LEANNE M. GILBERTSON

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EDUCATION

YALE UNIVERSITY, New Haven, CT — 2009 – 2014
Department of Chemical and Environmental Engineering
Doctor of Philosophy, May 2014
Master of Philosophy, May 2012
Master of Science, May 2012

HAMILTON COLLEGE, Clinton, NY — 2003 – 2007
Department of Chemistry
Bachelor of Arts, Magna Cum Laude, Chemistry & Education

PROFESSIONAL POSITIONS HELD

Assistant Professor, Civil and Environmental Engineering, University of Pittsburgh — 2015 – Present
Secondary Appointment, Chemical and Petroleum Engineering

Postdoctoral Associate, Chemical and Environmental Engineering, — 2014 – 2015
Center for Green Chemistry and Green Engineering, Yale University

High School Chemistry and AP Chemistry Teacher, St. James School, MD — 2009

Teaching Fellow, George Watson's College, Edinburgh Scotland — 2007 – 2008

PUBLICATIONS

Peer-Reviewed Publications
Google Scholar h-index = 19, citations = 728 (as of June 16, 2020)
Underline indicates advisee author | *Corresponding author | $^{\perp}$Shared first authorship

37. Stabryla, L. M.*; Clark, R. M.; **Gilbertson, L. M.*** "Instructional Design and Assessment of Design Thinking Course to Foster Creativity and Sustainable Engineering." *Under Review at Journal of Engineering Education*
36. Wang, Y.$^{\perp}$; Basdogan, Y.$^{\perp}$; Zhang, T.; Lankone, R.S.; Wallace, A. N.; Fairbrother, D. H.; Keith, J. A.; **Gilbertson, L.M.*** "Not all Oxygen is Equal: Identifying the Role of Different Oxygen Functional Groups in the Graphene-Mediated Glutathione Oxidation Reaction." *Under Review at ACS Applied Materials and Interfaces*
35. Albalghiti, E.; Stabryla, L. M.; **Gilbertson, L. M.**; Zimmerman, J. B.* "Towards resolution of antibacterial mechanisms in metal and metal oxide nanomaterials: a meta-analysis of the influence of study design on mechanistic conclusions." *Environmental Science: Nano*, *In Revision*
34. Aquino de Carvalho, N.; Wang, Y.; Morales-Soto, N.; Waldeck, D.; Bibby, K.; Doudrick, K; **Gilbertson, L. M.*** "Using Carbon-Doping to Identify Photocatalytic Properties of Graphitic Carbon Nitride that Govern Antibacterial Efficacy." *Environmental Science and Technology: Water, In Revision*

33. Sleight, T; Khanna, V; **Gilbertson, L. M.***; Ng, C*. "Network Analysis for Prioritizing Biodegradation Metabolites of Polycyclic Aromatic Hydrocarbons." *Environmental Science and Technology,* 2020, DOI: 10.1021/acs.est.0c02217
32. Hofmann, T.*; Lowry, G. V.*; Ghoshal, S; Tufenkji, N.; Brambilla, D.; Dutcher, J. R.; **Gilbertson, L. M**.; Giraldo, J. P.; Kinsella, J. M.; Landry, M. P.; Lovell, W.; Naccache, R.; Paret, M. L.; Pedersen, J. A.; Unrine, J. M.; White, J. C.; Wilkinson, K. J. "Technology readiness and overcoming barriers to sustainably implement nanotechnology-enabled plant agriculture." *Nature Food,* 2020, 1, 416-425.
31. **Gilbertson, L. M.***; Pourzahedi, L.; Laughton, S.; Gao, X; Zimmerman, J. B.; Theis, T. L.; Westerhoff, P.; Lowry, G. V. "Guiding the Design Space: Advancing Sustainable Crop Production Using Nanotechnology." *Nature Nanotechnology*, 2020, DOI: 10.1038/s41565-020-0706-5
30. Clark. R*.; Stabryla, L. M.; **Gilbertson, L. M.*** "Student Perspectives and Reflections on the Use of Design Thinking", *International Journal of Sustainability in Higher Education*, 2020, 21(3), 593-611.
29. Pandorf, M.; Pourzahedi, L.; **Gilbertson, L. M.**; Lowry, G. V.; Herckes, P.; Westerhoff, P.* "Graphite Nanoparticle Addition to Fertilizers Reduces Nitrate Leaching in Growth of Lettuce (*Lactuca sativa)*." *Environmental Science: Nano,* 2020, 7, 127–138.
28. Barrios, A. C.; Wang, Y.; **Gilbertson, L. M.**; Perreault, F.* "Structure-property-toxicity relationships of graphene oxide: role of surface chemistry on the mechanisms of interactions with bacteria." *Environmental Science and Technology,* 2019, 53(24), 14679-14687.
27. Wang, Y.; Aquino de Carvalho, N.; Tan, S.; **Gilbertson, L. M.*** "Leveraging Electrochemistry to Uncover the Role of Nitrogen in the Biological Reactivity of Nitrogen-Doped Graphene." *Environmental Science: Nano,* 2019, 6, 3525. *Cover Feature, Hot Article (selected as one of the top 10% of papers published)*
26. Johnston, K. A.; Stabryla, L. M.; **Gilbertson, L. M.**; Millstone, J. E.* "Connecting Concepts of Coinage Metal Stability Across Length Scales." *Environmental Science: Nano*, 2019, 6, 2674-2696 *Featured in the Themed Issue: Best Papers 2019*
25. Lowry, G. V.*; Avellan, A.; **Gilbertson, L. M.** "Opportunities and Challenges for Nanotechnology in the Agri-Tech Revolution." *Nature Nanotechnology*. 2019, 14, 517-522.
24. Lankone, R. S.; Challis, K.; Pourzahedi, L.; Durkin, D. P.; Bi, Y; Wang, Y; Garland, M; Brown, F; Hristovski, K; Tanguay, R.; Westerhoff, P.; Lowry, G.; **Gilbertson, L. M.**; Ranville, J. D.; Fairbrother, H.* "Copper release and transformation following natural weathering of nano-enabled pressure-treated lumber." *Science of the Total Environment*, 2019, 668, 234-244.
23. Wang, Y.; Tavakoli, S.; Vidic, R.; Khanna, V.; **Gilbertson, L. M.*** "Life Cycle Assessment of a Produced Water and Abandoned Mine Drainage Co-Treatment Process to Advance Water Quality Management in Pennsylvania" *Environmental Science and Technology,* 2018, 52(23), 13995-14005.
22. Smith, A. and **Gilbertson, L. M.*** "Rational Ligand Design to Improve Agrochemical Delivery Efficiency and Advance Agriculture Sustainability." *ACS Sustainable Chemistry and Engineering,* 2018, 6 (11), 13599-13610.
21. Stabryla, L.; Johnston, K.; Millstone, J. E.; **Gilbertson, L. M.*** "It's Not All About the Ion!: Support for Particle-Specific Contributions to AgNP Antimicrobial Activity." *Environmental Science: Nano*, 2018, 5, 2047-2068. *Cover Feature*
20. Pourzahedi, L.; Pandorf, M.; Ravikumar, D., Zimmerman, J. B.; Seager, T. P.; Theis, T. L.; Westerhoff, P.; **Gilbertson, L. M.***, Lowry, G. V. "Life cycle considerations of nano-enabled

