

JESSICA R. RAY

Curriculum Vitae

Civil & Environmental Engineering
More Hall, Room 201
352700
Seattle, WA 98195

Phone: +1 206-221-0791
Fax: +1 206-543-1543
Email: jessray@uw.edu

EDUCATIONAL HISTORY

University of California, Berkeley, Berkeley, CA
Postdoctoral Fellow, Civil & Environmental Engineering
December 2018

Washington University in St. Louis, St. Louis, MO
Ph.D., Energy, Environmental & Chemical Engineering
June 2015
Interactions, Fate and Transport of Natural and Engineered Oxide Nanoparticles in Wastewater and Colloids in Water Treatment Systems

Washington University in St. Louis, St. Louis, MO
M.S., Energy, Environmental & Chemical Engineering
October 2012
Understanding the Fate and Transport of Natural and Engineered Oxide and Carbonate Nanoparticles in Water and Wastewater Treatment Systems

Washington University in St. Louis, St. Louis, MO
B.S., Chemical Engineering
May 2009

EMPLOYMENT HISTORY

University of Washington
Seattle, WA, USA
Assistant Professor, 2019 – present

University of California, Berkeley Miller Institute for Basic Research
Berkeley, CA, USA
Postdoctoral Fellow, 2015 – 2018

Washington University in St. Louis
St. Louis, MO, USA
Graduate Research Assistant, 2009 – 2015

AWARDS AND HONORS

Justice, Equity, Diversity and Inclusion Award, June 9, 2021, University of Washington, CEE

Robert O. and Irene V. Sylvester Family Endowed Professorship in Water Resources - Environmental Engineering, March 9, 2021, University of Washington, CEE

“1,000 Inspiring Black Scientists in America”, December 28, 2020, Cell Mentor Rogel

Faculty Support Award, July 22, 2020, University of Washington, CEE

Talented 12 Class of 2020, August 14, 2020, American Chemical Society’s Chemical & Engineering News

Postdoctoral Fellowship, 2015 – 2018, University of California, Berkeley, Miller Institute for Basic Research

Science to Achieve Results (STAR) Graduate Fellowship, 2012 – 2015, Environmental Protection Agency

Graduate STEM Fellows in K-12 (GK-12) Fellowship, 2009 – 2010, National Science Foundation

AFFILIATIONS AND OTHER APPOINTMENTS

Adjunct Professor, Chemical Engineering (University of Washington, 2021 – present)

PUBLICATIONS

Superscript legend: 1: my postdoc, 2: my graduate student, 3: my undergraduate student, §: co- first authorship

Accepted/In Preparation/Under Review

1. Nicole Redden^{2,§}, Jessica M. Steigerwald^{2,§}, Fanny Okaikue-Woodie^{2,§}, Joshua Chong³ and **Jessica R. Ray**, “Treatment of trace organics in urban stormwater by biochar derived from spent coffee grounds,” *under preparation*.

Published

1. Fanny Okaikue-Woodie² and **Jessica R. Ray**, “Synthesis of ferrate (Fe(VI))-coated sand for stabilized reactivity and enhanced treatment of phenol” *Journal of Materials Chemistry A (IF: 11.9)*, **2023**, 11, 13552-13563, DOI: <https://doi.org/10.1039/D3TA01950K>; number of citations 0 (Google Scholar).
2. Yuemei Ye¹, Hojeong Bang³, Vivian Jones³, Kaylie Dennehy³, Jessica M. Steigerwald² and **Jessica R. Ray**, “H₂O₂-catalyzed defluorination of perfluorooctanesulfonate (PFOS) by oxidized vanadium carbide MXene nanosheets” *Journal of Materials Chemistry A (IF: 11.9)*, **2023**, 11, 16803-16814, DOI: <https://doi.org/10.1039/D3TA02073H>; number of citations: 0 (Google Scholar).
3. Jessica M. Steigerwald², Shawnie Peng³ and **Jessica R. Ray**, “Novel perfluorooctanesulfonate-imprinted polymer immobilized on spent coffee grounds biochar for selective removal of perfluoroalkyl acids in synthetic wastewater” *Environmental Science & Technology Engineering (IF: 7.1)*, **2023**, 3, 4, 520-532, DOI: <https://doi.org/10.1021/acsestengg.2c00336>; number of citations: 3 (Google Scholar).
4. Katya Cherukumilli¹, Max Steiner³ and **Jessica R. Ray**, “Effective fluoride removal using granular bauxite filter media as an affordable and sustainable alternative to activated alumina” *Environmental Science: Water Research & Technology (IF: 5.819)*, **2021**, DOI: <https://doi.org/10.1039/D1EW00033K>; number of citations: 5 (Google Scholar).
5. Jessica M. Steigerwald² and **Jessica R. Ray**, “Adsorption behavior of perfluorooctanesulfonate (PFOS) onto activated spent coffee grounds in synthetic wastewater effluent” *Journal of Hazardous Materials Letters (IF: 3.574)*, **2021**, 2, 100025-100032, DOI:

