

**Elizabeth McDaniel**  
Microbiology PhD Student  
(214)546-9748 | [emcdaniel@wisc.edu](mailto:emcdaniel@wisc.edu) | [elizabethmcd.github.io](https://github.com/elizabethmcd)

## **Education**

### **University of Wisconsin – Madison**

*Aug. 2016-present*

Ph.D. student in the Microbiology Doctoral Training Program

- Laboratory of Dr. Katherine McMahon, Department of Bacteriology

### **University of Arkansas – Fayetteville**

*Aug. 2012-May 2016*

Bachelor of Science in Biology with Statistics Minor, Cum Laude Honors

- GPA: 3.71/4.0
- Honors Thesis: Natural Variation of the Ena1p Sodium Pump in *S. cerevisiae*

## **Research Experience**

### **McMahon Lab – University of Wisconsin – Madison**

*Jan. 2017 - present*

Graduate research assistant in the laboratory of Dr. Katherine McMahon investigating bacterial communities of engineered wastewater systems. I use a combination of bioinformatics approaches and enrichment culture techniques to probe the diversity, functional activity and population dynamics of microorganisms that perform biological nutrient removal and understand microbial interactions.

### **Lewis Lab – University of Arkansas – Fayetteville**

*Aug. 2013-Aug. 2016*

Undergraduate research assistant in the laboratory of Dr. Jeffrey Lewis studying the natural variation of stress defense mechanisms in the budding yeast *Saccharomyces cerevisiae*.

### **Broach Lab – Penn State Hershey College of Medicine**

*May-Aug. 2014*

Intern in the Summer Undergraduate Research Internship Program in the laboratory of Dr. James Broach studying the interactions and movements of chromosomes during quiescence in the budding yeast *S. cerevisiae*.

## **Publications**

**1. McDaniel E.A.,** Stuecker T.N., Veluvolu M., Gasch A.P., Lewis J.A. **Independent Mechanisms for Acquired Salt Tolerance versus Growth Resumption Induced by Mild Ethanol Pretreatment in *Saccharomyces cerevisiae*.** mSphere. Nov 2018, 3 (6) e00574-18; DOI: 10.1128/mSphere.00574-18

## **Oral Presentations**

**7. McDaniel, E.A.,** Moya, F.M., van Steenbrugge, J., Oyserman, B.O., McMahon, K.D. Examining Long-Term Microbial Population Dynamics At Multiple Scales Using Enrichment Bioreactors As Model Ecosystems. Microbial Ecology and Water Engineering conference. Hiroshima, Japan. Nov. 2019.

**6. McDaniel, E.A.,** Peterson, B., Tran, P., Anantharaman, K., Krabbenhofft, D., McMahon, K.D. Expanded Phylogenetic Diversity and Metabolic Flexibility of Microbial Mercury Methylation. Evolution Series Seminar. University of Wisconsin – Madison JF Crow Institute for the Study of Evolution. Sept. 2019.

**5. McDaniel, E.A.,** van Steenbrugge, J., Oyserman, B.O, Moya, F., McMahon K.D. Eco-systems biology of a Microbial Community Performing Enhanced Biological Phosphorus Removal. Microbiology Doctoral Training Program Seminar. University of Wisconsin – Madison. Nov. 2018.

**4. McDaniel, E.A.,** McMahon, K.D. Bacterial Communities of Lab-Scale Wastewater Enrichments. UW-Madison Bioscience Opportunities Preview Weekend Lightning Talk. Sept. 2018.

**3. McDaniel, E.A.,** Moya, F., Camejo, P., He, S., McMahon, K.D. Integrating Anvi'o Tools into your Workflow: Insights from a Biological Nutrient Removal (BNR) System. Resolving Microbial Communities at Strain-Level Symposium. Penryn, UK. Aug. 2018.

**2. McDaniel, E.A.,** Stuecker, T.N., Elkon, I.M., Gasch, A.P., Lewis, J.A. Natural Variation in Yeast Uncovers Novel Regulation of the Ena1p Sodium Pump. Southeastern Regional Yeast Meeting. Tuscaloosa, AL. March 2016.

