

Juliana C. Taube

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Education

Bowdoin College

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

Honors thesis: Modeling coupled disease-behavior dynamics of SARS-CoV-2 using influence networks

Notable awards: Phi Beta Kappa, Almon Goodwin Prize, Bowdoin Goldwater Scholarship Nominee

Brunswick, ME

2017 - 2021

Summer Institute in Biostatistics

UNIVERSITY OF MINNESOTA

Coursework: 6 weeks of classes in biostatistics, epidemiology, and statistical computing using R and SAS

Final project: Outlined clinical trial protocol of canakinumab in HIV+ patients

Minneapolis, MN

June - July 2018

Research Experience

Division of Global Migration & Quarantine, CDC

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

- Funded by Bowdoin Internship Grant (\$5000) to assist with three different projects on the spread of COVID-19
- Gathered, cleaned, and wrangled census and meat-packing location data for COVID-19 hotspot model
- Used boosted regression tree machine learning model to predict and characterize COVID-19 county hotspots
- Collected data (attendance, venue size, event duration) for large gatherings considered COVID-19 superspreader events
- Looked for correlations between event aspects and disease transmission, in effort to estimate dispersion parameter
- Contributed to model implementation and assessment of interventions to mitigate COVID-19 spread on cruise ships

Remote

May - Aug. 2020

Odum School of Ecology, University of Georgia

STUDENT RESEARCHER (REU), ADVISOR: JOHN M. DRAKE, PHD

- Compiled and standardized infectious disease transmission trees from the literature into an R database
- Analyzed predictors of outbreak size & quantified the contribution of superspreading to onward transmission
- Tested theory relating frequency of superspreading events and the dispersion parameter
- Obtained REU Travel Grant (\$2000) from Rocky Mountain Biological Laboratory to present work at Epidemics 7

Athens, GA

May - July 2019

STUDENT RESEARCHER (REMOTE), ADVISOR: JOHN M. DRAKE, PHD

- Expanded database to include COVID-19 transmission trees and released data online at outbreaktrees.ecology.uga.edu 🔗
- Further explored frequency, timing, and generation of superspreaders for COVID-19 relative to other diseases using database
- Findings and results were submitted for publication in PLoS Biology

June - Dec. 2020

Dartmouth Hitchcock Medical Center

INTERN, ADVISOR: PETER F. WRIGHT, MD

- Assisted with development of Gates Foundation funding proposal: Applying the Lessons Learned from Polio Eradication
- 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

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

TAUBE JC, MILLER PB, DRAKE JM. *In Review at PLoS Biology*

<https://www.medrxiv.org/content/10.1101/2021.01.11.21249622v1> 🔗

Presentations

MIDAS Meeting 2021

AN OPEN-ACCESS DATABASE OF INFECTIOUS DISEASE TRANSMISSION TREES TO EXPLORE SUPERSPREADER EPIDEMIOLOGY

Online

May 2021

Epidemics 7

Charleston, SC

WHO INFECTED WHOM? CREATING A DATABASE OF TRANSMISSION TREES FOR COMPARATIVE OUTBREAK ANALYSIS

Dec. 2019

- Poster additionally presented at University of Georgia's Final Summer REU Poster Session (July 2019) and Bowdoin College's President's Summer Research Symposium (October 2019)

Teaching Experience

Dept. of Mathematics, Bowdoin College

Brunswick, ME

TEACHING ASSISTANT

Feb. - May 2021

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

Dept. of Digital and Computational Studies, Bowdoin College

Brunswick, ME

TEACHING ASSISTANT

Jan. - May 2021

- Contagion (DCS 3350): curate resources and assist students
- Find and summarize data sources for student disease modeling project, including flight, mobility, population, and contact tracing data
- Collect and organize news articles on other aspects of the COVID-19 pandemic, including racism, economic impacts, and misinformation
- Lead weekly study group to help students with their coursework using networkx

Dept. of Computer Science, Bowdoin College

Brunswick, ME

TEACHING ASSISTANT

Jan. 2019 - Dec. 2020

- Lead weekly two-hour study groups to assist students with their assignments, including asking probing questions, finding the bugs in their code, and explaining concepts from class
 - Introduction to Computer Science (CSCI 1101): Jan. 2019 – Dec. 2020
 - Social and Economic Networks (CSCI/DCS 2350): Sept. – Dec. 2020

Leadership & Co-curriculars

Women's Varsity Ice Hockey

Brunswick, ME

PLAYER

2017 - 2021

- Dedicate ~20 hours/week to practices and games, while balancing full academic course load
- Awards: Most Improved Player (2018-19), James Bowdoin Cup (2019, 2020)
- 2019-20 Community Service Representative, 2020-21 Bowdoin Student-Athlete Advisory Committee Representative

Bowdoin Bridge Club

Brunswick, ME

CLUB LEADER

2018 - 2019

- Founded and chartered club, attended club leader trainings, advocated for club funding
- Recruited community members to coach and students to play on a weekly basis
- Prepared card hands and bidding schemes for student development

Skills

Programming R, Python, Java, Mathematica
Software LaTeX, Git, MacOS, Microsoft Office