- <https://doi.org/10.1016/j.hazl.2021.100025> (invited submission); number of citations: 21 (Google Scholar).
6. Chelsea W. Neil, Xuanhao Wu, Doyoon Kim, Haesung Jung, Yanzhe Zhu, **Jessica R. Ray** and Young-Shin Jun, “Arsenite oxyanions affect CeO₂ nanoparticle dissolution and colloidal stability” *Environmental Science: Nano* (IF: 9.473), **2021**, 8, 233-244. DOI: <https://doi.org/10.1039/D0EN00970A>; number of citations: 5
 7. Fanny E. K. Okaikue-Woodi², Katya Cherukumilli¹ and **Jessica R. Ray**, “A critical review of contaminant removal by conventional and emerging media for urban stormwater treatment” *Water Research* (IF: 13.4), **2020**, 187, 116434-116455, DOI: <https://doi.org/10.1016/j.watres.2020.116434>; number of citations: 60 (Google Scholar)
 8. **Jessica R. Ray**, Xuanhao Wu, Chelsea W. Neil, Haesung Jung, Zhichao Li and Young-shin Jun, “Redox chemistry of CeO₂ nanoparticles in aquatic systems containing Cr(VI)(aq) and Fe²⁺ ions” *Environmental Science: Nano* (IF: 9.473), **2019**, 6, 2269-2280. DOI: <https://doi.org/10.1039/C9EN00201D>; number of citations: 10 (Google Scholar)
 9. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixidó, Yael G. Mishael, and David L. Sedlak, “Polymer-clay composite geomedia for sorptive removal of trace organic compounds and metals in urban stormwater” *Water Research* (IF: 13.4), **2019**, 157, 454-462. DOI: <https://doi.org/10.1016/j.watres.2019.03.097>; number of citations: 64 (Google Scholar)
 10. Vivek B. Shah, Chloe Ferris, Gregory S. Orf, Shaline Kavadiya, **Jessica R. Ray**, Young-shin Jun, Byeongdu Lee, Robert E. Blankenship and Pratim Biswas, “Supramolecular self-assembly of *Bacteriochlorophyll c*. molecules in aerosolized droplets to synthesize biomimetic chlorosomes” *Journal of Photochemistry and Photobiology B: Biology* (IF: 6.814), **2018**, 185, 161-168. DOI: <https://doi.org/10.1016/j.jphotobiol.2018.04.032>; number of citations: 6 (Google Scholar)
 11. **Jessica R. Ray**, Whitney Wong, and Young-shin Jun, “Antiscaling efficiency of CaCO₃ and CaSO₄ on polyethylene glycol (PEG)-modified reverse osmosis membranes in the presence of humic acid: Interplay of membrane surface properties and water chemistry” *Physical Chemistry Chemical Physics* (IF: 3.3), **2017**, 19 (7), 5647-5657, DOI: <https://doi.org/10.1039/C6CP08569E>; number of citations: 40 (Google Scholar).
 12. Chelsea W. Neil, **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Fractal aggregation and disaggregation of newly formed iron(III) (hydr)oxide nanoparticles in the presence of natural organic matter” *Environmental Science: Nano* (IF: 9.473), **2016**, 3 (3), 647-656, DOI: <https://doi.org/10.1039/C5EN00283D>; number of citations: 27 (Google Scholar).
 13. **Jessica R. Ray**,[†] Sirimuvva Tadepalli,[†] Saide Z. Nergiz, Keng-Ku Liu, Le You, Yinjie Tang, Srikanth Singamaneni, and Young-Shin Jun, “Hydrophilic, bactericidal nanoheater-enabled reverse osmosis membranes to improve fouling resistance” *ACS Applied Materials & Interfaces* (IF: 9.5), **2015**, 7 (21), 11117-11126, DOI: <https://doi.org/10.1021/am509174j>; number of citations: 79 (Google Scholar).
 14. Xuyang Liu,[†] **Jessica R. Ray**,[†] Chelsea W. Neil,[†] Qingyun Li, and Young-Shin Jun, “Enhanced colloidal stability of CeO₂ nanoparticles by ferrous ions: Adsorption, redox reaction, and surface precipitation” *Environmental Science & Technology* (IF: 11.357), **2015**, 49 (9), 5476-5483, DOI: <https://doi.org/10.1021/es506363x>; number of citations: 36 (Google Scholar).
 15. Jiayi Fang, Yang Wang, Michel Attoui, Tandeep S. Chadha, **Jessica R. Ray**, Wei-Ning Wang, Young-Shin Jun, and Pratim Biswas, “Measurement of sub-2 nm clusters of pristine and composite metal oxides during nanomaterial synthesis in flame aerosol reactors” *Analytical Chemistry* (IF: 8.008), **2014**, 86 (15), 7523-7529, DOI: <https://doi.org/10.1021/ac5012816>; number of citations: 29 (Google Scholar).

16. **Jessica R. Ray**, Wei Wan, Benjamin Gilbert, and Young-Shin Jun, “Effects of formation conditions on the physicochemical properties, aggregation, and phase transformation of iron oxide nanoparticles” *Langmuir* (IF: 4.331), **2013**, 29 (4), 1069-1076, DOI: <https://doi.org/10.1021/la3034319>; number of citations: 17 (Google Scholar).
17. Yandi Hu, **Jessica R. Ray**, and Young-Shin Jun, “Na⁺, Ca²⁺, and Mg²⁺ in brines affect supercritical CO₂-brine-biotite interactions: Ion exchange, biotite dissolution, and illite precipitation” *Environmental Science & Technology* (11.357), **2013**, 47 (1), 191-197, DOI: <https://doi.org/10.1021/es301273g>; number of citations: 38 (Google Scholar).
18. **Jessica R. Ray**, Byeongdu Lee, Jonas Baltrusaitis, and Young-Shin Jun, “Formation of iron(III) hydroxides on polyaspartate- and alginate-coated SiO₂: Effects of substrate hydrophilicity and functional groups at the surface” *Environmental Science & Technology* (IF: 11.357), **2012**, 46 (24), 13167-13175, DOI: <https://doi.org/10.1021/es302124g>; number of citations: 37 (Google Scholar).
19. Daniel Garcia, Hongbo Shao, Yandi Hu, **Jessica R. Ray**, and Young-Shin Jun, “Supercritical CO₂-brine-clay induced dissolution, swelling, and secondary mineral formation on phlogopite surfaces at 75-95 °C and 75 atm” *Energy & Environmental Science* (IF: 39.714), **2012**, 5 (2), 5758-5767, DOI: <https://doi.org/10.1039/C2EE02026B>; number of citations: 36 (Google Scholar).
20. Yandi Hu, **Jessica R. Ray**, and Young-Shin Jun, “Biotite–brine interactions under acidic hydrothermal conditions: fibrous illite, goethite, and kaolinite formation and biotite Surface Cracking” *Environmental Science & Technology* (IF: 11.357), **2011**, 45 (14), 6175– 6180, DOI: <https://doi.org/10.1021/es200489y>; number of citations: 55 (Google Scholar).
21. Hongbo Shao, **Jessica R. Ray**, and Young-Shin Jun, “Effects of salinity and the extent of water on supercritical CO₂-induced phlogopite dissolution and secondary mineral formation” *Environmental Science & Technology* (IF: 11.357), **2011**, 45 (4), 1737-1743, DOI: <https://doi.org/10.1021/es1034975>; number of citations: 104 (Google Scholar).
22. Hongbo Shao, **Jessica R. Ray**, and Young-Shin Jun, “Effects of organic ligands on supercritical CO₂-induced phlogopite dissolution and secondary mineral formation” *Chemical Geology* (IF: 4.685), **2011**, 290 (3-4), 121-132, DOI: <https://doi.org/10.1021/es1010169>; number of citations: 36 (Google Scholar).
23. Hongbo Shao, **Jessica R. Ray**, and Young-Shin Jun, “Dissolution and precipitation of clay minerals under geologic CO₂ sequestration conditions: CO₂-brine-phlogopite interactions” *Environmental Science & Technology* (IF: 11.357), **2010**, 44 (15) 5999-6005, DOI: <https://doi.org/10.1021/es1010169>; number of citations 132 (Google Scholar).

