Juliana C. Taube

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Education

Georgetown University   *Washington, DC*
PhD in Biology   *2023 - present*
Advisor: Shweta Bansal, PhD

Bowdoin College   *Brunswick, ME*
A.B. *summa cum laude* with Honors in Mathematics, minor in Biology   *2017 - 2021*
Undergraduate thesis: Modeling coupled disease-behavior dynamics of SARS-CoV-2 using influence networks
Advisors: Mary Lou Zeeman, PhD (Mathematics) and Mohammad Irfan, PhD (Computer Science, Digital & Computational Studies)

Research Experience

Georgetown University   *Washington, DC*
Graduate Student Researcher   *2023 - present*
- Described spatiotemporal trends in self-reported non-household contacts
- Characterized gender & race/ethnicity composition & citation practices in the field of infectious disease dynamics
- Disentangling aerosol and droplet respiratory disease transmission routes
- Quantifying the social and disease effects of hygienic behaviors across species & scales

Research Associate, Advisor: Shweta Bansal, PhD   *2021 - 2023*
- Analyzed spatiotemporal trends in self-reported mask-wearing behavior during the U.S. COVID-19 pandemic
- Mapped the immune landscape of orthopoxviruses at a fine spatial resolution using demographic and vaccination data

Bowdoin College   *Remote*
Student Researcher, Advisors: Mary Lou Zeeman, PhD; Mohammad Irfan, PhD   *2021 - 2023*
- Continued thesis work on coupled disease-behavior model by varying scales of risk perception & contact network structure

Centers for Disease Control and Prevention, Division of Global Migration & Quarantine,
Office of Innovation, Development, Evaluation, and Analytics   *Remote*
Intern, Advisors: Ardath Grills, PhD; Sarah Bowden, PhD; Michael Johansson, PhD   *Summer 2020*
- Organized county census & meat-packing plant data for boosted regression tree model to predict & characterize COVID-19 hotspots
- Collected data on COVID-19 superspreader events at large gatherings to estimate dispersion parameter
- Contributed to model implementation and assessment of interventions to mitigate COVID-19 spread on cruise ships

University of Georgia, Odum School of Ecology   *Athens, GA*
Student Researcher, Advisors: John M. Drake, PhD; Paige B. Miller, PhD (Remote)   *Fall 2020*
- Expanded transmission trees database to include COVID-19, extended analysis, and released data online

Student Researcher (REU)   *Summer 2019*
- Compiled and standardized infectious disease transmission trees from the literature into an R database
- Analyzed predictors of outbreak size & characterized the role of superspreading across outbreaks

Dartmouth Hitchcock Medical Center   *Lebanon, NH*
Intern, Advisor: Peter F. Wright, MD   *Summer 2017*
- Compiled and summarized literature on smallpox and polio eradication efforts, highlighting similarities and differences
- Organized data on bronchiolitis and RSV hospitalizations in New England

Publications

4. **Taube JC**, Susswein Z, Bansal S (2023) Spatiotemporal trends in self-reported mask-wearing behavior in the United States: Analysis of a large cross-sectional survey. *JMIR Public Health and Surveillance* 9: e42128. doi: 10.2196/42128 🔗 📄 🐙

3. **Taube JC***, Rest EC*, Lloyd-Smith JO, Bansal S (2022) The global landscape of smallpox vaccination history and implications for current and future orthopoxvirus susceptibility: a modelling study. *The Lancet Infectious Diseases*. 23(4): 454-462. doi: 10.1016/S1473-3099(22)00664-8. % 📄

2. **Taube JC**, Miller PB, Drake JM (2022) An open-access database of infectious disease transmission trees to explore superspreader epidemiology. *PLoS Biology* 20(6): e3001685. doi: 10.1371/journal.pbio.3001685. % 📄

1. Wright PF, Hoen AG, Jarvis JD, Zens MS, Dade EF, Karagas MR, **Taube JC**, Brickley EB (2022) Bronchiolitis hospitalizations in northern New England: Clues to disease prevention. *Therapeutic Advances in Infectious Disease* 9: 1-11. doi: 10.1177/ 20499361221099447 % 📄

* Authors contributed equally

Preprints & In Prep

2. **Taube JC**, Susswein Z, Colizza V, Bansal S (2024) Respiratory disease contact patterns in the US are stable but heterogeneous. *medRxiv*. doi:10.1101/2024.04.26.24306450 %

1. **Taube JC***, Merritt A*, Bansal S (2024) The extent of gender and race/ethnicity imbalance in infectious disease dynamics research. *In prep*.

