

Abigail W. Porter, Ph.D.
Department of Environmental Sciences
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EDUCATION

Cornell University, Department of Microbiology, Ithaca, New York 2008
Ph.D. Microbiology
Minors: Biochemistry; Agricultural and Biological Engineering
Dissertation "Presence and Fate of the Endocrine Disrupter Octylphenol"

Rutgers University, New Brunswick, New Jersey 2002
B. S. Biotechnology, with honors
Concentration: Applied Microbiology and Microbial Technology

APPOINTMENTS

Teaching Instructor - Rutgers University 2012- Present
Department of Environmental Sciences

Part-time Lecturer - Rutgers University 2010-2012
Department of Environmental Sciences

Post-doctoral Research Associate - Rutgers University 2007 - 2012
Department of Environmental Sciences
Biotechnology Center for Agriculture and the Environment
Advisor: Lily Y. Young

Doctoral Fellow - Cornell University 2003-2007
Microbiology Department
Advisor: Anthony G. Hay

Teaching Assistant - Cornell University 2002-2003
Microbiology Department

TEACHING EXPERIENCE

Rutgers University, Department of Environmental Sciences, New Brunswick, NJ

Introduction to Environmental Science - online (11:375:101:90)

Fully online, asynchronous course taught both spring and fall semesters since 2011. The students are non-majors.

Lab - Environmental Microbiology (11:375:312/512)

A fall semester laboratory course for both graduate and undergraduate students to learn microbiology techniques that have environmental applications. Designed a new lab exercise to isolate biofilm forming bacteria from the environment. Developed course modules to integrate DNA analyses with traditional microbiological plating and biochemical identification. Taught since 2010.

Environmental and Pollution Microbiology (11:375:411/510)

A spring semester lecture course for both graduate and undergraduate students that includes advanced material about environmental microbiology, including the biochemistry and genetics of pollutant biodegradation pathways. Also implemented new content to discuss environmental genomics. Taught since 2012.

Cornell University, Department of Microbiology, Ithaca, NY

General Microbiology (BioMi 290)

Teaching assistant Fall 2002
Small group leader 2004 - 2006

General Microbiology lab (BioMi 291)

Teaching assistant Spring 2003

Marine Microbes (BioMi 292)

Instructor 2004

STUDENT MENTORING AND ADVISING

G.H. Cook Honors Thesis Co-Advisor for Undergraduate Students

- Katherine Fullerton, Biotechnology major, 2016
G. H. Cook Honors Thesis "*Determination of the Presence of the Anaerobic Benzoyl-CoA Degradation Pathway in Animal Samples*"
2015 and 2016 Aresty Undergraduate Research Symposium Honorable Mention in Poster Competition
- Daniel Hollerbach, Biotechnology major, 2015
G. H. Cook Honors Thesis "*Genetic Characterization of bamA's Involvement in the Anaerobic Pathway for the Degradation of Natural Aromatics*"
2015 Aresty Undergraduate Research Symposium Best Poster Award Winner
- Wei Jie Tan, Microbiology major, 2013
G. H. Cook Honors Thesis "*Community Analysis and Genetic Diversity of Aromatic Compound Degrading Anaerobes*"

G.H. Cook Honors Thesis Reader (analogous to graduate committee member)

- Pinky Liao, Environmental Science major 2017
- Connor LaMontagne, Environmental Science major 2017

Research Mentor to Undergraduates

- Daniel Peltyszyn, Microbiology major 2019
- Angelica Nicosia, Microbiology major 2018
- Winifred Awa, Biology major 2011
- Jared Brisman, Bioenvironmental Engineering 2011
- Rose Filoramo, RISE program student 2010
- John Montemurro, Environmental Science major 2008

Supervisor to Graduate Student Teaching Assistants
Environmental Microbiology Lab

- Spencer Roth, 2017
- Francis Jordan , 2106
- Isatis Cintron, 2015
- Sarah Janssen, 2014
- Mingming Qin, 2013
- Sophia Worrell-Johnson 2012
- Anjuli Ramos-Busot 2010

Environmental and Pollution Microbiology

- Connor LaMontagne, 2017
- Julia Campbell, 2016
- Sarah Wolfson, 2013-2015
- Adam Mumford, 2012