Patents

1. Jessica Steigerwald and **Jessica Ray** (2021). *Spent coffee ground biochar* (Patent PCT/US2021/056771; UW Reference No: 49039.02WO2)
2. Jessica Steigerwald and **Jessica Ray** (2023). *Immobilized polymer surface functionalization of activated carbon for selective adsorption of per- and polyfluoroalkyl substances* (UW Reference No: 49671.01US1)

OTHER SCHOLARLY ACTIVITY

Invited lectures and seminars

1. Department of Civil & Environmental Engineering, University of Michigan, *Novel, polymer-imprinted activated carbon media for selective adsorption of PFAS in water*, March 2023.
2. Department of Chemical and Biological Engineering, University of British Columbia, *Practical*

- solutions to incorporate EDI+I into the classroom, lab and the department, December 2022.*
3. Department of Chemical and Biological Engineering, University of British Columbia, *Vanadium carbide (V₂C) nanomaterials for rapid, reductive defluorination of perfluorooctanesulfonate (PFOS) catalyzed by hydrogen peroxide*, December 2022.
 4. Department of Civil & Environmental Engineering, University of California, Irvine, *Treatment of stormwater runoff using activated carbon derived from used coffee grounds*. May 2022
 5. Guest lecturer, ChemE 475 Stanford University, *Electrochemical approaches for degradation of toxic contaminants in water*. May 2022.
 6. Madison Park Academy College and Career Day, *The road to environmental engineering: My role in the water crisis*, March 2022.
 7. Water and Environment Student Talks (WESTalks) Seminar Series, University of British Columbia, *Cost-effective, engineered and sustainably-produced media for stormwater runoff treatment*, February 2022.
 8. Guest lecturer, GEOG 459A *Urban stormwater management and treatment*, December 2021.
 9. Department of Chemical Engineering, University of Washington, *Vanadium carbide (V₂C) nanomaterials for rapid defluorination of perfluorooctanesulfonate (PFOS) catalyzed by hydrogen peroxide*, November 2021.
 10. American Society of Civil Engineers, Environmental and Water Resources Institute, *Activated spent coffee ground biochar for enhanced urban stormwater contaminant removal*, November 2021.
 11. Guest lecturer, EN.570.304, The Johns Hopkins University, *Urban stormwater management and treatment*, November 2021.
 12. Department of Environmental Health and Engineering, The Johns Hopkins University, M. Gordon Wolman Seminar, *Hydrogen peroxide-catalyzed reductive defluorination of per- and polyfluoroalkyl substances (PFAS) by vanadium carbide nanosheets*, November 2021.
 13. Grit City Think and Drink, *Low-cost, engineered materials for enhanced contaminant removal in urban stormwater*, October 2021.
 14. Department of Civil and Environmental Engineering, University of Pittsburgh, *Vanadium carbide (V₂C) nanomaterials for rapid, defluorination of perfluorooctanesulfonate (PFOS) catalyzed by hydrogen peroxide*, October 2021.
 15. Department of Chemical Engineering, University of California, Santa Barbara, *Reductive defluorination of Perfluorooctanesulfonate (PFOS) by vanadium carbide (V₂C) nanosheets in the presence of hydrogen peroxide*, May 2021.
 16. Puyallup Digital Learning, *Environmental engineering & my role in the water crisis*, April 2021.
 17. Molecular Engineering & Sciences Seminar, University of Washington, *Vanadium carbide (V₂C) catalytic nanomaterials for rapid, reductive defluorination of perfluorooctanesulfonate (PFOS)*, April 2021.
 18. Department of Civil, Construction & Environmental Engineering, *Vanadium carbide (V₂C) nanomaterials as catalytic centers for reductive perfluorooctanesulfonate (PFOS) defluorination*, April 2021.
 19. Department of Chemistry & Biochemistry, Dwain L. Ford Guest Lecture Series, Andrews University, *Vanadium carbide (V₂C) nanomaterials for rapid defluorination of perfluorooctanesulfonic acid (PFOS)*, March 2021.

20. Amazon Salons College of Engineering presentations, Civil and Environmental Engineering representative, *Used coffee ground biochar for urban stormwater treatment*, March 2021.
21. Guest lecturer, GEOG 459A *Low-cost media for urban stormwater treatment*, March 2021.
22. Guest lecturer, CEE 102, *Grand challenges in environmental engineering*, January 2021.
23. Department of Civil and Environmental Engineering, University of Wisconsin, Madison, *Novel, biomimetic V₂C nanomaterials for enhanced defluorination of perfluorooctane sulfonic acid (PFOS)*, November 2020.
24. American Chemical Society Cal and Washington Chapter Seminar, *Improving stormwater and wastewater removal of contaminants using low-cost composites*, November 2020.
25. Department of Civil and Environmental Engineering, University of Massachusetts Amherst, *Novel, biomimetic V₂C nanomaterials for enhanced defluorination of perfluorooctane sulfonic acid*, November 2020.
26. Reinventing the Nation's Urban Water Infrastructure (ReNUWI) Seminar, *Low-cost composite geomedia for urban stormwater treatment*, November 2020.
27. Guest lecturer, LA 424, *Low-cost media for urban stormwater treatment*, November 2020.
28. Department of Materials Science and Engineering, North Carolina State University, *Enhanced defluorination of perfluorooctane sulfonic acid (PFOS) using novel, catalytic V₂C nanozymes*, October 2020.
29. Department of Chemical, Biochemical and Environmental Engineering, University of Maryland, *Enhanced defluorination of perfluorooctanesulfonic acid (PFOS) using novel, catalytic V₂C nanozymes*, Baltimore County, October 2020.
30. Department of Civil and Environmental Engineering, University of Washington, *Low-cost material development for contaminant removal in the urban water sector*, October 2020.
31. Guest lecturer, LA 563 and 423, *Low-cost media for urban stormwater treatment*, May 2020.
32. Guest lecturer, CEE 350, *Dissolved Oxygen, Biochemical Oxygen Demand and the Streeter-Phelps Model*, November 2019.
33. Department of Civil and Environmental Engineering, Northwestern University, *Low-cost polymer-clay composites for urban stormwater treatment*, October 2019.
34. Mary Gates Undergraduate Research Symposium, *Low-cost media for urban stormwater treatment*, July 2019.

