

Taylor K. Dunivin

PhD Candidate in Microbiology and Toxicology

Email: dunivint@msu.edu

Website: taylordunivin.com

Linkedin: [linkedin.com/in/taylorkdunivin](https://www.linkedin.com/in/taylorkdunivin)

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: 3.94

University of Michigan, Ann Arbor, Michigan 2010-2014
Bachelor of Science in Biology, minor in Environmental Science
Cumulative GPA: 3.69

Research Experience

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

- Analyzed microbial diversity and abundance of arsenic resistance genes
- Examined co-occurrence between resistance genes during environmental disturbance
- Examined changes in clinically relevant antibiotic resistance genes over a temperature gradient

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

- Investigated the relationship between GTPases and plant defense signaling
- Produced single and double *Arabidopsis Thaliana* gene knockouts

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

- Created database for previously collected slide samples
- Organized database into a photograph PowerPoint for future slide comparisons

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

- Monitored air samples during asbestos removals
- Worked at the interface of the public and cleanup crews to promote worker safety and reduce public concern during asbestos cleanup

Publications

- Taylor K Dunivin, Susanna Yeh, Ashley Shade. Targeting microbial arsenic resistance genes: A meta-analysis across soils. *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 preparation*.
- Taylor K Dunivin and Ashley Shade. Antibiotic resistance genes over a long-term thermal stressor. *In press* for EDAR conference proceedings special issue of FEMS Microbiology Ecology.
- 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. *Plos ONE*. 13(1): e0191893.
- Hye Jin Hwang, Peter Dornbos, Michelle Steidemann, 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.
- Hye Jin Hwang, Michelle Steidemann, Taylor K Dunivin, Mike Rizzo, John LaPres. 2016. Data of enzymatic activities of the electron transport chain and ATP synthase complexes in mouse hepatoma cells following exposure to 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin (TCDD). Data in brief. 8, 93-97.

Taylor K. Dunivin

PhD Candidate in Microbiology and Toxicology

Email: dunivint@msu.edu

Website: taylordunivin.com

Linkedin: [linkedin.com/in/taylorkdunivin](https://www.linkedin.com/in/taylorkdunivin)

- 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.

Oral Presentations

- Taylor K. Dunivin. The Ecology of Microbial Arsenic Resistance Genes Over a Long Term Stressor. BMS Retreat. 25 August 2017, East Lansing, MI USA
- Taylor K. Dunivin. Microbial arsenic resistance in soil above an underground coal mine fire. WiPS. 30 January 2017, East Lansing, MI USA
- Taylor K. Dunivin, Ashley Shade. Ecological dynamics of wild and synthetic microbiomes. MMG UM 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 and Ashley Shade. Investigation of arsenic and antibiotic resistance gene co-selection over a long term stressor. EDAR Conference. 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-SURE. 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. ISME 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. DOE Joint Genome Institute User's Meeting. 23-27 March 2015. Walnut Creek, CA 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. 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

- | | |
|---|-------------|
| 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 |

Taylor K. Dunivin

PhD Candidate in Microbiology and Toxicology

Email: dunivint@msu.edu

Website: taylordunivin.com

Linkedin: [linkedin.com/in/taylorkdunivin](https://www.linkedin.com/in/taylorkdunivin)

- NIH BEST Scholar 2015-Present
- Council of Graduate Students travel award Fall 2015
- University Honors – University of Michigan 2011-2012

Teaching Experience

- *ACRES REU student mentor* – Michigan State University, East Lansing, MI Summer 2017
- *Introductory Laboratory for Microbiology* – Michigan State University, East Lansing, MI Spring 2017
- *EDAMAME workshop* – Michigan State University, Kellogg Biological Station, Kalamazoo, MI July 2016
- *Laboratory in Genomics and Molecular Genetics* – Michigan State University, East Lansing, MI Spring 2016
- *Undergraduate student mentor* – Michigan State University, East Lansing MI 2015-2016

Service Experience

- ScienceDebate.org student group leader 2017-present
- Reviewer for mSystems
- Reviewer for Environmental Science and Technology
- *EDAMAME course coordinator* – Michigan State University, East Lansing, MI 2016-present
- *Interviewer for CMSE candidate* – Michigan State University, East Lansing MI February 2017
- *Guide for BMS recruitment* – Michigan State University, East Lansing MI 2015-2017
- *New student Mentor* – BMS, Michigan State University, East Lansing MI August 2016
- *Judge for mid-SURE poster session* – Michigan State University, East Lansing MI July 2016
- *Panelist for undergraduate ASM meeting* – Michigan State University, East Lansing MI April 2016
- *Judge for URAF poster session* – Michigan State University, East Lansing MI May 2015

Outreach Experience

- *Author of newsletter* – ScienceDebate.org Dec. 2017
- *Co-author of iCER Research Highlights article* – East Lansing, MI May 2017
- *Speaker* – Biology on Tap, Lansing, MI February 2017
- *Mentor and scientific career advisor* – Scollegiate College Prep and Tutoring, White Lake, MI July 2016
- *Presenter* – Science Fest, East Lansing, MI April 2016
- *Director/ Publisher of research video* – MSU Global YouTube Channel and GreatLakesEcho.org April 2015
- *Chaired Food Sustainability Committee* – University of Michigan, Ann Arbor, MI 2012-2014