agrochemicals: Are today's tools up to the task?" *Environmental Science: Nano*, 2018, 5, 1057-1069. *Cover Feature*

19. Falinski, M. M.; Plata, D. L.; Chopra, S. S.; Theis, T. L.; **Gilbertson, L. M.**; Zimmerman, J. B.* "Navigating nanomaterial space for performance, hazard, and cost: Approaching more responsible nanomaterial selection and design." *Nature Nanotechnology*, 2018, 13, 708-714.
18. Urso, J. H. and **Gilbertson, L. M.*** "Atom Conversion Efficiency: A New Sustainability Metric Applied to Nitrogen and Phosphorus Use in Agriculture." *ACS Sustainable Chemistry and Engineering.* 2018, 6(4), 4453-4463. *Cover Feature*
17. Johnston, K. A.; Stabryla, L. M.; Smith, A. M.; Gan, X. Y.; **Gilbertson, L. M.***; Millstone, J. E.* "Impacts of Broth Chemistry on Silver Ion Release, Surface Chemistry Composition, and Bacterial Cytotoxicity of Silver Nanoparticles" *Environmental Science: Nano*, 2018, 5, 304-312.
16. Yin, J.; Wang, Y.; **Gilbertson, L. M.*** "Opportunities to Advance Sustainable Design of Nano-Enabled Agriculture Identified Through a Literature Review." *Environmental Science: Nano*, 2017, 5, 11-26.
15. Lankone, R. S.; Challis, K.; Bi, Y.; Hanigan, D.; Reed, R. B.; Zaikova, T.; Hutchison, J. E.; Westerhoff, P.; Ranville, J.; Fairbrother, H.; **Gilbertson, L. M.*** "Methodology for Quantifying Engineered Nanomaterial Release from Diverse Matrices in Outdoor Weathering Conditions to Inform Life Cycle Assessment." *Environmental Science: Nano,* 2017, 4, 1784-1797. *Cover Feature*
14. Gallagher, M. J.; Allen, C; Buchman, J. T.; Qiu, T. A.; Clement, P. L.; Krause, M. O. P.; **Gilbertson, L. M.*** "Research highlights: Applications of life-cycle assessment as a tool for characterizing environmental impacts of engineered nanomaterials." *Environmental Science: Nano,* 2017, 4(2), 276-281.
13. Wang, Y.; **Gilbertson, L. M.*** "Informing Rational Design of Graphene Oxide through Surface Chemistry Manipulations: Properties Governing Electrochemical and Biological Activities." *Green Chemistry,* 2017, 19, 2826-2838. *Special Issue: 2017 Emerging Investigators*
12. **Gilbertson, L. M.*** and Ng, C. A.* "Evaluating the Use of Alternatives Assessment to Compare Nanomaterial and Bulk Chemical Alternatives to Brominated Flame Retardants." *ACS Sustainable Chemistry and Engineering*, 2016, 4(11), 6019-6030.
11. **Gilbertson, L. M.***; Albalghiti, E. M.; Fishman, Z.; Perreault, F.; Corredor, C.; Posner, J. D.; Elimelech, M.; Pfefferle, L. D.; Zimmerman, J. B. "Shape-Dependent Properties of Nano-Cupric Oxide: Surface Reactivity and Antimicrobial Activity." *Environmental Science and Technology,* 2016, 50(7), 3975-3984.
10. **Gilbertson, L. M.**; Melnikov, F.; Wehmas, L.; Anastas, P. T.; Tanguay R.; Zimmerman, J. B.* "Toward Safer Multi-Walled Carbon Nanotube Design: Establishing a Statistical Model that Relates Surface Charge and Embryonic Zebrafish Mortality." *Nanotoxicology,* 2016, 10(1), 10-19.
9. **Gilbertson, L. M.*;** Wender, B. A.; Zimmerman, J. B.; Eckelman, M. J. "Coordinating Modeling and Experimental Research of Engineered Nanomaterials to Improve Life Cycle Assessment Studies." *Invited Submission to Environmental Science: Nano,* 2015, 2, 669-682.
8. Hicks, A.[⊥,]*; **Gilbertson, L. M.**[⊥]; Jamila S. Yamani; Zimmerman, J. B.; Theis, T. "Life Cycle Payback Estimates of Nano-Silver Enabled Textiles Under Different Silver Loading, Release, and Laundering Scenarios Informed by Literature Review." *Environmental Science and Technology,* 2015, 49(13), 7529-7542.
7. Azoz, S.; **Gilbertson, L. M.** ; Hashmi, S. M.; Han, P.; Stervinsky, G. E.; Kanaan, S. A.; Zimmerman,

J. B.; Pfefferle, L. D.* "Enhanced Dispersion and Electronic Performance of Single-Walled Carbon Nanotube Thin Films without Surfactant: A Comprehensive Study of Various Treatment Processes." *Carbon,* 2015, 93, 1008-1020.

