

Taylor K. Dunivin

PhD Candidate in Microbiology and Toxicology

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Education

Michigan State University, East Lansing, Michigan 2014-present
Graduate program in Microbiology and Molecular Genetics
Graduate program in Environmental and Integrative Toxicological Sciences
Cumulative GPA: 3.9

University of Michigan, Ann Arbor, Michigan 2010-2014
Bachelor of Science in Biology, minor in Environmental Science
Cumulative GPA: 3.7

Research Experience

Michigan State University, Department of Microbiology and Molecular Genetics 2014-present
PhD Candidate – Shade Lab

University of Michigan Department of Molecular, Cellular, and Developmental Biology 2013-2014
Laboratory Technician – Nielsen Lab

University of Michigan Department of Ecology and Evolutionary Biology Fall 2012
Undergraduate Researcher – Duda Lab

Nova Environmental, Inc., Ann Arbor, Michigan Summer 2012
Environmental Consultant

Publications

- Taylor K Dunivin, Susanna Yeh, Ashley Shade. Targeting microbial arsenic resistance genes: A meta-analysis across soils. *In preparation*.
- Taylor K Dunivin, Jin Choi, Adina Howe, Jim Cole, Ashley Shade. RefSoil+ provides insights into antimicrobial resistance genes on soil plasmids. *In preparation*.
- Patrick Kearns, Taylor K Dunivin, Ashley Shade. The global environmental distribution of the plant growth promoting enzyme, 1-Aminocyclopropane-1-Carboxylate deaminase. *In preparation*.
- Jackson W Sorensen, Taylor K Dunivin, Tammy C Tobin, Ashley Shade. Genome reduction and genetic pathway enrichment across a thermal gradient of soil metagenomes. *In review*. Preprint: doi.org/10.1101/276584
- Taylor K Dunivin and Ashley Shade. Antibiotic resistance genes over a long-term thermal stressor. 2018. *FEMS Microbiology Ecology*. 10.1093/femsec/fiy016/4834000
- Taylor K. Dunivin, Justine Miller, Ashley Shade. Taxonomically-linked growth phenotypes during arsenic stress among arsenic resistant bacteria isolated from soils overlying the Centralia coal seam fire. 2018. *Plos ONE*. 13(1): e0191893.
- Hye Jin Hwang, Peter Dornbos, Michelle Steidemmann, Taylor K Dunivin, Mike Rizzo, John LaPres. 2016. Mitochondrial-targeted Aryl Hydrocarbon Receptor and the Impact of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin on Cellular Respiration and the Mitochondrial Proteome. *Toxicology and Applied Pharmacology*. **1304**:121-32.
- Vincenzo Antignani, Amy L. Klocko, Gwangbae Bak, Suma D. Chandrasekaran, Taylor K. Dunivin, Erik Nielsen. 2014. Plant U-BOX13 and the PI4Kb1/b2 phosphatidylinositol-4 kinases by the small GTPase rabA4B plays important roles during salicylic acid-mediated plant defense signaling in Arabidopsis. *Plant Cell*. **27**: 243-261.

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Oral Presentations

- Taylor K Dunivin, Susanna Yeh, Ashley Shade. Targeting microbial arsenic resistance genes: a meta-analysis across soils. Rapid fire talk, ASM Microbe. 8 June 2018, Atlanta, GA USA
- Taylor K. Dunivin. Microbial arsenic resistance in soil above an underground coal mine fire. Work in Progress Seminar. 30 January 2018, East Lansing, MI USA
- Taylor K Dunivin. The Ecology of Microbial Arsenic Resistance Genes Over a Long Term Stressor. Biomolecular Sciences Retreat. 25 August 2017, East Lansing, MI USA
- Taylor K. Dunivin. Microbial arsenic resistance in soil above an underground coal mine fire. Work in Progress Seminar. 30 January 2017, East Lansing, MI USA
- Taylor K. Dunivin, Ashley Shade. Ecological dynamics of wild and synthetic microbiomes. Michigan State – University of Michigan Joint Retreat. 16-19 October 2016. Kalamazoo, MI USA
- Taylor K. Dunivin, Jackson W. Sorensen, Ashley Shade. The roles of rare taxa for microbial community dynamics across interfaces. Ecological Society of America Annual Meeting. 7-12 August 2016. Fort Lauderdale, FL USA

