

# Edna Chiang

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## EDUCATION

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### University of Wisconsin-Madison

Madison, WI

- PhD Student, Microbiology Doctoral Training Program, Department of Bacteriology Sep 2016 - Present
- Advisors: Dr. Garret Suen and Dr. Hannah Carey

### 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

## SCIENTIFIC PUBLICATIONS

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- Chiang E\***, Schmidt ML, Berry MA, Biddanda BA, Burtner AM, Johengen TH, Palladino D, Denef VJ  
(Submitted) Verrucomicrobia are prevalent in north-temperate freshwater lakes and display class-level preferences between lake habitats. *PLoS ONE*. (\* = corresponding author)
- 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.* 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

## SCIENTIFIC PRESENTATIONS

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- Poster, "Ecology of freshwater Verrucomicrobia, an abundant yet understudied bacterial phylum." Beckman Symposium, Aug 8, 2015, Irvine, CA.
- Poster, "Ecology of Verrucomicrobia in a Freshwater Estuary." American Society of Microbiology General Meeting, Jun 2, 2015, New Orleans, LA.
- Poster, "Ecology of Verrucomicrobia in a Freshwater Estuary." Program in Biology Undergraduate Research Poster Session, Jun 2, 2015, Ann Arbor, MI.
- Presentation, "RNA Preservation Agents and Nucleic Acid Extraction Method Bias Perceived Bacterial Community Composition." University of Michigan Microbial Ecology Working Group, Oct 30, 2014, Ann Arbor, MI
- Poster, "Deceptive sexual swellings as a counterstrategy to infanticide." Undergraduate Research Opportunity Symposium, Apr 18, 2012, Ann Arbor, MI.

## RESEARCH EXPERIENCE

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

- Linked bacterial taxonomy to function in hibernating 13-lined ground squirrels (*Ictidomys tridecemlineatus*) Jan 2017 – Present
- Prepared DNA libraries for Illumina MiSeq sequencing
- Analyzed bacterial and fungal amplicon sequencing data using mothur and R, and analyzed metagenomics
- Performed stable isotope assisted labeling experiments

**Undergraduate Researcher / Lab Technician, Dr. Vincent Deneff**, 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

**Undergraduate Researcher, Ruthven Museum of Natural History**, University of Michigan May 2012 – Jul 2012

- Analyzed mite abundance and distribution on preserved lizard specimens

**Undergraduate Research Opportunity Student, Dr. Jacinta Beehner**, University of Michigan Sep 2011 – Apr 2011

- Compared hormone levels with chest patch sexual swellings in gelada baboons (*Theropithecus gelada*)
- Conducted hormone elutions and assays, analyzed chest patch color using Photoshop

## AWARDS

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- NIH Biotechnology Training Program Traineeship Jan 2017
- Romance Languages and Literatures Student Achievement Award Apr 2015
- Phi Beta Kappa Mar 2015
- Beckman Scholars Fellowship May 2014 – Aug 2015
- American Society of Microbiology Undergraduate Research Fellowship May 2014 – Dec 2014
- University of Michigan Honors Summer Fellowship May 2014 – Aug 2014
- Sophomore Honors Award Nov 2013
- Summer Vincenti Study Abroad Scholarship Apr 2013
- Honors Travel Grant Mar 2013
- James B. Angell Scholar Mar 2013

## TEACHING EXPERIENCE

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

- Co-instructed workshops on analyzing 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

**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

## **VOLUNTEER EXPERIENCE**

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**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

**Volunteer, Biology Outreach Club**, University of Wisconsin-Madison

*Mar 31, 2017*

- Led “Disco Microbes” activity teaching the importance of proper hand washing at Science Expeditions

**Judge, Capital Science & Engineering Fair**

*Feb 18, 2017*

- Evaluated science projects from Wisconsin high school students and determined prize winners

**Volunteer, Wisconsin Science Festival**, University of Wisconsin-Madison

*Oct 21, 2016*

- Led interactive activity employing color-sensing robots

**Spanish Translator, Translate-a-thon**, University of Michigan

*Oct 2014*

- Translated multiple documents from English to Spanish for local non-profit organizations aiding immigrants and low-income families

**Worker and Interpreter, Jatun Sacha**, Galapagos Islands

*Jul 2013 – Aug 2013*

- Participated in environmental conservation by working with local farmers to develop sustainable farming practices, removing invasive species, and cleaning tortoise nest sites
- Facilitated communication between volunteers and staff by interpreting English and Spanish

## **LEADERSHIP EXPERIENCE**

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**Editorial Board Member, University of Michigan Undergraduate Research Journal**

*Sep 2012 – Apr 2015*

- Assisted students in improving writing submissions for publication
- Coordinated meetings with corporate sponsors and university departments to increase journal funding
- Performed outreach by conducting presentations to inform undergraduates about research opportunities

**Co-President, Arabian Dance Ensemble**, University of Michigan

*Sep 2011 – Apr 2015*

- Instructed beginning belly dance class and created choreography to teach students
- Oversaw usage of group funds, coordinated costume purchases, and organized performances

## **SKILLS**

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- **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
- **Bioinformatics:** R (intermediate), perl (beginner), mothur, amplicon sequencing analysis, metagenomic analysis
- **Languages:** English (fluent), Spanish (fluent), Mandarin Chinese (intermediate)

## CAREER DEVELOPMENT

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DELTA – Communicating Science with Everyone	<i>Sep 2017 – Dec 2017</i>
Improv for Scientists (Medicine 710)	<i>Sep 2017 – Oct 2017</i>
DELTA – NSF Application Broader Impacts Workshop	<i>Oct 4, 2017</i>
Oral Science Communication Through Improv Workshop	<i>Jun 26, 2017</i>
CIRTL – Developing a CV or Resume	<i>Jun 22, 2017</i>
What Graduate Students Need to Know about Successful Negotiation	<i>Apr 13, 2017</i>
Science Writing as a Career	<i>Apr 06, 2017</i>
Careers in Government Research Labs	<i>Mar 28, 2017</i>
Public Opinion of Life Science Issues (LSC 902)	<i>Sep 2016 – Dec 2016</i>
Writing Science as a Story (Comp Bio 675)	<i>Nov 2016 – Dec 2016</i>