6. **Gilbertson, L. M.**; Zimmerman. J. B.; Plata, D. L.; Hutchison, J. E.*; Anastas, P. T.* "Designing Nanomaterials to Maximize Performance and Minimize Implications Guided by the Principles of Green Chemistry." *Chemical Society Review,* 2015, 44, 5758-5777. *Cover Feature*
5. Azoz, S.; Exarhos, A. L.; Marquez, A.; **Gilbertson, L. M.**; Nejati, S.; Cha, J. J.; Zimmerman, J. B.; Kikkawa, J. M.; Pfefferle, L. D.* "Highly Conductive Single-Walled Carbon Nanotube Thin Films Preparation by Direct Alignment on Substrates from Water Dispersions." *Langmuir,* 2015, 31(3), 1155-1163.
4. **Gilbertson, L. M.**; Busnaina, A. A.; Isaacs, J.; Zimmerman, J. B.; Eckelman, M. J.* "Life Cycle Impacts and Benefits of a Carbon Nanotube-Enabled Chemical Gas Sensor." *Environmental Science and Technology*, 2014, 48(19), 11360-11368.
3. **Gilbertson, L. M.**; Goodwin, D. G.; Taylor, A. D.; Pfefferle, L. D.; Zimmerman, J. B.* "Towards Tailored Functional Design of Multi-Walled Carbon Nanotubes (MWNTs): Electrochemical and Antimicrobial Activity Enhancement via Oxidation and Selective Reduction." *Environmental Science and Technology*, 2014, 48(10), 5938-5945.
2. **Pasquini, [Gilbertson] L. M.**; Sekol, R. C.; Taylor, A. D.; Pfefferle, L. D.; Zimmerman, J. B.* "Realizing Comparable Oxidative and Cytotoxic Potential of Single- and Multiwalled Carbon Nanotubes through Annealing." *Environmental Science and Technology*, 2013, 47(15), 8775-8783.
1. **Pasquini, [Gilbertson] L. M.**; Hashmi, S. M.; Sommer, T. J.; Elimelech, M.; Zimmerman, J. B.* "Impact of Surface Functionalization on Bacterial Cytotoxicity of Single-Walled Carbon Nanotubes." *Environmental Science and Technology*, 2012, 46(11), 6297-6305.

Non-Refereed Publications

Peer-reviewed Conference Proceedings

2. Clark, R.; Stabryla, L. M.; **Gilbertson, L. M.** "Use of Active Learning and the Design Thinking Process to Drive Creative Sustainable Design Solutions." 2018 ASEE Annual Conference and Exposition, Salt Lake City, UT. https://peer.asee.org/31186
1. Wang, Y.; Zimmerman, J. B.; **Gilbertson, L. M.** "Effect of Oxygen Functionalization on the Electrochemical and Antimicrobial Activity of Carbon Nanomaterials: Isolating the role of Surface Chemistry." 2016 Carbon Conference, Penn State University.

PRESENTATIONS

Invited Presentations

21. 15th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials, Keynote speaker, Montreal, Canada August 23-26, 2020 (invited)
20. Safe and Sustainable Smart Nanomaterials workshop jointly organized by the European Commission's Joint Research Centre (JRC) and the Directorate-General for Research and Innovation (RTD), Ispra, Varese (Italy) March 24-25, 2020 (invited)
19. National Academy of Sciences US-UK Science Forum on Sustainable Agriculture, Keynote speaker, Washington, DC March 5-6, 2020
18. Washington University in Saint Louis, Department of Energy, Chemical and Environmental Engineering, September 20, 2019.

17. American Chemical Society Fall 2019 Meeting, Invited Speaker in the session: Showcasing Emerging Investigators & Future Perspectives: A Symposium by the RSC Environmental Science Journals, San Diego, CA, August 25-29, 2019.
16. American Chemical Society Colloids and Surface Sciences Symposium, Keynote speaker in the session: Environmental Systems and Sustainability Session, Atlanta Georgia, June 16-19, 2019.
15. Environmental Nanotechnology Gordon Research Conference, Speaker in the Sustainable Nano: Green Design and Life Cycle Assessment Session, Newry, ME, June 2-7, 2019.
14. Tennessee Tech University, Department of Chemical Engineering, April 23, 2019.
13. American Chemical Society Spring 2019 Meeting, Invited Speaker for the Nanotechnology at the Water-Agriculture-Energy Nexus, Orlando, Fl, March 31-April 4, 2019.
12. Pittsburgh Water Collaboratory, Faculty Lunch Series, February 4, 2019.
11. Quantifying Exposure to Engineered Nanomaterials (QEEN) from Manufactured Products Workshop II, Speaker in the Exposure to Nanomaterials in Agroecosystems and Agriculture Production Session, U.S. Department of Labor, Washington DC, October 9-10, 2018.
10. Nanoscale Science and Engineering for Agriculture and Food Systems Gordon Research Conference, Speaker in the Emerging Investigator Session, South Hadley, MA, June 3-8, 2018.
9. University of Buffalo, Department of Civil and Environmental Engineering, December 8, 2017.
8. Northwestern University, Department of Civil and Environmental Engineering, October 27, 2017.
7. 3M, Science and Engineering Day, June 6, 2017.
6. Carnegie Mellon University, Department of Civil and Environmental Engineering, March 24, 2017.
5. Arizona State University, School of Sustainable Engineering and the Built Environment, February 21, 2016.
4. St. Francis University, Environmental Engineering Department, December 2, 2016.
3. Indiana University of Pennsylvania, Chemistry Department Seminar, October 31, 2016.
2. University of Pittsburgh Science 2016, Late-Breaking Technologies and Methods session, October 20, 2016.
1. Hamilton College, Chemistry Department Seminar, April 8, 2016.

Conference Presentations

46 since at University of Pittsburgh (34 student presentations, 3 received award recognition)

64. *Identifying the Role of Different Oxygen Functional Groups in the Graphene-Mediated Antioxidant Glutathione Oxidation Reaction*. 8th Sustainable Nanotechnology Organization Conference, San Diego, CA. November 7-9, 2019. (**Student Oral, Yan Wang**)
63. *Linking Electrochemical Properties and Biological Reactivities of N-Doped Graphene to Inform Rational Design*. 8th Sustainable Nanotechnology Organization Conference, San Diego, CA. November 7-9, 2019. (**Student Poster, Yan Wang**) ***First prize in student poster competition**
62. *Leveraging Electrochemistry to Uncover the Role of Nitrogen in the Biological Reactivity of Nitrogen-Doped Graphene*. SETAC North America 40th Annual Meeting, Toronto, Ontario, Canada. November 3-7, 2019. (**Student Oral, Yan Wang**)
61. *Combatting Antimicrobial Resistance through Rationally Designed Engineered Nanomaterials.* National Defense Science and Engineering Graduate Fellowship Conference, San Diego, CA, August 5-9, 2019 (**Student Poster, Lisa Stabryla**)

