

# Juliana C. Taube

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## Education

### Bowdoin College

B.A. MATHEMATICS MAJOR, BIOLOGY MINOR, GPA: 4.00/4.00

Brunswick, ME

Anticipated May 2021

*Course highlights:* Statistics, Bayesian Statistics, ODEs, PDEs, Evolution, Ecology, Microbiology, Genetics\*, Science Communication\*, Data Structures, Social & Economic Networks, Contagion (\*Spring 2021)

### Summer Institute in Biostatistics

UNIVERSITY OF MINNESOTA

Minneapolis, MN

June - July 2018

*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

## Research Experience

### Division of Global Migration & Quarantine, CDC

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

Remote

May - Aug. 2020

- Assisted 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

### Odum School of Ecology, University of Georgia

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


Athens, GA

May - July 2019

- 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

STUDENT RESEARCHER, ADVISOR: JOHN M. DRAKE, PHD

June - Dec. 2020

- Expanded database to include COVID-19 transmission trees and released data online at [outbreaktrees.ecology.uga.edu](https://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

### Dartmouth Hitchcock Medical Center

INTERN, ADVISOR: PETER F. WRIGHT, MD

Lebanon, NH

June - Aug. 2017

- 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

## Poster Presentations

### 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)

## 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> 

## Teaching Experience

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### Dept. of Computer Science, Bowdoin College

Brunswick, ME

#### TEACHING ASSISTANT

Jan. 2019 - present

- 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
  - Contagion (DCS 3350): Jan. – May 2021

## Leadership & Co-curriculars

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### Women's Varsity Ice Hockey

Brunswick, ME

#### PLAYER

Aug. 2017 - present

- Dedicate ~20 hours/week to practices and games, while balancing full academic course load
- 2019-20 Community Service Representative, organized team community service activities
- 2020-21 Bowdoin Student-Athlete Advisory Committee Representative, advocate for team needs and work with administration to implement NCAA and NESCAC initiatives

### Bowdoin Bridge Club

Brunswick, ME

#### CLUB LEADER

April 2018 - Nov. 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

## Volunteering Experience

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### Parkview Medical Center

Brunswick, ME

#### VOLUNTEER

Sept. - Dec. 2018

- Guided patients to the waiting room and procedure area
- Interacted with and comforted patients in the Pain Procedure Suite
- Organized billing materials, stocked medical supplies, and disinfected procedure furniture

## Skills

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**Programming** R, Python, Java, Mathematica

**Software** LaTeX, Git, MacOS, Microsoft Office

## Awards & Fellowships

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2020 **Almon Goodwin Prize**, given to exemplary members of Phi Beta Kappa

2020 **Phi Beta Kappa**

2018-20 **Sarah and James Bowdoin Scholar & Book Award Winner** (3x), Book Award is for students with 4.0 GPA

2019-20 **James Bowdoin Cup** (2x), given to the varsity athlete(s) with the highest GPA

2020 **Bowdoin Funded Internship Grant** \$5000

2019 **REU Travel Grant for Epidemics 7** \$2000, from Rocky Mountain Biological Laboratory

2019 **Bowdoin College Goldwater Scholarship Nominee**

2018 **First Year Chemistry Award**, recognizes outstanding promise and achievement in chemistry

2017 **Bowdoin Faculty Scholar** \$3000, recognizes students who achieved excellence in their high school coursework

2017 **Bowdoin National Merit Scholarship**