

Juliana C. Taube

she/her/hers | ✉ jt1352@georgetown.edu | ✉ taubejc@gmail.com | 🏠 jtaube.github.io

Education

Georgetown University

PHD IN BIOLOGY

Advisor: Shweta Bansal, PhD

Washington, DC

2023 - present

Bowdoin College

A.B. *summa cum laude* WITH HONORS IN MATHEMATICS, MINOR IN BIOLOGY

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)

Relevant coursework: Linear Algebra, Probability, Statistics, Bayesian Statistics, ODEs, PDEs, Data Structures, Social & Economic Networks, Evolution, Ecology, Microbiology, Genetics & Molecular Biology, Science Communication

Brunswick, ME

2017 - 2021

Research Experience

Georgetown University

RESEARCH ASSOCIATE, ADVISOR: SHWETA BANSAL, PHD

- 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

Washington, DC

Aug. 2021 - Aug. 2023

GRADUATE STUDENT RESEARCHER

- 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

Aug. 2023 - present

Bowdoin College

STUDENT RESEARCHER, ADVISORS: MARY LOU ZEEMAN, PHD; MOHAMMAD IRFAN, PHD

- Continued honors thesis work including varying scales of risk perception, incorporating real-world contact network structure, & examining model interactions between risk perception and social influence

Remote

May 2021 - Dec. 2023

Centers for Disease Control and Prevention, Division of Global Migration & Quarantine, Office of Innovation, Development, Evaluation, and Analytics

INTERN, ADVISORS: ARDATH GRILLS, PHD; SARAH BOWDEN, PHD; MICHAEL JOHANSSON, PHD

- 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

Remote

May - Aug. 2020

University of Georgia, Odum School of Ecology

STUDENT RESEARCHER (REU), ADVISORS: JOHN M. DRAKE, PHD; PAIGE B. MILLER, PHD

- 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

Athens, GA

May - July 2019

STUDENT RESEARCHER (REMOTE)

- Expanded database to include COVID-19 transmission trees, extended analysis, and released data online

June - Dec. 2020

Dartmouth Hitchcock Medical Center











INTERN, ADVISOR: PETER F. WRIGHT, MD

- Compiled and summarized literature on smallpox and polio eradication efforts, highlighting similarities and differences
- Organized data on bronchiolitis and RSV hospitalizations in New England

Lebanon, NH


June - Aug. 2017

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

1. **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 

Presentations

The extent & drivers of gender & race/ethnicity imbalance in infectious disease dynamics research

Invited VERENA Lighthouse Lightning Talk (virtual)

March 2024

Contact patterns in the US vary over space but not time


Poster at MIDAS Meeting 2023 

Oct. 2023

Poster at EEID 2023 

May 2023

Characterizing spatiotemporal trends in self-reported mask-wearing behavior in the U.S.

Talk at MIDAS Meeting 2022 

Sept. 2022

Talk at Delphi's COVID-19 Trends and Impacts Survey Monthly Collaboration Meeting (virtual)

May 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)

Oct. 2021

An open-access database of infectious disease transmission trees to explore superspreader epidemiology

Rapid Fire Talk at MIDAS Meeting 2021 (virtual) 

May 2021

Poster at Epidemics 7 

Dec. 2019

Awards & Honors

2023	\$111,000	NSF Graduate Research Fellow
2021	\$1,920	Student Faculty Research Grant Fellowship for summer research funding
2020		Almon Goodwin Prize for exemplary members of Phi Beta Kappa
2020		Phi Beta Kappa
2020		Sarah and James Bowdoin Scholar & Book Award Winner (4x), Book Award is for 4.0 GPA
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
2018		First Year Chemistry Award for outstanding promise and achievement in chemistry
2017	\$3,000	Bowdoin Faculty Scholar for excellence in high school courses
2017	\$4,000	Bowdoin National Merit Scholarship

Teaching Experience

Georgetown University

BIOLOGY TEACHING FELLOW

Washington, DC

Aug. - Dec. 2022, 2023

- Modeling Populations and Diseases (BIOL 422/4615, GLID 522/5522): attended lecture; led & graded weekly labs; held weekly office hours; graded student homeworks & papers; updated assignment keys

Bowdoin College

MATHEMATICS TEACHING ASSISTANT

Brunswick, ME

Feb. - May 2021

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

DIGITAL AND COMPUTATIONAL STUDIES TEACHING ASSISTANT

Jan. - May 2021

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

COMPUTER SCIENCE TEACHING ASSISTANT

Jan. 2019 - Dec. 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

MIDAS Trainee Committee

Jan. 2023 - present

virtual

- Plan and facilitate student events for the MIDAS (Models of Infectious Disease Agent Study) Network, including lightning talks, research colloquia, and panels PhD applications & work/life balance
- Co-lead starting Dec. 2023

Bowdoin Curriculum Implementation Committee Alternate Member

Aug. 2020 - May 2021

Brunswick, ME

- 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

GEORGETOWN UNIVERSITY

Washington, DC

Fall 2023 - present

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

Studying Identity, Diversity, and Equity in Science

GEORGETOWN UNIVERSITY

Washington, DC

Summer 2023

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

Teaching, Learning & Innovation Summer Institute

GEORGETOWN UNIVERSITY

Washington, DC

May 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

BOWDOIN COLLEGE

Virtual

April - May 2021

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

Summer Institute in Biostatistics

UNIVERSITY OF MINNESOTA

Minneapolis, MN

June - July 2018

Six weeks of classes in biostatistics, epidemiology, and statistical computing using R and SAS

Skills

Programming R, Python, Mathematica

Software LaTeX, Git, MacOS, Microsoft Office