

Maike L Morrison

maikem@stanford.edu | MaikeMorrison.com

Education

- 2020– **Stanford University** **Stanford, CA**
PhD in Biology (Ecology & Evolution)
- 2016–2020 **The University of Texas at Austin** **Austin, TX**
BS in Mathematics, Dean's Scholars Honors Program **GPA: 3.94**
Distinctions in Service and Leadership, and Research

Research Experience

- Sep 2020– **Graduate Research Assistant** **Stanford, CA**
Present *Supervised by Dr. Noah Rosenberg in the Stanford University Department of Biology.*
· Developing an F_{ST} -based tool for measuring ancestry variation in inference of population structure.
- Dec 2017– **Evolutionary Genetics Undergraduate Research Assistant** **Austin, TX**
Present *Supervised by Dr. Mark Kirkpatrick in the UT Austin Department of Integrative Biology.*
· Applied the MCMC-based species delimitation program BPP to genetic data from the super-abundant marine cyanobacteria *Prochlorococcus marinus* in order to delimit ecotypes.
- Aug 2017– **Mathematical Epidemiology Undergraduate Research Assistant** **Austin, TX**
Present *Supervised by Dr. Lauren Ancel Meyers in the UT Austin Department of Integrative Biology.*
· Modeled demand for COVID-19 isolation beds for the Austin homeless population based on epidemic projections; discussed findings with city leaders.
· Analyzed the Texas counties and school districts with the highest conscientious vaccination exemption rates. Modeled the sociodemographic predictors of these exemptions.
- Aug 2019– **Senior Honors Mathematics Thesis** **Austin, TX**
May 2020 *Supervised by Dr. Stephen Walker in the UT Austin Departments of Mathematics.*
· Wrote thesis titled: “Mathematical Statistics in Epidemiology: A Discussion of the Mathematical Concepts Employed in Regression Analyses and Studies of Disease Spread.”
- May 2019– **UC San Francisco Amgen Scholars Program** **San Francisco, CA**
Jul 2019 *Supervised by Dr. John Witte in the UCSF Department of Biostatistics & Epidemiology. Participant in UCSF's Summer Research Training Program. Funded by the Amgen Foundation.*
· Conducted genome-wide association studies to identify single-nucleotide polymorphisms (SNPs) significantly associated with immune response strength to 22 distinct antigens.
- Jun 2018– **The Mathematical Biosciences Institute NSF REU** **State College, PA**
Aug 2018 *Supervised by Dr. Ephraim Hanks in the Penn State University Department of Statistics. Participant in the MBI Research Experience for Undergraduates program at Ohio State University.*
· Explored dynamics of disease spread over patchy terrain through extensive simulation study.
- Aug 2016– **UT Austin Freshman Research Initiative** **Austin, TX**
Aug 2017 *Participated in a hands-on wet-lab training course; awarded a summer research fellowship.*
· Used CRISPR/Cas9 to study histone proteins in *Saccharomyces cerevisiae*.

Publications

Peer-Reviewed Morrison M*, Castro LA*, Meyers LA (2020). Conscientious vaccination exemptions in kindergarten to eighth-grade children across Texas schools from 2012 to 2018: A regression analysis. *PLOS Medicine* 17(3): e1003049.

Kachuri L*, Francis SS*, Morrison ML, Wendt GA, Bossé Y, Cavazos TB, Rashkin SR, Ziv E, Witte JS (2020). The landscape of host genetic factors involved in immune response to common viral infections. *Genome Medicine* 12(93): 1-18.

Under Review Ingle T, Morrison ML, Wang X, Karman V, Mercer T, Fox S, Meyers LA. Projecting COVID-19 isolation bed requirements for people experiencing homelessness.

In Prep. Miyagi M*, Morrison ML*, Kirkpatrick M. How many ecotypes are there in the world's most abundant photosynthetic organism?

*These authors contributed equally

Honors, Awards, & Fellowships

2021–2025 **NSF Graduate Research Fellowship Program**
Nationally competitive award providing three years of stipend and tuition support for students in research-based graduate programs. (\$138K award)

2020–2025 **Stanford Graduate Fellowship**
Nominated by Biology Department and selected by university-wide committee. Provides three years of stipend and tuition to top science and engineering graduate students. (\$250K award)

2020 **University Co-op Mitchell Award for Outstanding Undergraduate Research**
Awarded annually to five undergraduates from across UT Austin. (\$5K award)

2020 **Dean's Honored Graduate: University of Texas College of Natural Sciences**
Awarded to 1% of College of Natural Science graduates; selected through faculty panel vote.

2020 **UT Austin Mathematics Special Departmental Honors**
Earned in recognition of mathematics academic achievement and thesis project.

2020 **NSF Graduate Research Fellowship Program, Honorable Mention**

2019–2020 **Alan Kaylor Cline Dean's Scholars Scholarship**
Peer-nominated award for students portraying the ideals of a Dean's Scholar: academic achievement, research involvement, and commitment to improving the program. (\$3K award)

2019–2020 **Phi Beta Kappa**
Junior year election

2019 **Undergraduate Diversity at Evolution Award**
Covered registration, travel, meals, and lodging for the 2019 Evolution Meeting. (\$2K award)

2019 **Barry M. Goldwater Scholarship**
Awarded to top science, engineering, & mathematics undergraduates in the US. (\$7.5K award)

2018–2020 **University of Texas University Honors: College Scholar**
Earned in recognition of academic achievement in math and science coursework.

