# Christy Lynn Haynes

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## Education

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| 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<br>Thesis: Fundamentals and Applications of Nanoparticle Optics and Surface-Enhanced Raman Scattering |

## Employment

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| 2019 – | Distinguished McKnight University Professor |
| 2015 – | 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

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|---|---|
| 2019 | Finalist for 2019 Blavatnik National Awards for Young Scientists |
| | *Analytical Scientist*'s Power List |
| 2018 | Guggenheim Fellow |
| | Theophilus Redwood Award from the Royal Society of Chemistry |
| | Craver Award from the Coblentz Society |
| | Finalist for 2018 Blavatnik National Awards for Young Scientists |

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| 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 (183), h-index = 50

183. Synthesis, Applications and Potential Photoluminescence Mechanism of Spectrally Tunable Carbon Dots, Zhi, B.; Yao, X.; Cui, Y.; Orr, G.; Haynes, C.L. *Nanoscale*, accepted.

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*, accepted.

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. Mate. 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.; Doğangün, 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 $TiO_2$ 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 Schoonevveld, 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 Cyotskeleton 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. Biophy. Acta - General Subjects*, 1850(9) 1862-1868 (2015).

110. Ultraporous Mesostructured Silica Nanoparticles, Egger, S.M., Hurley, K.R., Datt, A., Swindlehurst, G., and Haynes, C.L. *Chem. Mat.*, 27(9) 3193-3196 (2015).

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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

- "Application of Mesoporous Silica Nanoparticles to Members of the Family of Cucurbitaceae," Haynes, C.L., Buchman, J. T., Elmer, W., White, J., Application #62/902,865, applications filed 09/19/2019.
- "Coupling Surface-Enhanced Raman Spectroscopy and Glycopolymers to Create Bio-Sensors," Haynes, C. L., Reineke, T. M., Szlag, V., Application #20150324, 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. US 2016/0193588-A1, application filed 09/26/2014.

- "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

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|---|---|
| 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 |

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| 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, Pacifichem 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 Fransisco, 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 |

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| 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 5$^{th}$ 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 Pharmaceutics 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

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| | 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), and Fall 2019 (2 sections, enrollment = 14, 8)

## Selected Synergistic Activities and University Service

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 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)

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| | Regular contributor to sustainable-nano.com |
| 2017 | Featured on PBS' Hands-On Science (10/2017 air date) |
| | Featured on "People Behind the Science" Podcast |
| | 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 11$^{th}$ Annual "Chemistry Day" for West 7$^{th}$ 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 10$^{th}$ Annual "Chemistry Day" for West 7$^{th}$ 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" |

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| | 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 |

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| | 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

- 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