Presentations given at conferences (*speaker)

1. **Jessica Ray**, "Oxidized vanadium carbide nanosheets for catalytic defluorination of PFAS in water." *American Chemical Society National Meeting & Exposition*, San Francisco, CA, August 2023. (**Invited Speaker**)
2. **Jessica Ray**, "Treatment of stormwater runoff organics using cost-effective, biochar adsorbent infiltration media." *American Chemical Society National Meeting & Exposition*, San Francisco, CA, August 2023. (**Invited Speaker**)
3. Alanna Hildebrandt* and **Jessica Ray**, "Evaluation of 6PPD-quinone removal from stormwater from stormwater runoff using soils and sorption media." *American Chemical Society National Meeting & Exposition*, San Francisco, CA, August 2023.

4. Fanny Okaikue-Woodi* and **Jessica Ray**, "Synthesis of Fe(VI)-coated sand composite media and application for enhanced removal of phenol." *American Chemical Society National Meeting & Exposition*, San Francisco, CA, August 2023.
5. Jessica Steigerwald* and **Jessica Ray**, "Immobilization of a multi-template imprinted polymer on spent coffee grounds activated carbon." *American Chemical Society National Meeting & Exposition*, San Francisco, CA, August 2023.
6. **Jessica Ray**, "The promises and problems of stormwater runoff." *Gordon Research Conference: Urbanization, Water and Food Security*, Tuscany, Italy, July 2023. (**Invited Speaker**)
7. Fanny Okaikue-Woodi and **Jessica Ray**, "Synthesis of Fe(VI)-coated sand composite for enhanced removal of phenol." *Gordon Research Conference: Urbanization, Water and Food Security*, Tuscany, Italy, July 2023. (poster)
8. Jessica Steigerwald and **Jessica Ray**, "Comparison of novel single- and multi-templated molecularly imprinted polymer coatings on spent coffee grounds biochar for selective adsorption of perfluoroalkyl substances in water." *Gordon Research Conference: Urbanization, Water and Food Security*, Tuscany, Italy, July 2023. (poster)
9. **Jessica Ray**, "Design, characterization and application of novel materials for contaminant removal and degradation in the urban water sector." *American Chemical Society National Meeting & Exposition*, Chicago, IL, August 2022.
10. Yuemei Ye, Jessica Steigerwald, Hojeong Bang, Kaylie Dennehy and **Jessica Ray**, "Vanadium carbide (V_2C) MXene nanosheets for catalytic defluorination of perfluorooctanesulfonate (PFOS) in the presence of hydrogen peroxide." *Environmental Sciences: Water Gordon Research Conference*, Holderness, NH, July 2022.
11. Yuemei and **Jessica Ray**, "Rapid, reductive defluorination of per- and polyfluoroalkyl substances (PFAS) by MXene nanomaterials catalyzed by hydrogen peroxide." *American Chemical Society National Meeting & Exposition*, San Diego, CA, March 2022.
12. Jessica Steigerwald and **Jessica Ray**, "Targeted adsorption of perfluorooctanesulfonate (PFOS) using molecularly imprinted polymer-modified biochar." *American Chemical Society National Meeting & Exposition*, San Diego, CA, March 2022. (**Invited Speaker**)
13. **Jessica Steigerwald** and Jessica Ray, "Immobilization of a perfluorooctanesulfonate (PFOS) molecularly imprinted polymer adsorbent on spent coffee ground biochar for targeted PFOS removal." *EMCON: International Conference on Emerging Contaminants*, virtual, September 2021.
14. Fanny Okaikue-Woodi and **Jessica Ray**, "Synthesis of ferrate, Fe(VI)-coated sand for oxidation and complexation of organic and inorganic contaminants in urban stormwater" *American Chemical Society National Meeting & Exposition*, Atlanta, GA, August 2021.
15. **Jessica Steigerwald** and **Jessica Ray**, "Immobilization of a perfluorooctanesulfonate (PFOS) molecularly imprinted polymer adsorbent on spent coffee ground biochar for targeted PFOS removal." *American Chemical Society National Meeting & Exposition*, Atlanta, GA, August 2021.
16. Yuemei Ye and **Jessica Ray**, "Vanadium carbide (V_2C) nanocatalysts for reductive defluorination of perfluorooctanesulfonate (PFOS) in the presence of hydrogen peroxide." *American Chemical Society National Meeting & Exposition*, Atlanta, GA, August 2021.
17. Maureen Kinyua, William Tarpeh, Jacelyn Rice-Bouyaue and **Jessica Ray**, "Beyond recruitment: Development of a guidance framework to foster Black junior environmental engineering faculty Success." *Association of Environmental Engineering and Science Professors Appetizer Event*, July 2021.