2017 **Freshman Research Initiative Summer Research Fellowship**
Funded summer research through a UT Austin program. (\$1,250 award)

- 2016–2020 **University of Texas College of Natural Sciences Scholarship**
Awarded to recruit top applicants to the College of Natural Sciences. (\$10K award)
- 2016–2020 **Dean’s Scholars Honors Program**
A research-focused honors community limited to 1.5% of undergraduates in the UT Austin College of Natural Sciences.

Teaching

- Winter 2021 **BIO 85: Evolution** **Stanford University**
Graduate Teaching Assistant *Drs. Dmitri Petrov & Molly Schumer*
 - 30-student introductory undergraduate course taught fully online.
 - Wrote problem sets, weekly quizzes, and exams.
 - Prepared and delivered presentations and activities to weekly discussion sections.

Leadership

- May 2018– May 2019 **Elected Chair, Dean’s Scholars Honors Program Council** **UT Austin**
Coordinated all program events; managed budget of \$35,000; organized first-ever alumni newsletter; spearheaded fundraising more than \$13,000 for endowment; authored legislation calling for student notification of sexual misconduct violations among UT faculty.
- Sep 2016– May 2020 **Elected Member, Dean’s Scholars Honors Program Council** **UT Austin**
Elected to the governing body for Dean’s Scholars, a research-focused honors community. Planned program events, which included dinners, trips, community service & outreach, mentorship, and research events.
- May 2017– May 2018 **Chair, Dean’s Scholars Distinguished Lecture Series Committee** **UT Austin**
Led committee to organize, advertise, and moderate a lecture and dinner with Dr. Carole Baldwin, Director of Vertebrate Zoology at the Smithsonian National Museum of Natural History, in 2018.
- Sep 2016– May 2020 **Member, Dean’s Scholars Distinguished Lecture Series Committee** **UT Austin**
Planned dinner for Dr. Miguel Nicolelis, who spoke on brain-machine interfaces in 2017; advised 2019 DLSC Chair on the 2019 Lecture with Nobel Laureate Dr. Rainer Weiss; advised 2020 DLSC Chair on the planned 2020 Lecture with Nobel Laureate Dr. Jim Allison.

University Service

- Sep 2017– May 2020 **Student Ambassador, College of Natural Sciences Admissions** **UT Austin**
Represented UT Natural Sciences at admissions events and meetings with prospective students.
- Sep 2017– May 2020 **Student Recruiter, College of Natural Sciences Honors Center** **UT Austin**
Represented the CNS Honors Center at events and as a contact for prospective students.
- Dec 2018– Mar 2019 **Selection Committee Member, Jean Holloway Award** **UT Austin**
CNS nominee to the selection committee for the Holloway Award for Excellence in Teaching.

Conference Presentations

Oral Presentations

- Aug 2019 **UCSF Summer Research Training Program Symposium** San Francisco, CA
“Genome-Wide Association Study of Immune Response to Twelve Common Pathogens.”
SRTP Award for Outstanding Oral Presentations

- Apr 2019 **Undergraduate Research Forum at UT Austin** Austin, TX
 “How Many Species Make Up the World’s Most Abundant Photosynthetic Organism?”
FSTI Award for Excellence in Oral Presentation
- Nov 2018 **Capital of Texas Undergraduate Research Conference** Austin, TX
 “Analyzing Conscientious Vaccination Exemption Rates in Texas.”
Award of Excellence for an Outstanding Oral Presentation of Research
- Aug 2018 **Mathematical Biosciences Institute Capstone Conference** Columbus, OH
 “Distinguishing Resource Selection from Heavy-Tailed Dispersal in Spatial Epidemic Models.”
Link to recording. (co-presented with Emily Strong)

Poster Presentations

- Aug 2019 **UCSF Summer Research Training Program Symposium** San Francisco, CA.
 “Genome-Wide Association Study of Immune Response to Twelve Common Pathogens.”
- Jun 2019 **Evolution Meeting** Providence, RI
 “How Many Ecotypes are Comprised by the World’s Most Abundant Photosynthetic Organism?”
Undergraduate Diversity at Evolution Award Program
- Apr 2019 **Longhorn Research Poster Session** Austin, TX
 “Modeling Conscientious Vaccination Rates in Texas Metropolitan Areas.”
- Aug 2018 **Mathematical Biosciences Institute Capstone Conference** Columbus, OH
 “Distinguishing Resource Selection from Heavy-Tailed Dispersal in Spatial Epidemic Models.”
- Apr 2018 **Undergraduate Research Forum at the University of Texas at Austin** Austin, TX
 “Conscientious Vaccination Exemption Rates in Texas: A Longitudinal Analysis of Trends and Predictors.”

Media Coverage

- March 13, 2020 **Live television interview:** Discussed Texas vaccination exemptions with Amanda Salinas on FOX 7’s *Good Day Austin*, an Austin-area morning show.
- March 12, 2020 **“Which Texans are less likely to vaccinate their kids?”** By Wes Rapaport, *KXAN* (Austin’s NBC affiliate).
- March 11, 2020 **“UT study: White, suburban, college educated Texans less likely to vaccinate children.”** By Matthew Quick, *FOX 7 Austin*.
- March 10, 2020 **“Rich White Texans Are Running With Anti-Vax Misinformation.”** By Julia Ries, *VICE*.
- March 10, 2020 **“White, College-Educated, Wealthier Parents Less Likely to Vaccinate their Children, Texas Study Reveals.”** By Kashmira Gander, *Newsweek*.
- April 3, 2018 **“8 Undergrads Doing Research You Must Know About.”** By Annie Zhang, *The University of Texas at Austin College of Natural Sciences News*.