

# Edna Chiang

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## EDUCATION

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### University of Wisconsin-Madison

Madison, WI

- Microbiology PhD Student, Life Sciences Communication and Biotechnology Minors

Sep 2016 - Present

- Advisors: Dr. Garret Suen and Dr. Hannah Carey

GPA: 4.00/4.00

### University of Michigan

Ann Arbor, MI

- Bachelor of Science with High Distinction

Graduation: Apr 30, 2015

- Microbiology (High Honors) and Spanish

GPA: 3.85/4.00

- Honors Thesis: Ecology of Verrucomicrobia in a Freshwater Estuary

## RELEVANT GRADUATE COURSEWORK

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Public Opinion of Life Sciences Issues

Improv for Scientists

Communicating Sciences with Everyone

Web Design for Scientists

Writing Science as a Story

Scientific Writing

Life Sciences Communication Colloquium

Current Issues in Microbiology

## PROFESSIONAL EMPLOYMENT

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### **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

### **Science Policy Fellow, Federation of American Societies for Experimental Biology (FASEB)**

- Tracked science issues and appropriations in Congress by attending congressional hearings and briefings and participating in stakeholder meetings for science agencies and professional societies

May 2019 – Aug 2019

- Wrote articles for the FASEB Washington Update newsletter to inform scientists and policy enthusiasts about important science policies

- Contributed to an educational and advocacy campaign for the National Science Foundation by helping create an informational factsheet and coordinate a congressional briefing about NSF-funded research addressing the public health concern of antimicrobial resistance

### **Undergraduate Researcher / Lab Technician, Dr. Vincent Denef, University of Michigan**

Sep 2012 – Aug 2016

- Studied freshwater microbial ecology to understand the role of bacteria in Great Lakes carbon cycling

- Optimized fluorescent *in situ* hybridization microscopy protocol, extracted DNA/RNA, prepared samples for amplicon sequencing, created cultures, collected water and sediment sample from the Great Lakes

- Applied statistical and bioinformatics techniques to analyze bacterial 16S rRNA data using mother and R

### **Biochemistry Study Group Leader, Science Learning Center, University of Michigan**

Sep 2013 – Apr 2015

- Created engaging activities to help students enhance their understanding of biochemistry

- Cultivated strong sense of community to encourage collaborative discussion between students

## SCIENTIFIC PUBLICATIONS

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- Becker SL\*, **Chiang E\***, Plantinga A, Carey H, Suen G, Swoap SJ. (In Review) Stevia supplementation does not rescue high fat diet-induced obesity, glucose intolerance, or microbiota changes. *FEMS Micro Ecol.* \* = co-first author
- 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
- Schmidt ML, Biddanda, BA, Weinke AD, **Chiang E**, Januska F, Props R, Denef VJ (2017) Microhabitats shape diversity-productivity relationships in freshwater bacterial communities. *bioRxiv*.
- 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

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- Presentation, "Science Policy Internship with the Federation of American Societies for Experimental Biology (FASEB)." Biotechnology Training Program Student Seminar, Sep 25, 2019, Madison WI.
- Presentation, "Winter is Coming: A Stark Look at the Hibernator Microbiota." Microbiology Doctoral Training Program Student Seminar, Sep 26, 2018, Madison, WI.
- Poster, "The hibernating squirrel microbiome responds to seasonal dietary shifts by altering its functional potential." 17<sup>th</sup> 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.

## SCIENCE COMMUNICATION EXPERIENCE

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- Invited Speaker, Kettle Moraine Evening with Nature** Sep 12, 2019
- Presented two stories about hibernation from the perspective of a hibernating squirrel and its gut microbes
  - Engaged in informal discussion with local WI residents about implications of hibernation research
- Invited Speaker, Science On Tap – Minocqua** Jan 2, 2019
- Presented two stories about hibernation from the perspective of a hibernating squirrel and its gut microbes
  - Engaged in informal discussion with local Minocqua, WI residents about implications of hibernation research
- Gaining STEAM! Scientist, JKK Comics, University of Wisconsin-Madison** Oct 2018 – Present
- Created a comic book about hibernation microbiology by integrating science, story-telling, and art through a collaboration with JKK Comics and local Madison artists
  - Incorporated the comic into outreach activities to improve participant engagement and learning

**Wisconsin Idea STEM Fellow, University of Wisconsin-Madison***Jun 2018 – Present*

- Learned interactive teaching strategies and outreach evaluation techniques
- Designed and implemented an interactive hibernation microbiology outreach activity for elementary school-aged children at eight outreach events
- Worked with fellows-in-training to develop and improve their outreach activities

**Designer and Volunteer, Science Saturday, University of Wisconsin-Madison***Sep 2017 - Present*

- Co-developed and executed outreach activities to teach hibernation physiology and microbe-host interactions to Madison children in elementary through high school
- Collaborated with the Wisconsin Institute for Discovery and the Morgridge Research Institute

**SELECTED AWARDS**

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|---|----------------------------|
| - NSF Non-Academic Research Internships for Graduate Students (INTERN) Supplemental Funding | <i>Jul 2019</i>            |
| - NSF Graduate Research Fellowship  | <i>Sep 2018 – Aug 2023</i> |
| - NIH Biotechnology Training Grant  | <i>Jan 2017 – Aug 2019</i> |
| - Dr. Leonard E. Mortenson Graduate Scholarship   | <i>Apr 2019</i>            |
| - University of Wisconsin-Madison Student Research Travel Grant                             | <i>Sep 2018</i>            |
| - American Society of Microbiology Undergraduate Research Fellowship                        | <i>May 2014 – Dec 2014</i> |
| - Beckman Scholars Fellowship   | <i>May 2014 – Aug 2015</i> |