18. **Jessica Ray**, “Spent coffee grounds biochar for effective, sustainable and cost-effective removal of trace organic urban stormwater contaminants.” *American Chemical Society Northwest Regional Meeting Women Chemists Committee Pacific Northwest Rising Stars Symposium*, May 2021 (**Invited Speaker**).
19. **Yuemei Ye** and Jessica R. Ray, “Enhanced oxidation and defluorination of perfluorooctane sulfonic acid via Haloperoxidase-like V₂C Nanozyme Catalytic Activity” *American Chemical Society National Meeting & Exposition Virtual Postdoc Symposium*, online, November 2020.
20. **Yuemei Ye** and Jessica R. Ray, “Simple and efficient defluorination of PFASs in wastewater by V₂C nanosheets and H₂O₂” *American Chemical Society National Meeting & Exposition*, online, August 2020.
21. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixido Planes, Yael G. Mishael and David L. Sedlak, “Improving stormwater and wastewater removal of contaminants Using low-cost Composites”, *American Chemical Society National Meeting & Exposition*, San Diego, CA, August 2019 (**Invited Graduate Student Symposium Planning Committee Speaker**).
22. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixido Planes Yael G. Mishael, and David L. Sedlak, “Polymer-clay composites for passive removal of trace organic compounds and metals during urban stormwater treatment.” *Association of Environmental Engineering and Science Professors Research and Education Conference*, Tempe, AZ, May 2019.
23. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixido Planes Yael G. Mishael, and David L. Sedlak, “Polymer-clay composites for sorptive removal of trace organic compounds and metals during urban stormwater treatment.” *American Chemical Society National Meeting & Exposition*, Orlando, FL, March 2019.
24. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixido Planes Yael G. Mishael, and David L. Sedlak, “Polymer-clay Composite Geomedia for Adsorption of Trace Contaminants during Urban Stormwater Treatment.” *Gordon Research Conference on Environmental Science: Water*, Holderness, NH, June 24 – June 29, **2018**. *Poster Presentation*
25. **Jessica R. Ray**, Itamar A. Shabtai, Marc Teixido Planes Yael G. Mishael, and David L. Sedlak, “Polymeric Functionalized Clay Composites for Adsorption of Trace Contaminants in Urban Stormwater.” *American Chemical Society National Meeting & Exposition*, New Orleans, LA, March 18-22, **2018**. *Oral Presentation*
26. **Jessica R. Ray**, Sirimuvva Tadepalli, Saide Z. Nergiz, Keng-Ku Liu, Le You, Yinjie, Srikanth Singamaneni, and Young-Shin Jun, “Photothermal and Hydrophilic Functionalization of Reverse Osmosis Membranes for Enhanced Resistance of Mineral Scaling, Organic, and Bio- Fouling.” *American Chemical Society National Meeting & Exposition*, San Francisco, CA, April 2-6, **2017**. *Oral Presentation*
27. **Jessica R. Ray**, Sirimuvva Tadepalli, Saide Z. Nergiz, Keng-Ku Liu, Le You, Yinjie, Srikanth Singamaneni, and Young-Shin Jun, “Nanostructure-enabled Membranes for Better Reverse Osmosis Processes.” *American Chemical Society National Meeting & Exposition*, San Diego, CA, March 13-17, **2016**. *Oral Presentation*
28. **Jessica R. Ray**, Chelsea W. Neil, Haesung Jun, Zhichao Liu, and Young-Shin Jun, “Effect of Fe²⁺ and Cr(VI) on Redox-Active CeO₂ Nanoparticle Surface Properties and Transformation in Aqueous Systems.” *American Chemical Society National Meeting & Exposition*, San Diego, CA, March 13-17, **2016**. *Oral Presentation*
29. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Efficacy of CaCO₃ and CaSO₄ Scaling Resistance of Polyethylene Glycol Hydrophilically-Modified Reverse Osmosis Membranes in the

- Presence of Humic Acid.” *American Chemical Society National Meeting & Exposition*, Denver, CO, March 22-26, **2015**. *Oral Presentation*
30. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Photothermally Active Reverse Osmosis Membranes for Improved Resistance against Mineral Scaling and Organic Bio- Fouling.” 249th *American Chemical Society National Meeting & Exposition*, Denver, CO, March 22-26, **2015**. *Poster Presentation*
 31. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “In Situ Investigation of Nucleation Mechanisms Governing Iron(III) (Hydr)oxide Formation on Environmentally Abundant Polymeric Organic-Coated Substrates.” *Argonne National Laboratory Meeting SES-VI*, Argonne IL, September 11-12, **2014**. *Poster Presentation*
 32. **Jessica R. Ray**, Sirimuvva Tadepalli, Saide Z. Nergiz, Keng-Ku Liu, Le You, Yinjie Tang, Srikanth Singamaneni, and Young-Shin Jun, “Photothermally Active Reverse Osmosis Membranes for Improved Resistance against Mineral Scaling and Organic Bio-Fouling.” *Gordon Research Conference on Environmental Science: Water*, Holderness, NH, July 27 – August 1, **2014**. *Poster Presentation*
 33. **Jessica R. Ray**, Benjamin Gilbert, and Young-Shin Jun, “Drying-Induced Aggregation and Phase Transformation of Iron Oxide Nanoparticles: *In Situ* and *Ex Situ* Properties Governed by Formation Conditions.” *50th Anniversary Annual Meeting of the Clay Minerals Society*, Urbana, IL, October 6-10, **2013**. *Oral Presentation*
 34. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Hydrophilicity and Surface Functional Group-Controlled Iron(III) Hydroxide Formation on Polymer-Coated Substrates.” *18th Annual Mid-American Environmental Engineering Conference*, St. Louis, MO, September 20-21, **2013**. *Oral Presentation*
 35. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Reverse Osmosis Membrane Modification for Calcium Carbonate Fouling Inhibition.” *18th Annual Mid-American Environmental Engineering Conference*, St. Louis, MO, September 20-21, **2013**. *Poster Presentation*
 36. **Jessica R. Ray**, Byeongdu Lee, and Young-Shin Jun, “Effects of Surface Hydrophilicity and Functional Group of Organic Coated Substrates on Iron(III) (Hydr)oxide Nucleation.” 245th *American Chemical Society National Meeting & Exposition*, New Orleans, LA, April 7-11, **2013**. *Oral Presentation*
 37. **Jessica R. Ray**, Byeongdu Lee, Jonas Baltrusaitis, and Young-Shin Jun, “Surface Hydrophilicity and Functional Group-Driven Iron(III) Hydroxide Nucleation on Organic- Coated Substrates in Aqueous Environments.” *2012 American Geochemical Union Meeting*, San Francisco, CA, December 3-7, **2012**. *Poster Presentation*
 38. **Jessica R. Ray**, Wei Wan, and Young-Shin Jun, “Effects of Synthesis Conditions on Simultaneous Hematite and Maghemite Nanoparticle Formation, their Physico-chemical Properties, and Arsenate Adsorption.” *Gordon Research Conference on Environmental Nanotechnology*, Manchester, NH, May 29 – June 3, **2011**. *Poster Presentation*
 39. **Jessica R. Ray**, Barry Williams, Hiro Mukai, “A Lesson in Water Chemistry: Encouraging Middle School Students to Pursue a Future in Engineering.” *NSF GK-12 Annual Meeting*, Washington, D.C., March 26-28, **2010**. *Poster Presentation*
 40. **Jessica R. Ray**, Wei Wan, and Young-Shin Jun, “Effects of Fe³⁺ Injection Rate, Cooling and Drying Method on Particle Size, Morphology and Mineral Phase of Iron Oxide Nanoparticles.” *American Chemical Society National Meeting & Exposition*, San Francisco, CA, March 21-25, **2010**. *Poster Presentation*

