 2010, Fall 2011, and Fall 2012 enrollment = 10, 15, 11, 7, 17, 10, and 14 respectively
- Freshman Seminar (CHEM 1905, The End of the World as We Know It) at the University of Minnesota, Fall 2006, Spring 2007, Spring 2012, Fall 2013, and Fall 2014 enrollment = 14, 9, 15, 11, and 15, respectively
- Process Analytical Chemistry (CHEM 2121) at the University of Minnesota, Spring 2010 and Spring 2011, enrollment = 164 and 156, respectively
- Chemical Principles II (CHEM 1072) at the University of Minnesota, Spring 2014 and Spring 2015, enrollment = 79 and 78, respectively
- Freshman Seminar (CHEM 1905, Ideas Worth Spreading: Digging into TED Talks) at the University of Minnesota, Fall 2015 (2 sections, enrollment = 15 and 13), Fall 2016 (2 sections, enrollment = 15 and 14), Fall 2017 (2 sections, enrollment = 15 and 14), Fall 2019 (2 sections, enrollment = 14, 8), Fall 2020 (2 sections, enrollment = 9 and 15), Fall 2021 (2 sections, enrollment = 13, 12)

Selected Synergistic Activities and University Service

2021 Associate Head, UMN Chemistry Department
Associate Director, Center for Sustainable Nanotechnology
UMN ASPIRE Alliance IChange Team Member
Advisory Board for BCM-Rice Superfund Center
Advisory Board for COACH
Member of Executive Board for “Energy and U”
Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”
Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*
Curator of feature and perspective articles for *Analytical Chemistry*
Developer of the *Analytical Chemistry* Diversity & Inclusion cover art series
Faculty Leadership Council for the University of Minnesota Institute on the Environment
2020-2021 University of Minnesota Women’s Leadership Institute

2020 Associate Head, UMN Chemistry Department
Associate Director, Center for Sustainable Nanotechnology
Member of Executive Board for “Energy and U”

Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”

Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*

Curator of feature and perspective articles for *Analytical Chemistry*

Faculty Leadership Council for the University of Minnesota Institute on the Environment

2020-2021 University of Minnesota Women’s Leadership Institute

Academic for Black Survival and Wellness workshop participant

Host for American Chemical Society Social Distance Social Chat – Journal Club Edition

2019 Visiting Faculty, Instituto de Tecnología Química, Valencia, Spain

Associate Head, UMN Chemistry Department

Associate Director, Center for Sustainable Nanotechnology

Member of Executive Board for “Energy and U”

Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”

Member of Executive Committee for University of Minnesota Materials Research Science and Engineering Center (MRSEC)

Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*

Performed “Energy and U” show for 14000 children (with co-presenters)

Curator of feature and perspective articles for *Analytical Chemistry*

Regular contributor to sustainable-nano.com

Featured on [Analytical Scientist](http://AnalyticalScientist.com) website

2018 Visiting Faculty, Instituto de Tecnología Química, Valencia, Spain

Associate Head, UMN Chemistry Department

Associate Director, Center for Sustainable Nanotechnology

Member of Executive Board for “Energy and U”

Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”

Member of Executive Committee for University of Minnesota Materials Research Science and Engineering Center (MRSEC)

Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*

Member of Executive Committee for University of Minnesota Institute for Engineering in Medicine

Performed “Energy and U” show for 14000 children (with co-presenters)

Regular contributor to sustainable-nano.com

2017 Featured on PBS' [Hands-On Science](http://Hands-OnScience.com) (10/2017 air date)

Featured on “People Behind the Science” [Podcast](http://Podcast.com)

Associate Head, UMN Chemistry Department
 Associate Director, Center for Sustainable Nanotechnology
 Member of Executive Board for “Energy and U”
 Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”
 Member of Executive Committee for University of Minnesota Materials Research Science and Engineering Center (MRSEC)
 Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*
 Member of Executive Committee for University of Minnesota Institute for Engineering in Medicine
 Performed “Energy and U” show for 14000 children (with co-presenters)
 Regular contributor to sustainable-nano.com

2016 Associate Head, UMN Chemistry Department
 Associate Director, Center for Sustainable Nanotechnology
 Member of Executive Board for “Energy and U”
 Member of Advisory Board for “Open Chemical Collaborative in Diversity Equity (OXIDE)”
 Member of “Nanostructural Materials and Processes” Committee in *Industrial Partnership for Research in Interfacial Materials and Engineering (IPRIME)*
 Organized 2-day Retreat for Women Faculty in the UMN College of Science and Engineering
 Performed “Energy and U” show for 14000 children (with co-presenters)
 Regular contributor to sustainable-nano.com
 Organized 11th Annual “Chemistry Day” for West 7th Street Community Center

2015 Associate Head, UMN Chemistry Department
 Associate Director, Center for Sustainable Nanotechnology
 Member of Executive Board for “Energy and U”
 Performed “Energy and U” show for 10000 children (with co-presenters)
 Steering Committee for Biotechnology Training Grant
 Co-Chair of UMN Women’s Faculty Cabinet
 Organized 10th Annual “Chemistry Day” for West 7th Street Community Center

2014 Chair, UMN Faculty Search Committee
 Associate Director, Center for Sustainable Nanotechnology
 Symposium organizer (Colloid Division) for ACS Fall 2014
 Member of Executive Board for “Energy and U”
 Performed “Energy and U” show for 10000 children (with co-presenters)
 Steering Committee for Chemistry/Biology Interface Training Grant
 Steering Committee for Biotechnology Training Grant