60. *Leveraging Electrochemistry to Uncover the Role of Nitrogen in the Biological Reactivity of Nitrogen-Doped Graphene*. Carbon 2019, Lexington, KY. July 14-19, 2019. (**Student Oral, Yan Wang**)
59. *Not all Oxygen is Equal: Identifying the Role of Different Oxygen Functional Groups in the Graphene-Mediated Glutathione Oxidation Reaction*. Carbon 2019, Lexington, KY. July 14-19, 2019. (**Oral, Gilbertson**)
58. *The Role of Nitrogen in the Rational Design of Carbon Nitride for Antibacterial Applications.* Environmental Nanotechnology Gordon Research Seminar and Conference, Newry, ME. June 2-7, 2019 (**Student Poster, Nathália Aquino de Carvalho**).
57. *Combatting Antimicrobial Resistance through Rationally Designed Engineered Nanomaterials.* Environmental Nanotechnology Gordon Research Seminar and Conference, Newry, ME, June 1-7, 2019 (**Student Poster, Lisa Stabryla**)
56. *Linking Electrochemical Properties and Biological Reactivities of N-Doped Graphene to Inform Rational Design*. Environmental Nanotechnology Gordon Research Seminar and Conference, Newry, ME. June 1-7, 2019. (**Student Poster, Yan Wang**)
55. *Leveraging Nanomaterial Design for Next Generation Antimicrobials.* Environmental Nanotechnology Gordon Research Seminar, Newry, ME, June 1-7, 2019 (**Student Oral, Lisa Stabryla**)
54. *Tuning Carbon Nanomaterial Interactions at the Bio-interface: From Mechanism to Sustainable Design.* AEESP Conference, Phoenix, AZ. May 14-16, 2019 (**Oral, Gilbertson**)
53. *Teaching Sustainable Engineering and Driving Creative Sustainable Solutions Using a Design Thinking Approach.* AEESP Conference, Phoenix, AZ. May 14-16, 2019 (**Student Oral, Lisa Stabryla**)
52. *Networks Analysis to Inform Predictions of Polycyclic Aromatic Hydrocarbon Degradation in the Environment.* AEESP Conference, Phoenix, AZ. May 14-16, 2019 (**Student Oral, Trevor Sleight**)
51. *Combatting Antimicrobial Resistance through Rationally Designed Engineered Nanomaterials.* AEESP Conference, Phoenix, AZ. May 14-16, 2019 (**Student Poster, Lisa Stabryla**)
50. *The Role of Nitrogen in the Rational Design of Carbon Nitride for Antibacterial Applications.* Engineering Sustainability Conference, Pittsburgh, PA. April 7-9, 2019. (**Student Poster, Nathalia Aquino de Carvalho**)
49. *Designing new antimicrobial agents.* Department of Defense (DoD) Science, Technology, and Innovation Exchange (STI^X), US Institute of Peace, Washington DC, December 10-11, 2018. (**Student Oral, Lisa Stabryla**)
48. *A Systems Approach to Design of Nano-Enabled Solutions to Improve Nutrient Use Efficiency.* Sustainable Nanotechnology Organization Conference, Washington, DC. November 8-10, 2018. (**Oral, Gilbertson**)
47. *Designing with the System in Mind: Life Cycle Assessment of Nano-Enabled Agrochemicals.* 2018 AIChE Annual Meeting, Pittsburgh, PA. Oct 28-Nov 2, 2018. (**Oral, Gilbertson**)
46. *Unraveling the role of nitrogen in the biological activity of nitrogen-doped graphene.* 2018 AIChE Annual Meeting, Pittsburgh, PA. Oct 28-Nov 2, 2018. (**Student Oral Presentation, Yan Wang**)

45. *Life cycle assessment of co-treatment process of produced water and abandoned mine drainage.* PA-AWWA SW Districts and Western Section WWOAP Joint Meeting, Pittsburgh, PA. Oct 19, 2018. (**Student Oral, Yan Wang**)
44. *Quantifying nanomaterial release of nanocomposites following natural weathering.* 2nd Quantifying Exposure to Engineered Nanomaterials from Manufactured Products Workshop, Washington, DC. October 9-10, 2018. (**Poster, Gilbertson**))
43. *Teaching sustainable engineering using a design thinking approach.* The Association for the Advancement of Sustainability in Higher Education (AASHE) Conference & Expo, Pittsburgh, PA, Oct 2-5, 2018. (**Joint Oral Presentation, Gilbertson and Lisa Stabryla**)
42. *Use of active learning and the design thinking process to drive creative sustainable design solutions and promote inclusive classroom environments*. The Association for the Advancement of Sustainability in Higher Education (AASHE) Conference & Expo, Pittsburgh, PA, Oct 2-5, 2018. (**Student Poster, Lisa Stabryla**)
41. *Revealing causative mechanisms of electrochemical and biological activities of graphene via heteroatom functionalization*. 256th ACS National Meeting, Boston, MA. Aug 19-23, 2018 (**Student Oral, Yan Wang**)
40. *Leveraging nanomaterial design for next generation antimicrobials*. Microbial Stress Response Gordon Research Seminar (GRS) and Conference (GRC), South Hadley, MA, July 14-20, 2018. (**Student Poster, Lisa Stabryla**)
39. *Atom Conversion Efficiency (ACE): Assessing Fertilizer Use Efficiency From Synthesis to Farm Gate*. 2018 Nanoscale Science and Engineering for Agriculture and Food Systems (GRS and GRC), South Hadley, MA, June 3−8, 2018 (**Student Poster, Josh Urso**)
38. *Leveraging nanomaterial design for next generation antimicrobials*. Graduate Student Research Day (GSRD), University of Pittsburgh, Pittsburgh, PA, April 6, 2018. (**Student Oral, Lisa Stabryla**)
37. *Use of Active Learning and the Design Thinking Process to Drive Creative Sustainable Design Solutions.* Assessment and Teaching Conference, Pittsburgh, PA, January 26, 2018. (**Student Poster, Lisa Stabryla**)
36. *Sustainable design of carbon nanomaterials: decoupling the role of material structure and surface chemistry on electrochemical and biological activities.* 9th Annual Sustainability Conference hosted by ASCE, Pittsburgh, PA. Nov 16, 2017. (**Student Poster, Yan Wang**) ***Third Prize Best Poster Award in Student Poster Competition**
35. *Informing rational design of graphene oxide through surface chemistry manipulations: properties governing electrochemical and biological activities* American Carbon Society Graphene Workshop, Cleveland, Ohio Nov 14−15, 2017. (**Student Oral, Yan Wang**).
34. *Sustainable design of carbon nanomaterials: decoupling the role of material structure and surface chemistry on electrochemical and biological activities* AIChE Annual Meeting, Minneapolis, MN Oct 29−Nov 2, 2017. (**Student Oral, Yan Wang**) ***Second Runner-up Prize of the Carbon Nanomaterials Graduate Student Award**
33. *Coupling Material and Biological Systems to Inform Design of Nano-enabled Antimicrobials*. 27th Annual Society of Environmental Journalists (SEJ) Conference, Pittsburgh, PA, Oct 4-8, 2017. (**Student Poster, Lisa Stabryla**)
32. *Design for Sustainable (nano)Materials.* AEESP Research and Education Conference, University of Michigan, June 20–22, 2017. (**Poster, Gilbertson**)