Podcasts and Other Media

1. C&EN Water Magazine, “Urban stormwater presents pollution challenge: Chemists look to adapt green infrastructure to manage emerging contaminants” by Alla Katsnelson, Volume 100, Issue 6, February 2022. <https://cen.acs.org/environment/water/Urban-stormwater-presents-pollution-challenge/100/i6>
2. C&EN Stereo Chemistry podcast, *Jessica Ray and William Tarpeh on clean water, turning trash into treasure, and life as assistant professors*, December 2021. <https://cen.acs.org/environment/water/Podcast-Jessica-Ray-William-Tarpeh/99/web/2021/12>
3. Grit City Think and Drink, *Low-cost, engineered materials for enhanced contaminant removal in urban stormwater*, October 2021. <https://www.youtube.com/watch?v=qwikEz7YbIA>
4. Thermo Fisher Scientific Season 2: Bringing Chemistry to Life (episode 7), *Fresh urban water*, May 2021. <https://www.alfa.com/en/chemistry-podcasts/>
5. University of Washington College of Engineering Outreach Black History Month Instagram post, March 2021. https://www.instagram.com/p/CLfMpELADIE/?utm_source=ig_web_copy_link
6. University of Washington *The Daily Newspaper* Interview, March 2021. https://www.dailyuw.com/news/article_a56c67d2-8226-11eb-b16c-b7dd658457ed.htm
7. Harvard University podcast, “Pint-Sized Science: Keeping It Clean: Engineering New Ways To Remove Toxic Contaminants From Storm Water”, October 2020. <https://sitn.hms.harvard.edu/podcast/pint-sized-science/2020/pint-sized-science-keeping-it-clean-engineering-new-ways-to-remove-toxic-contaminants-from-storm-water/>

Professional society memberships

American Chemical Society, 2009 – Present

Association of Environmental Engineering and Science Professors, 2014 – Present
American Geophysical Union, 2020 – Present

Professional development

1. SpeakOut Institute, “Creating a Resiliency Toolkit for Women of Color with Ericka Huggins” participant, virtual, March 2022.
2. UW ADVANCE Pre-Tenure Workshop participant, virtual, May 2021.
3. National Science Foundation Engineering CAREER Workshop participant, virtual, April 21 – 23, 2021
4. SpeakOut Institute, “Asian Americans: Facing Hate, Fighting for Justice, and Shaping America” participant, virtual, April 2021.
5. SpeakOut Institute, “Virtual Book Launch: *Dispatches from the Race War* with Tim Wise”, participant, virtual, January 2021.
6. SpeakOut Institute Summer Institute participant, virtual, July 13 – 16, 2020.
7. National Center for Faculty Development & Diversity Faculty Success Program participant, virtual, Summer 2020.
8. Early Career Women Faculty of Color mentoring group, participant. October 2019 – Present.
9. University of Washington Faculty Fellows Program participant, September 2019.
10. UW ADVANCE Launching Academics on the Tenure-Track: An Intentional Community in Engineering (LATTICE) participant, March 2019.

11. Association of Environmental Engineering and Science Professors Global Mentorship Initiative participant, January 2019 – Present.

Peer Reviewing Journals

Environmental Science and Technology Engineering

Environmental Science and Technology

Environmental Science: Nano

Environmental Science & Technology Letters

Water Research

Langmuir

Journal of Hazardous Materials

Journal of Hazardous Materials Letters

GRADUATE STUDENTS

Postdoctoral Scholars

- Yuemei Ye, Ph.D., April 2019 – May 2021
- Katya Cherukumilli, Ph.D., January 2019 – March 2020

Chaired Doctoral Degrees

- Brian Roman, Committee Member, Civil & Environmental Engineering, 1st year, 2023
- Seokhwan Chung, Graduate Student Representative, Materials Science & Engineering, graduated Spring 2022
- Lorenzo Guio, Graduate Student Representative, Materials Science & Engineering, 4th year, passed general exam June 2020

Current Doctoral Students

- Reagan Beers, Chair, first year
- Alanna Hildebrandt, Chair, first year
- Jennifer Hooper, Co-Chair with Prof. Michael Dodd, second year, passed qualifying exam
- Jessica Steigerwald, Chair, passed qualifying exam, 3rd year
- Fanny Okaikue-Woodi, Chair, passed general exam, 3rd year

Chaired Masters Degrees

- Ivette Andrea Pinochet Troncoso, Co-chair with Prof. Gregory Korshin, Spring 2023.
- Aminda Cheney-Irgen, Co-chair with Prof. Gregory Korshin, Thesis: “Mass balance of arsenic in microelectrolysis treatment of arsenic-containing landfill gas condensate and initial study of formation of volatile arsenic species”, Spring 2022.
- Nicole Redden, Chair with Prof. Edward Kolodziej, Thesis: “Viability of spent coffee ground biochar as a filtration media to remove organic contaminants from urban stormwater in the Pacific Northwest”, Spring 2021.
- Gabriel Rifkin, Co-chair with Prof. Gregory Korshin, Thesis: “Arsenic in landfill gas condensates and gas treatment solids: A study of removal by alternative treatment approaches and mobilization”, Winter 2021, current employer: Environmental Resources Management engineer

Current Masters Students

- Amy Quintanilla, Chair, expected Winter 2024.

Current and Past Undergraduate Students

- Frances Yih, UW Chemical Engineering, Undergraduate research, AUT22 – present
- Shawnie Peng, UW Chemical Engineering, Undergraduate research, AUT21 – WIN23
- Joseph Severin, UW Chemical Engineering, Undergraduate research, AUT21 – SPR22
- Joshua Chong, UW Chemical Engineering, Undergraduate research, WIN21 – present
- Vivian Jones, UW Chemical Engineering, Honors research, ChemE Chair: Prof. Lilo Pozzo, SPR21 graduation.
- Hojeong Bang, UW Civil & Environmental Engineering B.S. ENVE, Undergraduate research, AUT19 – SPR20.
- Max Steiner, UW Chemical Engineering, Honors research, ChemE Chair: Prof. Lilo Pozzo, SUM19 – SUM20.
- Daaniya Iyaz, Undergraduate research, current Masters student in Environmental Health, SPR19 – WIN20.
- Kaylie Dennehy, volunteer research, current UW Civil & Environmental Engineering undergraduate, SPR19 – AUT19.