RESEARCH PUBLICATIONS

**denotes corresponding author*

1. Yee, N., J. Choi, **A. Porter**, S. Carey, I. Rauschenbach, and A. Harel. 2014. Selenate reductase activity requires Isc iron-sulfur cluster biosynthesis genes. *FEMS Microbiol. Letters* 361(2):138-143.
2. **Porter, A. W*** and L. Y. Young. 2014. Benzoyl-CoA, a universal biomarker for anaerobic degradation of aromatic compounds. *Adv. Appl. Microbiol.* 88:167-203.
3. **Porter, A. W.** and L. Y. Young. 2013. The *bamA* gene is widely distributed in the environment. *Front. Microbiol.* 4:302
4. Heenan, J., **A. W. Porter**, D. Ntarlagiannis, L. Slater, L. Young, and D. D. Werkema. 2013 Sensitivity of the spectral induced polarization method to microbially enhanced oil recovery (MEOR) processes. *Geophysics.* 78(5): E261-E269.
5. Li, Y., **A. W. Porter**, A. Mumford, X. Zhao, and L. Y. Young. 2012. Bacterial community structure and *bamA* gene diversity in anaerobic degradation of toluene and benzoate under denitrifying conditions. *J. Appl. Microbiol.* 112(2):269-79.
6. **Porter, A. W.**, B. R. Campbell, B. Kolvenbach, P. F.-X. Corvini, D. Benndorf, G. Rivera-Cancel, and A. G. Hay. 2012. Identification of the flavin monooxygenase responsible for *ipso* substitution of alkyl and alkoxyphenols in *Sphingomonas* sp. TTNP3 and *Sphingobium xenophagum* Bayram. *Appl. Microbiol. Biotechnol.* 94(1):261-272.
7. Kagle, J., **A. W. Porter**, R. W. Murdoch, G. Rivera-Cancel, and A. G. Hay. 2009. Biodegradation of pharmaceutical and personal care products. *Adv. Appl. Microbiol.* 67:65-108.
8. **Porter, A. W.** and A. G. Hay. 2007. Identification of *opdA*, a gene involved in the biodegradation of the endocrine disrupter octylphenol. *Appl. Environ. Microbiol.* 73(22):7373-7379.

CONTRIBUTED TALKS

- "Drugs in the Environment". 2017. Science Café, Rutgers University School of Environmental and Biological Sciences, New Brunswick, NJ
- "The Benzoyl-CoA Pathway is an Important Part of the Anaerobic Carbon Cycle". 2016. Department of Environmental Sciences, Rutgers University, New Brunswick, NJ.
- "Genetic Diversity of the Anaerobic Benzoyl-CoA Pathway". 2015. Northeastern Microbiologists: Physiology, Ecology, Taxonomy (NEMPET), Blue Mountain Lake, NY.
- "Microbial Biodegradation of Recalcitrant Organics". 2012. Department of Chemistry, Franklin and Marshall College, Lancaster, PA.
- "Microbial Degradation of Recalcitrant Organics: Development and Use of Genetic Biomarkers". 2012. Department of Biology, West Chester University, West Chester, PA.

