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Education

University of California, Berkeley	Environmental Engineering	Ph.D. 2004
University of California, Berkeley	Environmental Engineering	M.S. 1999
Massachusetts Institute of Technology	Environmental Engineering Science	B.S. 1998

Professional Experience

Duke University, Civil & Environmental Engineering.	<i>Professor</i>	2019-present
	<i>Associate Professor</i>	2013-2019
	<i>Assistant Professor</i>	2005-2013
Nicholas School of the Environment, <i>Secondary Faculty Appointment</i>		2011-present
University of Delaware, College of Marine Studies. <i>Postdoctoral Fellow</i>		2004-2005
University of California, Berkeley. <i>Graduate Student Instructor</i>		Fall 1999
Lawrence Livermore National Laboratory. <i>Summer Research Intern</i>		1998, 1999

Overview of expertise and activities

Dr. Heileen (Helen) Hsu-Kim is an environmental engineer with expertise in aquatic geochemistry, trace element biogeochemistry, and nanogeoscience. Her research primarily focuses on trace element contaminants, their distribution in the environment and exposure risks, and technologies to recover valuable metals from unconventional sources. Her scholarly publications include papers on environmental nanogeochemistry, mercury biogeochemistry, coal ash geochemistry, and rare earth element recovery from wastes. Her research team is currently studying metal pollutants and their transformations in urbanized settings and developing methods to evaluate exposures of these chemicals to vulnerable communities. Her group is also evaluating the impacts of mining on mercury biogeochemical cycling in landscapes and advancing technologies to recover rare earth elements and material resources from mining and combustion wastes.

Dr. Hsu-Kim is the Director of Graduate Studies for Duke's CEE Department and contributes as an Associate Editor for *Environmental Science & Technology*. Dr. Hsu-Kim is also the faculty advisor for the Duke student group FEMMES+ (Females and Allies Exceling More in Math, Engineering and Science), a K-12 STEM education outreach group for the Durham, North Carolina community.

Teaching

CEE561L/ENV542L Environmental Aquatic Chemistry (graduate level), fall semesters
CEE461L Chemical Processes in Environmental Engineering (undergraduate), fall semesters
CEE/ENV666 Aquatic Geochemistry, (graduate), spring semesters

Honors and Awards

AEESP Distinguished Service Award, 2024

AEESP / Mary Ann Liebert Award for Publication Excellence in *Environmental Engineering Science*, 2019
Environmental Science & Technology Letters Excellence in Review Award, 2016
 Research Triangle Institute University Scholar, 2016
 Pratt Engineering Excellence in Teaching, 2015
 Bass Professorship for excellence in research and teaching, Duke University, 2014-2019
 American Society for Engineering Education, 20 Under 40, Prism Magazine, Sept. 2014
Environmental Science & Technology Excellence in Review Award, 2013
 Presidential Early Career Award for Scientists and Engineers (PECASE), 2012
 Department of Energy Early Career Research Award, 2011
 NSF Ridge 2000 Postdoctoral Fellowship, 2004
 ACS Environmental Chemistry Division Graduate Student Paper Award, 2003
 UC-Berkeley Outstanding Graduate Student Instructor Award, 1999-2000
 National Physical Science Consortium Graduate Student Fellowship, 1998-2004