- Co-Chair of UMN Women's Faculty Cabinet
 Organized 9th Annual "Chemistry Day" for West 7th Street Community Center
 Featured speaker for UMN "MinneCollege"
 Chair, UMN Chemistry Awards Committee
- 2013 Steering Committee for Chemistry/Biology Interface Training Grant
 Steering Committee for Biotechnology Training Grant
 Co-Chair of UMN Women's Faculty Cabinet
 Organized 8th Annual "Chemistry Day" for West 7th Street Community Center
 Performed "Energy and U" show for 9000 children (with co-presenters)
 Featured speaker for UMN "Headliners" Series
 Chair, UMN Chemistry Awards Committee
 Chair, UMN Analytical Chemistry Specialty Area
- 2012 Appointed member of U of MN Women's Faculty Cabinet
 Faculty Judge for U MN Graduate Symposium
 Performed "Energy and U" show for 4500 children (with co-presenters)
 Organized 7th Annual "Chemistry Day" for West 7th Street Community Center
 Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
 Chair, UMN Chemistry Awards Committee
- 2011 Featured speaker for UMN Alumni "Lunch and Learn"
 Performed "Energy and U" show for 3000 children (with co-presenters)
 Organized 6th Annual "Chemistry Day" for West 7th Street Community Center
 Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
 Chair, UMN Chemistry Awards Committee
- 2010 Performed "Energy and U" Show for 1540 children (with co-presenters)
 Organized 5th Annual "Chemistry Day" for West 7th Street Community Center
 Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
 Co-Chair, UMN Chemistry Awards Committee
- 2009 Featured speaker for founding meeting of Minnesota chapter of Achievement Rewards for College Scientists (ARCS)
 Hosted Chemistry Department Ethics Discussion on "Plastic Fantastic"
 Organized 4th Annual "Chemistry Day" for West 7th Street Community Center and Centennial Elementary School
 Featured speaker for Chemical Engineering/Materials Science Women's Lunch
 Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
 Co-Chair, UMN Chemistry Awards Committee
- 2008 Organized 3rd Annual "Chemistry Day" for West 7th Street Community Center

- Featured on PBS' DragonFly TV (11/29/08 air date)
- Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
- Co-Chair, UMN Chemistry Awards Committee
- 2007 Organizer of 3-part Graduate Fellowship Writing Workshop
- Host and organizer for 2nd Annual Chemistry Day at the W. 7th Community Center
- Panel Member for Preparing Future Faculty Discussion on “Exploring Careers in Academia”
- Visited Congressional Offices as American Chemical Society Representative to Discuss Science Education Standards and R&D Funding
- Organized and Hosted PittCon Workshop on “Junior Faculty Initiating Competitive Research Programs”
- Initiated “Bioanalytical Supergroup Meeting” with Arriaga and Bowser Groups
- Judge for Graduate Student Research Symposium and Undergraduate Poster Session
- Invited Speaker for UMN High School Chemistry Teachers Workshop, “Teaching Chemistry through Interdisciplinary Examples”
- Organized 2nd Annual “Chemistry Day” for West 7th Street Community Center
- Invited Speaker for IT “Sneak Preview”
- Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
- UMN Chemistry Awards Committee
- 2006 Organized “Chemistry Day” for West 7th Street Community Center
- Judge for Graduate Student Research Symposium and Undergraduate Poster Session
- FOX News Appearance Promoting “Everyday Chemistry” and “National Chemistry Week” Events
- Chair of Analytical Seminar Series
- Organizer of UMN Chemistry Graduate Fellowship Writing Workshop
- 2005 Co-author for Northwestern University Nanoscale Science and Engineering Center education outreach website, <http://www.discovernano.northwestern.edu/>
- Co-interviewer and Author of 4-part Series Addressing Life Balance in Science Careers, Science Advisory Board, <http://humans.scienceboard.net/>
- 2004 Virtual Mentor for Northwestern University's Professional Development Listserv
- 2003 Co-author of Materials World Module on Nanoscience, Haynes, C.; McFarland, A.; Van Duyne, R.; Godwin, H. Nanoscience and Nanotechnology Module, Materials World Modules; Northwestern University: Evanston, Illinois, 2008.

Professional Affiliations

- Editorial Advisory Board, *ACS Nano* (2020 – present)
- Editorial Advisory Board, *Nanoscale* and *Nanoscale Advances* (2020 – present)
- Associate Editor, *Analytical Chemistry* (2016 – present), Curator of Feature Articles and Perspectives (2018 – present)

- Advisory Board, *Journal of Raman Spectroscopy* (2009 – present)
- Editorial Advisory Board, *Chemical Sciences* (2010 – present)
- Editorial Board, *The Analyst* (2010 – present)
- Editorial Advisory Board, *Chemical Research in Toxicology* (2013 – present)
- Vice Editor-in-Chief, *Environmental Science: Nano* (2013 – 2015)
- Editorial Advisory Board, *Analytical Chemistry* (2013 – 2016)
- Editorial Advisory Board, *Environmental Science: Nano* (2016 – present)
- Editorial Advisory Board, *ACS Nano* (2020 – present)
- Phil Beta Kappa, Honor Society for Liberal Arts and Sciences
- Alpha Chi Sigma, Chemistry Honor Society
- American Chemical Society
- Biophysical Society
- Iota Sigma Pi, Women in Chemistry Honor Society
- Phi Lambda Upsilon, Graduate Chemistry Honor Society
- Society for Applied Spectroscopy
- Society for Electroanalytical Chemistry
- Coblentz Society