

JEFFREY A. NASON

Education

- 2006 Ph.D., Civil Engineering
The University of Texas at Austin
Dissertation: *Particle aspects of precipitative softening: experimental measurement and mathematical modeling of simultaneous precipitation and flocculation*
Advisor: Dr. Desmond Lawler
- 2002 M.S., Environmental Engineering
Cornell University
Thesis: *The effect of mean cell residence time on the electrostatic properties of activated sludge surfaces*
Advisor: Dr. James Bisogni
- 1997 B.S., Chemical Engineering
Cornell University

Professional Experience

- Sept. 2021 – present **Professor**
School of Chemical, Biological, and Environmental Engineering
Oregon State University
- Apr. 2014 – present **Associate Head for Graduate Programs**
School of Chemical, Biological, and Environmental Engineering
Oregon State University
- Sept. 2013 – Sept. 2021 **Associate Professor**
School of Chemical, Biological, and Environmental Engineering
Oregon State University
- Aug. 2018 – Jan. 2019 **Interim School Head**
School of Chemical, Biological, and Environmental Engineering
Oregon State University
- Sept. 2016 – June 2017 **Academic Guest**
Department of Environmental Toxicology (UTOX)
Swiss Federal Institute for Aquatic Science and Technology (Eawag)
- Jan. 2007 – Aug. 2013 **Assistant Professor**
School of Chemical, Biological, and Environmental Engineering
Oregon State University

- Sept. 2002 – Dec. 2006 **Graduate Research Assistant**
Department of Civil, Architectural, and Environmental Engineering
The University of Texas at Austin
- Aug. 2000 – May 2002 **Graduate Teaching Assistant**
Department of Civil and Environmental Engineering
Cornell University
- June 2001 – Jan. 2002 **Teaching Assistant Fellow**
College of Engineering
Cornell University
- Jan. 1998 – June 2000 **Engineer II**
Water/Wastewater Group
Parametrix, Inc., Sumner, WA

Publications

1. **Surette, M.C.; McColley C.J.**; and Nason, J.A. (2021) Comparing the Fate of Pristine and Wastewater-Aged Gold Nanoparticles in Freshwater. *Environmental Science: Nano* 8, 1109-1120 (Primary Investigator: collaborated with student on development of research idea and methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
2. **Oney, D.M.** and Nason, J.A. (2021) Natural Organic Matter Surface Coverage as a Predictor of Heteroaggregation between Nanoparticles and Colloids. *Environmental Science: Nano* 8, 687-697 (Primary Investigator: collaborated with the student on development of research idea and methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
3. **Surette, M.C.**; Nason, J.A.; and Kaegi, R. (2019) The influence of surface coating functionality on the aging of nanoparticles in wastewater. *Environmental Science: Nano* 6, 2470-2483 (Co-Investigator and corresponding author: collaborated with student and colleague on development of research idea and methodology, equally shared responsibility of overseeing graduate student work, provided substantial input into the data analysis, writing and editing of the manuscript).
4. **Deline, A.R.** and Nason, J.A. (2019) Evaluation of Labeling Methods Used for Investigating the Environmental Behavior and Toxicity of Metal Oxide Nanoparticles. *Environmental Science: Nano* 6, 1043-1066 (Primary Investigator: collaborated with student on development of the review and outline of content, provided substantial input into the organization, writing and editing of the manuscript)
5. **Surette, M.C.** and Nason, J.A. (2019) Nanoparticle Aggregation in a Freshwater River: The Role of Engineered Surface Coatings. *Environmental Science: Nano* 6, 540-553 (Primary Investigator: collaborated with student on development of research idea and methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
6. **Deline, A.R.**; Young, W.M.; and Nason, J.A. (2018) Synthesis and utility of gold core-labeled TiO₂ nanoparticles for tracking behavior in complex matrices. *Environmental*