Peer-Reviewed Journal Publications

120. Dai, Y., Zhou, Z., Yu, W., Ma, Y., Kim, K., Rivera, N., Mohammed, J., Lantelme, E., Hsu-Kim, H., Chilkoti, A.; You, L. (2024). Biomolecular condensates regulate cellular electrochemical equilibria. *Cell*, 187(21), 5951-5966. DOI: [10.1016/j.cell.2024.08.018](https://doi.org/10.1016/j.cell.2024.08.018)
119. Middleton, A.; Hedin, B.C.; Hsu-Kim, H. (2024). Recovery of Rare Earth Elements from Acid Mine Drainage with Supported Liquid Membranes: Impacts of Feedstock Composition for Extraction Performance. *Environmental Science & Technology*. 58, 2998-3006. <https://doi.org/10.1021/acs.est.3c06445>
118. Marchese, M.J.; Gerson, J.R.; Berky, A.J.; Driscoll, C.; Fernandez, L.E.; Hsu-Kim, H.; Lansdale, K.N.; Letourneau, E.; Montesdeoca, M.; Pan, W.K.; Robie, E.; Vega, C.; Bernhardt, E.S. (2024) Diet choices determine mercury exposure risks for people living in gold mining regions of Peru. Submitted to *Environmental Research: Health*. 2, (3), 035001. <https://dx.doi.org/10.1088/2752-5309/ad3d79>
117. Wadle, A.; Neal-Walthall, N.; Ndu, U.; Hsu-Kim, H. (2024). Distribution and Homogenization of Multiple Mercury Species Inputs to Freshwater Wetland Mesocosms. *Environmental Science & Technology*, <https://doi.org/10.1021/acs.est.3c07169>
116. Berky, A.J., Weinhouse, C., Vissoci, J., Rivera, N., Ortiz, E.J., Navio, S., Miranda, J.J., Mallipudi, A., Fixen, E., Hsu-Kim, H. and Pan, W.K. (2023). In utero exposure to metals and birth outcomes in an artisanal and small-scale gold mining birth cohort in Madre de Dios, Peru. *Environmental Health Perspectives*, 131(9), 097008. <https://doi.org/10.1289/EHP10557>
115. Koenigsmark, F., Rivera, N.A., Pierce, E.M. and Hsu-Kim, H. (2023). Dissolution Potential of Elemental Mercury in the Presence of Bisulfide and Implications for Mobilization. *Environmental Science & Technology*, 57(33), 2388-12397. <https://doi.org/10.1021/acs.est.3c00694>
114. Middleton, A.; Hsu-Kim, H. (2023). Separation of Rare-Earth Elements by Supported Liquid Membranes: Impacts of Soluble Iron, Aluminum, and pH in Low-Grade Feedstocks. *ACS ES&T Engineering*. 3, 8, 1197–1204 <https://doi.org/10.1021/acsestengg.3c00060>
113. Lalwani, P.; King, D. E.; Morton, K.S.; Rivera, N.A.; Huayta, J.; Hsu-Kim, H.; Meyer, J.N. (2023) Increased cytotoxicity of Pb²⁺ with co-exposures to a mitochondrial uncoupler and mitochondrial calcium uniporter inhibitor. *Environmental Science: Processes & Impacts*. <https://doi.org/10.1039/D3EM00188A>

