

Updated: July, 2018

Andrew Giguere

Department of Microbiology and Ecosystem Science
 Division of Microbial Ecology
 University of Vienna, Vienna, Austria

Education

Ph.D. Soil Science, Oregon State University	2017
B.S. Environmental Science and Management, University of Rhode Island Minor: Geographical Information Systems and Remote Sensing	2011

Research and Employment Experience

<u>Post-Doctoral Researcher</u> , Division of Microbial Ecology, University of Vienna, Vienna, Austria. PI: Dagmar Woebken.	2017-Present
<u>Graduate Research Assistant/ Provost Graduate Fellow</u> , Laboratory of Environmental Microbiology, Oregon State University, Corvallis, OR PIs: Peter Bottomley, David Myrold.	2012- 2017
<u>National Science Foundation/Japan Society for the Promotion of Science Fellow</u> Chuo University, Tokyo, Japan. PI: Yuichi Suwa.	2014
<u>Undergraduate Research Assistant</u> , Laboratory of Soil Ecology and Microbiology, University of Rhode Island, Kingston, RI. PI: Jose Amador.	2010 - 2012
<u>Environmental Assistant</u> , Rhode Island Department of Transportation, Providence, RI	2011

Refereed Journal Publications

Mellbye B.L., **Giguere A.T.**, Chaplen F., Bottomley P.J., Sayavedra-Soto L.A. (2018) Modeling biotic and abiotic nitric oxide(s) and nitrous oxide production from single and co-cultures of *N. europaea* and *N. winogradskyi*. *mSystems* 3: e0070-17

Giguere, A.T., Taylor, A.E., Myrold, D.D., Bottomley, P.J., 2018. Nitrite-oxidizing activity responds to nitrite accumulation in soil. *FEMS Microbial Ecology*, 94, 1-9.

DeCrappeo N. D., DeLorenze E. J. D., **Giguere A.T.**, Pyke D.A., Bottomley P. J. 2017. Different fungal and bacterial contributions to nitrogen cycling in cheat grass invaded and uninvaded native sagebrush soils of the western USA., *Plant and Soil* 416, 271-281.

- Giguere, A.T.**, Taylor, A.E., Myrold, D.D., Bottomley, P.J., 2017. Uncoupling of ammonia oxidation from nitrite oxidation: impacts upon nitrous oxide production in non-cropped Oregon soils. *Soil Biology and Biochemistry* 104, 30-38.
- Taylor, A.E., **Giguere, A.T.**, Zobelein C. Myrold, D.D., Bottomley P.J., 2016. Modeling of soil nitrification responses to temperature reveals thermodynamic differences between ammonia-oxidizing activity of archaea and bacteria. *ISME J.* 11, 896-908.
- Mellbye B.L., **Giguere A.T.**, Bottomley P.J., Sayavedra-Soto L.A. 2016. Quorum quenching of *Nitrobacter winogradskyi* suggests quorum sensing regulates fluxes of nitrogen oxide(s) during nitrification. *mBIO* 7, 1-9.
- Mellbye B.L., **Giguere A.T.**, Chaplen F., Bottomley P.J., Sayavedra-Soto L.A. 2016. Steady state growth under inorganic carbon limitation increases energy consumption for maintenance and enhances nitrous oxide production in *Nitrosomonas europaea*. *Applied and Environmental Microbiology*. 81, 5917-5926.
- Giguere, A.T.**, Taylor, A.E., Myrold, D.D., Bottomley, P.J., 2015. Nitrification responses of soil ammonia-oxidizing archaea and bacteria to ammonium concentrations. *Soil Science Society of America Journal*, 79 1366-1374. (Featured Article in CSA News).
- Taylor, A.E., Vajjala, N., **Giguere, A.T.**, Gitelman, A.I., Arp, D.J., Myrold, D.D., Sayavedra-Soto, L., Bottomley, P.J., 2013. Use of aliphatic n-alkynes to discriminate soil nitrification activities of ammonia-oxidizing thaumarchaea and bacteria. *Applied and Environmental Microbiology* 79, 6544-6551 (AEM Spotlight, Nov 2013 issue).

Invited Conference Presentations

- Uncoupling of ammonia oxidation from nitrite oxidation, and its impact upon nitrous oxide production in a grassland soil. 2015. Soil Science Society of America meeting, Minneapolis, MN.
- How meaningful are taxonomic subdivisions of Andisols for soil biology? 2014. Oregon Society of Soil Scientists Winter Meeting, Astoria, OR.