1. **McDaniel, E.A.** Stuecker, T.N., Elkon, I.M., Gasch, A.P., Lewis, J.A. Natural Variation in Yeast Uncovers Novel Regulation of the Ena1p Sodium Pump. Southeastern Regional Yeast Meeting. Little Rock, AR. *March 2015*.

### **Poster Presentations**

10. McMahon Lab. Microbiomes of Freshwater Lakes and Engineered Wastewater Systems. Water@UW Symposium. Madison, WI. *Oct. 2018*. (Poster constructed and presented on behalf of McMahon Lab)

9. McDaniel, E.A. Peterson, B. Stevens, S.L.R., Krabbenhoft, D., McMahon, K.D. Expanded Phylogenetic and Metabolic Diversity of Microbial Mercury Methylation. Department of Bacteriology Raper Symposium. Madison, WI. *Sept. 2018*.

8. McDaniel, E.A. Peterson, B. Stevens, S.L.R., Krabbenhoft, D., McMahon, K.D. Comparative Genomics of Microbial Mercury Methylation. International Society of Microbial Ecology Meeting. Leipzig, Germany. *Aug. 2018*.

7. McDaniel, E.A. Moya, F. Camejo, P. He, S. McMahon, K.D. Long-Term Population Dynamics of '*Candidatus* Accumulibacter phosphatis' in Enhanced Biological Phosphorus Removal Sequencing-Batch Reactors. Population, Evolutionary, Quantitative Genetics Conference. Madison, WI. *May 2018*.

6. McDaniel, E.A. Peterson, B. Stevens, S.L.R., Krabbenhoft, D., McMahon, K.D. Comparative Genomics of Microbial Methylmercury Production. Madison Microbiome Meeting. Madison, WI. *April 2018*.

5. McDaniel, E.A. Peterson, B. Stevens, S.L.R., Krabbenhoft, D., McMahon, K.D. Comparative Genomics of Microbial Methylmercury Production. Joint Genome Institute User Meeting: Genomics of Energy and Environment. San Francisco, CA. *Mar. 2018*

4. McDaniel, E.A. Stuecker, T.N., Elkon, I.M., Gasch, A.P., Lewis, J.A. Natural Variation in Yeast Uncovers Novel Regulation of the Ena1p Sodium Pump. Arkansas IDeA Network of Biomedical Research Excellence Meeting. Fayetteville, AR. *Nov. 2015*

3. McDaniel, E.A. Stuecker, T.N., Elkon, I.M., Gasch, A.P., Lewis, J.A. Natural Variation in Yeast Uncovers Novel Regulation of the Ena1p Sodium Pump. 27<sup>th</sup> International Conference on Yeast Genetics and Molecular Biology. Levico, Terme, Trentino, Italy. *Sept. 2015*

2. McDaniel, E.A. Stuecker, T.N., Elkon, I.M., Gasch, A.P., Lewis, J.A. Natural Variation in Yeast Uncovers Novel Regulation of the Ena1p Sodium Pump. South Central Branch of the American Society for Microbiology Joint Meeting. Fayetteville, AR. *Sept. 2014*

1. McDaniel, E.A. Rutledge, M.T., Broach, J.R. Chromosome Interactions in Quiescent Yeast. Penn State Hershey Summer Undergraduate Research Internship Programs Symposium. Hershey, PA. *Aug. 2014*.