112. Rivera, N.A.; Ling, F.T.; Jin, Z.; Pattammattel, A.; Yan, H.; Chu, Y.S.; Peters, C.A. and Hsu-Kim, H. (2023) Nanoscale heterogeneity of arsenic and selenium species in coal fly ash particles: analysis using enhanced spectroscopic imaging and speciation techniques. *Environmental Science: Nano*. 10, 1768-1777. DOI: [10.1039/D2EN01056A](https://doi.org/10.1039/D2EN01056A)
111. Jin, Z.; Ren, J.; Rivera, N.A.; Hower, J.C. (2023) Functional Predictor Variables for the Leaching Potential of Arsenic and Selenium from Coal Fly Ash. *ACS ES&T Water*. <https://doi.org/10.1021/acsestwater.2c00568>
110. Koenigsmark, F.; Chiu, M.; Rivera, N.A.; Johs, A.; Eskelsen, J.; Leonard, D.; Robertson, B.K.; Szykiewicz, A.; Derolph, C.; Zhao, L.; Gu, B.; Hsu-Kim, H. Pierce, E.M. (2023) Crystal lattice defects in nanocrystalline metacinnabar in contaminated streambank soils suggest a role for biogenic sulfides in the formation of mercury sulfide phases. *Environmental Science: Processes & Impacts*, DOI: [10.1039/d1em00549a](https://doi.org/10.1039/d1em00549a).
109. Hower, J. C.; Groppo, J. G.; Hopps, S. D.; Morgan, T. D.; Hsu-Kim, H.; Taggart, R. K. (2022) Coal Feed-Dependent Variation in Fly Ash Chemistry in a Single Pulverized-Combustion Unit. *Minerals*. 12(9),1071. DOI: [10.3390/min12091071](https://doi.org/10.3390/min12091071)
108. Berky, A. J.; Robie, E.; Chipa, S. N.; Ortiz, E. J.; Palmer, E. J.; Rivera, N. A.; Avalos, A. M. M.; Meyer, J. N.; Hsu-Kim, H.; Pan, W. K. (2022) Risk of lead exposure from wild game consumption from cross-sectional studies in Madre de Dios, Peru. *The Lancet Regional Health - Americas*, 2022, 12, 100266. DOI: [10.1016/j.lana.2022.100266](https://doi.org/10.1016/j.lana.2022.100266).
107. Kessler, M.L., Kelm, J.E., Starr, H.E., Cook, E.N., Miller, J.D., Rivera, N.A., Hsu-Kim, H., and Dempsey, J.L. (2022) Unraveling Changes to PbS Nanocrystal Surfaces Induced by Thiols. *Chemistry of Materials*, 2022. DOI: [10.1021/acs.chemmater.1c03888](https://doi.org/10.1021/acs.chemmater.1c03888)
106. Neal-Walthall, N.; Ndu, U.; Rivera, N.A.; Elias, D.A; Hsu-Kim, H. (2022) Utility of Diffusive Gradient in Thin-Film (DGT) Passive Samplers for Predicting Mercury Methylation Potential and Bioaccumulation in Freshwater Wetlands. *Environ. Sci. & Technol.* 56, 1743-1752. <https://doi.org/10.1021/acs.est.1c06796>
105. Gerson, J.R.; Szponar, N.; Almeyda Zambrano, A.; Berquist, B.; Broadbent, E.; Driscoll, C.T.; Erkenswick, G.; Evers, D.C.; Fernandez, L.E.; Hsu-Kim, H.; Inga, G.; Lansdale, K.N.; Marchese, M.J.; Martinez, A.; Moore, C.; Pan. W.K.; Pérez Purizaca, R.O.; Sánchez, V.; Silman, M.; Ury, E.A.; Vega, Cl.; Watsa, M.; Bernhardt, E.S. (2022). Amazon forests capture high levels of atmospheric mercury pollution from artisanal gold mining. *Nature Communications*. <https://doi.org/10.1038/s41467-022-27997-3>
104. Mello, D.F.; Maurer, L.L.; Ryde, I.T.; Song, D.H.; Marinakos, S.M.; Jiang, C.; Wiesner, M.R.; Hsu-Kim, H.; Meyer, J.N. (2022) *In vivo* effects of silver nanoparticles on development, behavior and mitochondrial function are altered by genetic defects in mitochondrial dynamics. *Environ. Sci. & Technol.* 56, 1113-1124. DOI: [10.1021/acs.est.1c05915](https://doi.org/10.1021/acs.est.1c05915)
103. Koenigsmark, F.; Weinhouse, C.; Berky, A.J.; Morales, A.M.; Ortiz, E.J.; Pierce, E.M.; Pan, W.K.; Hsu-Kim, H. (2021) Efficacy of Hair Total Mercury Content as a Biomarker of Methylmercury Exposure to Communities in the Area of Artisanal and Small-Scale Gold Mining in Madre de Dios, Peru. *International Journal of Environmental Research and Public Health*. 18(24), 13350. <https://doi.org/10.3390/ijerph182413350>
102. Wang, Lu; Mello, D.F.; Zucker, R.M.; Rivera, N.A.; Rogers, N.M.K.; Geitner, N.K.; Boyes, W.K.; Wiesner, M.R.; Hsu-Kim, H.; Meyer, J.N. (2021). Lack of detectable direct effects of silver and silver nanoparticles on mitochondria in mouse hepatocytes. *Environ. Sci. & Technol.* 55, 11166-11175. DOI: [10.1021/acs.est.1c02295](https://doi.org/10.1021/acs.est.1c02295)