SELECTED ABSTRACTS

A. W. Porter is the poster presenter unless otherwise indicated (). Names of undergraduate students are underlined.*

- Porter, A. W.**, S. J. Wolfson, L. Y. Young. Microplastic is a Means for Transporting Naproxen-transforming Microbes in the Environment. American Society for Microbiology 2017 Microbe Conference, New Orleans, LA.
- Porter, A.W.**, S. J. Wolfson, J. Campbell, L. Y. Young. Anaerobic Toxicity of Eight Aromatic Pharmaceutical and Personal Care Products. American Society for Microbiology 2016 Microbe Conference, Boston, MA.
- Wolfson, S.J., * **A. W. Porter**, L. Y. Young. Anaerobic Transformation of Naproxen by Methanogenic and Sulfidogenic Consortia. American Society for Microbiology 2016 Microbe Conference, Boston, MA.
- Fullerton, K., * **A.W. Porter**, L.Y. Young. Determination of the Presence of the Anaerobic Benzoyl-CoA Degradation Pathway in Animal Samples. American Society for Microbiology 2016 Microbe Conference, Boston, MA.
- Hollerbach, D., * **A.W. Porter**, L.Y. Young. 2015. Genetic Characterization of *bamA*'s Involvement in the Anaerobic Pathway for the Degradation of Natural Aromatics. Northeastern Microbiologists: Physiology, Ecology, Taxonomy (NEMPET), Blue Mountain Lake, NY
- Porter, A. W.**, W. J. Tan, and L. Y. Young. 2013. The *bamA* gene is a biomarker for the anaerobic benzoyl-CoA pathway. Gordon Research Conference on Applied & Environmental Microbiology, South Hadley, MA.
- E. A. Rodgers-Vieira*, **A. W. Porter**, Q. Wang, E. Kim, J. R. Cole, L. Y. Young, G. J. Zylstra. 2012. Diversity of *bamA* Populations in Biogeographically Distinct Sediments. American Society for Microbiology 112th General Meeting, San Francisco, CA.
- Porter, A.W.**, Y. Li, M. Rivera, L. Kerkhof, and L.Y. Young. 2011. Anaerobic aromatic metabolism: benzoate gene diversity and implications for the Gulf oil spill. Gordon Research Conference on Applied & Environmental Microbiology, South Hadley, MA.
- Porter, A. W.**, C. Vetriani, and L. Y. Young. 2010. Aromatic carboxylic acids are anaerobically degraded in Guaymas Basin sediments. Goldschmidt Conference, Knoxville, TN.

- Porter, A. W.,** C. Vetriani, and L. Y. Young. 2009. Anaerobic hydrocarbon transformation in Guaymas Basin enrichments. American Society for Microbiology 109th General Meeting, Philadelphia, PA.
- Wise, A. E.** and A. G. Hay. 2006. *Bacterial biodegradation of the endocrine disrupter octylphenol by a sludge isolate.* EPA STAR Fellowship Conference, Washington, D.C
- Wise, A. E.** and A. G. Hay. 2006. Characterization of genes involved in octylphenol biodegradation by *Sphingomonas* sp. PWE1. American Society for Microbiology 106th General Meeting, Orlando, Fl.
- Wise, A. E.** and A. G. Hay. 2005. Characterization of genes involved in octylphenol biodegradation. American Society for Microbiology 105th General Meeting, Atlanta, GA.
- Wise, A. E.** and A.G. Hay. 2004. Presence and fate of estrogenic alkylphenols in sewage sludge. EPA STAR fellowship conference, Washington, D.C.
- Wise, A. E.** and A. G. Hay. 2003. Bacterial growth on *p*-octylphenol. American Society for Microbiology 103rd General Meeting, Washington, D.C.
- Wise, A. E.,** C.D. Phelps, and L. Y. Young. 2002. Anaerobic biodegradation of *p*-cresol. American Society for Microbiology 102nd General Meeting, Salt Lake City, Utah.

SYNERGISTIC ACTIVITIES

- Abstract reviewer for American Society for Microbiology 2017 Microbe Conference
- Peer reviewer for *Applied Microbiology and Biotechnology*, *Applied and Environmental Microbiology*, and CRC Press
- Secretary for Department of Environmental Sciences faculty meetings 2016-present
- Community engagement presentation "Raising Awareness about Microplastics in Household Products", in conjunction with Douglass Environmental Living-Learning Community, Rutgers Day 2016
- Environmental Science subject matter expert for Prometric , Inc. 2013-2014
- Instructor, 4-H Science Saturday 2011
- Judge, North Jersey Regional Science Fair 2010-2011
- Member, Current Protocols Advisory Board 2008-2015

HONORS and AWARDS

- Participant in Rutgers University OASIS Leadership and Professional Development Program Spring 2017
- Certificate in Teaching with Technology Spring 2010
- EPA Science to Achieve Results Fellowship 2004 - 2007
- Cornell University College of Agriculture and Life Sciences travel grant 2005
- USDA Multidisciplinary Graduate Education Traineeship 2002-2004
- George H. Cook Honors Scholar 2002
- USDA/Rutgers Summer Biotechnology Internship 2001
- George H. Cook Honors Program 1998-2002

PROFESSIONAL AFFILIATION

- Theobald Smith Society, North Jersey Branch of the American Society for Microbiology
Serving in the position of Branch Alternate Councilor since 2015
- American Association for the Advancement of Science
- American Society for Microbiology