

# Ho, Wei-Chin

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## Education

- 2011 – 2017    **Ph.D. in Ecology & Evolutionary Biology**  
University of Michigan, Ann Arbor, MI, USA.  
Dissertation: The genotype-phenotype map: origins, properties, and evolutionary consequences (Advisor: Dr. Jianzhi Zhang)
- 2008 – 2010    **M.S. in Zoology**  
National Taiwan University, Taiwan.  
Thesis: Inferring speciation history of *Drosophila* by massive parallel sequencing (Advisor: Dr. Chau-Ti Ting)
- 2004 – 2008    **B.S. in Life Science (Minor in Chemistry)**  
National Taiwan University, Taiwan.

## Professional Experiences

- 2023 –        **Assistant Professor**  
Department of Biology, The University of Texas at Tyler, TX, USA.
- 2017 – 2023    **Postdoctoral Research Associate**  
Biodesign Center for Mechanisms of Evolution, Arizona State University, AZ, USA. (Advisor: Dr. Michael Lynch)
- 2010 – 2011    **Research Assistant**  
Department of Life Science, National Taiwan University, Taiwan. (Advisor: Dr. Chau-Ti Ting)

## Publications (\*co-first authors; @corresponding authors; ^mentored undergrads)

### **In-Prep:**

- Wei-Chin Ho & Jeremy G. Wideman. **Population-genetic environments for resolving mitochondria-to-nuclear gene duplications.**
- Wei-Chin Ho, Lily King<sup>^</sup>, Ryan Stikeleather & Michael Lynch. **Evolution of novel metabolic capabilities by non-selection forces in a rich environment.**
- Wei-Chin Ho, Jadon Gonzales<sup>^</sup> & Michael Lynch. **Antibiotic treatment affects the distribution of fitness effects of spontaneous mutations.**

### **Submitted:**

- Ryan Stikeleather, Farhan Ali, Wei-Chin Ho, Tim Licknack & Michael Lynch. (2025) **Translation accuracy in *Escherichia coli*.** *bioRxiv*: 2025.04.18.649569.

### **Published:**

14. Stephan Baehr<sup>@</sup>, Wei-Chin Ho, Sam Perez, Alyssa Cenzano, Katelyn Hancock, Lea Patrick, Adalyn Brown, Samuel Miller & Michael Lynch (2025). **Consideration of a**