31. *Leveraging Nanomaterial Design for Next Generation Antimicrobials*. Environmental Nanotechnology Gordon Research Conference (GRC), Stowe, Vermont, June 18-23, 2017 (**Student Poster, Lisa Stabryla**).
30. *Leveraging Nanomaterial Design for Next Generation Antimicrobials*. 21st Annual ACS Green Chemistry & Engineering Conference, Reston, Virginia, June 13-15, 2017. (**Student Poster, Lisa Stabryla**)
29. *Leveraging Nanotechnology to Advance Agriculture Sustainability: Life Cycle Considerations and Recommendations.* Engineering Sustainability Conference, Pittsburgh, PA, April 10–11, 2017. (**Oral, Gilbertson**)
28. *Sustainable Design of Carbon Nanomaterials: Decoupling the Role of Material Structure and Surface Chemistry on Electrochemical and Biological Activities.* Engineering Sustainability Conference, Pittsburgh, PA, April 10–11, 2017. (**Student Poster, Yan Wang**)
27. *Systems-Level Evaluation of Nano-Enabled Applications for Agriculture and Food Systems: Opportunities to Inform Sustainable Design.* Engineering Sustainability Conference, Pittsburgh, PA, April 10-11, 2017. (**Student Poster, Joy Yin**)
26. *Coupling Material and Biological Systems to Inform Design of Nano-enabled Antimicrobials.* Engineering Sustainability Conference, Pittsburgh, PA, April 10-11, 2017. (**Student Poster, Lisa Stabryla**)
25. *Informing Rational Design of Graphene Oxide through Surface Chemistry Manipulations: Properties Governing Electrochemical and Biological Activities.* Graduate Student Research Day, Department of Civil and Environmental Engineering, University of Pittsburgh, April 7th, 2017. (**Student Oral, Yan Wang**)
24. *Can We Engineer a Solution to the Antimicrobial Resistance Challenge Using Silver Nanoparticles?* Graduate Student Research Day, Department of Civil and Environmental Engineering, University of Pittsburgh, Pittsburgh, PA, April 7, 2017. (**Student Oral, Lisa Stabryla**)
23. *Toward Rational Design of Carbon Nanomaterials: Decoupling the Role of Material Structure and Surface Chemistry on Electrochemical and Antimicrobial Activity.* Carbon Conference, State College, PA, July 10–15, 2016. (**Student Poster, Yan Wang**)
22. *Effect of Oxygen Functionalization on the Electrochemical and Antimicrobial Activity of Carbon Nanomaterials: Isolating the role of Surface Chemistry*. Carbon Conference, Penn State University, July 10–15, 2016. (**Oral, Gilbertson**)
21. *Evaluating a Potential Win-Win for Water Quality Management in Pennsylvania.* Gordon Research Conference, Environmental Sciences: Water, Holderness, NH, June 26–July 1, 2016. (**Poster, Gilbertson**)
20. *Systems-Level Evaluation of Nano-Enabled Applications in the Agriculture Sector.* Green Chemistry and Engineering Conference, Portland, OR, June 14–16, 2016. (**Student Poster, Joy Yin**)
19. *Evaluating Trade-Offs to Maximize the Net Benefit of Emerging (nano)Technologies*. Green Chemistry and Engineering Conference, Portland, OR, June 14–16, 2016. (**Oral, Gilbertson**)
18. *Engineered Path Towards Innovative and Sustainable Nanotechnology Through the Lens of Manufacturing.* Sustainable Nanotechnology Organization Conference, Portland, OR, November 8–10, 2015. (**Oral, Gilbertson**)
17. *Sustainability by Design: Development of an Engineered Nanomaterials Selection Framework that Includes Property, Function and Hazard Criteria.* Gordon Research Conference in Environmental Nanotechnology, Mount Snow, West Dover, VT, June 21–26, 2015. (**Poster, Gilbertson**)

