

Lillian M. Barten

Wisconsin Energy Institute

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Education:

Bachelor of Science (Genetics and Genomics) UW-Madison
Certificate in Global Health

December 2022

Research Experience:

Research Intern

March 2023-Present

Wisconsin Energy Institute, Great Lakes Bioenergy Research Center, Madison WI

- Conduct genetic engineering of *S. cerevisiae* and phenotypic testing
- Self-guided research and experiments to optimize microbial biofuel production and tolerance to inhibitory molecules
- Mentoring of an undergraduate in research, providing support and instruction to help develop their skills in the lab

Research Analyst

October 2021-February 2023

Wisconsin Department of Health Services, Madison WI

- Interview patients with food and water borne illnesses and provide education relating to their illness
- Work directly with epidemiologists to assist on tracking food and water borne outbreaks
- Enter and manage patient data into WEDSS and Microsoft Access and send and request medical records from labs and medical facilities

Lab Assistant

February 2020-December 2022

Chang Lab WIMR, Madison WI

- Perform general laboratory tasks such qPCR, midi prep, migration assays, and gel electrophoresis
- Work with *E. Coli* and mammalian cell culture and cloning
- Assist with current projects in the lab including work with CRISPR to test effects of gene deletion on melanoma metastasis

Lab Technician

May 2022-August 2022

Gutierrez Lab Cereals Breeding and Quantitative Genetics, Madison WI

- Experiment handling and harvest in the field at multiple locations
- Perform phenotype experiments in the field at multiple locations
- Collect and analyze crop and seed data

Publications:

- Dong B, Simonson L, Vold S, Oldham E, **Barten L**, Ahmad N, Chang H. FZD6 Promotes Melanoma Cell Invasion but Not Proliferation by Regulating Canonical Wnt Signaling and Epithelial–Mesenchymal Transition. *J Invest Dermatol.* 2023 Apr;143(4):621629.e6. doi: 10.1016/j.jid.2022.09.658. Epub 2022 Nov 9. PMID: 36368445; PMCID: PMC10292634.
- **Lillian Barten**, Johnathan G. Crandall, Dan Xie, Jose Serate, Evan Handowski, Annie Jen, Katherine A. Overmyer, Joshua J. Coon, Chris Todd Hittinger, Robert Landick, Yaoping Zhang, and Trey K. Sato. (under review) pH adjustment increases biofuel production from inhibitory switchgrass hydrolysate. *bioRxiv* 2025.01.10.632484; doi: <https://doi.org/10.1101/2025.01.10.632484>

Poster Presentations:

*undergraduate mentee

- **Lillian Barten**, Dan Xie, Jose Serate, Kallysa Taylor, John Crandall, Steve Karlen, Chris Todd Hittinger, Yaoping Zhang, Trey K. Sato. Ergosterol restores yeast biofuel production from inhibition by saponins in drought switchgrass. Poster presentation delivered at Great Lakes Bioenergy Research Center annual science meeting, Lake Geneva, WI. May, 2024.
- Elizaveta Korolev*, **Lillian Barten**, Trey K. Sato, Chris Todd Hittinger. Genetically modifying yeast to overproduce ergosterol and reverse the inhibition of biofuel production by saponins. UW-Madison Fungal Supergroup, Madison, WI. May, 2024.
- **Lillian Barten**, Kallysa Taylor, Elizaveta Korolev*, Dan Xie, Jose Serate, Chris Todd Hittinger, Ali Missaoui, Brian Davison, Yaoping Zhang, Trey K. Sato. Ergosterol rescues yeast biofuel production from inhibition by saponins in drought and variant switchgrass hydrolysates. Poster presentation delivered at DOE review, Madison, WI. January 2025.

Undergraduate Mentoring:

Elizaveta Korolev - Independent study

January 2024-Present

- Creating genetic knock outs and inducible plasmids to overexpress ergosterol production or increase saponin resistance in *S. cerevisiae*
- Awarded a Sophomore Research Scholarship for this project

Honors and Awards:

Dean's list

Spring 2020, Spring 2021-Fall 2022

Certificate of Recognition

April 2022

- For work in Wisconsin during the COVID-19 pandemic from Governor Tony Evers.

Organizational affiliations:

- UW-Madison Fungal supergroup *September 2023-Present*
- General member
- WEI Journal club *March 2023-Present*
- Discuss and analyze papers related to genetics, molecular biology, evolutionary biology, and biochemistry with students and interns within WEI
- EDC DEI Journal club *November 2023-Present*
- Discuss and analyze papers related to equity, diversity, inclusion, and accessibility in science with researchers within the GLBRC

Professional Training

- Genomics Data Carpentry workshop *August 2023*
Linux essentials workshop 1 and 2 *September 2023 UW-*
Madison Biosafety Training *January 2020-Present*

University and Community Services:

- Equity and diversity Community committee member** *May 2023-present*
Equity and diversity Community committee Co-chair *October 2024-present*

GLBRC - Help devise and organize community building events including: multicultural potluck and associated cookbook, community park clean-up, DEI journal club meetings, and school supply drives for local community

- Lead meetings and organize meeting and event agendas, delegate tasks to committee members when needed.
- Assist with DEI education and outreach

- UW Madison science expeditions** *May 2023*

WEI - Excite the local community with science related to clean energy, bioenergy, and general conservation efforts.

- Maintain an informational and interactive booth

- Madison park clean up** *April 2024*
WEI

- Earth Day community clean up through the city of Madison at a local park

- School supply drive** *August 2024*
WEI

- Organize and plan a building wide school supply drive for Dane County WI in partnership with United Way