- liquid mutation-accumulation experiment to measure mutation rates by successive serial dilution.** *Genome Biol. Evol.* 17(4): evaf049.
13. Megan G. Behringer<sup>@</sup>, Wei-Chin Ho<sup>@</sup>, Samuel F. Miller, Sarah B. Worthan, Zeer Cen, Ryan Stikeleather & Michael Lynch (2024) **Trade-offs, trade-ups, and high mutational parallelism underlie microbial adaptation during extreme cycles of feast and famine.** *Current Biology* 34(7): 1403-1413.
  12. Wen Wei<sup>\*@</sup>, Wei-Chin Ho<sup>\*</sup>, Megan G. Behringer, Samuel F. Miller, George Bcharah & Michael Lynch<sup>@</sup> (2022) **Rapid evolution of the mutation rate and spectrum in response to environmental and population-genetic challenges.** *Nat. Comm.* 13: 4752.
  11. Leandra Brettner, Wei-Chin Ho, Kara Schmidlin, Sam Apodaca, Rachel Eder & Kerry Geiler-Samerotte<sup>@</sup> (2022) **Challenges and potential solutions for studying the genetic and phenotypic architecture of adaptation in microbes.** *Curr. Opin. Genet. Dev.* 75: 101951.
  10. Megan G. Behringer<sup>\*@</sup>, Wei-Chin Ho<sup>\*@</sup>, John Meraz, Samuel F. Miller, Gwyneth Boyer, Carl Stone, Meredith Andersen & Michael Lynch (2022) **Complex ecotype dynamics evolve in response to fluctuating resources.** *mBio* 13(3): e03467-21.
  9. Wei-Chin Ho<sup>@</sup>, Megan G. Behringer, Samuel F. Miller, Jadon Gonzales<sup>^</sup>, Amber Nguyen<sup>^</sup>, Meriem Allahwerdy<sup>^</sup>, Gwyneth Boyer & Michael Lynch<sup>@</sup> (2021) **Evolutionary dynamics of asexual hypermutators adapting to a novel environment.** *Genome Biol. Evol.* 13(12): evab257.
  8. Wei-Chin Ho<sup>\*</sup>, Diyan Li<sup>\*</sup>, Qing Zhu & Jianzhi Zhang<sup>@</sup> (2020) **Phenotypic plasticity as a long-term memory easing readaptation to ancestral environments.** *Sci. Adv.* 6(21): eaba3388.
  7. Michael Lynch<sup>@</sup> & Wei-Chin Ho (2020) **The limits to estimating population-genetic parameters with temporal data.** *Genome Biol. Evol.* 12(4): 443-455.
  6. Wei-Chin Ho & Jianzhi Zhang<sup>@</sup> (2019) **Genetic gene expression changes during environmental adaptations tend to reverse plastic changes even after the correction for statistical nonindependence.** *Mol. Biol. Evol.* 36(3):604-612.
  5. Wei-Chin Ho & Jianzhi Zhang<sup>@</sup> (2018) **Evolutionary adaptations to new environments generally reverse plastic phenotypic changes.** *Nat. Comm.* 9: 350.
  4. Wei-Chin Ho, Yoshikazu Ohya & Jianzhi Zhang<sup>@</sup> (2017) **Testing the neutral hypothesis of phenotypic evolution.** *Proc. Natl. Acad. Sci. U.S.A.* 114(46): 12219-12224.
  3. Calum J. Maclean<sup>\*</sup>, Brian P.H. Metzger<sup>\*</sup>, Jian-Rong Yang<sup>\*</sup>, Wei-Chin Ho, Bryan Moyers & Jianzhi Zhang<sup>@</sup> (2017) **Deciphering the genic basis of yeast fitness variation by simultaneous forward and reverse genetics.** *Mol. Biol. Evol.* 34(10): 2486-2502.
  2. Wei-Chin Ho & Jianzhi Zhang<sup>@</sup> (2016) **Adaptive genetic robustness of *Escherichia coli* metabolic fluxes.** *Mol. Biol. Evol.* 33(5): 1164-1176.
  1. Wei-Chin Ho & Jianzhi Zhang<sup>@</sup> (2014) **The genotype-phenotype map of yeast complex traits: basic parameters and the role of natural selection.** *Mol. Biol. Evol.* 31(6): 1568-1580.

### Patent

Stephan Baehr, Wei-Chin Ho, & Michael Lynch. Liquid Mutation Accumulation Experiment to Measure Mutation Rates. U.S. Provisional Application No. 63/514,952; filed 07/21/2023, Patent Pending.

### Grants

- Beta Beta Beta Research Foundation Research Grant: **Fitness outcomes of Mutations of *Escherichia coli* in rich and stressful environments** (PI with mentee Avnoor Verma), Jan 2025-Aug 2025, \$750.
- Texas Ecology Laboratory Program: **Seasonal Dynamic of Phenotypic and Genotypic Diversity of *Escherichia coli* in East Texas** (PI), Jan 2025-Dec2025, \$4,870.

### Talks

- University of Houston, TX, USA, Oct 2024.
- Annual Meeting of Society for Molecular Biology and Evolution, Puerto Vallarta, Mexico, Jul 2024.
- Texas Branch of the American Society for Microbiology Meeting, Stephenville, TX, USA, Oct 2023
- University of Texas at Arlington, TX, USA, Oct 2023.
- University of Arkansas at Little Rock, AR, USA, Apr 2023.
- Xavier University of Louisiana, LA, USA, Apr 2023.
- University of Texas at Tyler, TX, USA, Feb 2023.
- St. Mary's University, TX, USA, Feb 2023.
- University of Nebraska Omaha, NE, USA, Feb 2023
- Saint Louis University, MO, USA, Jan 2023.
- Purdue University Fort Wayne, IN, USA, Jan 2023.
- Denison University, OH, USA, Dec 2022.
- Evolution Meeting, Cleveland, OH, USA, Jun 2022.
- Arizona Postdoctoral Research Conference, Phoenix, AZ, USA, Sep 2021.
- Annual Meeting of Society for Molecular Biology and Evolution, Gold Coast, Australia, Jul 2016.
- Annual Meeting of Society for Molecular Biology and Evolution, Vienna, Austria, Jul 2015.
- Annual Meeting of Society for Molecular Biology and Evolution, San Juan, Puerto Rico, Jun 2014.
- University of Michigan, Ann Arbor, MI, USA, Jan 2013.
- Annual Meeting of Society for Molecular Biology and Evolution, Lyon, France, Jul 2010.