16. *Development of a Pre-Screening Tool to Quantify Impact and Benefit Tradeoffs of Emerging Technologies.* Association of Environmental Engineering and Science Professors (AEESP) Conference, Yale University, New Haven, CT, June 13–16, 2015. (**Oral, Gilbertson**)
15. *Towards the Development of a Model that Informs Safer Carbon Nanotube Design: Using Zebrafish Mortality to Evaluate Carbon Nanotube Ecotoxicity Potential.* Sustainable Nanotechnology Organization Conference, Boston, MA, November 2–4, 2014. (**Oral, Gilbertson**)
14. *Life Cycle Impacts and Benefits of a Carbon Nanotube-Enabled Chemical Gas Sensor.* Sustainable Nanotechnology Organization Conference, Boston, MA, November 2–4, 2014. (**Oral, Gilbertson**)
13. *Towards Tailored Functional Design of Multi-Walled Carbon Nanotubes (MWNTs): Electrochemical and Antimicrobial Activity Enhancement via Oxidation and Selective Reduction*. American Chemical Society 248th National Meeting, San Francisco, CA, August 10–14, 2014. (**Oral, Gilbertson**)
12. *Impact of Oxygen Functional Groups on Multi-Walled Carbon Nanotube (MWNT) Reactivity: Potential Environmental Implications*. Gordon Research Conference in Environmental Sciences: Water, Holderness, NH, June 22–27, 2014. (**Poster, Gilbertson**)
11. *Impact of Annealing Treatment on the Electrochemical Activity of Multi-Walled Carbon Nanotubes: Implications for Bacterial Cytotoxicity*. Gordon Research Conference in Environmental Nanotechnology, Stowe, VT, June 2–7, 2013. (**Poster, Pasquini [Gilbertson]**)
10. *Physicochemical Properties that Govern Multi-Walled Carbon Nanotube (MWNT) Bacterial Cytotoxicity*. Robert M. Langer Graduate Student Symposium, Yale University, December 7, 2012. (**Oral, Pasquini [Gilbertson]**)
8. *A New Perspective on Carbon Nanotube Bacterial Cytotoxicity: MWNTs Exhibit Equivalent Loss of Cell Viability as SWNTs*. Inaugural Sustainable Nanotechnology Organization Conference, Arlington, VA, November 4–6, 2012. (**Poster, Pasquini [Gilbertson]**)
9. *Towards Green Design of Single-Walled Carbon Nanotubes: Decreased Cytotoxicity via Addition of Surface Functional Groups*. Robert M. Langer Graduate Student Symposium, Yale University, December 9, 2011. (**Oral, Pasquini [Gilbertson]**)
7. *Towards Green Design of Single-Walled Carbon Nanotubes: Decreased Cytotoxicity via Addition of Surface Functional Groups*. Environmental Protection Agency STAR Graduate Fellowship Conference, Washington, DC, September 19–20, 2011. (**Poster, Pasquini [Gilbertson]**)
6. *Green Design of Single-Walled Carbon Nanotubes: Decreased Bacterial Cytotoxicity via Addition of Surface Functional Groups*. Gordon Research Conference in Environmental Nanotechnology, Waterville Valley, NH, May 29–June 3, 2011. (**Poster, Pasquini [Gilbertson]**)
5. *Green Design of Single-Walled Carbon Nanotubes: Decreased Bacterial Cytotoxicity via Addition of Surface Functional Groups*. American Chemical Society 15th Annual Green Chemistry and Engineering Conference, Washington, DC, June 21–23, 2011. (**Poster, Pasquini [Gilbertson]**)
4. *Green Design of Single-Walled Carbon Nanotubes: Decreased Bacterial Cytotoxicity via Addition of Surface Functional Groups*. Robert M. Langer Graduate Student Symposium, Yale University, December 10, 2010. (**Oral, Pasquini [Gilbertson]**)
3. *Safer Design of Single Walled Carbon Nanotubes (SWNTs): A Comparative Bacterial Cytotoxicity Study of Pristine and Functionalized SWNTs*. American Chemical Society 14th Annual Green Chemistry and Engineering Conference, Washington, DC, June 21–23, 2010. (**Poster, Pasquini [Gilbertson]**)

2. *Safer Design of Single Walled Carbon Nanotubes (SWNTs): A Comparative Bacterial Cytotoxicity Study of Pristine and Functionalized SWNTs*. 5th Annual Greener Nanoscience Conference, Portland, OR, June 16–18, 2010. (**Poster, Pasquini [Gilbertson]**)
1. *Surface Enhanced Raman Spectroscopy Applied to Inorganic Compounds*. American Chemical Society 233rd National Meeting, Chicago, March 25–29, 2007. (**Poster, Pasquini [Gilbertson]**)

CONTRIBUTIONS TO TEACHING

Courses Taught at the University of Pittsburgh 2015 – Present

The curriculum of each course listed below has been developed with a particular focus on integrating active learning components to enhance student engagement with the course content. Opportunities for students to develop their written and oral communications skills is also emphasized. In addition, CEE1618 integrates the Design Thinking process in an effort to enhance students' innovative and creative problem-solving mindset in tackling engineering challenges and takes advantage of the University MakerSpaces.

Course	*Level*	*Term Taught*
CEE2501: Environmental Engineering Chemistry	Graduate	Fall 2015-2019
CEE1618: Design for the Environment	Undergraduate	Fall 2016-Fall 2019
CEE1504: Chemistry for Environmental Engineers	Undergraduate	Summer 2018, Spring 2019 & 2020
Average *graduate* teaching effectiveness score		**4.52/5**
Average *undergraduate* teaching effectiveness score		**4.59/5**

Stanford d-School Teaching and Learning Studio July 2017

National Effective Teaching Institute (NETI-1B) May 2017

Guest Lecturer, University of Pittsburgh
Environmental Engineering Processes, CEE 1513, 1/14/16 (undergraduate, 55 students)
Sustainable Computing, ECE 2195, 1/25/16 (graduate, 15 students)

Teaching Fellow, School of Engineering and Applied Science, Yale University 2011, 2012
Green Engineering and Sustainable Design (mixed grad/undergrad, 30-40 students)
Instructors: Dr. Julie B. Zimmerman, Dr. Mathew J. Eckelman

Teaching Fellow, School of Forestry & Environmental Science, Yale University 2010
Greening Business Operations (graduate, 30 students)
Instructors: Dr. Thomas E. Graedel, Dr. Marian Chertow, Dr. Julie B. Zimmerman

High School Chemistry and AP Chemistry Teacher, Saint James School, MD 2009

Advancement Via Individual Determination (AVID) Mentor 2009
Humble Independent School District, Kingwood, TX

Teaching Fellow, George Watson's College, Edinburgh, Scotland 2007 – 2008

Chemistry Teaching Intern, summer program, Northfield Mount Hermon School 2006

GRADUATE STUDENTS

Ph.D. Students, Department of Civil and Environmental Engineering

Ms. Yan Wang (primary, sole advisor) Graduated April 25, 2020

Source of Support: NSF CBET grant, USGS 104B, PennDOT, ORAU Powe Jr. Faculty Award

Dissertation Title: *Toward Rational Design of Graphene Nanomaterials: Manipulating Chemical Composition to Identify Governing Properties for Electrochemical and Biological Activities*

Current Position: Postdoctoral Associate with Dr. Scown working on a collaborative project between UC Berkeley and Lawrence Berkeley National Lab

Ms. Nathália Aquino de Carvalho (primary, sole advisor) Anticipated graduation Fall 2020

Source of External Support: PPG Graduate Research Fellowship

Source of Internal Support: U. Pitt CRDF, Department TA

Status: Passed proposal defense (Nathália started her PhD working in the lab of Dr. Kyle Bibby and transitioned to my lab in the Fall 2017)