- Science: Nano* 5, 956-968. (Primary Investigator: developed idea and research methodology, collaborated with students on execution of the research, directed graduate and undergraduate student work, provided substantial input into the writing and editing of the manuscript)
7. **Surette, M.C.** and Nason, J.A. (2016) Effects of Surface Coating Character and Interactions with Natural Organic Matter on the Colloidal Stability of Gold Nanoparticles, *Environmental Science: Nano* 3 (5), 1144-1152. (Primary Investigator: collaborated with student on development of research methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
 8. **Smith, B.M.; Pike, D.J.; Kelly, M.O.,** and Nason, J.A. (2015) Quantification of heteroaggregation between citrate-stabilized gold nanoparticles and hematite colloids. *Environmental Science and Technology* 49 (21), 12789-12797. (Primary Investigator: developed idea and research methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
 9. Choi, Y.H.; Nason, J.A.; Kweon, J.H. (2013) Effects of aluminum hydrolysis products and natural organic matter on nanofiltration fouling with PACl coagulation pretreatment. *Separation and Purification Technology* 120 (13), 78–85. (Contributor: worked with the PI during her sabbatical, provided feedback and input during the manuscript development and editing)
 10. Nason, J.A., **Sprick, M.S.,** and **Bloomquist, D.J.** (2012) Determination of copper speciation in highway stormwater runoff using competitive ligand exchange – adsorptive cathodic stripping voltammetry. *Water Research* 46 (17), 5788-5798. (Primary Investigator: developed idea and research methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
 11. Nason, J.A., **Bloomquist, D.J.,** and **Sprick, M.S.** (2012) Factors influencing dissolved copper concentrations in Oregon highway stormwater runoff. *Journal of Environmental Engineering* 138 (7), 734-742. (Primary Investigator: developed idea and research methodology, directed graduate student work, provided substantial input into the writing and editing of the manuscript)
 12. Nason, J.A., **McDowell, S.A.,** and **Callahan, T.W.** (2012) Effects of Natural Organic Matter Type and Concentration on the Aggregation of Citrate-Stabilized Gold Nanoparticles. *Journal of Environmental Monitoring* 14 (7) 1885-1892. (Primary Investigator: planned experiments and directed work of undergraduate and graduate students)
 13. Koretsky, M., Williamson, K.J., Nason, J.A., Jovanovic, G., Chang, C-H, Higgins, A.Z., Gates, C.M., and Roehner, R.M. (2012) Using Studios as a Strategy to Respond to Increasing Enrollment. *Proceedings of the 2012 American Society for Engineering Education Annual Conference & Exposition*, San Antonio, TX, Session T612. 22 pgs. (Co-Investigator: contributed substantially to the development and implementation of the project and provided text for the manuscript)
 14. Nason, J.A., **McDowell, S.A.,** and **Callahan, T.W.** (2012) The Influence of Natural Organic Matter Type and Concentration on Gold Nanoparticle Colloidal Stability. *Proceedings of the IWA International Conference on Particle Separation*. Berlin, Germany, p. 309-316. (Primary Investigator: planned experiments and directed work of undergraduate and graduate students)
 15. Radniecki, T.S., **Stankus, D.P.,** Neigh, A., Nason, J.A., and Semprini, L. (2011) Influence of liberated silver from silver nanoparticles on nitrification inhibition of *Nitrosomonas*

- europaea. *Chemosphere* 85 (1) 43-49. (Co-Investigator: contributed intellectual ideas, directed graduate student work, supplied data and provided text)
16. Truong, L., Moody, I.S., **Stankus, D.P.**, Nason, J.A., Lonergan, M.C., and Tanguay, R.L. (2011) Differential stability of lead sulfide nanoparticles influences biological responses in embryonic zebrafish. *Archives of Toxicology* 85 (7), 787-798. (Co-Investigator: contributed intellectual ideas, directed graduate student work, supplied data and provided text)
 17. **Stankus, D.F.**, Lohse, S.E., Hutchison, J.E., and Nason, J.A. (2011) Interactions between natural organic matter and gold nanoparticles stabilized with different organic capping agents. *Environmental Science and Technology* 45 (8), 3238-3244. (Primary Investigator: developed idea and research methodology, directed graduate student work and provided substantial input into the writing and editing of the manuscript)
 18. Nason, J.A., and Gorczyca, B. (2011) Evolving coagulation and flocculation roles. in Recent research every utility manager needs to know about. Speight, V. and Via, S. eds. *Journal of the American Water Works Association* 103 (1) 49-51. (Primary Author)
 19. Nason, J.A. (2011) Understanding clarification. in Recent research every utility manager needs to know about. Speight, V. and Via, S. eds. *Journal of the American Water Works Association* 103 (1) 51. (Primary Author)
 20. Nason, J.A., Brooks, B.J., and Koretsky, M. (2011) Interdisciplinary Course Design Opportunities for Chemical Engineers: A Material Balances Course with Integrated Concept-Based Active Learning Pedagogy: Comparison of Student Perception and Performance with their Attitudes and Approaches to Learning. *Proceedings of the 2011 American Society for Engineering Education Annual Conference & Exposition*, Vancouver, CAN, Session T412, 19 pgs. (Primary Investigator: devised and executed the research with input from the co-authors. Primary author of the manuscript)
 21. Nason, J.A. and Lawler, D.F. (2010) Modeling particle size distribution dynamics during precipitative softening. *Journal of Environmental Engineering* 136 (1), 12-21. (Primary Investigator: devised and carried out research, wrote manuscript)
 22. Nason, J.A. and Lawler, D.F. (2009) Particle size distribution dynamics during precipitative softening: declining solution composition. *Water Research* 43 (2), 303-312. (Primary Investigator: devised and carried out research, wrote manuscript)
 23. Nason, J.A. and Lawler, D.F. (2008) Particle size distribution dynamics during precipitative softening: constant solution composition. *Water Research* 42 (14), 3667-3676. (Primary Investigator: devised and carried out research, wrote manuscript)
 24. Kim, J., Nason, J.A. and Lawler, D.F. (2008) Influence of surface charge and particle size on attachment in granular media filtration. *Environmental Science and Technology* 42 (7), 2557-2562. (Co-Investigator: collected and analyzed zeta potential data in support of column experiments, provided text and editing)
 25. Nason, J.A. and Lawler, D.F. (2007) Simultaneous precipitation and flocculation during lime softening: effects of saturation ratio and mixing intensity. *Proceedings of the IWA International Conference on Particle Separation*. Toulouse, France, p. 146. (Primary Investigator: devised and carried out research, wrote the manuscript)
 26. Nason, J.A. (2007) Simultaneous Precipitation and Flocculation in Water Treatment: Modeling and Experiments. *Proceedings – National Water Research Institute Graduate Fellowship Research Conference*, Orange, CA, April 13, p. 29-35. (Primary Investigator: devised and carried out research, wrote the manuscript)

