Edna Chiang

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EDUCATION

University of Wisconsin-Madison *Sep 2016 - Present*

- PhD Candidate, Microbiology Doctoral Training Program, Department of Bacteriology GPA: 4.00/4.00
- PhD Minors: Life Sciences Communication and Biotechnology
- Advisors: Dr. Garret Suen and Dr. Hannah Carey

University of Michigan *Graduation: Apr 30, 2015*

- BS with high distinction in Microbiology (High Honors) and Spanish GPA: 3.85/4.00
- Honors Thesis: Ecology of Verrucomicrobia in a Freshwater Estuary

NOTABLE AWARDS

- NSF Non-Academic Research Internships for Graduate Students (INTERN) Supplemental Funding *Jul 2019*
- NSF Graduate Research Fellowship *Sep 2018 – Aug 2023*
- NIH Biotechnology Training Program Traineeship *Jan 2017 – Aug 2019*
- Beckman Scholars Fellowship *May 2014 – Aug 2015*
- American Society of Microbiology Undergraduate Research Fellowship *May 2014 – Dec 2014*

SCIENTIFIC PUBLICATIONS

Becker S*, **Chiang E***, Platinga A, Carey H, Suen G, Swoap S. (2020) Effect of stevia on the gut microbiota and glucose tolerance in a murine model of diet-induced obesity. *FEMS Microbiol. Ecol.* 96(6):fiaa079. doi: 10.1093/femsec/fiaa079 * *co-first author*

Schmidt ML, Biddanda, BA, Weinke AD, **Chiang E**, Januska F, Props R, Denef VJ (2020) Microhabitats shape diversity-productivity relationships in freshwater bacterial communities. *FEMS Microbiol. Ecol.* 96(4):fiaa029. doi: 10.1093/femsec/fiaa029.

Regan MD, **Chiang E**, Martin SL, Porter WP, Assadi-Porter FM, Carey HV. (2019) Shifts in metabolic fuel use coincide with maximal rates of ventilation and body surface rewarming in an arousing hibernator. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 316(6):R764-R775. doi: 10.1152/ajpregu.00379.2018.

Chiang E, Schmidt ML, Berry MA, Biddanda BA, Burtner AM, Johengen TH, Palladino D, Denef VJ (2018) Verrucomicrobia are prevalent in north-temperate freshwater lakes and display class-level preferences between lake habitats. *PLoS ONE* 13(3):e0195112. doi:10.1371/journal.pone.0195112. .

Denef VJ, Carrick HJ, Cavaletto J, **Chiang E**, Johengen TH, Palladino D, Vanderploeg HA (2017) Lake bacterial assemblage composition is sensitive to biological disturbance caused by an invasive filter feeder. *mSphere* 2:e00189-17. doi:10.1128/mSphere.00189-17.

Denef VJ, Mueller RS, **Chiang E**, Liebig JR, Vanderploeg HA (2016) Chloroflexi CL500 11 populations that predominate deep lake hypolimnion bacterioplankton rely on nitrogen-rich DOM metabolism and C1 compound oxidation. *Appl. Environ. Microbiol.* 82(5):1423-1432. doi:10.1128/AEM.03014-15.

McCarthy A, **Chiang E**, Schmidt ML, Denef VJ (2015) RNA Preservation Agents and Nucleic Acid Extraction Method

Bias Perceived Bacterial Community Composition. *PLoS ONE* 10(3):e0121659. doi:10.1371/journal.pone.0121659.

SELECTED SCIENTIFIC PRESENTATIONS

Presentation, "The Hibernation Microbiome: Seasonal Shifts in Carbohydrate Metabolism." Microbiology Doctoral Training Program Student Seminar – Special Recruitment Seminar, Jan 31, 2020, Madison, WI

Presentation, "Winter is Coming: A Stark Look at the Hibernator Microbiota." Biotechnology Training Program Seminar, Nov 7, 2018, Madison, WI

Poster, "The hibernating squirrel microbiome responds to seasonal dietary shifts by altering its functional potential." 17th International Symposium on Microbial Ecology, Aug 12, 2018, Leipzig, Germany.

Poster, "Ecology of Verrucomicrobia in a Freshwater Estuary." American Society of Microbiology General Meeting, Jun 2, 2015, New Orleans, LA.

RELEVANT RESEARCH EXPERIENCE

Graduate Research Assistant, **Dr. Garret Suen and Dr. Hannah Carey,** University of Wisconsin-Madison

- Investigated microbe-host interactions in hibernating mammals to understand the link between bacterial taxonomy and function *Jan 2017 – Present*
- Worked with an interdisciplinary team to perform *in vivo* stable isotope-assisted labeling experiments
- Increased bioinformatics proficiency by analyzing amplicon sequencing and metagenomic data

Undergraduate Researcher / Lab Technician**, Dr. Vincent Denef,** University of Michigan *Sep 2012 – Aug 2016*

- Optimized fluorescent *in situ* hybridization microscopy protocol, extracted DNA/RNA, prepared samples for amplicon sequencing, created cultures
- Collected water and sediment sample from Muskegon Lake and Lake Michigan
- Applied statistical and bioinformatics techniques to analyze bacterial 16S rRNA data using mothur and R

TEACHING EXPERIENCE

Co-Instructor**, Biotechnology Center**, University of Wisconsin-Madison *Nov 2017 – Present*

- Co-instructed workshops teaching analysis of amplicon sequencing data with mothur and R

Graduate Teaching Assistant**, University of Wisconsin-Madison** *Sep 2017 – Dec 2017*

- Assisted in teaching Emerging Infectious Diseases and Bioterrorism (MM&I 554)
- Encouraged student discussion, graded exams and homework

Guest Instructor**, Microbiology Capstone Course,** University of Wisconsin-Madison *Jan 2017 – May 2017*

- Designed student research projects in collaboration with Dr. Robin Kurtz and Dr. Melissa Christopherson
- Collected samples for students, taught bioinformatics, and directly aided in bacterial genome assembly

SKILLS

- **Bioinformatics:** R (advanced), perl (familiar), python (familiar), mothur (advanced), bash (familiar), HTML (intermediate), CSS (intermediate), amplicon sequencing analysis, metagenomic analysis
- **Lab Skills:** DNA/RNA extraction, PCR, gel electrophoresis, DNA library preparation, Illumina MiSeq sequencing, fluorescent *in situ* hybridization microscopy, limnology field work and sample collection,

squirrel trapping

- **Languages:** English (fluent), Spanish (fluent), Mandarin Chinese (intermediate)