**Anna P. Zmich**

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Objective

To make an impact by making chemistry greener through engineering and characterizing biocatalysts. I will be available for the job market by summer of 2024.

Education

**Iowa State University**

**Bachelor of Science:**Biology, Class of 2019, Summa Cum Laude

**Bachelor of Arts:** Chemistry, Class of 2019, Summa Cum Laude

**University of Wisconsin – Madison**

**Doctor of Philosophy:** Biochemistry

**Minor:** Biology

Graduate Research Experience

**Buller Lab Graduate Research Assistant,** 12/2019 to current

**University of Wisconsin Madison** – Madison, WI

* Identified, engineered, and characterized biocatalysts to make non-canonical amino acids.
* Trained undergraduate and graduate students.
* Experience in biocatalysis, organic synthesis, isolation and characterization of small molecules, enzymology, bioinformatics, and protein crystallography.

**Biotechnology R&D Intern,** 05/2022 to 8/2022

**Cargill** – Plymouth, MN

* Developed yeast strain engineering skills for the biocatalysis of a bulk commodity chemical.
* Characterized yeast fermentation yields via shake flasks and automated sampling instruments.
* Recommended ‘for hire’ at the conclusion of the internship.

Graduate Fellowships

**Arnold E and Catherine M. Denton Biochemistry Graduate Fellowship,** 03/2023 to current

**Department of Biochemistry** – Madison, WI

* Awarded this fellowship based on research accomplishments.
* One year of stipend, tuition, and fees awarded.

**Biotechnology Training Program Fellowship,** 09/2020 to 9/2022

**National Institute of General Medicinal Sciences (NIGMS)**

* Received two years of funding and tuition remission.
* Completed a cross disciplinary minor through additional coursework.
* Gained networking skills and knowledge about research in industry.

Authorships

1. **Efficient Chemoenzymatic Synthesis of α-Aryl Aldehydes as Intermediates in C–C Bond Forming Biocatalytic Cascades**

Anthony Meza, Meghan E. Campbell, **Anna Zmich**, Sierra A. Thein, Abbigail M. Grieger, Matthew J. McGill, Patrick H. Willoughby, and Andrew R. Buller

*ACS Catalysis* 2022 *12* (17), 10700-10710, DOI: 10.1021/acscatal.2c02369

1. **Multiplexed Assessment of Promiscuous Non-Canonical Amino Acid Synthase Activity in a Pyridoxal Phosphate-Dependent Protein Family**

**Anna Zmich**, Lydia J. Perkins, Craig Bingman, Justin F. Acheson, Andrew R. Buller

*ACS Catalysis* 2023 13 (17) 11644–11655, DOI: 10.1021/acscatal.3c02498

1. **Structural and mechanistic exploration of a thermostable cystathionine γ-lyase reveals a new catalytic function –** *in preparation*

Anna Zmich, Lydia J. Perkins, Craig Bingman, Andrew R. Buller

Graduate Presentations, Posters, Activities, and Honors

**Midwest Enzymes Chemistry Conference Poster Winner,** 09/2023

**Midwest Enzymes Chemistry Conference Poster,** 10/2021, 10/2022, 09/2023

**Central US Synthetic Biology Workshop Poster,** 10/2022

**Integrated Program in Biochemistry (IPiB) Retreat Presenter,** 09/2022

**Integrated Program in Biochemistry (IPiB) Retreat Poster,** 09/2022, 09/2023

**NSF GRFP Honorable Mention,** 04/2021

**Annual** **Integrated Program in Biochemistry (IPiB) Poster Session,** 1/2021, 1/2022

**Graduate Leadership and Development Committee (GLDC) Social Chair,** 09/2020 – 08/2021

**Graduate Leadership and Development Committee (GLDC) Recruitment Chair,** 09/2021 – 05/2022

Graduate Teaching Assistant History

**Biochemistry 551 Graduate Teaching Assistant,** Spring 2021, Spring 2022

**University of Wisconsin – Madison** – Madison, WI

* Facilitated and led a laboratory class of senior biochemistry students.
* Taught fundamental biochemical laboratory skills.

**Biochemistry 551 Graduate Seminar Instructor,** Spring 2022

**University of Wisconsin – Madison** – Madison, WI

* Led a seminar class of senior biochemistry students on the topic of enzymatic tools.

Undergraduate Research Experience and Fellowships

**Wilkinson Lab Research Assistant,** 08/2017 to 12/2018

**Iowa State University** – Ames, IA

* Gained spectroscopic analysis and ELISA skills.
* Developed and applied Basic R programming skills.

**Sakaguchi Lab Research Assistant,** 08/2016 to 05/2017

**Iowa State University** – Ames, IA

* Conducted immunohistochemistry (IHC) methods and assisted with the care of zebrafish embryos used to study the development of brain stem cells.

**The Freshman Research Initiative: Stem Cells for Neuroregeneration Research Assistant,** 01/2016 to 05/2016

**Iowa State University** – Ames, IA

* Conducted research under the supervision of Post-doctorate Dr. Sandquist and Dr. Sakaguchi.
* Performed IHC methods and assisted with the care of zebrafish embryos used to study the development of brain stem cells.

Undergraduate Work History

**Biological Education Success Teams Peer Mentor,** 08/2016 to 12/2018  
**Iowa State University** – Ames, IA

* Mentored the incoming freshman class by conducting weekly study help rooms and teaching two seminar sections about on campus resources.
* Coached skills and strategies for effective studying, class participation, and application of campus resources.

**Academic Success Center Tutor,** 01/2018 to 12/2018

**Iowa State University** – Ames, IA

* Tutored multiple groups of students for general chemistry and biology classes twice a week.

**Student Fundraiser,** 01/2019 to 06/2019

**Iowa State University Foundation** – Ames, IA

* Fundraised at least $38,000 for Iowa State University.
* Gained excellent rapport and interpersonal skills by talking to donors.

Undergraduate Activities and Honors

**Biological Sciences Club Social Chair,** 01/2015 to 12/2018

**Women in Science and Engineering (WiSE) Learning Community,** 08/2015 to 05/2019

**Department of Chemistry Academic Achievement Award,** 05/2017, 05/2018, 05/2019

**Skunk River Navy Volunteer,** 08/2015, 08/2017

**Dean's List,**Fall 2015, Spring 2016, Fall 2016, Spring 2017, Fall 2017, Spring 2018, Fall 2018, Spring 2019

**Summa Cum Laude,** Class of 2019