101. Hower, J.C.; Groppo, J.G.; Hsu-Kim, H.; Taggart, R.K. (2021). Signatures of rare earth element distributions in fly ash derived from the combustion of Central Appalachian, Illinois, and Powder River basin coals. *Fuel*. 301, 121048. DOI: [10.1016/j.fuel.2021.121048](https://doi.org/10.1016/j.fuel.2021.121048)
100. Pan, William K.; Weinhouse, C.; Ortiz, E.; Berky, A.; Fixsen, E.; Mallipudi, A.; Feingold, B.F.; Navio, S.; Rivera, N.A.; Hsu-Kim, H.; Miranda, J.J. (2021). CoNaMad—Cohorte de Nacimiento de Madre de Dios / Madre de Dios Birth Cohort to study effects of in-utero trace metals exposure in the Southern Peruvian Amazon. *Annals of Global Health*. 87(1), 69. DOI: [10.5334/aogh.3152](https://doi.org/10.5334/aogh.3152)
99. McMillan, H.M.; Rogers, N.; Wadle, A.; Hsu-Kim, H.; Wiesner, M.R.; Hendren, C.O. (2021) Microbial vesicle-mediated communication: convergence to understand interactions within and between domains of life. *Environmental Science: Processes & Impacts*. 23, 664-677. DOI: [10.1039/D1EM00022E](https://doi.org/10.1039/D1EM00022E)
98. Dong, Z.; Deblonde, G.; Middleton, A.; Hu, D.; Dohnalkova, A.; Kovarik, L.; Qafoku, O.; Shutthanadan, V.; Jin, H.; Hsu-Kim, H.; Teaker, N.; Jiao, Y.; Park, D.M. (2021). Microbe Encapsulated Silica Gel Biosorbent for Selective Extraction of Scandium from Coal Byproducts. *Environ. Sci. & Technol*. 55(9), 6320-6328. DOI: [10.1021/acs.est.0c08632](https://doi.org/10.1021/acs.est.0c08632)
97. Hower, J.C.; Groppo, J.G.; Hsu-Kim, H.; Taggart, R.K. (2021). Distribution of rare earth elements in fly ash derived from the combustion of Illinois Basin coals. *Fuel*. 289, 119990. DOI: [10.1016/j.fuel.2020.119990](https://doi.org/10.1016/j.fuel.2020.119990)
96. Weinhouse, C.; Gallis, J.A.; Ortiz, E.; Berky, A.J.; Morales, A.M.; Diringer, S.E.; Harrington, J.; Bullins, P.; Rogers, L.; Hare-Grogg, J.; Hsu-Kim, H.; Pan, W.K. (2021). A population-based mercury exposure assessment near an artisanal and small-scale gold mining site in the Peruvian Amazon. *J. Exposure Science and Environmental Epidemiology*. 31, 126-136. DOI: [10.1038/s41370-020-0234-2](https://doi.org/10.1038/s41370-020-0234-2)
95. Kose-Mutlu, B., Hsu-Kim, H. and Wiesner, M.R. (2022). Separation of rare earth elements from mixed-metal feedstocks by micelle enhanced ultrafiltration with sodium dodecyl sulfate. *Environmental Technology*, 43(7), 1013-1025. DOI: [10.1080/09593330.2020.1812732](https://doi.org/10.1080/09593330.2020.1812732)
94. Berky, A.J., Robie, E., Ortiz, E.J., Meyer, J.N., Hsu-Kim, H. and Pan, W.K. (2020) Evaluation of Peruvian Government Interventions to Reduce Childhood Anemia. *Annals of Global Health*, 86(1), 98. DOI: [10.5334/aogh.2896](https://doi.org/10.5334/aogh.2896)
93. Gerson, J. R.; Naslund, L. C.; Liu, Y.-T.; Hsu-Kim, H.; Driscoll, C. T.; Ross, M. R. V.; Waters, M. N.; Bernhardt, E. S. (2020) Mercury and selenium loading in mountaintop mining impacted alkaline streams and riparian food webs. *Biogeochemistry* 150(1), 109-122. DOI: [10.1007/s10533-020-00690-7](https://doi.org/10.1007/s10533-020-00690-7)
92. Middleton, A.; Park, D.M.; Jiao, Y.; Hsu-Kim, H. (2020). Major element composition controls rare earth element solubility during leaching of coal fly ash and coal by-products. *Intl. J. Coal Geology*. DOI: [10.1016/j.coal.2020.103532](https://doi.org/10.1016/j.coal.2020.103532)
91. Alipanah, M.; Park, D.M.; Middleton, A.; Dong, Z.; Hsu-Kim, H.; Jiao, Y.; Jin, H. (2020) Techno-economic and Life Cycle Assessments for Sustainable Rare Earth Recovery from Coal Byproducts using Biosorption. *ACS Sustainable Chemistry & Engineering*. 8(49), 17914-1722. DOI: [10.1021/acssuschemeng.0c04415](https://doi.org/10.1021/acssuschemeng.0c04415)
90. Reuben, A; Frischtak, H.; Berky, A.; Ortiz, E.J.; Morales A.M.; Hsu-Kim, H.; Pendergast, L.L.; Pan, W.K. (2020) Elevated Hair Mercury Levels Are Associated With

