

Megan E. Dolan

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OVERVIEW

I am a dependable, hard-working researcher interested in genomics and computational biology. As both an avid and adaptable learner, I work well both individually and in teams. My current goals include completing a Master's degree in Biology, expanding my computational skill set, and contributing to genomic research.

EDUCATION

MS Biology <i>Washington State University</i> Certificate: Bioinformatics	2019-Present
BS Biology <i>Illinois Wesleyan University</i> Minor: Computer Science	2015-2019

RESEARCH EXPERIENCE

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| Characterization of <i>Theobroma cacao</i> microbiome, Master's Thesis
<i>Washington State University, Advisor: Dr. Omar Cornejo</i> | 2019-Present |
| <ul style="list-style-type: none">Quantified relative abundance and relatedness of microorganisms in 200 <i>T. cacao</i> samples to characterize microbes across different host populations.Identified differential representation of metabolic pathways in microbe genomes.For more information, please visit www.megandolan.com/Research. | |
| Development of Bacteriophage Database, Independent Research
<i>Illinois Wesleyan University, Advisor: Dr. David Bollivar</i> | 2018 |
| <ul style="list-style-type: none">Created a web-based application that allows students to input data regarding newly discovered bacteriophages into a university database.Allows users to edit their information without deleting/changing information regarding other student's discovered bacteriophages. | |
| Annotation of Potential Helicase Gene, Independent Research
<i>Illinois Wesleyan University, Advisor: Dr. David Bollivar</i> | 2018 |
| <ul style="list-style-type: none">Conducted analysis of potential ATP-dependent helicase gene in recently discovered bacteriophage "MrWorf" and annotated genomes within host <i>Rhodobacter capsulatus</i> bacteriophage cluster for genetic similarity.Presented written report summarizing research to biology faculty, staff, and students. | |

Biofortification Research Intern

2017

International Rice Research Institute, Advisor: Dr. Mallikarjuna Swamy

- Studied biofortification of high zinc rice varieties in the Plant Breeding Division.
- Conducted activities related to rice hybridization, element concentration measurements, phenotyping and genotyping, data gathering, analysis, and QTL mapping.
- Prepared written and oral report summarizing experience and presented among Plant Breeding research team.

Faculty Advised Research

2015–2016

Illinois Wesleyan University, Advisors: Dr. Richard Alvey and Dr. David Bollivar

- Worked for the Science Education Alliance Program: Phage Hunters Advancing Genomics and Evolutionary Science (also known as SEA-PHAGES).
- Isolated, purified, sequenced, and analyzed newly discovered bacteriophages.
- Presented relevance research at the John Wesley Powell Research Conference in the spring.

TEACHING EXPERIENCE

Mentor for Undergraduate Researcher

Present

Washington State University, Biological Sciences

- Responsible for organizing and instructing undergraduate mentee in contribution to the cacao project.
- Hold biweekly meetings for open discussions regarding research objectives, related journal articles and reviews, troubleshooting concerns, and general professional advice.

Principles of Organic Evolution (BIOL 405), Teaching Assistant

Present

Washington State University, Biological Sciences

- Taught an average of 25 undergraduate students per section, with one section per semester.
- Taught hour long introduction lectures each week, actively led class discussions, and assisted with answering questions that covered a range of introductory concepts in evolutionary biology.

Organismal Biology (BIOL 106), Teaching Assistant

2019

Washington State University, Biological Sciences

- Taught an average of 35 undergraduate students per section, with three sections per semester.
- The course covered a range of topics pertaining to plant and animal anatomy/physiology.

Plant and Fungal Diversity (BIOL 306), Teaching Assistant

2017-2018

Illinois Wesleyan University, Biological Sciences

- Taught an average of 35 undergraduate students per semester.
- Assisted students with classifying and identifying specimen in taxonomic ordering, such as: fungi, slime molds, cyanobacteria, algae, bryophytes, eusporangiate and leptosporangiate gymnosperms, and angiosperms.

Plant Anatomy and Physiology (BIOL 375), Teaching Assistant

2018

Illinois Wesleyan University, Biological Sciences

- Taught an average of 25 undergraduate students per semester
- The course covered the following topics: plant cell structures, vegetative and reproductive plant body structure in angiosperms, pollination syndromes, sporogenesis, gametogenesis, fruit and flower morphologies, and plant tissue types.

PUBLICATIONS

3. **Dolan, M.** and Cornejo, O. (2020) *Diverse endophyte composition across highly divergent populations of the chocolate tree, Theobroma cacao L.* Manuscript in preparation, School of Biological Sciences, Washington State University.
2. **Dolan, M.** (2020) *A Web-Based Application for Efficient Organization of Microbial Genomic Data.* Manuscript in preparation, Department of Biological Sciences, Illinois Wesleyan University.
1. **Dolan, M.** (2020) *Web-Based Bacteriophage Organization System.* Department of Biological Sciences, Illinois Wesleyan University. DOI: 10.5281/zenodo.3625228.

PRESENTATIONS

Dolan, M. (2018). *Development of a Rhodobacter capsulatus Bacteriophage Database Application.* Oral presentation given at the IWU Criley Research Conference.

Dolan, M. (2017). *Zinc Biofortification Research Conducted at the International Rice Research Institute.* Oral presentation given at the IWU Biology Internship Conference.

Braun, M., **Dolan, M.**, Lennon, J. Lane, S., and Alvey, R. (2016). *Genetic Analyses and Annotations of Three Newly Discovered C1 Mycobacteriophages.* Poster session presented at the John Wesley Powell Research Conference.

GRANTS AND AWARDS

TOTAL: \$8,531.46

Carl H. Elling Travel Endowment <i>Washington State University - \$1,500.00</i>	2020
Carl H. Elling Travel Endowment <i>Washington State University - \$531.46</i>	2019
Criley Research Fellowship Grant <i>Illinois Wesleyan University - \$4,000.00</i>	2018
Freeman Asia Internship Grant <i>Illinois Wesleyan University - \$2,500.00</i>	2017

HONORS

Undergraduate Dean's List 2018, 2019
Illinois Wesleyan

COMPUTER SKILLS

Basic Language Comprehension:

HTML, CSS, JavaScript, C++, C, Python, Perl, R, SQL

Basic Database Management Comprehension:

MongoDB, MySQL, SQLite

ADDITIONAL EXPERIENCE

Greenhouse Assistant Manager 2017-Present
Illinois Wesleyan University, Advisor: Prof. Bethany Evans-Campbell

- Maintained a diverse collection of plant species, including: bryophytes, eusporangiate and leptosporangiate gymnosperms, and angiosperms.
- Attended to daily greenhouse up-keeping.

PROFESSIONAL AFFILIATIONS

Graduate Women's Alliance in Academia 2020-Present
Active Member

Graduate Women in Science (GWIS) 2020-Present
Active Member

The National Society of Leadership and Success 2018-Present
Inducted/Active Member

The National FFA Organization 2013-Present
Student Advisor, Secretary, and Alumni

COMMUNITY SERVICE/ADDITIONAL AFFILIATIONS

Million Women Mentors (MWM) 2020-Present
Volunteer Mentor

Palouse Science (Children's) Discovery Center 2019-Present
Volunteer Member

Alpha Phi Omega – Professional Service Fraternity 2018-Present
Inducted Member

IWU Peace Garden 2016 - 2019
Community Volunteer Member