### **Honors and Awards**

<b>O.N. Allen Soil and Environmental Microbiology Small Grants Award - \$3,290</b>	<i>August 2019</i>
<b>Department of Bacteriology Betley-Allen Fellowship Award</b>	<i>May 2019</i>
<b>University of Wisconsin-Madison Student Travel Grant - \$600</b>	<i>April 2019</i>
<b>Microbiology Doctoral Training Program Travel Award - \$1000</b>	<i>May 2018</i>
<b>Department of Bacteriology Travel Award - \$1000</b>	<i>May 2018</i>
<b>Southeastern Regional Yeast Meeting Travel Award - \$250</b>	<i>Mar. 2016</i>
<b>University of Arkansas Honors College Research Grant - \$1200</b>	<i>Jan. 2016</i>
<b>University of Arkansas Honors College Travel Grant - \$1200</b>	<i>Aug. 2015</i>
<b>Southeastern Regional Yeast Meeting Travel Award - \$250</b>	<i>Mar. 2015</i>
<b>University of Arkansas Honors College Research Grant - \$2500</b>	<i>Jan. 2015</i>
<b>University of Arkansas Academic Scholarship - \$2500</b>	<i>2014-2015</i>
<b>ASM South Central Branch Meeting 2<sup>nd</sup> Place Poster Award</b>	<i>Sept. 2014</i>
<b>University of Arkansas Academic Scholarship - \$1000</b>	<i>2013-2014</i>
<b>University of Arkansas Symphony Orchestra Scholarship - \$1000</b>	<i>2012-2016</i>
<b>University of Arkansas New Arkansan Non-Resident Tuition Award - \$39,040</b>	<i>2012-2016</i>

## **Teaching, Mentoring, and Service**

### **Bioinformatics Workshops (Teaching Assistant/Instructor/Course Development)**

Carpentries Genomics Introduction to R Instructor	<i>August 2019</i>
Data Carpentry Workshop Introduction to R Instructor	<i>June 2019</i>
Software Carpentry Workshop Helper	<i>June 2019</i>
Microbiome & Data Science Hubs Git/Github Pages Workshop Instructor and Developer	<i>March 2019</i>
Resolving Microbial Communities at Strain-Level Resolution Symposium Teaching Assistant	<i>Aug. 2018</i>
ComBEE Git/Github Pages Workshop Instructor and Developer	<i>Sept. 2017</i>
ComBEE Anvi'o Workshop Teaching Assistant	<i>May 2017</i>
ComBEE Git Workshop Teaching Assistant	<i>March 2017</i>

### **McMahon Lab Mentoring**

*2017-present*

*Graduate Student Mentor for Summer REUs and Undergraduate Research Students*

- *Kaela Amundson: Characterization and Enrichment of Microorganisms Capable of External Electron Transfer. Fall 2017-Spring 2018. Currently pursuing a Ph.D. in Microbiology at Colorado State University*

- *Kali Denis: Time-Series Analysis of Under-Ice Freshwater Bacterial Communities. Spring 2018.*

- *EBPR Reactor Maintenance Team: Oversaw 6 undergraduate students for maintenance of wastewater reactors. Fall 2018-current.*

### **Computational Biology, Ecology, and Evolution (ComBEE) Study Group Co-Chair**

*Jan. 2017-present*

ComBEE is a peer-led group for computational biology researchers on the UW-Madison campus. We hold bi-weekly R and Python study group sessions and monthly meetings on current research topics in ecology and evolution.

### **Microbiology Doctoral Training Program Admissions Committee**

*Fall 2019*

### **UW-Madison Metagenomics Workshop Development Team**

*Spring 2019 - present*

### **Data Science Hub Research Bazaar Planning Committee**

*Fall 2019*

### **Microbiology 304: Biology of Microorganisms Laboratory TA**

*Spring 2018*

### **BIOL 2323: General Genetics Drill Instructor**

*Spring 2015*

### **University of Arkansas Office of Admissions Ambassador**

*Aug. 2013-Dec. 2015*

## **Professional Development**

### **DELTA Research Mentor Training**

*Summer 2019*

### **Carpentries Instructor Training**

*April 2019*

### **Microbial Genomics and Metagenomics Workshop, FISABIO**

*June 2017*

### **Anvi'o Workshop, University of Chicago**

*April 2017*

### **Data Carpentry Workshop, University of Wisconsin-Madison**

*Jan. 2017*