27. Kim, J., Nason, J.A. and Lawler, D.F. (2006) Zeta potential distributions in particle treatment processes. *Journal of Water Supply: Research and Technology – AQUA*, 55(7-8), 461-470. (Co-Investigator: collected and analyzed zeta potential data in support of column experiments, provided text and editing)
28. Lawler, D.F. and Nason, J.A. (2006) Granular media filtration: Old process, new thoughts. *Water Science and Technology*, 53(7), 1–7. (Co-Investigator: carried out the modeling work and analysis; contributed equally to the writing of the manuscript)
29. Lawler, D. F. and Nason, J. A. (2005) Integral water treatment plant modeling: Improvements for particle processes. *Environmental Science and Technology*, 39(17), 6337-6342. (Co-Investigator: carried out the modeling work and analysis; contributed equally to the writing of the manuscript)
30. Lawler, D. F. and Nason, J. A. (2005) Granular media filtration: Old process, new thoughts. *Proceedings of the IWA International Conference on Particle Separation*. Seoul, Korea, p. 1-8. (Co-Investigator: carried out the modeling work and assisted in the manuscript preparation under the guidance of the co-author)
31. Lawler, D. F. and Nason, J. A. (2004) The scientific basis of flocculator design. *Water Science and Technology*, 50(12), 155-162. (Co-Investigator: carried out the modeling work and assisted in the manuscript preparation under the guidance of the co-author)
32. Lawler, D.F. and Nason, J.A. (2003) The scientific basis of flocculator design. *Proceedings of the IWA Specialist Conference on Nano and Microparticles in Water and Wastewater Treatment*, Zurich, Switzerland, 8 pgs. (carried out the modeling work and assisted in the manuscript preparation under the guidance of the co-author)

Professional Meetings, Symposia, and Conferences

Notes: In the sections below, **Bold** indicates graduate students advised by JAN who contributed substantially to the work. Underline indicated undergraduate students mentored by JAN who contributed substantially to the work.

Presentations by JAN

1. Nason, J.A.; Kaegi, R.; and Behra, R. (2019) Interactions of gold nanoparticles with algae and their exudates. *Gordon Research Conference: Environmental Nanotechnology*, Newry, ME, June 2-7, 2019 (Poster)
2. Nason, J.A. (2019) Copper speciation at the interface of the built and natural environment. *AEESP Research and Education Conference*, Tempe, AZ, May 15-16, 2019 (Oral Talk)
3. Nason, J.A. and Katz, L.E. (2018) No particle shall remain uncounted: Application of Coulter Counter measurements to better understand precipitative coagulation processes. *255th ACS Annual Conference & Exposition*, New Orleans, LA, March 18-22, 2018 (Oral Talk)
4. Nason, J.A. (2017) Elucidating the complex interactions between engineered nanoparticles, (bio)colloids, and naturally occurring macromolecules. *EMT Research Day*, Oregon State University, January 19, 2017. **INVITED**.
5. Nason, J.A. (2017) The role of natural organic matter in controlling interactions between engineered nanoparticle and suspended particulate matter in aquatic systems. *Department of Geosciences Seminar*, University of Vienna, Vienna, Austria, May 4, 2017. **INVITED**

6. Nason, J.A. (2017) "Patchy" particles: the role of surface heterogeneity in controlling nanoparticle aggregation. *NanoImpact Conference*, Monte Verita, Switzerland, March 12-17, 2017.
7. Nason, J.A. (2016) Aggregation of engineered nanoparticles in aquatic systems. *Eawag Institutional Seminar*. Dubendorf, Switzerland, September 29, 2016. **INVITED**.
8. Nason, J.A. (2016) Copper binding by surface water and wastewater organics. *Oregon Association of Clean Water Agencies Summer Conference*, Bend, OR, July 28th, 2016
9. Nason, J.A. (2016) Copper in highway stormwater runoff: occurrence, speciation and removal. *Transportation Research Board 95th Annual Meeting*, Washington, DC, January 10-14, 2016.
10. Nason, J.A.; **Pike, D.J.**; **Surette, M.C.**; **Smith, B.M.**; and Kelly, M. (2015) Interactions of gold nanoparticles with metal oxide colloids under relevant aquatic chemistry. *Gordon Research Conference: Environmental Nanotechnology*, Mt. Snow, VT, June 21-26, 2015 (Poster)
11. Nason, J.A. and **Silvertooth, J.R.** (2015) The role of natural organic matter in controlling copper removal from stormwater. *AWWA Sustainable Water Management Conference*. Portland, OR, March 16-18, 2015 (Oral Talk)
12. Nason, J.A. and **Pike, D.J.** (2014) Heteroaggregation between gold nanoparticles and metal oxide colloids: Effects of colloid type and aquatic chemistry. *248th ACS Annual Meeting*, San Francisco, CA, August 10-14, 2014 (Oral Talk)
13. Nason, J.A. and Gerould, J.M. (2014) Copper remediation using thermally altered biomass: effects of feedstock type and pyrolysis temperature. *248th ACS Annual Meeting*, San Francisco, CA, August 10-14, 2014 (Oral Talk)
14. Nason, J.A. and **Smith, B.M.** (2013) Influence of natural and engineered coatings on heteroaggregation of gold nanoparticles and hematite colloids, *246th ACS Annual Meeting*, Indianapolis, IN, September 10, 2013 (Oral Talk)
15. Nason, J.A. and **Smith, B.M.** (2013) Heteroaggregation: Interactions between dissimilar colloids and experiences in interdisciplinary research. *50th Anniversary AEESP Conference*, Golden, CO, July 16, 2013 (Oral Talk) **INVITED**
16. Nason, J.A. and **Smith, B.M.** (2013) Heteroaggregation of engineered nanoparticles and natural colloids: Method development using gold nanoparticles and hematite, *87th ACS Colloid and Surface Symposium*, Riverside, CA, June 25, 2013 (Oral Talk)
17. Nason, J.A., **McDowell, S.A.**, and Callahan, T.W. (2012) The Influence of Natural Organic Matter Type and Concentration on Gold Nanoparticle Colloidal Stability. *Proceedings of the IWA International Conference on Particle Separation*. Berlin, Germany (Poster)
18. Nason, J.A. Stability of engineered nanoparticles in aqueous systems: elucidating the roles of capping agents and natural organic matter (2011) *AICHE Annual Meeting*, Minneapolis, MN, October 16-21, 2011 (Oral Talk)
19. Nason, J.A., **Stankus, D.P.**, Lohse, S.E., and Hutchison, J.E. (2011) The role of humic substances in controlling the colloidal stability of organically stabilized gold nanoparticles. *Fourth IWA Specialty Conference on Natural Organic Matter: From Source to Tap and Beyond*, Costa Mesa, CA, July 27-29, 2011.