RESEARCH ACTIVITIES

Funded Research

Funding Agency	Title	Your role with other PI's and co-PI's	Total Amount, Your Amount	Dates (start - finish)
DOE	<i>Novel functionalization of conventional sorbents for enhanced selectivity and improved concentration of ultrashort- and short-chain PFAS</i>	Co-PI; PI: Lee Blaney, Wenqing Xu, Ke He	Total amount \$750K, my amount \$250K	5/24 – 1/27
NSF	<i>Ferrate (Fe(VI))-coated sand media for simultaneous oxidation of organic contaminants and adsorption of trace metals</i>	PI	Total amount \$250K	8/2023 – 5/2026
NSF	<i>Beyond recruitment: Development of a guidance framework to foster Black junior environmental engineering faculty success</i>	PI, Co-PIs: William Tarpeh, Jacelyn Rice-Boayue, Shakira Hobbs Consultant: Maureen Kinyua	Total amount \$80K, my amount \$20K	05/2022 – 04/2023

NSF	<i>CAREER: Targeted, catalytic reduction of persistent organohalogenes in water using a novel V₂C MXene-imprinted polymer composite</i>	PI	\$500K	05/2022 – 04/2027
UW CoMotion	<i>Coffee biochar</i>	PI	Total amount \$10K	05/2022 – 11/22
NSF, MEM-C	<i>Robust and regenerable molecularly imprinted polymer (MIP)/carbon nanotube (CNT) filters for selective removal of perfluoroalkyl acids (PFAAs)</i>	PI, co-PI: Lucas Meza, UW Mechanical Engineering	Total amount \$50K, my amount \$25K	10/2020 - 09/2022
UW CoMotion	<i>Spent coffee ground biochar filtration media</i>	PI	Total amount \$50K	01/2021 – 12/22
Washington Research Foundation	<i>Upcycled spent coffee grounds as biochar for enhanced urban stormwater contaminant removal</i>	PI	Total amount \$20K	10/2020 – 03/2021
Washington Research Foundation (gift), Royalty Research Fund	<i>Fe(VI)-coated sand for passive oxidation of toxic and persistent polychlorinated biphenyls in urban stormwater</i>	PI	Total amount \$40K	06/2019 – 05/2020
Campus Sustainability Fund	<i>BIOSWALE UW</i>	Co-PI, PI: Amy Kim Co-PI: Brook Sullivan	Total amount \$106K, my amount \$46K	11/2019 – 10/2020

Pending Proposals

Funding Agency	Title	Your role with other PI's and co-PI's	Total Amount, Your Amount, (Subcontracts if any, University Matching if any)	Dates (start - finish)
NSF	<i>Iron-amended biochar for enhanced oxidation of trace stormwater contaminants</i>	PI	Total amount \$330K, my amount \$165K	9/24 – 8/27
National Sciences and Engineering Research Council of Canada – Catalyst	<i>Development of iron-biochar amendments for oxidation of toxic contaminants in urban stormwater runoff</i>	Co-PI	Total amount \$25K, my amount \$10K	8/24 – 7/25

DOCUMENTATION OF TEACHING EFFECTIVENESS

Courses Taught & Student Evaluations

Course	Title	Quarter	Credit Hrs	Enrollment	Evaluations? Response	Item 1	Item 3	Item 4	Overall Adj. Median
CEWA 549	Physical-Chemical Treatment Processes	SPR22	3	10	Yes, 10/10	4.2	4.7	4.4	4.4
CEE 357	Environmental Engineering	WIN23	5	52	Yes, 21/52	3.5	4.3	3.9	3.8
CEE 498/CEWA 599	Stormwater Management & Treatment (Special Topics)	AUT22	3	15	Yes, 14/15	4.2	4.4	4.0	4.2
CEWA 549	Physical-Chemical Treatment Processes	SPR22	3	6	Yes, 4/6	4.5	4.6	4.6	4.5
CEE 357	Environmental Engineering	WIN22	5	66	Yes, 52/66	4.3	4.6	4.5	4.5
CEWA 549	Physical-Chemical Treatment Processes	SPR21	3	12	Yes, 10/12	3.9	4.7	4.7	4.4
CEE 357	Environmental Engineering	WTR21	5	71	Yes, 59/71	4.7	4.9	4.9	4.8
CEE 357	Environmental Engineering	SPR20	5	73	Yes, 59/73	4.2	4.7	4.7	4.6
CEWA 549	Advanced Topics in Environmental Engineering, Chemistry and Biology	WIN20	3	9	Yes, 9/9	3.6	4.2	4.2	3.9
CEE 357	Environmental Engineering	SPR19	5	72	Yes, 34/72	2.3	3.0	2.1	2.4

Peer Teaching Evaluations

Course	Quarter	Reviewer
CEWA 549	Spring 2023	Korshin
CEE 357	Winter 2022	Lundquist
CEE 357	Winter 2021	Brett
CEWA 549	Winter 2020	Korshin

Center for Engineering Teaching & Learning Mid-Quarter Teaching Evaluations

Course	Quarter	Reviewer
CEE 357	Winter 2022	Yasuhara
CEE 357	Winter 2021	Yasuhara
CEE 357	Spring 2020	Yasuhara

Independent Study

Course	Student Name	Research Description	Quarter	Credit Hours
CEE 499	Reyna Lumagui	Assisted with assessment of novel PFAS sorbent	Spring 2022	3
CEE 599	Cecilia Welch	Contacted WA state utilities and engineers to	Spring 2021	2
CEE 499	Shawna Myatt	Conducted case studies and experiments related to biochar environmental treatment	Winter 2020	3
CEE 599	Zheng Luo	New synthesis method for selective polymer-coated sand composite	Winter 2020	3

SERVICE

Departmental service

- Graduate Education Faculty Committee Fall 2021 – Present
 - Partnering with committee members and graduate student advisory board members to develop a Ph.D. student handbook
 - Working within subcommittee to develop rubric for admitting Masters and PhD students into CEE
- Justice, Equity, Diversity and Inclusion (JEDI) Faculty Committee January 2019 – 2021
 - Implemented structural, departmental initiatives to help faculty and staff increase inclusivity (e.g., including gender pronouns in email signatures and class syllabi)
 - Co-organized JEDI monthly book club meetings to discuss anti-racism, racism in academia and other important topics related to creating a more inclusive and equitable climate in the department
 - Worked with student committee members to create a student-peer mentoring program to facilitate mentoring of younger undergraduate students by upper-level undergraduate students
 - Coordinated with University of Washington College of Engineering staff to institute a formalized diversity, equity and inclusion training for the department faculty and staff which included submission of a UW Diversity Seed Grant proposal
- 2021 Faculty Search Committee Member Spring 2021
 - Served on a search committee for an open hire across disciplines in our department which included review of over 60 applications, phone interviews, design of evaluation rubrics and coordination of remote interviews (over 90 h)