Ms. Lisa Stabryla (primary, sole advisor) Anticipated graduation Spring 2021

Source of Support: NDSEG Fellowship, Mindlin Foundation Education Award

Status: Passed proposal defense

Mr. Trevor Sleight (Co-advisor with Dr. Carla Ng) Anticipated graduation 2021

Source of Support: US Air Force

Status: Proposal defense planned June 2020

Mr. Jason Geiger (primary, sole advisor) Anticipated graduation 2023

Source of Support: NSF CBET grant

Applying to NSF GRFP and other National Fellowships Fall 2020

Status: Qualifying exam planned January 2021

Mr. Patrick Dunn (primary, sole advisor) Anticipated graduation 2023

Source of Support: U. Pitt Momentum Funds

Applying to NSF GRFP and other National Fellowships Fall 2020

Status: Qualifying exam planned January 2021

MS Students, Department of Civil and Environmental Engineering

Mr. Tianyu Zhang (primary, sole advisor) Graduated April 2019

Source of Support: U. Pitt CRDF

M.S. Thesis Title: *Methods Development for Isolation of Carbon Nanomaterial Degradation Products Under Simulated Conditions Relevant for their Proposed Use in Desalination Membranes.*

Mr. Joshua Urso, professional M.S. (primary, sole advisor) Graduated December 2018

Source of Support: 3M Non-Tenured faculty award

Jiaoyang Yin, professional M.S. (primary, sole advisor) Graduated Spring 2016
Source of Support: Self-funded, Department TA

Sishan Li, (primary, sole advisor), CEE 2996 *research for credit* Spring 2017

Zhenqi Zhang, (primary, sole advisor), CEE 2996 *research for credit* Spring 2017

OTHER ADVISEES

Postdoctoral Associates, Department of Civil and Environmental Engineering

Dr. Traci Clymer, PhD in Chemistry (co-advisor with Dr. Carla Ng) 2019 (8 months)
Source of Support: Departmental New Collaborative Initiatives Grant

Dr. Ashley Smith, PhD in Chemistry (primary, sole advisor) 2018 (7 months)
Source of Support: Faculty Start-Up
Current Position: Assistant Professor of Chemistry, St. Francis College

Dr. Leila Pourzahedi, PhD in Civil and Environmental Engineering 2018 – 2019
Served as co-advisor, Dr. Lowry at CMU served as primary advisor
Source of Support: LC Nano (via Dr. Lowry)
Current Position: Senior Environmental Specialist, Owens Corning

Undergraduate Students

Department of Civil and Environmental Engineering

Courtney Emerson (research for credit, advisor) Spring 2020
Project: Carbon sequestration using agriculture soils

Ananya Mukherjee (SSOE summer research fellow, advisor) Summer 2019
Project: Graphene-based biosensors
PhD student mentor: Yan Wang

Rachel Fay (MCSI summer research fellow, co-advisor with Dr. Carla Ng) Summer 2019
Project: Degradation of polyaromatic hydrocarbons

Nathanial Buettner (Mindlin Foundation Fellow, advisor) 2017 –2018
Project: Enhancing concrete performance using carbon nanomaterials
**NSF-GRFP recipient based on research conducted with me*

Rebecca Linick (research for credit, co-advisor with Dr. Carla Ng) Fall 2017 – Spring 2019
Project: Network analysis of polyaromatic hydrocarbon degradation pathways

Department of Chemical and Petroleum Engineering

Todd Ackerman (MCSI summer research fellow, co-advisor with Dr. Bedewy) Summer 2020
Project: Silk-based lithography: A sustainable alternative towards green

micro-/nano-manufacturing?

Caitlin Sexton (SSOE summer research fellow, advisor) Spring 2020 – Present
Project: Network analysis of polyaromatic hydrocarbon degradation pathways
PhD student mentor: Trevor Sleight

Alexis Yates (ChemE REU program, co-advisor with Dr. Carla Ng) Summer 2018
Project: Network analysis of polyaromatic hydrocarbon degradation pathways

Sean Vinik (ChemE REU program, advisor) Summer 2017
Project: Development of carriers for improved nutrient delivery to crops
M.S. student mentor: Joshua Urso

Jasmine Toney (MCSI summer research fellow, advisor) Summer 2016
Project: Bacteria interactions with N-doped carbon nanomaterials
PhD student mentor: Yan Wang

Department of Mechanical Engineering and Materials Science

Bridget Moyer (senior research project, advisor) Fall 2019
Project: Multi-cycle stability of graphitic carbon nitride for *E. coli* disinfection
PhD student mentor: Nathália Aquino de Carvalho

Cole Daurizio (MCSI summer research fellow, advisor) Summer 2017
Project: Bacteria growth response to silver nanoparticle exposure
PhD student mentor: Lisa Stabryla

Hannah Laskey (senior research project, advisor) Spring 2016
Project: Bacteria growth response to silver nanoparticle exposure
PhD student mentor: Lisa Stabryla

High School Students

Rachel Bina, North Allegheny High School 2019 – Present
PhD student mentor: Lisa Stabryla

Liam Hainsworth, Pittsburgh Science and Technology Magnet School 2017 – 2018
PhD student mentor: Yan Wang

HONORS AND AWARDS

National Academy of Engineering Frontiers of Engineering Fellow, *Nominated*	2020
Mara H. Wasburn Early Engineering Educator Grant, Women in Engineering Division of ASEE	2019
Gordon and Betty Foundation, Moore Inventor Fellow Top 10 Finalist	2017
Ralph E. Powe Junior Faculty Enhancement Award	2017
3M Non-Tenured Faculty Award	2017
Excellence in Review Award, Environmental Science & Technology	2016

Top 10 Reviewer Award, Environmental Science: Nano	2016
Yale-Jefferson Public Service Award, Yale University	2014
Harding Bliss Prize for Excellence in Engineering and Applied Science, Yale University	2014
National Science Foundation (NSF) Graduate Research Fellow	2012 – 2014
U.S. Environmental Protection Agency (EPA) STAR Fellow	2010 – 2012
Graduate School Community Service Award Finalist, Yale University	2011
ACS Green Chemistry Institute Ciba Travel Award	2010
National Science Foundation Scholar Conference Travel Award	2010
Emerson Electric Company Fellowship, Yale University	2009 – 2011
George Watson's College Teaching Fellowship, Hamilton College	2007
Undergraduate Student Award, NY Section of the Society for Applied Spectroscopy	2007
Levitt Scholar, Hamilton College	2007
Phi Beta Kappa, Hamilton College	2007
Dean's List Honors, Hamilton College	2003 – 2007