- Neurodevelopmental Deficits in Children Living Near Artisanal and Small-Scale Gold Mining in Peru. *GeoHealth*. 4(5), e2019GH000222. DOI: [10.1029/2019GH000222](https://doi.org/10.1029/2019GH000222).
89. Wang, Z.; Coyte, R.M.; Dwyer, G.S.; Ruhl, L.S.; Hsu-Kim, H.; Hower, J.C.; Vengosh, A. (2020) Distinction of strontium isotope ratios between water-soluble and bulk coal fly ash from the United States. *Intl. J. Coal Geology*. 222, 103464. DOI: [10.1016/j.coal.2020.103464](https://doi.org/10.1016/j.coal.2020.103464).
 88. Park, D.; Middleton, A.; Smith, R.; Deblonde, G.; Laudal, D.; Theaker, N.; Hsu-Kim, H.; Jiao, Y. (2020). A biosorption-based approach for selective extraction of rare earth elements from coal byproducts. *Separation and Purification Technology*. 241, 116726. DOI: [10.1016/j.seppur.2020.116726](https://doi.org/10.1016/j.seppur.2020.116726)
 87. Diana, Z.; Sawickij, N.; Rivera, N.A.; Hsu-Kim, H.; Rittschof, D. (2020) Plastic Pellets Trigger Feeding Responses in Sea Anemones. *Aquatic Toxicology*. 222, 105447. DOI: [10.1016/j.aquatox.2020.105447](https://doi.org/10.1016/j.aquatox.2020.105447)
 86. Avellan, A.; Simonin, M.; Anderson, S.M.; Geitner, N.K.; Bossa, N.; Spielman-Sun, E.; Bernhardt, E.S.; Castellon, B.T.; Colman, B.P.; Cooper, J.L.; Ho, M.; Hochella, M.F.; Hsu-Kim, H.; Inoué, S.; King, R.S.; Loughton, S.; Matson, C.W.; Perrotta, B.G.; Richardson, C.J.; Unrine, J.M.; Wiesner, M.R.; Lowry, G.V. (2020) Differential Reactivity of Copper- and Gold-based Nanomaterials Controls their Seasonal Biogeochemical Cycling and Fate in a Freshwater Wetland Mesocosm. *Environ. Sci. & Technol*. 54, 1533-1544. DOI: [10.1021/acs.est.9b05097](https://doi.org/10.1021/acs.est.9b05097)
 85. Diringer, S.E.; Berky, A.; Marani, M.; Ortiz, E.J.; Karatum, O.; Plata, D.L.; Pan, W.K.; Hsu-Kim, H. (2020) Deforestation Due to Artisanal and Small-Scale Gold Mining Exacerbates Soil and Mercury Mobilization in Madre de Dios, Peru. *Environ. Sci. & Technol*. 54, 286-296. DOI: [10.1021/acs.est.9b06620](https://doi.org/10.1021/acs.est.9b06620)
 84. Mello, D. F.; Trevisan, R.; Rivera, N.; Geitner, N. K.; Di Giulio, R. T.; Wiesner, M. R.; Hsu-Kim, H.; Meyer, J. N. (2020) Caveats to the use of MTT, neutral red, Hoechst and Resazurin to measure silver nanoparticle cytotoxicity. *Chemico-Biological Interactions*. 315, 108868. DOI: [10.1016/j.cbi.2019.108868](https://doi.org/10.1016/j.cbi.2019.108868)
 83. Feingold, B.J.; Berky, A.; Hsu-Kim, H.; Rojas, E.; Pan, W.K. (2020) Population based dietary exposure to mercury through fish consumption in the Southern Peruvian Amazon. *Environmental Research*. 108720. DOI: [10.1016/j.envres.2019.108720](https://doi.org/10.1016/j.envres.2019.108720)
 82. Volkoff, S.; Osterberg, J.; Jayasundara, N.; Cooper, E.; Hsu-Kim, H.; Rogers, L.; Gehrke, G.; Jayaraman, S.; Di Giulio, R. (2019). Embryonic *Fundulus heteroclitus* responses to sediment extracts from differentially contaminated sites in the Elizabeth River, VA. *Ecotoxicology*. 28, (9), 1126-1135. DOI: [10.1007/s10646-019-02116-z](https://doi.org/10.1007/s10646-019-02116-z)
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 80. Rivera, N.A.; Bippus, P.M.; Hsu-Kim, H. (2019). Relative Reactivity and Bioavailability of Mercury Sorbed to or Coprecipitated with Aged Iron Sulfides. *Environ. Sci. & Technol*. 53, 7391-7399. [10.1021/acs.est.9b00768](https://doi.org/10.1021/acs.est.9b00768)
 79. Zhang, T.; Lowry, G. V.; Capiro, N. L.; Chen, J.; Chen, W.; Chen, Y.; Dionysiou, D. D.; Elliott, D. W.; Ghoshal, S.; Hofmann, T.; Hsu-Kim, H.; Hughes, J.; Jiang, C.; Jiang, G.; Jing, C.; Kavanaugh, M.; Li, Q.; Liu, S.; Ma, J.; Pan, B.; Phenrat, T.; Qu, X.; Quan, X.; Saleh, N.; Vikesland, P. J.; Wang, Q.; Westerhoff, P.; Wong, M. S.; Xia, T.; Xing, B.; Yan, B.; Zhang,

