Julian A. Liber

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East Lansing, MI 48825

EDUCATION

Michigan State University, East Lansing, MI Aug 2018 - Anticipated May 2021
Masters of Science in Plant Biology – Current GPA: 4.00

- Coursework: Advanced Mycology, Evolutionary Biology, Special Topics in Mycology, Eukaryotic Cell Biology, Foundations of Plant Biology, Statistical Methods in Ecology and Evolution 1 & 2, Plant Genomics, Teaching College Science

Michigan State University, East Lansing, MI Aug 2016 - May 2019
Bachelors of Science in Plant Biology - GPA: 3.99

- Minor: Computational Mathematics, Science, and Engineering
- Biology Coursework: Biology of Plants, Fundamental Genetics, Organic Chemistry, Ecology, Evolution, Introduction to Forestry, Plant Physiology, Plant Systematics, Algal Biology, Biochemistry
- Computational and Quantitative Coursework: Computational Biology, Computational Modeling Tools and Techniques, Introduction to Programming II, Bioinformatics
- Honors College

The Ohio State University Stone Laboratory, Gibraltar Island, OH Summer 2017

- Field courses in Evolution and Ecology

RESEARCH EXPERIENCE

Graduate Research Assistant, MSU, East Lansing, MI Summer 2019 - Present

- Bonito Lab – Systematics of Mortierellaceae, fungal interactions with bacteria, algae, plants, nematodes, and plant viruses, computer vision applications to fungi.
- Mentoring of undergraduate and high school students

Undergraduate Research Assistant, MSU, East Lansing, MI Fall 2018 - Spring 2019

- Bonito Lab – Independent research project studying the interaction of bacterial and fungal endophytes in grasses.
- Responsibilities – Experimental design, data collection, presentation of results, lab maintenance duties, regular meetings with research group and professor.

iGEM Competition Team Member, MSU, East Lansing, MI, Spring 2018 - Fall 2018

- Team project to transform a native bacterial endophyte of grasses to promote drought stress tolerance in cereal crops
- Responsibilities – Organizing team meetings, project and experimental design, technical problem solving, community outreach, inter-lab collaboration, research presentation

Professorial Assistantship, MSU, East Lansing, MI Fall 2016 - Spring 2018

- Bonito Lab (Spring 2017 – Spring 2018) – Study of endosymbiotic bacteria interactions in fungi; culturing and sequencing novel fungi strains, microscopy and image analysis
- Sticklen Lab (Fall 2016) – Genetic transformation techniques of wheat and cotton
- Responsibilities – Frequent meetings with PI and lab members, writing research reports, training students, working independently and in groups, scheduling

TEACHING EXPERIENCE

Teaching Assistant, MSU, East Lansing, MI Fall 2019

- Center for Integrative Studies in General Science
- Course: ISB 208L – Applications in Biological Science Laboratory
- Responsibilities – Course development and planning, lectures, grading, working with course coordinator and TAs, help room

Undergraduate Learning Assistant, MSU, East Lansing, MI Spring 2018 – Spring 2019

- Department of Computational Mathematics, Science, and Engineering
- Course: CMSE 202 – Computational Modeling Tools and Technology
- Responsibilities – Group facilitation in class, weekly meetings with instructors, aid students in help room, software troubleshooting, discussion of education pedagogy

AWARDS

- Summa Cum Laude, MSU Spring 2019
- Department of Plant Biology Outstanding Undergraduate Award Spring 2019
- Department of Computational Mathematics, Science, and Engineering Outstanding Learning Assistant Spring 2019
- University Undergraduate Research and Arts Forum 1st Place Poster Spring 2018
- Dean's List Fall 2016 - Spring 2019
- Scholarships - Alumni Distinguish Scholarship Finalist, National Merit Finalist, Norman A. Good Scholarship Award, College of Natural Science Research Scholarship

SYNERGISTIC ACTIVITIES/PROFESSIONAL IMPACT

MSU Plant Biology Graduate Student Organization Outreach Committee 2019-2020
Organize and participate in events in the Lansing, MI area to promote interest in science and science literacy.

