



Anne K. Alexander

Assistant Professor, Physics and Chemistry

Degree with Fields, Institution, and Date

- Doctor of Philosophy, Environmental Engineering and Science, University of Iowa, 2010
- Bachelors of Science, Environmental Sciences (Chemistry Track), University of Iowa, 2004

Years of Service on this Faculty: 6

Date of Original Appointment: August 2012

Advancement in Rank/Position

- Assistant Professor, August 2013
- Adjunct Assistant Professor, August 2012

Other Teaching Experience

- Adjunct Professor, Kirkwood Community College, Iowa City, IA, June-August 2011
- Graduate Teaching Assistant, The University of Iowa, Iowa City, IA, 2009-2010

Industrial Experience

- Textbook Accuracy Reviewer for Chemistry for Engineering Students, 4th edition, Cengage, Summer 2017.

- Center for Biocatalysis and Bioprocessing Intern, Ecolotree, Inc., North Liberty, IA, Summer 2010.

Clinical Experience

- Postdoctoral Research Scholar and Consultant, Department of Civil and Environmental Engineering, The University of Iowa, Iowa City, IA, 2010-2013
- Graduate Research Assistant, Department of Civil and Environmental Engineering, The University of Iowa, Iowa City, IA, 2005-2010
- Undergraduate Research Assistant, Department of Chemistry, The University of Iowa, Iowa City, IA, 2002-2004

Publications

- Wang, J., Koo, Y., Alexander, A.K., Yang, Y., Westerhof, S., Zhang, Q., Schnoor, J.L., Colvin, V.L., Braam, J., Alvarez, P.J.J. "Phyto-Stimulation of Poplars and *Arabidopsis* Exposed to Silver Nanoparticles and Ag⁺ at Sub-Lethal Concentrations." *Environmental Science and Technology*, 2013, 47, 5442-5449.
- Alexander, A.K., Biedermann, D., Fink, M.J., Mihovilovic, M.D., Mattes, T.E. "Enantioselective Oxidation by a Cyclohexanone Monooxygenase from the Xenobiotic-Degrading *Polaromonas* sp. strain JS666." *Journal of Molecular Catalysis B: Enzymatic*, 2012, Vol. 78, pp 105-110.
- Mattes, T.E., Alexander, A.K., Coleman, N.V. "Aerobic Biodegradation of the Chloroethenes: Pathways, Enzymes, Ecology and Evolution." *FEMS Microbiology Reviews*. 2010, 34 (4), 445-475.
- Mattes, T.E., Alexander, A.K., Richardson, P.M., Munk, A.C., Han, C.S., Stothard, P., and Coleman, N.V. "The Genome of *Polaromonas* sp. strain JS666: Insights into the Evolution of a Hydrocarbon- and Xenobiotic-Degrading Bacterium, and Features of Relevance to Biotechnology." *Applied and Environmental Microbiology*. 2008, 74 (20), 6405-6416.

Honors and Awards

- Center for Biocatalysis and Bioprocessing Graduate Fellowship, 2009-2010
- National Science Foundation Graduate Research Fellowship, 2006-2009

Professional Service

- MSOE Focus Program Instructor, July 2018
- MSOE Discover Summer Program Instructor, July 2018 and 2017
- MSOE CREST Modeling Team Advisor, 2017-Present
- MSOE Carter Academy Faculty Fellow, 2016-Present
- Faculty Senate, 2016-Present
- MSOE Carter Academy Chemistry Professor, Summers 2014-Present
- MSOE Secular Student Alliance Faculty Co-Advisor, 2016-Present

Professional Development

- Biennial Conference on Chemical Education, University of Notre Dame, July 2018
- American Chemical Society Great Lakes Regional Meeting, Fargo, ND, June 2017
- Biennial Conference on Chemical Education, Grand Valley State University, MI, August 2014
- International Phytotechnology Conference, Portland, OR, September 2011

Presentations Given

- Workshop: “Endless Possibilities: Collaborations with MSOE to Facilitate Student Learning with 3D Physical and Virtual Models”, Biennial Conference on Chemical Education, University of Notre Dame, July 2018.
- “Engaging Undergraduates in a Chemistry Prep Course by Making the Skill Mastery More Adaptive and the Content More Career-Relevant”, Biennial Conference on Chemical Education, University of Notre Dame, July 2018.
- “Exposing non-science majors to the scientific process: Questions about current nano-environmental research” Biennial Conference on Chemical Education, Grand Valley State University, August 2014.

- "Nanoparticle-Plant Interactions: Transport and Toxicity" Marquette University, Milwaukee, WI, November 2012.
- "Interactions of Plants and Engineered Nanoparticles" International Phytotechnology Conference, Portland, OR, September 2011
- "Cyclohexanone Monooxygenase from *Polaromonas* sp. strain JS666" Center for Biocatalysis and Bioprocessing Conference, Iowa City, IA, October 2009
- Association of Environmental Engineering and Science Professors Conference, Iowa City, IA, July 2009
- "Bioremediation and Biocatalysis with *Polaromonas* sp. strain JS666" University of Iowa Department of Civil and Environmental Engineering Environmental Seminar, Iowa City, IA, December 2007 and March 2010
- General Meeting of the American Society for Microbiology, Toronto, ON, May 2007
- University of Iowa College of Engineering Research Open House, Iowa City, IA, April 2007
- Center for Environmentally Beneficial Catalysis Spring Advisory Board Meeting, Lawrence, KS, April 2006
- Center for Biocatalysis and Bioprocessing Conference, Iowa City, IA, October 2005, 2006, 2007, and 2010