

Edna Chiang

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EDUCATION

University of Wisconsin-Madison Sep 2016 - Present
- Microbiology PhD Candidate, Life Sciences Communication and Biotechnology Minors GPA: 4.00/4.00
- 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

SCIENCE COMMUNICATION TRAINING

Life Sciences Communication Symposium Jan 2019 – May 2019
Scientific Writing Jan 2019 – May 2019
Gaining STEAM! Workshops: Combining Science, Story-telling, and Art Oct 2018
Getting the Message Across Seminar Oct 2018
Wisconsin Idea STEM Fellow Training Jun 2018 – Jul 2018
Empowering People to Break the Prejudice Habit: Creating Inclusion and Overcoming Bias Workshop Dec 2017
Communicating Science with Everyone Sep 2017 – Dec 2017
Improv for Scientists Sep 2017 – Oct 2017
Oral Science Communication Through Improv Workshop Jun 2017
Writing Science as a Story Nov 2016 – Dec 2016
Public Opinion of Life Science Issues Sep 2016 – Dec 2016

SCIENTIFIC PUBLICATIONS

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 hibernation. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 316(6):R764-R775. doi: 10.1152/ajpregu.00379.2018.

Chiang E, Schmidt ML, Berry MA, Biddanda ChBA, 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 AWARDS

- NSF Non-Academic Research Internship for Graduate Students – Science Policy Fellowship Jul 2019
- NSF Graduate Research Fellowship Sep 2018 – Aug 2023
- NIH Biotechnology Training Program Traineeship Jan 2017 – Aug 2019
- University of Wisconsin-Madison Student Research Travel Grant Sep 2018
- Phi Beta Kappa Mar 2015
- Beckman Scholars Fellowship May 2014 – Aug 2015
- American Society of Microbiology Undergraduate Research Fellowship May 2014 – Dec 2014

RESEARCH EXPERIENCE

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

- Investigated how microbe-host interactions contribute to the survival of hibernating ground squirrels for applications in biomedicine and long-duration space travel Jan 2017 – Present
- Worked with an interdisciplinary team to design and execute stable isotope assisted labeling experiments
- Increased bioinformatics proficiency by analyzing amplicon sequencing and metagenomic data

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

- Studied freshwater microbial ecology to understand the role of bacteria in Great Lakes carbon cycling
- Optimized a fluorescent *in situ* hybridization microscopy protocol and designed and completed field work
- Applied statistical and bioinformatics techniques to analyze bacterial 16S rRNA data using mothur and R

SELECTED SCIENTIFIC PRESENTATIONS

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.” 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.

PUBLIC ENGAGEMENT EXPERIENCE

Science Policy Fellow, Federation of American Societies for Experimental Biology May 2019 – Aug 2019

- Worked in the Office of Public Affairs to follow policies and congressional hearings about increasing STEM opportunities for women and underrepresented groups, and combatting sexual harassment in science
- Wrote articles in the Washington Update newsletter to inform society members of the latest news in science policy and advocacy
- Contributed to an NSF educational campaign called “NSF Matters” by coordinating a congressional briefing about NSF-funded research addressing the public health issue of antimicrobial resistance
- Created a factsheet highlighting the vital and complementary nature of NSF and NIH research in advancing biology, responding to public health issues, and developing innovative biomedical technologies

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 144 local Minocqua, WI residents about implications of hibernation and microbiology research

Gaining STEAM! Scientist, JKC Comics, University of Wisconsin-Madison

Oct 2018 – May 2019

- Created a comic book about hibernation microbiology by integrating science, story-telling, and art through a collaboration with JKC Comics and local Madison artists
- Presented the comic at a “Saturday Science” interactive showcase to 109 local Madison, WI residents, including families and elementary-aged students
- Incorporated the comic into outreach activities to improve participant engagement and learning

Wisconsin Idea STEM Fellow, University of Wisconsin-Madison

Jun 2018 – Present

- Learned informal teaching strategies and outreach evaluation techniques
- Developed an interactive hibernation microbiology outreach activity for elementary school-aged children
- 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 implemented outreach activities with the Wisconsin Institute for Discovery and Morgridge Research Institute to teach hibernation physiology and microbe-host physiology

Social Media Manager, University of Wisconsin-Madison

Dec 2016 - Present

- Managed twitter handles for the Microbiology Doctoral Training Program (MDTP, @UWMadisonMDTP), Suen Lab (@suenlab), and Carey Lab (@13liner), as well as the MDTP Facebook page
- Increased public recognition by highlighting news from MDTP trainers, students, and collaborators

CLASSROOM ENGAGEMENT EXPERIENCE

Co-Instructor, Biotechnology Center, University of Wisconsin-Madison

Nov 2017 – Present

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

Graduate Teaching Assistant, University of Wisconsin-Madison

Sep 2017 – Dec 2017

- Assisted in teaching “Emerging Infectious Diseases and Bioterrorism”
- 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

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