- L.; Zhou, D.; Alvarez, P. J. J.. (2019) In situ remediation of subsurface contamination: opportunities and challenges for nanotechnology and advanced materials. *Environmental Science: Nano*. 6, (5), 1283-1302.
78. Smith, R.C.; Taggart, R.K.; Hower, J.C.; Wiesner, M.R.; Hsu-Kim, H. (2019). Selective Recovery of Rare Earth Elements from Coal Fly Ash Leachates Using Liquid Membrane Processes. *Environ. Sci. & Technol.* 53, 4490-4499. DOI: [10.1021/acs.est.9b00539](https://doi.org/10.1021/acs.est.9b00539)
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 75. Taggart, R.K.; Rivera, N.A.; Levard, C.; Ambrosi, J.-P.; Borschneck, D.; Hower, J.C.; Hsu-Kim, H. (2018). Differences in bulk and microscale yttrium speciation in coal combustion fly ash. *Environmental Science: Processes & Impacts*. 20, 1390-1403. DOI: [10.1039/c8em00264a](https://doi.org/10.1039/c8em00264a)
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 71. Ndu, U.; Christensen, G.A.; Rivera, N.A.; Gionfriddo, C.M.; Deshusses, M.A.; Elias, D.A.; Hsu-Kim, H. (2018). Quantification of Mercury Bioavailability for Methylation Using Diffusive Gradient in Thin-Film Samplers. *Environ. Sci. & Technol.* 52, 8521-8529. DOI: [10.1021/acs.est.8b00647](https://doi.org/10.1021/acs.est.8b00647)
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- Leachate: Performance and Cost Evaluation. *Chemical Engineering Journal*. 349: 309-317. DOI: [10.1016/j.cej.2018.05.080](https://doi.org/10.1016/j.cej.2018.05.080)
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Editorial Contributions