20. Nason, J.A., Understanding interactions between natural organic matter and engineered nanomaterials in aqueous systems (2011) *Gordon Research Conference: Environmental Nanotechnology*, Waterville Valley, NH, May 29 – June 3, 2011. (Poster)
21. Nason, J.A. (2011) Particle Destabilization in Flocculation and Filtration. *Cascade to Coast AWWA Short School*, Eugene, OR, March 16, 2011. (Oral Talk) **INVITED**
22. Nason, J.A. (2011) Environmental fate and transport of engineered nanomaterials. University of Arkansas Civil Engineering Graduate Seminar Series, University of Arkansas, Fayetteville, AR. March 3, 2011. (Oral Talk) **INVITED**
23. Nason, J.A., Brooks, B.J., and Koretsky, M. (2011) Interdisciplinary Course Design Opportunities for Chemical Engineers: A Material Balances Course with Integrated Concept-Based Active Learning Pedagogy: Comparison of Student Perception and Performance with their Attitudes and Approaches to Learning. *Proceedings of the 2011 American Society for Engineering Education Annual Conference & Exposition*, Vancouver, CA, Session T412. (Oral Talk)
24. Nason, J.A., Yokochi, A., Coussens, N., **Stankus, D.**, Thomsen, C. (2010) Synthesis of Labeled TiO₂ Nanoparticles as a Tool for Examining the Environmental Transport and Fate of Engineered Nanoparticles. *AIChE Annual Meeting*, Salt Lake City, UT, November 7-11, 2010. (Oral Talk)
25. Nason, J.A. and **Stankus, D.P.** (2010) Nanoparticles in aquatic systems: the importance of physic-chemical properties for fate, transport and toxicity. *Subsurface Biosphere Initiative Summer Workshop*, July 21, 2010. (Oral Talk) **INVITED**
26. Nason, J.A. and **Stankus, D.P.** (2010) Interactions between ligand stabilized gold nanoparticles and natural organic matter: effects of capping agent and aqueous chemistry. *Gordon Research Conference – Environmental Sciences: Water*, Holderness, NH. June 20-25, 2010. (Poster)
27. Nason, J.A., (2010) Influence of coagulation conditions on particle size distributions and floc morphology. *Annual Conference of the Pacific Northwest Section AWWA*, Tacoma, WA. May 14, 2010 (Oral Talk)
28. Nason, J.A. (2010) Nanoparticle stability in aquatic systems: The effects of capping agent, water chemistry and natural organic matter. Division of Environmental and Biomolecular Systems Graduate Seminar, Oregon Health and Science University, Hillsboro, OR, April 24, 2010. **INVITED**
29. Nason, J.A., **Bloomquist, D.J.**, and **Sprick, M.S.** (2010) Copper Speciation in Highway Stormwater Runoff. *239th ACS National Meeting*, San Francisco, CA, March 21-25, 2010. (Poster)
30. Nason, J.A. (2009) Evaluating particle processes through detailed measurements of the size distribution. *Annual Conference, American Water Works Association*. San Diego, CA. (Oral Talk) **INVITED**
31. Nason, J.A. and Lawler, D.F. (2007) Simultaneous precipitation and flocculation during lime softening: effects of saturation ratio and mixing intensity. *Proceedings of the IWA International Conference on Particle Separation*. Toulouse, France. (Oral Talk)
32. Nason, J.A. (2007) Simultaneous Precipitation and Flocculation in Water Treatment: Modeling and Experiments. *Proceedings – National Water Research Institute Graduate Fellowship Research Conference*, Orange, CA, April 13 (Oral Talk)

33. Nason, J.A. and Lawler, D.F. (2006) Precipitative Coagulation: Kinetics of Particle Growth and Flocculation. *Proceedings – Annual Conference, American Water Works Association*. San Antonio, TX. (Oral Talk)
34. Nason, J. A. and Lawler, D. F. (2004) Rethinking flocculator design: a modern approach. *Proceedings - Annual Conference, American Water Works Association*, Orlando, Florida. (Oral Talk)
35. Nason, J. A. and Lawler, D. F. (2004) Rethinking flocculator design: a modern approach. *Texas Water 2004* (annual conference of the Texas American Water Works Association), Arlington, TX. (Oral Talk)
36. Nason, J.A. (2004) Simultaneous precipitation and flocculation in water treatment: Modeling and experiments. *2004 EPA STAR Graduate Fellowship Conference – Next Generation Scientists, Next Opportunities*, Washington, DC. (Oral Talk)

