

Maike L Morrison

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Education

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

Research Experience

Dec 2017– Present	Evolutionary Genetics Undergraduate Research Assistant <i>Supervised by Dr. Mark Kirkpatrick in the UT Austin Department of Integrative Biology.</i> <ul style="list-style-type: none">· Evaluated performance of Bayesian Phylogenetics and Phylogeography (BPP) when applied to prokaryotic genomic data. BPP is a Bayesian Markov chain Monte Carlo program for analyzing eukaryotic DNA sequence alignments under the multispecies coalescent model.· Identified independently evolving lineages within a superabundant marine cyanobacteria responsible for 5% of global oxygen production, <i>Prochlorococcus marinus</i>.	Austin, TX
Aug 2017– Present	Mathematical Epidemiology Undergraduate Research Assistant <i>Supervised by Dr. Lauren Ancel Meyers in the UT Austin Department of Integrative Biology.</i> <ul style="list-style-type: none">· Analyzed the Texas counties and school districts most at risk of an outbreak due to high conscientious vaccination exemption rates, which have more than doubled in the past six years. Fit an array of models to identify sociodemographic predictors of these exemptions.· Modeled demand for COVID-19 isolation beds for the Austin homeless population based on epidemic projections; discussed findings with city leaders.	Austin, TX
Aug 2019– May 2020	Senior Honors Mathematics Thesis <i>Supervised by Dr. Stephen Walker in the UT Austin Departments of Mathematics, and Statistics and Data Sciences.</i> <ul style="list-style-type: none">· Wrote thesis titled: “Mathematical Statistics in Epidemiology: A Discussion of the Mathematical Concepts Employed in Regression Analyses and Studies of Disease Spread.”	Austin, TX
May 2019– Jul 2019	UC San Francisco Amgen Scholars Program <i>Supervised by Dr. John Witte in the University of California San Francisco Department of Biostatistics and Epidemiology. As part of the UCSF Summer Research Training Program, I was selected for funding by the Amgen Foundation.</i> <ul style="list-style-type: none">· Conducted genome-wide association studies to identify single-nucleotide polymorphisms (SNPs) significantly associated with immune response strength to 22 distinct antigens.	San Francisco, CA
Jun 2018– Aug 2018	The Mathematical Biosciences Institute NSF REU <i>Supervised by Dr. Ephraim Hanks in the Penn State University Department of Statistics. Participant in the MBI NSF Research Experience for Undergraduates program, which was hosted by The Ohio State University in Columbus, OH.</i> <ul style="list-style-type: none">· Explored dynamics of disease spread over patchy terrain through extensive simulation study.· Found that terrain heterogeneity (i.e., resource selection) can cause population dispersal to be heavy tailed, creating accelerating epidemic waves.	State College, PA

- Aug 2016– **UT Austin Freshman Research Initiative** **Austin, TX**
 Aug 2017 *Participated in a hands-on wet-lab training course and summer research position; member of the Functional Genomics research stream.*
 · Used CRISPR/Cas9 to study histone proteins in *Saccharomyces cerevisiae*.

Publications

- Peer-Reviewed** **Morrison M***, Castro LA*, Ancel Meyers L (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.
- Under Review** Kachuri L*, Francis S*, **Morrison M**, Cavazos T, Rashkin S, Ziv E, Witte J. The landscape of host genetic factors involved in infection with common viruses and SARS-CoV-2.
- In Prep.** Ingle T*, **Morrison M***, Wang X, Fox S, Ancel Meyers L. Projecting COVID-19 isolation bed requirements for people experiencing homelessness.
- Miyagi M*, **Morrison M***, Kirkpatrick M. How many ecotypes are there in the world's most abundant photosynthetic organism?
- *These authors contributed equally

Honors, Awards, & Fellowships

- 2020–2023 **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.

Leadership

- May 2018– **Elected Chair, Dean’s Scholars Honors Program Council** **UT Austin**
 May 2019 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– **Elected Member, Dean’s Scholars Honors Program Council** **UT Austin**
 May 2020 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– **Chair, Dean’s Scholars Distinguished Lecture Series Committee** **UT Austin**
 May 2018 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– **Member, Dean’s Scholars Distinguished Lecture Series Committee** **UT Austin**
 May 2020 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– **Student Ambassador, College of Natural Sciences Admissions** **UT Austin**
 May 2020 Represented UT Natural Sciences at admissions events and meetings with prospective students.
- Sep 2017– **Student Recruiter, College of Natural Sciences Honors Center** **UT Austin**
 May 2020 Represented the CNS Honors Center at events and as a contact for prospective students.
- Dec 2018– **Selection Committee Member, Jean Holloway Award** **UT Austin**
 Mar 2019 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*.