- Hsu-Kim, H., Eckley, C.S.; Selin, N.E. (2018). Modern science of a legacy problem: mercury biogeochemical research after the Minamata Convention. *Environ. Sci: Processes & Impacts.* 20(4), 582-583. <http://dx.doi.org/10.1039/C8EM90016G>
- Hsu-Kim H., Cory R.M. “Water Chemistry by P.L. Brezonik and W.A. Arnold: A new textbook for environmental aquatic chemistry”. AEESP Newsletter. 47(1), 9. January 2012. <http://www.aeesp.org/pdf/publications/AEESPNL.47.1.2012.pdf>
- Aiken G., Hsu-Kim H., Ryan J., Alvarez P. “Guest Comment: Nanoscale Metal-Organic Matter Interactions”. Guest editors G.R. Aiken, H. Hsu-Kim and J.N. Ryan. Special focus issue of *Environmental Science & Technology.* 45, 3194–3195. April 15, 2011. DOI: [10.1021/es2007148](https://doi.org/10.1021/es2007148)

Research Advisees

Postdoctoral Associates/Research Scientists:

Nelson Rivera, 2014-present
 Ryan Smith, 2016-2019
 Udonna Ndu, 2015-2018

Carol Johnson, 2014-2016
Anh Pham, 2012-2015
Gretchen Gehrke, 2012-2015
Sung-Woo Lee, 2013-2014
Kate Kucharzyk, 2011-2014
Yu-Ting Liu, 2010-2013
Amanda Morris, 2011-2012
Lee Bryant, 2010-2012
Boris Lau, 2007-2008

Graduate students:

Graduated:

Anna Altmann, M.S., 2024
Zehao Jin, Ph.D., 2024
Qinhan Wen, M.S., 2023
Austin Wadle, Ph.D., 2023
Zhiheng Hao, MEM, 2023
Haotian Li, MS, 2023
Andrew Middleton, Ph.D., 2022
Natalia Neal-Walthall, Ph.D., 2022
Faye Koenigsmark, Ph.D., 2021
Jie Ren, M.S., 2021
Jieqi Liu, M.S., 2020
Ross Taggart, Ph.D., 2018
Jane Cooper, M.S., 2017
Sarah Diringer, Ph.D., 2016
Chuanjia Jiang, Ph.D., 2016
Abigail McEwen, MEM, 2015
Grace Schwartz, Ph.D., 2015
Andreas Gondikas, Ph.D., 2012
Tong Zhang, Ph.D., 2012
Amrika Deonarine, Ph.D., 2011

In-Progress:

Joshua Miller, Ph.D. candidate, 2020-present
Shannon Plunkett, Ph.D. candidate, 2021-present
Lijia Gao, Ph.D. candidate, 2022-present
Caroline Zuber, Ph.D. candidate, 2023-present
Eli Ford, M.S. candidate, 2023-present

Undergraduate:

Emily Gjertsen, CEE major, 2024
Alan Huang, Computer Science major, 2025
Gloria Odenyo, CEE major, 2023
Zehua (Roy) Wang, Env. Eng. major, 2022
Katherine Li, CEE major, 2022
Jenny Liang, Env Eng. major, 2019
Emma Palmer, Env Eng. major, 2018-19