PROFESSIONAL SERVICE ACTIVITIES

Internal

Member of the CEE Graduate Committee, Univ. Pittsburgh 2017 – Present

Faculty Advisor, Society of Women Engineers, Univ. Pittsburgh 2018 – Present

Faculty Advisor, The Aquaponics Project, Univ. Pittsburgh 2017 – Present

Member of the CEE Faculty Search Committee, Univ. Pittsburgh 2018 – 2019

Member of the CEE Faculty Search Committee, Univ. Pittsburgh 2017 – 2018

Department Website Committee Lead, Univ. Pittsburgh 2016 – 2019

Department Graduate Seminar Organizer 2017 – 2018

Annual Women in STEM Conference, Univ. Pittsburgh 2017, 2020

Co-organizer, *Perfecting Your Pitch: Effective Scientific Communication from the Classroom to the Boardroom (2020)*

Panelist, *Work-Life Balance Panel Discussion (2017)*

Speaker**,** *Why You Should Consider Environmental Engineering (2017)*

Department point person for new ENG 2900 graduate fellowships workshop course Fall 2016

PhD Committee Member, University of Pittsburgh 2015 – Present
14 in the Department of Civil and Environmental Engineering
2 in the Department of Chemistry

MS Committee Member, University of Pittsburgh 2015 – Present
1 in the Department of Civil and Environmental Engineering

External

Journal Reviewer for Environmental Science and Technology, Environmental Science and Technology Letters, ACS Nano, Carbon, Nanoscale, Environmental Science: Nano, Journal of American Chemical Society, ACS Sustainable Chemistry and Engineering, ACS Applied Materials and Interfaces, ACS

Applied Bio Materials, Environmental Science: Water Research and Technology, Langmuir, Chemical Research in Toxicology, Environmental Pollution, Chemical Engineering Journal, Advances in Colloid and Interface Science, Construction and Building Materials, Environmental Research, Materials Chemistry and Physics, Water Research, Scientific Reports, Journal of Materials Chemistry B, NanoImpact, Journal of Advanced Research, Critical Reviews in Environmental Science and Technology, Journal of Chemical Education, Green Chemistry

NSF Panel Reviewer for *CBET*: Environmental Engineering Program, Environmental Sustainability Program, and Biological and Environmental Interactions of Nanoscale Materials Programs, and *CMMI*: Nanomanufacturing Program

Advisory Committee Member, *2020 Green Chemistry and Green Engineering Conference,* Seattle, WA

Scientific Committee Member, *2019 World Carbon Conference,* Lexington, KY

Session Co-Chair, *Advances in Carbon Nanomaterial Design and Applications for Environmental Sustainability*, Division of Environmental Chemistry, 256th ACS National Meeting and Exposition, Boston, MA August 19-23, 2018

Member of the Water Works Operators' Association of Pennsylvania (WWOAP) Scholarship Committee, 2018

Session Moderator, *Advancing Community Health Through Technology Innovation: Physical-Chemical Session,* Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, University of Michigan Ann Arbor, June 20-22, 2017.

Chair, Environmental Nanotechnology Gordon Research Seminar (GRS), Stowe, VT, June 17-18, 2017

Session Chair, *Sustainable Materials*, Green Chemistry and Engineering Conference, Portland, OR, June 14-16, 2016

NSF-AEESP Grand Challenge Workshop Participant on redefining environmental engineering and science, Rice University Houston, TX, March 31 – April 1, 2016

Session Chair, *Industrial Ecology and Manufacturing*, Sustainable Nanotechnology Organization (SNO) Conference, Portland, OR, November 8-10, 2015

NSF Workshop Participant, the Role of Nanotechnology in Achieving Sustainability at the Food-Energy-Water (FEW) Nexus, Carnegie Mellon University Pittsburgh, PA, October 19-20, 2015

Session Chair, *LCA at the Technology Nexus: Evaluating Tradeoffs* and *LCA at the Energy Nexus*, Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference, Yale University New Haven, CT, June 13-16, 2015.

Registration & Communications Manager, Association of Environmental Engineering & Science Professors (AEESP) Research and Education Conference Committee, Yale University New Haven, CT, Fall 2014 – Summer 2015

Chair, Professional Development Panel at the Environmental Nanotechnology Gordon Research Seminar (GRS), West Dover, VT, June 20-21, 2015.

Women in Science at Yale Mentor, Two PhD students, Yale University, 2014 – 2015

Research Mentor, Chemical and Environmental Engineering, Yale University, 2014 – 2015

2 PhD students, 1 female undergraduate, 1 female visiting researcher, 2 high school students (1 female)

Advanced Graduate Leadership Program K-12 Outreach Fellow, School of Engineering & Applied Science, 2011 – 2014

Pathways to Engineering Day Organizer, Yale University, 2011-2012

Yale Summer SCHOLAR Instructor, Yale University, summer 2012
Recruitment Committee Member, Environmental Engineering, Yale University, 2010 & 2012
Planning Committee Member & Panel Moderator, U.S. EPA STAR Conference, September 2011
Science & Engineering Enrichment Program Volunteer, Yale University, 2010 – 2011
Langer Symposium Committee Member, Yale University, 2009 & 2013
President, American Chemical Society Student Chapter, Hamilton College, 2007

CONRIBUTIONS TO DIVERSITY

Served on the department faculty search committee for two positions in sustainable and environmental engineering (2017-2018); 67% of the nine candidates interviewed on campus were *female* and 44% were an *underrepresented minority*.

Advised or co-advised *three female* postdoctoral associates (Dr. Clymer, Dr. Pourzahedi, Dr. Smith).

Serve(d) as primary advisor to *three female* PhD students, including one minority student (Dr. Wang, Ms. Aquino de Carvalho, Ms. Stabryla).

Mentored *female minority undergraduates* through the MCSI summer research fellowship (Ms. Toney) and departmental research for credit (Ms. Emerson).

Mentored *two female* master's students (Ms. Li, Ms. Yin), six additional *female undergraduate* students, (Ms. Mukherjee, Ms. Fay, Ms. Sexton, Ms. Yates, Ms. Moyer, Ms. Laske), and *one female* high school student (Ms. Bina).

Mentored and *published a paper* in Environmental Science & Technology (2016 publication) with a *female minority undergraduate student* (Ms. Albalghiti) who worked with me during my graduate and postdoctoral career (2014-2015).

CONSULTING ACTIVITIES

Scientific advisory board member for Invaio Sciences, a Flagship Pioneering agriculture start-up in Cambridge, MA (2019 – Present)

STEM Education Consultant for Finn Partners, consulted on content for ExxonMobil's Be An Engineer campaign (May 2015 – February 2016)