Presentations by students advised by JAN

1. **Oney, D.M.** and Nason, J.A. (2019) Natural Organic Matter surface coverage as a predictor of heteroaggregation between nanoparticles and colloids. *Gordon Research Conference: Environmental Nanotechnology*, Newry, ME, June 2-7, 2019 (Poster)
2. **Surette, M.S.** and Nason, J.A. (2019) Examining the aggregation of “aged” vs. “pristine” engineered nanoparticles in a freshwater river. *Gordon Research Conference: Environmental Nanotechnology*, Newry, ME, June 2-7, 2019 (Poster)
3. **Surette, M.C.** and Nason, J.A. (2019) The Impact of Transformations during Wastewater Treatment on the Environmental Fate of Engineered Nanomaterials. *AEESP Research and Education Conference*, Tempe, AZ, May 15-16, 2019 (Oral Talk)
4. **Surette, M.C.**, Nason, J.A., and Kägi, R. (2018) The Aging of Engineered Surface Coatings During Wastewater Treatment and the Impact on the Fate of Engineered Nanoparticles, *13th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials*, Duke University, Durham, North Carolina, September 5 – 8th, 2018 (Poster)
5. **Deline, A.R.** and Nason, J.A. (2018) Examining the role of TiO₂ nanoparticle surface transformations on treatment and toxicity. *SEATAC Europe 28th Annual Meeting*, Rome, Italy, May 13-17 2018 (Poster)
6. **Surette, M.C.** and Nason, J.A. (2018) The influence of engineered surface coatings on nanomaterial stability in a complex, natural medium. *SEATAC Europe 28th Annual Meeting*, Rome, Italy, May 13-17 2018 (Poster)
7. **Surette, M.C.**, Nason, J.A., and Kaegi, R. (2018) Transformations of engineered nanomaterials during wastewater treatment: the role of engineered surface coatings and the impact on environmental fate. *SEATAC Europe 28th Annual Meeting*, Rome, Italy, May 13-17 2018 (Poster)
8. **Surette, M.C.** and Nason, J.A. (2018) Refining the parameterization of engineered nanomaterial heteroaggregation within aquatic environments: The relative influence of surface coating functionality. *255th ACS Annual Conference & Exposition*, New Orleans, LA, March 18-22, 2018 (Oral Talk)
9. **Deline, A.R.** and Nason, J.A. (2018) Examining the role of TiO₂ surface transformations on nanoparticle properties and treatment efficacy. *255th ACS Annual Conference & Exposition*, New Orleans, LA, March 18-22, 2018 (Poster)

10. **Mitzel, J.** and Nason, J.A. (2018) Quantifying copper speciation in pulp and paper wastewater effluent and implications for the Biotic Ligand Model. *255th ACS Annual Conference & Exposition*, New Orleans, LA, March 18-22, 2018 (Poster)
11. **Burch, S.J.** and Nason, J.A. (2018) Evaluating biochar in sustainable stormwater treatment of heavy metals. *255th ACS Annual Conference & Exposition*, New Orleans, LA, March 18-22, 2018 (Oral Talk)
12. **Mosbrucker, A.M.**, Nason, J.A.; Williamson, K.J.; Baumgartner, B. (2017) Evaluating the freshwater copper biotic ligand model for NPDES wastewater permitting. *WEFTEC 91st Annual Technical Exhibition & Conference*, New Orleans, LA, September 29-October 3, 2017. (Oral Talk)
13. **Surette, M.C.** and Nason, J.A. (2017) Using relative heteroaggregation attachment efficiency factors to assess the role of surface coating on the fate of engineered nanomaterials. *4th FFF-MS Workshop*. Vienna, Austria. September 29-30, 2017. (Poster)
14. **Deline, A.R.**; Young, W.; and Nason, J.A. (2017) Development and utility of core@shell Au@TiO₂ NPs. *Gordon Research Conference on Environmental Nanotechnology*, Stowe, Vermont, June 18-23, 2017. (Poster)
15. **Deline, A.R.**; Young, W.; and Nason, J.A. (2017) Development of Gold-labeled Titanium Dioxide Nanoparticles for Examining Exposure and Biodistribution in Complex Matrices. *7th Society for Environmental Toxicology and Chemistry World Congress*. Orlando, Florida, November 6-10, 2017. (Oral Talk)
16. **Surette, M.C.** and Nason, J.A. (2017) Investigations into the heteroaggregation of engineered nanomaterials with natural colloids in a freshwater environment, *4th Gordon Research Conference on Environmental Nanotechnology*, Stowe, Vermont, June 21-22, 2017. (Poster)
17. **Burch, S.J.** and Nason, J.A. (2016) Evaluating biochar in sustainable stormwater treatment of heavy metals. *Biochar 2016*. Corvallis, OR, August 22-24, 2016. (Oral Talk)
18. **Deline, A.R.**; Young, W.; and Nason, J.A. (2016) Utility of gold-labeled core/shell nanoparticles as a tool for examining the environmental fate, transport, and toxicity of titanium dioxide. *11th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials*. Golden, Colorado, August 14-18, 2016. (Oral Talk)
ARD awarded 3rd Place Student Presentation Award
19. **Surette, M.C.** and Nason, J.S. (2016) Evaluating the effect of engineered nanomaterial surface coating on aggregation processes in aquatic environments. *11th International Conference on the Environmental Effects of Nanoparticles and Nanomaterials*. Golden, Colorado, August 14-18, 2016. (Poster)
20. **Surette, M.C.**; Dondick, A.; and Nason, J.A. (2016) Assessing the influence of surface coating on the fate of engineered nanomaterials within aquatic environments. *6th Annual Pacific Northwest water Research Symposium*. Corvallis, OR, April 18-19, 2016. (Oral Talk)
21. **Burch, S.J.** and Nason, J.A. (2016) Evaluating biochar in sustainable stormwater treatment of heavy metals. *6th Annual Pacific Northwest water Research Symposium*. . Corvallis, OR, April 18-19, 2016. (Oral Talk)