Conference Presentations

- Uncoupling of ammonia oxidation from nitrite oxidation: Impact upon nitrous oxide production in non-cropped Oregon soils, 2016. Soil Science Society of America Meeting, Phoenix, AZ.
- Uncoupling of ammonia oxidation from nitrite oxidation, and its impact upon nitrous oxide production in a grassland soil, 2015 International Conference on Nitrification, Edmonton, Canada.
- Nitrification responses of ammonia-oxidizing bacteria and archaea to ammonia additions in cropped and non-cropped soils. 2013 International Conference on Nitrification, Chuo University, Tokyo, Japan.

Projects Funded

National Science Foundation/ Japan Society for the Promotion of Science: Contributions of microorganisms to greenhouse gas emissions from volcanic soils prevalent in the Pacific Rim region. Award Abstract #1414921, A Giguere, PI. \$12,000

Ad-hoc Reviewer Duties

Soil Biology and Biochemistry

Published Abstracts

- Giguere, A. T.**, Trojan, D., Watzka, M., Richter, A., Wuebken, D., Eichorst, S. A., 2018 (upcoming). Exploring H₂ utilization in mesophilic soil acidobacteria. Abstracts of the ISME meeting, Leipzig, Germany.
- Eichorst S.A., Trojan D., **Giguere A.T.**, Roux S., Herbold C., Rattei T., Wuebken D. 2018. Exploring the ecophysiology of acidobacteria and identifying the potential strategies for their success in soil. Abstracts of the American Society for Microbiology, Baltimore, MD
- Tzanakakis V., Dörsch P., Taylor A.E., **Giguere A.T.**, Bakken R.L., Bottomley P.J. and D.D. Myrold. 2017. Distinct N₂O yields of AOB and AOA driven ammonia oxidation across a range of Oregon forest soils. Abstracts of the European Geosciences Union, Vienna, Austria.
- Giguere, A.T.**, Taylor, A.E., Myrold, D.D., Bottomley, P. 2016. Uncoupling of ammonia oxidation from nitrite oxidation: impact upon nitrous oxide production in non-cropped Oregon soils. Abstracts of the Soil Science Society of America meeting, Phoenix, AZ.
- Giguere, A.T.**, Taylor, A. E., Myrold, D., Bottomley, P. 2015. Uncoupling of ammonia oxidation from nitrite oxidation, and its impact upon nitrous oxide production in a grassland soil. Abstracts of the Soil Science Society of America meeting, Minneapolis MN.
- Myrold D.D., **Giguere A.T.**, Taylor A.E., Bottomley P.J. 2015. Insights into the contributions of ammonia oxidizing archaea and bacteria in soil nitrification. Abstracts of the Frontiers in Soil Microbiology Meeting. Beijing, China.
- Giguere, A.**, Myrold, D., Bottomley, P. 2015. Uncoupling of ammonia oxidation from nitrite oxidation, and its impact upon nitrous oxide production in a grassland soil. Abstracts of the International Conference on Nitrification, Edmonton, Canada.
- Mellbye. B.L., **Giguere, A.T.**, Chaplen, F., Bottomley, P.J., Sayavedra-Soto, L. 2015. *Nitrosomonas europaea* responses at suboptimum carbonate levels in continuous culture. Abstracts of the International Conference on Nitrification, Edmonton, Canada.
- Taylor, A.T., **Giguere, A.T.**, Myrold, D.D., Bottomley, P.J. 2015. Responses of soil nitrification to temperature gradient shifts. International Conference on Nitrification, Edmonton, Canada,
- Myrold D.D., **Giguere A.T.**, Taylor A.T., Lu X., Bottomley P.J. 2015. Defining the niche space for nitrification by ammonia-oxidizing archaea and bacteria in soil. International Conference on Nitrification, Edmonton, Canada,