### Poster Presentation

- Populational, Evolutionary, & Quantitative Genetics at The Allied Genetics Conference, DC, USA, Mar 2024.

- Society for Molecular Biology and Evolution Satellite Meeting on Mechanisms of Cellular Evolution, Tempe, AZ, Nov 2023.
- Populational, Evolutionary, & Quantitative Genetics Conference, Pacific Grove, CA, USA, 2022.
- Society for Molecular Biology and Evolution Annual Conference Online, 2021.
- Populational, Evolutionary, & Quantitative Genetics at The Allied Genetics Conference Online, 2020.
- Gordon Research Conference on Molecular Mechanisms in Evolution, Easton, MA, USA, 2019.
- Society for Molecular Biology and Evolution Annual Conference, Yokohama, Japan, 2018.
- Society for Molecular Biology and Evolution Annual Conference, Austin, TX, USA, 2017.
- Society for Molecular Biology and Evolution Annual Conference, Chicago, IL, USA, 2013.
- Society for Molecular Biology and Evolution Annual Conference, Dublin, Ireland, 2012.
- Asian-Pacific *Drosophila* Research Conference, Taipei, Taiwan, 2011.
- Symposium on College of Life Science in National Taiwan University, Taipei, Taiwan, 2010.
- Symposium on College of Life Science in National Taiwan University, Taipei, Taiwan, 2009.

### **Teaching Experiences**

#### **As a Main Instructor in University of Texas at Tyler:**

- Molecular and Genome Evolution (BIOL 4395/5380), F'24.
- Genetics (BIOL 3332), Sp'25, Sp'24.
- Genetics Laboratory (BIOL 3133), Sp'25, Sp'24, F'23.

#### **As a Graduate Student Instructor in University of Michigan, Ann Arbor:**

- Genetics (BIOLOGY 305), W'17, W'15, W'13, W'12.
- Supervised Teaching (EEB/MCDB 801), W'17.
- Evolution (EEB 390), F'13.
- Introductory Biology: Ecology and Evolution (BIOLOGY 171), F'11.

#### **As a Teaching Assistant in National Taiwan University:**

- Population Genetics (EEB 5045), F'10, F'09, F'08.
- Genetics (LS 3007), Sp'10.
- General Biology (LS 1006), F'09.
- General Biology Laboratory (LS 1017), F'08.

### **Mentoring Experiences**

#### **University of Texas at Tyler:**

MS Students: Kingsley Amoateng (2024-).

Laboratory Undergraduate Researchers: Christian Buford (2024-), Pricila Garcia (2024- ), Sora Kim (2024-2025), Alberto Macias (2024-), Ivan Mendez (2024- ), Brent Orji (2024- ), Julian Ramirez (2024- ), Ryan Tarr (2024-), Natalie Zarate Sanchez (2024), Avnoor Verma (2024- ).

Honor Course Research Undergraduate Students: Neida Perez (Sp 2025).

**Arizona State University (\*BS with honor thesis; #accelerated MS):**

Laboratory Undergraduate Researchers: Meriem Allahwerdy (2019), Tristan Chen (2019), Jadon Gonzales\*# (2018-2023), Logan Graham\*# (2020-), Lily King\* (2019-2022), Ameya Kulkarni\* (2022-2024), Amber Nguyen (2018-2019), Arin Shaw (2022), Dannish Tung (2020-2021).

**Mentees' Poster Presentation**

- Kingsley Amoateng, & Wei-Chin Ho. **Experimental Evolution of *Escherichia coli* in Acidic Environments.** Lyceum at UT-Tyler, Apr 2025.
- Brent Orji, Christian Buford, Julian Ramirez, Natalie Zarate & Wei-Chin Ho. **Spontaneous Mutations for Antibiotic Resistance in *Escherichia coli*.** Lyceum at UT-Tyler, Apr 2025.
- Christian Buford & Wei-Chin Ho. **Phenotypic Diversity of *Escherichia coli* in North & East Texas.** Lyceum at UT-Tyler, Apr 2025.
- Julian Ramirez, Kingsley Amoateng, Sora Kim, Ivan Mendez, Natalie Zarate & Wei-Chin Ho. **Effects of Historical Adaptation of Microbes in New Environments.** Lyceum at UT-Tyler, Apr 2025.
- Avnoor Verma & Wei-Chin Ho. **Fitness outcomes of Mutations of *Escherichia coli* in rich and stressful environments.** Beta Beta Beta Research Symposium, Apr 2025.
- Ivan Mendez & Wei-Chin Ho. **The Impacts of Environmental Changes on Microbial Fitness.** LSAMP Symposium, Jul 2024.