22. **Mosbrucker, A.R.** and Nason, J.A. (2016) Copper complexation with natural and wastewater-derived dissolved organic matter. *6th Annual Pacific Northwest Water Research Symposium*. . Corvallis, OR, April 18-19, 2016. (Oral Talk)
23. **Deline, A.R.**; Young, W.; and Nason, J.A. (2016) Development of gold-labeled, core/shell titanium dioxide nanoparticles for tracking behavior in complex media. *25th Annual Pacific Northwest Chapter of the Society for Environmental Toxicology and Chemistry Conference*. Bellingham, Washington, June 1-4, 2016. (Oral Talk) **ARD awarded 1st Place Ph.D. Student Presentation Award**
24. **Surette, M.C.**; Dondick, A.R.; and Nason, J.A. (2016) Investigating the Role of Surface Coatings in Stabilizing Gold Nanoparticles in Varying Aquatic Environments, *25th Annual Conference of the Pacific Northwest Chapter of the Society of Environmental Toxicology and Chemistry*, Bellingham, Washington, June 1-4, 2016. (Oral Talk)
25. **Deline, A.R.**; Young, W.; and Nason, J.A. (2016) Development of gold-labeled titanium dioxide nanoparticles for tracking behavior in complex environmental matrices. *American Chemical Society National Meeting and Exposition*, San Diego, California, March 13-17, 2016.(Oral Talk) **ARD awarded Certificate of Merit Award for her presentation**
26. **Mosbrucker, A.R.**; and Nason, J.A. (2016) Copper speciation in wastewater-impacted surface waters. *American Chemical Society National Meeting and Exposition*, San Diego, California, March 13-17, 2016. (Oral Talk)
27. **Deline, A.R.**; Young, W.; and Nason, J.A. (2015) Synthesis and utility of gold-labeled, core/shell titanium dioxide nanomaterials for tracking environmental fate and transport. *Sustainable Nanotechnology Organization Conference*, Portland, Oregon, November 10-12, 2015. (Poster) **ARD awarded 1st Place Poster Award**
28. **Surette, M.C.**; Dondick, A.; and Nason, J.A. (2015) Assessing the influence of surface coating on the fate of engineered nanomaterials within aquatic environments. *Sustainable Nanotechnology Organization Conference*, Portland, Oregon, November 10-12, 2015. (Poster) **ARD awarded 1st Place Poster Award**
29. **Deline, A.R.**; Young, W.; and Nason, J.A. (2015) "Development of traceable titanium dioxide nanoparticles for examining environmental fate and transport." *Gordon Research Conference on Environmental Nanotechnology*, Mount Snow, Vermont, June 22-25, 2015. (Poster)
30. **Deline, A.R.** and Nason, J.A. (2015) Development of traceable titanium dioxide nanoparticles for examining environmental fate and transport. *5th Annual Pacific Northwest Water Research Symposium*. Corvallis, OR, April 26-28, 2015. (Oral Talk)
31. **Silvertooth, J.R.** and Nason, J.A. (2014) Evaluation of Compost and Apatite II™ as Media for Copper Removal from Stormwater Runoff, *EWRI World Environmental and Water Resources Congress*, Portland, OR, June 1-5, 2014 (Oral Talk)
32. **Pike, D.J.** and Nason, J.A. (2014) Heteroaggregation of gold nanoparticle with model colloids and the influence o environmental aqueous chemistry. *4th Annual Pacific Northwest Water Research Symposium*. . Corvallis, OR, May 12th , 2014. (Oral Talk)
33. **Smith, B.M.** and Nason, J.A. (2013) Heteroaggregation of capped gold nanoparticles and natural colloids under relevant environmental conditions, *245th ACS National Meeting*, New Orleans, LA, April 7-11, 2013. (Oral Talk)