4. Anti-racism Book Club Facilitator Summer 2020 – present
 - Initiated an anti-racism book club with my research group members and professional masters students for whom I am advising to grow and learn about systemic racism, anti-Black violence and police brutality, and environmental justice
5. Undergraduate Admissions Committee May 2020
 - Provided recommendations and reviewed applications for BSEnVE undergraduate admissions to CEE
6. Undergraduate Mentoring Session Panelist May 2020
 - Participated in 1-h environmental engineering mentoring session panel to help current BSEnVE juniors prepare for classes and graduation requirements for senior year
7. Invited Speaker Coordinator October 2019, November 2020
 - Organized Prof. Nancy Love 2019 Kappe Lecture talk and visit to our department
 - Assisted staff in coordination and arrangement of Dr. Khalid Kadir's 2020 Visiting Burges Professorship virtual visit and talk
8. Undergraduate Scholarship Review Committee June 2019
 - Reviewed applications for undergraduate College of Engineering awards for CEE students

College service

1. Department of CEE Chair Search Advisory Committee Member March 2022 – Sept. 2022
 - Met with departmental stakeholder groups (e.g., assistant professors, research area groups, student leaders) to receive input about concerns within the department. Held weekly meetings with committee members to develop rubrics and selection criteria, meet with candidates, and communicate with CEE faculty members.
2. MoLE Ph.D. Graduate School Interdisciplinary Committee Co-Chair Dec. 2020 – Present
 - Met with co-chair and fellow committee members to outline revised graduate student admission to the Molecular Engineering & Sciences Institute program (40 hours)
3. COFFEE – Celebration of First-Year Female Engruds & Excellence Mentor May 2021
 - Met with freshman, female engineering students after completing their first year in engineering to provide mentorship and support (1.5 hours)
4. College of Engineering Strategic Planning Focus Group Member May 2020
 - Participated in a focus group for assistant professors within the college to assist Dean Allbritton in developing a new strategic plan for the college

University service

N/A

Professional society and other service

1. *Environmental Science & Technology Engineering* Early Career Board member 2022 – 2023
2. *Journal of Hazardous Materials* Early Career Board member 2022 – 2023
3. American Chemical Society, Environmental Chemistry Symposium Chair 2022, 2023
4. Washington Research Foundation Postdoctoral Fellowship Committee July 2020 – present
 - Reviewed applications and interviewed candidates for acceptance to the Washington Research Foundation Postdoctoral Fellowship (50 hours/cohort)
5. *Journal of the American Chemical Society (JACS) Au* Board Member Fall 2021 – present

- Charged with increasing *JACS Au* visibility, helping the journal become more aware of emerging trends and areas of importance to young, emerging scientists (1-2 year term)
- 6. Association of Environmental Engineering & Science Professors Meeting Organizer, July 2021
 - Lead a workshop required for all meeting attendees intended to promote success of Black junior Environmental Engineering faculty
- 7. Association of Environmental Engineering & Science Professors Strategic Planning Meeting participant February 2021
 - Discussed 2021 vision for the environmental engineering professional association (4 hours)
- 8. American Geophysical Union Session Chair December 2020
 - Presided over the “Harnessing Fundamental Geochemical Insights for Deployable Subsurface and Environmental Technologies” session during the virtual 2020 AGU meeting
- 9. American Chemical Society Environmental Division Session Chair August 2020
 - Presided over the “Reactive Materials & Processes for Sustainable, Resource-Efficient Water Treatment” session during the virtual 2020 Fall ACS meeting

Community service

1. Hip Hop is Green community outreach activity Summer 2022
 - Worked with black youth participants to conduct water filtration experiments, and led a lesson about environmental engineering and sustainable water treatment
2. Association of Environmental Engineering and Science Professors “Coffee Hour” meeting panelist January 2022
 - Discussed importance of internal and external mentoring for assistant professors
3. University of Washington *The Daily* Newspaper interview March 2021
 - Interviewed with a student report from *The Daily* about the Cell Mentor “1,000 Inspiring Black Scientists in America”
 - https://www.dailyuw.com/news/article_a56c67d2-8226-11eb-b16c-b7dd658457ed.html
4. Washington University in St. Louis Prospective Graduate Student panelist February 2021
 - Participated in a virtual panel for the Washington University in St. Louis Department of Energy, Environmental & Chemical Engineering alumni panel (30 min)
5. Guest presentation at Shorewood High School January 2020
 - Guest lectured for 1-h to high school students in Mrs. Gloria Horne’s Honors/AP Chemistry course about my career in engineering and my research interests
6. University of Washington College of Engineering Outreach highlight March 2021
 - Prepared responses for Instagram post highlighting Black engineering faculty at UW during Black History Month
 - https://www.instagram.com/p/CLfMpELADIE/?utm_source=ig_web_copy_link
7. Summer Early Enrichment in Engineering for Dean’s Scholars presenter September 2020
 - Gave a 2-h presentation to University of Washington freshman about my lab’s research interests and opportunities as an environmental engineer
8. Garfield High School Black Lives Matter Week interview February 2019
 - Recorded a 10-min video describing my experiences as a Black female professor and scientist to be shared with Adrian Dowst—a Chemistry teacher at Garfield High School (Seattle, WA)—to present to students during the Black Lives Matter Week

International, national or governmental service

- NSF Environmental Engineering 1440 Unsolicited Proposal panelist, March 2022
- NSF special workshop: “Participatory design meetings for smartphone survey app development”, May 2021
- NSF Environmental Engineering 1440 Unsolicited Proposal panelist, January 2021
- US-Israel Binational Agricultural Research and Development Fund reviewer, January 2021
- NSF Engineering Research to Advance Solutions for Environmental PFAS (ERASE-PFAS) panelist, June 2020
- Stanford University SLAC National Accelerator Laboratory user proposal reviews