- Giguere, A.T.**, Bottomley, P.J., Suwa, Y., 2014 Contributions of microorganisms to greenhouse gas emissions from volcanic soil prevalent in the Pacific Rim region. 2014. Abstracts of the 2014 JSPS Summer Program, Sokendai, Japan
- Giguere, A.T.**, Taylor A.E, Myrold D.D., Tennigkeit B., Bottomley P.J., 2013. Nitrification responses of ammonia-oxidizing bacteria and archaea to ammonia additions in cropped and non-cropped soils. 2013 Abstracts of the International Conference on Nitrification, Tokyo, Japan.
- Bottomley, P.J., Taylor, A.E., **Giguere A.T.**, Gitelman A.I., Myrold, D.D. Discriminating soil nitrification contributions of ammonia-oxidizing thaumarchaea and bacteria using aliphatic n-alkynes. 2013. Abstracts of the Advanced methods for investigating nutrient dynamics in soil and ecosystems meeting, Haifa, Israel.
- Giguere, A.T.**, Taylor A.E., Myrold D.D., Tennigkeit B., Bottomley P.J. 2013. Nitrification responses of ammonia-oxidizing bacteria and archaea to ammonia additions in cropped and non-cropped soils. Abstracts of the 2013 Soil Science Society of America International Meeting, Tampa, FL.
- Possinger, A., Winkler N., **Giguere A.T.**, Brown R., Amador J.A. 2013. Using seaweed as a soil amendment: Effect on soil quality and yield of sweet corn (*Zea mays* L. var. *rugosa*). Abstracts of the 2013 Soil Science Society of America International Meeting, Tampa, FL.
- Possinger, A., Winkler, N., **Giguere, A.T.**, Brown, R., Amador, J.A. 2013. Using seaweed as a soil amendment: Effects on soil quality and yield of sweet corn (*Zea mays* L. var. *rugosa*). Soil Ecology Society Conference, Camden, New Jersey.
- Bottomley, P.J., Taylor A.T., Veeraja N., **Giguere A.T.**, Gitelman A., Arp D., Myrold D.D., Sayavedra-Soto L., 2013. Use of aliphatic n-alkynes to discriminate soil nitrification activities of ammonia oxidizing thaumarchaea and bacteria. USDA Conference, Washington DC.
- Possinger, A., Winkler N., **Giguere A.T.**, Brown R., Amador J.A., 2012. Using seaweed as a soil amendment: Effect on soil quality and yield of sweet corn (*Zea mays* L. var. *rugosa*). 2012 Abstracts of the Soil Science Society of America International Meeting, Cincinnati, OH.
- Taylor, A., Vajrala N., **Giguere A.**, Sayavedra-Soto L., Myrold D., Bottomley P., 2012. Discriminating between the contributions of ammonia oxidizing archaea and bacteria to soil nitrification. Abstracts of the 2012 International Society for Microbial Ecology Meeting, Copenhagen, Denmark.
- Avizinis, E., Atoyan J., **Giguere A.T.**, Staines C., Amador J.A. 2011. Earthworm community composition in two managed pasture sites in southern Rhode Island. Abstracts of Northeast Natural History Survey Conference, Albany, NY.
- Avizinis, E., **Giguere A.T.**, Amador J.A. 2010. Effect of earthworms on methane flux in temperate pastures. Abstracts of the Soil Science Society of America International Meeting, Long Beach, CA.

Teaching Experience

- Guest lecturer (Upper level undergrad/grad soil biology)

2016

- Graduate teaching assistant (Introduction to soils)

Awards

Oregon State University, Department of Crop and Soil Science Travel Award (2015): \$250
Oregon Lottery Scholarship (2014): \$2550
Provosts' Distinguished Doctoral Fellowship (2012): \$56,000
Oregon State University Graduate Student Travel Award for International Conference on Nitrification, Tokyo, Japan (2013): \$1000
Writers Fund Travel Award for International Conference on Nitrification, Tokyo, Japan (2013): \$250
Undergraduate Research Initiative: Award for Scholarly Projects Grant (2011): \$953

Memberships and Other Activities

Soil Science Society of America
Nitrification Network

Leadership Experience

Faculty Liaison: Association of Soil Science Graduate Students	2014-2015
Treasurer: Association of Soil Science Graduate Students	2013-2014

Extension and Outreach

KinderUni 2017: Conducting laboratory demonstrations with children (7-9 yr)
KinderUni 2018: Conducting laboratory demonstrations with children (7-9 yr)

University Service

Member, Search Committee, Pedologist/Soil Taxonomist, Oregon State University, Dept. of Crop Soil Science	Winter/Spring 2015
Student Member, Promotion and Tenure Committee, Oregon State University, Dept. of Crop and Soil Science	Fall 2014

References

Dr. Peter Bottomley (PhD Advisor)
Oregon State University
Department of Microbiology/Crop and Soil Science
348 Nash Hall
Corvallis, OR 97331

Phone: (541) 737-1844

Email: peter.bottomley@oregonstate.edu

Dr. David Myrold (PhD Co-Advisor)

Oregon State University

Department of Crop and Soil Science

3127 Ag & Life Sciences Building

Corvallis, OR 97331

Phone: (541) 737-5737

Email: david.myrold@oregonstate.edu

Dr. Luis Sayavedra-Soto (PhD Committee Member)

Oregon State University

Department of Botany and Plant Pathology

4098 Cordley Hall

Corvallis, OR 97331

Phone: 541-737-5285/4214

Email: sayavedl@science.oregonstate.edu

More references available upon request

Signature: 