MSU Plant Biology Club President 2018-2019
Club activities organization, recruitment, plant collection maintenance, outreach events.

MSU iGEM Team 2018
Integrated human practices including expert consultations, community surveys and public forums, and educational events at Impression 5 Science Center and Lansing Public Library.

MSU Science Festival Presenter 2017-2020
Interactive presentations discussing photosynthesis and plant adaptations.

East Lansing Science Nights Presenter 2016-2019
Hands-on activities exploring plant diversity, microbiomes, evolution, and plant anatomy.

PUBLICATIONS/PRESENTATIONS/FEATURES

- Vandepol N, Liber JA, Matlock J, Bonito, G (2020) *Mortierella elongata* stimulates aerial growth, seed production, and responses to auxin, ethylene, and reactive oxygen species in *Arabidopsis thaliana*. Molecular Plant Microbe Interactions. *In Preparation.*
- Vandepol N, **Liber JA**, Desirò A, Na H, Kennedy M, Barry K, Grigoriev IV, Miller AN, O'Donnell K, Stajich JE, Bonito G (2020) Resolving the Mortierellaceae phylogeny through synthesis of Multi-Locus Sequence Typing (MLST) and phylogenomics. Fungal Diversity. *In Revision.*
- **Liber JA**, Bonito G (2019) Do fungal endophytes facilitate colonization of bacterial endophytes in *Brachypodium distachyon*? Mycological Society of America. University of Minnesota, Minneapolis, Minnesota, Aug. 13, 2019. Poster presentation.
- **Liber JA** (2019) Co-inoculation effects of bacterial and fungal endophytes in Brachypodium distachyon. University Undergraduate Research and Arts Forum. Michigan State University, East Lansing, Michigan, Apr. 5, 2019. Oral presentation.

- **Liber JA**, Brauer-Delaney B (2018). Julian Liber: Undergrad research opportunities. MSU Today Student Views. Dec. 5, 2018.
- **Liber JA**, Houwat I (2018). MSU team wins bronze at 2018 synthetic biology competition. Michigan State University, Molecular Plant Sciences News. Nov. 27, 2018.
- **Liber JA**, Lee J, Uhelski E, Del Rose A, Schultz J, Viola S, Gate C, and Caldwell S (2018). Transformation of endophyte *Enterobacter ludwigii* with ACC deaminase related to ethylene stress response. iGEM Giant Jamboree. Hynes Convention Center, Boston, Massachusetts, Oct. 25, 2018. Poster and oral presentation.
- **Liber JA**, Gall E, Vande Pol N, Silvia D, and Bonito G (2018). Use of hyphal image analysis and machine learning to classify Mucoromycota soil fungal isolates. International Mycological Congress. San Juan Convention Center, San Juan, Puerto Rico, July 20, 2018. Poster presentation.
- Aime MC, Urbina H, **Liber JA**, Bonito G, and Oono R (2018). Two new endophytic Atractiellomycetes, *Atractidochium hillariae* and *Proceropycnis hameedii*. Mycologia. 110(1): 136-146
- **Liber JA**, Gall E, Vande Pol N, Silvia D, and Bonito G (2018). Use of hyphal image analysis and machine learning to classify Mucoromycota soil fungal isolates. University Undergraduate Research and Arts Forum. Michigan State University, East Lansing, Michigan Apr. 13, 2018. Poster presentation.
- Desirò A, Hao Z, **Liber JA**, Benucci GM, Lowry D, Roberson R, Bonito G. (2018) Mycoplasma-related endobacteria within Mortierellomycotina fungi: diversity, distribution and functional insights into their lifestyle. The ISME journal. 12(7): 1743-1757.
- Hussien A, Olson E, Brisco E, West H, Javaid T, **Liber JA**, and Sticklen M (2016). Overactivation of two wheat native genes in wheat genome confers resistance to FHB pathogen inoculations. Scab Symposium, Genes Discovery and Engineering Chapter. Hyatt Regency at the Arch. St. Louis, Missouri, Dec. 4-6, 2016. Poster presentation.