Presentations

The extent of gender & race/ethnicity imbalance in infectious disease dynamics research
Invited VERENA Lighthouse Lightning Talk (virtual)   *2024*

Contact patterns in the US vary over space but not time
Poster at MIDAS Meeting 2023 📄   *2023*
Poster at EEID 2023 📄   *2023*

Characterizing spatiotemporal trends in self-reported mask-wearing behavior in the U.S.
Talk at MIDAS Meeting 2022 📄   *2022*
Talk at Delphi's COVID-19 Trends and Impacts Survey Monthly Collaboration Meeting (virtual) *2022*

Modeling coupled disease-behavior dynamics of SARS-CoV-2 using influence networks
Invited talk for Prof. Mohammad Irfan's Research Group at Bowdoin College (virtual)   *2021*

An open-access database of infectious disease transmission trees to explore superspreader epidemiology
Rapid Fire Talk at MIDAS Meeting 2021 (virtual) 📄   *2021*
Poster at Epidemics 7 📄   *2019*

Awards & Honors

2024	$2,785	**SISMID Halloran Scholarship** and travel funding
2023	$111,000	**NSF Graduate Research Fellow**
2021	$1,920	**Student Faculty Research Grant Fellowship** for summer research funding
2020		**Phi Beta Kappa**
2020	$5,000	**Bowdoin Funded Internship Grant** for internship with CDC
2019	$2,000	**REU Travel Grant for Epidemics 7** from Rocky Mountain Biological Laboratory
2019		**Bowdoin College Goldwater Scholarship Nominee**
2017	$3,000	**Bowdoin Faculty Scholar** for excellence in high school courses
2017	$4,000	**Bowdoin National Merit Scholarship**

Teaching Experience

Georgetown University
Washington, DC

BIOLOGY TEACHING FELLOW
Fall 2022, 2023, 2024

- Modeling Populations and Diseases (BIOL 422/4615, GLID 522/5522): responsible for grading, office hours, & assignment keys

Bowdoin College
Brunswick, ME

MATHEMATICS TEACHING ASSISTANT
Spring 2021

- Partial Differential Equations (MATH 3209): created videos to explain homework solutions or review confusing concepts

DIGITAL AND COMPUTATIONAL STUDIES TEACHING ASSISTANT
Spring 2021

- Contagion (DCS 3350): held office hours; compiled flight, mobility, population, and contact tracing data for student projects

COMPUTER SCIENCE TEACHING ASSISTANT
2019 - 2020

- Introduction to Computer Science (CSCI 1101, Jan. 2019 – Dec. 2020): held weekly office hours for multiple sections
- Social and Economic Networks (CSCI/DCS 2350, Sept. – Dec. 2020): held weekly office hours

Service

Georgetown Biology Student-Faculty Liasion
Washington, DC
2024 - present

- Take notes at department faculty meetings and relay important information to Biology graduate students

MIDAS Trainee Committee
virtual
2023 - present

- Co-lead starting 2024; plan and facilitate student events for the MIDAS Network,
  including lightning talks, research colloquia, and panels on PhD applications & work/life balance

Bowdoin Curriculum Implementation Committee
Brunswick, ME
2020 - 2021

- Alternate member; attended committee meetings to provide student perspective on course proposals, including how they fit into the Bowdoin curriculum, and whether they satisfied distribution requirements

Training

Apprenticeship in Teaching Program
Washington, DC

GEORGETOWN UNIVERSITY
2023 - present

Attend pedagogy workshops to develop teaching skills, including effective classroom interaction & course design

Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID)
Atlanta, GA

EMORY UNIVERSITY
Summer 2024

Attended MCMC I, MCMC II, and Simulation-based Inference for Epidemiological Dynamics modules

Studying Identity, Diversity, and Equity in Science
Washington, DC

GEORGETOWN UNIVERSITY
Summer 2023

Discuss identity in science from a variety of disciplines to identify how research can contribute to a more equitable society

Teaching, Learning & Innovation Summer Institute
Washington, DC

GEORGETOWN UNIVERSITY
Spring 2022

Workshops on universal design, assessments in STEM courses, use of office hours, and science communication

Exploring Racial Justice: An Intragroup Dialogue for White Identified Students
Virtual

BOWDOIN COLLEGE
Spring 2021

Six-week workshop exploring social justice issues and white privilege without burdening students of marginalized identities

Summer Institute in Biostatistics
Minneapolis, MN

UNIVERSITY OF MINNESOTA
Summer 2018

Coursework in biostatistics, epidemiology, and statistical computing using R and SAS

Skills

Programming   R, Python

Software   LaTeX, Git, MacOS, Microsoft Office