Posters and Abstracts

- Taylor K Dunivin, Susanna Yeh, Ashley Shade. Targeting microbial arsenic resistance genes: a meta-analysis across soils. ASM Microbe. 8 June 2018, Atlanta, GA USA
- Taylor K. Dunivin and Ashley Shade. Investigation of arsenic and antibiotic resistance gene co-selection over a long term stressor. International Symposium on the Environmental Dimension of Antibiotic Resistance. 13-17 August 2017. East Lansing, MI USA
- Susanna Yeh, Taylor K. Dunivin, Ashley Shade. Diversity and abundance of arsenic resistant genes in soil microbiomes. Mid-Michigan Symposium for Undergraduate Research Experiences. 26 July 2017. East Lansing, MI USA
- Taylor K. Dunivin, Ashley Shade. The diversity of microbial arsenic resistance mechanisms from soil impacted by an ongoing coalmine fire. International Society for Microbial Ecology Conference. 21-26 August 2016. Montreal, QC Canada
- Taylor K. Dunivin, John Chodkowski, Jackson W. Sorensen, Ashley Shade. Microbial community arsenic tolerance and the fate of arsenic in soil. Microbiology and molecular genetics 2nd year poster session. 26 April 2016. East Lansing, MI USA
- Taylor K. Dunivin, John Chodkowski, Jackson W. Sorensen, Ashley Shade. Microbial community arsenic tolerance and the fate of arsenic in soil. Argonne Soil Metagenomics Meeting. 21-23 October 2015. Lisle, IL USA
- Taylor K. Dunivin, John Chodkowski, Jackson W. Sorensen, Ashley Shade. Microbial community arsenic tolerance and the fate of arsenic in soil. Microbiome Symposium. 10 September 2015. Ann Arbor, MI USA
- Ashley Shade, Tammy C. Tobin, Taylor K. Dunivin, Sang-Hoon Lee, Jackson W. Sorensen, Joshua R. Herr. Microbial Responses to Extreme Disturbance: Insights from the Ongoing Centralia Coal Mine Fire. Department of Energy Joint Genome Institute User's Meeting. 23-27 March 2015. Walnut Creek, CA USA.

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- Ashley Shade, Tammy C. Tobin, Taylor K. Dunivin, Sang-Hoon Lee, Jackson W. Sorensen, Joshua R. Herr. Microbial Responses to Extreme Disturbance: Insights from the Ongoing Centralia Coal Mine Fire. American Society for Microbiology General Meeting. 30 May-02 June 2015. New Orleans, LA USA
- J. Bursley, T. Dunivin, S. Umthong, J. W. Zagorski, A. E. Turley, H. E. Dover, C. E. Rockwell. Activation of Nrf2 by tBHQ upregulates IgM production by LPS-activated mouse splenocytes. The Society of Toxicology National Meeting. 22-26 March 2015. San Diego, California.

Honors and Awards

- Russell B. DuVall Fall Fellowship Fall 2018
- Ronald M. and Sharon Rogowski fellowship for Food Safety and Toxicology Fall 2017
- Ronald M. and Sharon Rogowski fellowship for Food Safety and Toxicology Summer 2016
- Gerhardt travel award Summer 2016
- NIH BEST Scholar 2015-present
- Council of Graduate Students travel award Fall 2015
- University Honors – University of Michigan 2011-2012

Teaching Experience

- EDAMAME workshop* – Michigan State University 2016-2018
- ACRES REU student mentor* – Michigan State University Summer 2017
- Introductory Laboratory for Microbiology* – Michigan State University Spring 2017
- Laboratory in Genomics and Molecular Genetics* – Michigan State University Spring 2016
- Undergraduate student mentor* – Michigan State University 2015-2016

Service Experience

- Reviewer* – mSystems
- Reviewer* – Environmental Science and Technology
- ScienceDebate.org student group leader – Michigan State University 2017-present
- Computational workshop course coordinator* – Michigan State University 2016-present
- Panelist for internships – Broadening Experiences in Scientific Training program June 2018
- Faculty meeting representative* – Michigan State University 2017-2018
- Interviewer for faculty candidate* – Computational Mathematics Science & Engineering Feb. 2017
- Guide for program recruitment* – Biomolecular Science Program 2015-2017
- New student Mentor* – Biomolecular Science Program August 2016
- Judge at poster session* – *Symposium for Undergraduate Research Experiences* July 2016
- Panelist for undergraduate ASM meeting* – Michigan State University April 2016
- Judge at poster session* – *Undergraduate Research And Fellowships* May 2015

Outreach Experience

- Author of newsletter* – ScienceDebate.org Dec. 2017
- Co-author of iCER Research Highlights article* May 2017
- Speaker* – Biology on Tap, Lansing, MI Feb. 2017
- Mentor and scientific career advisor* – Schollegiate College Prep and Tutoring July 2016
- Presenter* – Michigan State University Science Festival April 2016
- Producer of research video* – GreatLakesEcho.org April 2015
- Chaired Food Sustainability Committee* – University of Michigan 2012-2014