34. **Rowbotham, B.S.** and Nason, J.A. (2013) Development of traceable metal oxide nanoparticles for environmental fate and transport studies, *245th ACS National Meeting*, New Orleans, LA, April 7-11, 2013. (Oral Talk)
35. **Provolt, J.R.** and Nason, J.A. (2013) Evaluation of Apatite II™ for removal of copper and zinc from highway stormwater runoff: laboratory and field experiments, *245th ACS National Meeting*, New Orleans, LA, April 7-11, 2013. (Poster)
36. **Smith, B.M.** and Nason, J.A. (2013) Heteroaggregation of capped gold nanoparticles and natural colloids in aqueous environments. *3rd Annual Pacific Northwest Water Research Symposium*. . Corvallis, OR, April 13, 2013.
37. **Stankus, D.P.** and Nason, J.A. (2011) The role of humic substances in controlling the aggregation of capped gold nanoparticles. *241st ACS National Meeting*, Anaheim, CA, March 27-31, 2011. (Oral Talk)
38. **Maguire, I.R.** and Nason, J.A. (2010) The effect of coagulation conditions on floc size distribution and morphology, *American Water Works Association Annual Conference and Exposition*, Chicago, IL, June 20-24, 2010 (Oral Talk)
39. **Stankus, D.P.** and Nason, J.A. (2010) Interactions between natural organic matter and gold nanoparticles with different capping agents. *Greener Nanosciences 2010*, Portland, OR, June 16-18, 2010. (Poster)
40. Nason, J.A. and **Stankus, D.P.** (2010) Interactions between natural organic matter and gold nanoparticles with different capping agents. *239th ACS National Meeting*, San Francisco, CA, March 21-25, 2010. (Oral Talk) **DPS awarded a certificate of merit for his presentation**
41. **Maguire, I.R.** and Nason, J.A. (2009) The effect of coagulation conditions on floc size distribution and morphology: implications for downstream processes. Fresh Ideas Poster Competition, *Annual Conference of the Pacific Northwest Section of the American Water Works Association*, Salem, OR, May 6-8, 2009. (Poster) **IRM awarded 2nd place in the Fresh Ideas Poster Competition.**

Presentations by co-investigators or students of co-investigators

1. Koretsky, M., Williamson, K.J., Nason, J.A., Jovanovic, G., Chang, C-H, Higgins, A.Z., Gates, C.M., and Roehner, R.M. (2012) Using Studios as a Strategy to Respond to Increasing Enrollment. *Proceedings of the 2012 American Society for Engineering Education Annual Conference & Exposition*, San Antonio, TX, Session T612. (Oral Talk)
2. Caple, K., Kusanto, N., Williamson, K., Nason, J.A., Jovanovic, G.N., Yokochi, A. (2011) Advanced oxidation for water processing in microstructured reactors *AICHE Annual Meeting*, Minneapolis, MN, October 16-21, 2011 (Oral Talk)
3. Radniecki, T.S., **Stankus, D.P.**, Nason, J.A., and Semprini, L. (2010) Silver nanoparticle inhibition of the ammonia oxidizing bacterium, *Nitrosomonas europaea*: Influence of aquatic chemistry on bioavailability and exposure *AICHE Annual Meeting*, Salt Lake City, UT, November 7-11, 2010. (Oral Talk)
4. Radniecki, T.S., **Stankus, D.P.**, Nason, J.A. and Semprini, L. (2010) Characterization of silver nanoparticle inhibition on the ammonia oxidizing bacterium *Nitrosomonas europaea*. *Greener Nanosciences 2010*, Portland, OR, June 16-18, 2010. (Poster)
5. Radniecki, T.S., **Stankus, D.P.**, Nason, J.A. and Semprini, L. (2010) Inhibition of *Nitrosomonas europaea* by Silver Nanoparticles. *International Conference on the*

- Environmental Implications of Nanotechnology 2010*, Los Angeles, CA, May 11-12, 2010. (Oral Talk)
6. Radniecki, T.S., **Stankus, D.P.**, Nason, J.A. and Semprini, L. (2009) Inhibition of *Nitrosomonas europaea* by silver nanoparticles *SETAC North America 30th Annual Meeting*, New Orleans, LA, November 19-23, 2009. (Oral Talk)
 7. Yokochi, A., Nason, J., Capel, K, **Stankus, D.**, Kimmell, R. and AuYeung, N. (2009) Synthesis of Traceable Nanoparticles to Enable the Study of the Fate and Transport of Engineered Nanomaterials. *AIChE Annual Meeting*, Nashville, TN, November 8-13, 2009. (Oral Talk)
 8. Kim, J., Lawler, D. F. and Nason, J. A. (2005) Particle attachment in granular media filtration. *Proceedings – Annual Conference, American Water Works Association*. San Francisco, California. (Oral Talk)
 9. Lawler, D. F. and Nason, J. A. (2005) Granular media filtration: Old process, new thoughts. *Proceedings of the IWA International Conference on Particle Separation*. Seoul, Korea. (Oral Talk)
 10. Lawler, D. F. and Nason, J. A. (2004) Integral water treatment plant design: A new look. *Abstracts of Papers, 228th ACS National Meeting*, Philadelphia, Pennsylvania. (Oral Talk)
 11. Lawler, D. F. and Nason, J. A. (2004) Source water particle characterization and treatment optimization. *Proceedings – Annual Conference, American Water Works Association*, Orlando, Florida. (Oral Talk)
 12. Lawler, D.F. and Nason, J.A. (2003) The scientific basis of flocculator design. *Proceedings of the IWA Specialist Conference on Nano and Microparticles in Water and Wastewater Treatment*, Zurich, Switzerland. (Oral Talk)