**Thesis Committee Services**

Allison Gonzalez (2025), Ciara Moroney (2025-).

**Awards and Fellowships**

- Young Investigator Travel Award, Annual Meeting of the Society for Molecular Biology and Evolution, 2018-2015.
- Rackham One-Term Dissertation Fellowship, Rackham Graduate School, University of Michigan, 2016.
- Graduate Travel Award, Annual Meeting of the Society for Molecular Biology and Evolution, 2014, 2010.
- Chia-Lun Lo Fellowship, Rackham Graduate School, University of Michigan, 2013
- Scholarship of Government Sponsorship for Overseas Study in Systematic Biology (Taiwan), 2011 (Declined).
- Dean's Award, College of Life Science, National Taiwan University, 2010.

- Outstanding Students Conference Travel Grant, Foundation for the Advancement of Outstanding Scholarship (Taiwan), 2010.
- Reward of Excellence, Symposium on College of Life Science, National Taiwan University, 2010.

### **Professional Associations**

American Society for Microbiology (2022-)  
Genetics Society of America (2020-)  
Society for Molecular Biology and Evolution (2010-)  
Society for the Study of Evolution (2020-)

### **Academic Services**

- *Ad-hoc* Reviewer for Journals: *BMC Genomics*, *Ecol. Evol.*, *eLife*, *Evol. Dev.*, *Genetics*, *Genome Biol. Evol.*, *Front. Microbiol.*, *JoVE*, *Mol. Biol. Evol.*, *Mol. Ecol.*, *Nat. Eco. Evol.*, *Proc. Natl. Acad. Sci. U.S.A.*, *PLoS Genetics*, *PLoS One*, *The Innovation*.
- *Ad-hoc* Reviewer for Grant Proposals: NSF.
- Institutional Biosafety Committee, University of Texas at Tyler (F'2024 - Sp' 2025).
- Seminar Committee, Department of Biology, University of Texas at Tyler (F'2024 - Sp' 2025).
- Oral Presentation Judge, Lyceum Symposium Meeting at University of Texas at Tyler (Apr 2025).
- Panelist, Bioinformatics & Biostatistics Panel Discussion by The Association for Computing Machinery, Chapter at University of Texas at Tyler (Oct 2024).
- Oral Presentation Judge, Texas Branch of the American Society for Microbiology Meeting (Oct 2024).
- Voluntary Instructor for Biology Summer Camp, University of Texas at Tyler (Jun 2024).
- Curriculum Committee, Department of Biology, University of Texas at Tyler (F'2023 - Sp' 2024).
- Co-director for organizing SMBE satellite meeting on Mechanisms of Cellular Evolution, Arizona State University (Nov 2023).
- Poster Judge, Texas Branch of the American Society for Microbiology Meeting (Oct 2023).
- Organizer for Diversity, Equity, and Inclusion Reading Group, Center for Mechanisms of Evolution, Arizona State University (2020-2021).
- Volunteer for ASU Open Door at the Biodesign Institute (2018-2020).
- Committee Representative for the 13th Annual University of Michigan Early Career Scientists Symposium: Ecology and Evolutionary Biology of Phenotypic Plasticity at University of Michigan, Ann Arbor (2017).
- Co-organizer for the special lunch seminar- EEB's Faculty "Leslie" Panel: A "behind the scenes" look at life from multiple positions in academia at University of Michigan, Ann Arbor (2016).

- Voluntary helpers for Software Carpentry Workshops at University of Michigan, Ann Arbor (Oct'16, Dec'16).
- Seminar Committee Representative for Graduate Researchers in Ecology and Evolutionary Biology at University of Michigan, Ann Arbor (F'16-W'17, F'13-W'14).
- Camp Director for the Life Science Camp (Five-day symposium for 80 high school students) at National Taiwan University (2007).
- Director of Academic and Culture Section for the Student Association of the Department of Life Science at National Taiwan University (F'06-Sp'07).
- Deputy Editor for *The Cell*, published (in Chinese) by Student Association of the Department of Life Science at National Taiwan University (Sp'06).

**Professional Development**

- Rackham-CRLT Seminar on Preparing Future Faculty at University of Michigan, Ann Arbor (2016).
- LS&A ELI/CRLT Graduate Student Instructor Training Course at University of Michigan, Ann Arbor (2011).

**Programming Skills** C/C++, MATLAB, Perl, Python, R.