Eliza Letourneau, Env. Sci. major, 2018-19
Madeline McKnight, Chemistry major, 2018-19
April Laranang, REU student, summer 2018
Fangfei Liu, REU student, summer 2018
Joyce Gu, REU student, summer 2018
Xiating Chen, Env Eng. major, 2016
John Hare-Grogg, Environ. Sci. major, 2015-16
Jack King, Env. Eng. major, 2015-16
Elaine Hung, REU student, summer 2015
Devon Manley, REU student, summer 2014
Osman Ulug, REU student, summer 2014
Laura Rogers, Environ. Sci. major, spring 2014 – 2015
Lauren Riedle, UNC Env. Sci. major, 2013-2014
Marika Nell, REU student, summer 2013
Zakary Goldberg, REU student, summer 2013
Karen Yu, REU student, summer 2011
Andrew Matsumoto, REU student, summer 2011
Greer Mackabee, CEE major, graduated 2012
Marianne Leonhardt, CEE major, graduated 2012
Brian Au, CEE major, graduating 2012
Patrick Canning, CEE major, graduated 2009
Natalya Polishchuk, REU student, summer 2007
Kristen Jenkins, biology major, graduated 2008

Professional Affiliations

Memberships: American Chemical Society, Association of Environmental Engineering and Science Professors (AEESP), Geochemical Society, Chinese-American Professors in Environmental Engineering and Science (CAPEES)

Technical Advisory

Associate Editor, *Environmental Science & Technology*, ACS Publications, 2024-present
Editorial Advisory Board. *Environmental Science & Technology Letters* (2014-present). *ACS ES&T Water* (2020-present)

Service and Outreach Activities

Duke University & Pratt School of Engineering

CEE Director of Graduate Studies (2021-present)
Nicholas Institute Strategic Advisory Committee (2019-present)
Duke University Standing Committee on Research Misconduct (2019-present)
Advisory Working Group for collective bargaining activities with PhD. Student union, (2023-2024)
Director Search Committee, Nicholas Institute (2023-2024)
Pratt Dean Search Committee (2021)
CEE Faculty Search Committee (2021)
CEE Masters graduate program, Assistant Director (2018-2021)
Civil & Environmental Engineering Graduate Colloquium, program organizer (2017-2020)
Civil & Environmental Engineering faculty search committee, chair (2019-2020)

Advisory Committee for the Vice Provost Office for Faculty Advancement (2018-2019)
Civil & Environmental Engineering faculty search committee (2017-18)
Duke University Diversity Task Force (2014-2015)
Pratt School of Engineering Faculty Council (2013-2015)
University Campus Sustainability Committee (2013-2014)
Environmental Engineering faculty search committee, chair (2013-15)
University Committee on Facilities & Environment (2012-2015)
Academic Council. Representative from the Pratt School of Engineering. April 2012-2016.
Pratt Engineering EXCEL Building faculty planning committee (spring 2007).

Scientific Community

Conference Chair, AEESP2025 Research and Education Conference, Durham, NC, May 20-22, 2025
Investment Oversight Committee, AEESP Foundation, 2022-2024
Treasurer and member of Board of Directors, Association of Environmental Engineering and Science Professors and AEESP Foundation, 2018-2023.
Associate Editor, *Environmental Science: Processes & Impacts*, RSC Publications. 2016-2023.
DOE, Office of Biological and Environmental Research, Science and Operations Review of the Environmental Molecular Sciences Laboratory, November 29-30, 2017.
DOE, Office of Basic Energy Research, Basic Research Needs Workshop on the Energy-Water Nexus. January 4-5, 2017.
DOE, Office of Biological and Environmental Research, Climate and Environmental Science Division, Committee of Visitors, July 19-21, 2016.
NSF Workshop Participant “Geobiology and Microbial Geochemistry Workshop”, October 10-12, 2013.
NSF Workshop Participant, “Future Directions in Geobiology and Low-Temperature Geochemistry”, September 27-28, 2010
Patterson Award Committee, Geochemical Society, 2008-2011

Community/K-12 Outreach

FEMMES+ (Females and Allies Excelling More in Math, Engineering, and Science), Faculty advisor and workshop volunteer (2007-present).
GAINS Conference, Faculty presenter/speaker. Durham and Chapel Hill, NC. April 3-4, 2016.
NanoDays volunteer. North Carolina Museum of Life & Sciences. 2011 and 2012.
Developed an activity titled *NanoToss* for museum visitors.
Research mentor for Pratt NSF-REU (summer 2007-08, 2010), Howard Hughes Precollege Program in the Biological Sciences.