Advising

Student	Degree	Thesis	Graduated
1. Ian Maguire	MS	<i>The effect of coagulation conditions on floc size distribution and morphology: Implications for downstream treatment processes</i>	Fall 2009
2. Matthew Sprick	MS	<i>Analytical Determination of Copper Speciation in Oregon Highway Runoff</i>	Fall 2009
3. Don Bloomquist	MS	<i>Statistical Analysis and Speciation Modeling of Copper in Oregon Highway Runoff</i>	Fall 2009
4. Dylan Stankus	MS	<i>Interactions between Natural Organic Matter and Gold Nanoparticles Stabilized with Different Organic Capping Agents</i>	Spring 2011
5. Hsiao-wen Huang	MS	<i>The Assessment of Copper and Zinc Removal from Highway Stormwater Runoff using Apatite IITM</i>	Spring 2012
6. Shannon McDowell	MS	<i>The Effects of Engineered Coatings and Natural Organic Matter on Nanoparticle</i>	Summer 2012

		<i>Aggregation</i>	
7. Justin Provolt	MS	<i>Evaluation of Apatite II™ for Removal of Copper and Zinc from Highway Stormwater Runoff: Laboratory and Field Experiments</i>	Spring 2013
8. Brian Smith	MS	<i>Heteroaggregation between Citrate-Stabilized Gold Nanoparticles and Hematite Colloids: Mechanisms and Quantification of Nanoparticle-Colloid Interactions</i>	Spring 2013
9. Brian Rowbotham	MS	<i>Development of Traceable Metal Oxide Nanoparticles for Examining Environmental Fate and Transport</i>	Summer 2013
10. Jason Silvertooth	MS	<i>Evaluation of Copper Removal from Stormwater Runoff Using Compost and Apatite II™</i>	Spring 2014
11. Dan Pike	MS	<i>Heteroaggregation of Gold Nanoparticles with Model Colloids and the Influence of Environmental Aqueous Chemistry</i>	Spring 2014
12. Ariel Mosbrucker	MS	<i>Copper Speciation in Wastewater-Impacted Surface Waters</i>	Summer 2016
13. Alyssa Deline	PhD	<i>Examining the Environmental Behavior and Treatment Efficacy of Titanium Dioxide Nanomaterials in Complex Systems</i>	Summer 2018
14. Sarah Burch	PhD	<i>Evaluating biochar for the sustainable treatment of heavy metals in stormwater: characteristics, mechanisms, and barriers to application</i>	Summer 2018
15. Joe Mitzel	MS	<i>Quantification of Copper Speciation in Pulp and Paper Wastewater and Implications for the Biotic Ligand Model</i>	Summer 2018
16. Mark Surette	PhD	<i>The influence of engineered surface coatings on nanoparticle aggregation and corona formation: examinations in simulated and real aquatic media</i>	Spring 2019
17. Dylan Oney	MS	<i>Natural Organic Matter Surface Coverage as a Predictor of Heteroaggregation between Nanoparticles and Colloids.</i>	Summer 2019

Grant and Contract Support

<i>Agency & Dates</i>	<i>PI (and coPIs)</i>	<i>Title</i>	<i>Total Budget</i>	<i>My Share</i>
Competitive Extramural Funding				
NCASI 6/17-6/18	J. Nason	Binding of copper to DOC in mill final effluents	\$47,455	\$47,455
NSF 6/17-12/20	J. Nason	CAREER supplement for sabbatical work	\$9,919	\$9,919
Clean Water Services	J. Nason	Organic complexation of copper in natural waters and	\$46,002	\$46,002

6/15-8/17		wastewater effluent		
NSF 7/13-12/20	J. Nason	CAREER: Synthesis of traceable metal oxide nanoparticles for examining environmental transport and fate	\$454,887	\$454,887
NSF 7/11-6/14	A. Yokochi and J. Nason	Chemical Reaction Activation in Microreactors through Corona Discharge	\$328,729	\$164,363
ODOT 4/11-6/14	J. Nason	Assessment of copper removal from highway stormwater runoff using fish bone meal: laboratory and field testing	\$360,294	\$360,294
NSF 6/11-5/14	J. Nason	Interactions between engineered nanoparticles in aquatic systems: Roles of engineered capping agents and natural organic matter	\$304,488	\$304,488
SNNI/AFRL 7/09-7/11	L. Semprini, J. Nason, D. Arp, and T. Radniecki	Identifying the Inhibition and Expression of Sentinel Genes of the Bacteria <i>N. europaea</i> Upon Exposure to Metal Oxide Nanoparticles	\$120,000	\$60,000
ODOT 9/07-6/10	J. Nason and P. Nelson	Copper speciation in highway stormwater runoff as related to bioavailability and toxicity to ESA listed salmon	\$388,204	\$388,204
<i>Subtotal</i>			\$2,059,978	\$1,835,612
Competitive Internal/OSU Funding				
OSU GRF 4/09-10/10	J. Nason	Probing interactions between engineered nanoparticle and natural organic matter: implications for environmental fate, transport and toxicity	\$8,666	\$8,666
OSU IWW 2/08-2/11	J. Nason and A. Yokochi	Synthesis of traceable nanoparticle for studying the fate and transport of engineered nanomaterials in aquatic systems	9,926	9,926
OSU RERF 1/08	J. Nason	Purchase of a Brightwell Dynamic Particle Analyzer," OSU Research Equipment Reserve Fund	\$47,480	\$47,480
<i>Subtotal</i>			\$66,072	\$66,072
<i>Grand Totals</i>			\$2,126,050	\$1,901,684

AWARDS

- **CAREER Award** (National Science Foundation), 2013-2018
- **EPA STAR Graduate Fellowship** (US Environmental Protection Agency), 2004-2006
- **Abel Wolman Graduate Fellowship** (American Water Works Association), 2004-2006
- **NWRI Graduate Fellowship** (National Water Research Institute), 2004-2006