

CASEY ZIPFEL

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EDUCATION

Georgetown University- Washington, DC

August 2016 - Present

Ph.D. Candidate, Department of Biology

GPA: 3.9

Dissertation Topic: The Interplay between Human Behavior and Infectious Disease Dynamics

Advisor: Dr. Shweta Bansal

The Pennsylvania State University- University Park, PA

August 2012 - May 2016

B.S. in Biology (Concentration in Vertebrate Physiology)

GPA: 3.5

Minor in Health Policy and Administration

PUBLICATIONS

- **Zipfel, C. M., & Bansal, S.** (2020). Assessing the interactions between COVID-19 and influenza in the United States. *MedRxiv*.
- **Zipfel, C. M., Colizza, V., & Bansal, S.** (2020). Health inequities in influenza transmission and surveillance. *MedRxiv*.
- Carlson, C. J., Albery, G. F., Merow, C., Trisos, C.H., **Zipfel, C. M.**, Eskew, E.A., Olival, K.A., Ross, N., & Bansal, S. (2020). Climate change will drive novel cross-species viral transmission. *Nature*, *In review*.
- Carlson, C. J., **Zipfel, C. M.**, Garnier, R., & Bansal, S. (2019). Global estimates of mammalian viral diversity accounting for host sharing. *Nature Ecology & Evolution*, 3(7), 1070-1075.
- Stoto, M.A., Darling, N., Gasior, J., Harmsen, M., LeBlanc, N., & **Zipfel, C. M.** (2019). A Century of Influenza: Is the World Prepared for the Next Pandemic? *Georgetown Journal of International Affairs*, 20 (Fall 2019), 163-169.

RESEARCH EXPERIENCE

Graduate Research Assistant, Georgetown University

August 2016 - present

Conducted independent research in the Bansal Lab studying the interplay between human behavioral dynamics and infectious disease dynamics by combining mathematical models and empirical data

Visiting Graduate Researcher, EPIcx Lab, The Institut national de la santé et de la recherche médicale (INSERM)

May 2019 - July 2019

Collaborated with EPIcx lab as a part of the Chateaubriand STEM Fellowship. Integrated research questions, data, and modeling across countries, comparing and translating between the United States and France

Undergraduate Research Assistant, Pennsylvania State University

August 2014 - May 2016

Participated in data collection of ant social behavior contributing to NSF funded research in the Hughes lab. Conducted an independent research project modeling infectious disease dynamics of social insects based on parasite type and colony conditions

AWARDS

PhRMA Informatics Pre-Doctoral Fellowship*August 2019 - August 2021*

To support advanced stages of pre-doctoral thesis research using novel informatics in an integrative approach toward understanding biological processes (\$25,000 per year, for 2 years).

Conference Travel Grant, Georgetown Graduate School of Arts & Sciences*2019*

To attend Epidemics, the International Conference on Infectious Disease Dynamics 2019 (\$350)

Chateaubriand STEM Fellowship*2019*

To support 4 months of collaboration with Vittoria Colizza and EPIcx Lab at INSERM in Paris, France in May-July 2019, leading to collaborative publications (\$5,900)

Conference Travel Grant, Georgetown Graduate School of Arts and Sciences*2018*

To attend the International Conference on Network Science (NetSci) 2018 (\$425)

Conference Travel Grant, Georgetown Department of Biology*2018*

To attend the International Conference on Network Science (NetSci) 2018 (\$500)

Travel Scholarship, University of Washington*2018*

To attend the 2017 Summer Institutes at the University of Washington (\$1,800)

Travel Scholarship, International Clinics on Infectious Disease Dynamics and Data*2016*

To attend the 2016 Clinic on Dynamical Approaches to Infectious Disease Data (\$150, Room & Board)

RESEARCH PRESENTATIONS

Socioeconomic disparities in influenza burden: the role of individual- and population-level factors*2/2020*

Graduate Research Symposium, Georgetown University Department of Biology, 12 minute talk

Health disparities increase influenza burden in the US*12/2019*

Epidemics, the International Conference on Infectious Disease Dynamics 2019, Poster

The interplay between infectious disease and human behavior: health disparities exacerbate influenza burden*10/2019*

Graduate Research Seminar, Georgetown University Department of Biology, 1 hour talk

Harnessing medical claims to quantify vaccine hesitancy & its determinants*4/2019*

MIDAS (Models of Infectious Disease Agent Study) Vaccine Symposium, Atlanta, GA, 15 minute talk

The interplay between infectious disease and human behavior*3/2019*

Three Minute Thesis Competition, Georgetown University, 3 minute talk

Impacts of infectious disease on behavior: drivers of vaccine hesitancy*2/2019*

Graduate Research Symposium, Georgetown University Department of Biology, Poster

Interrelated dynamics of infectious disease and human behavior 2/2019
Graduate Research Seminar, Georgetown University Department of Biology, 1 hour talk

Infection-induced behavior change: impact on epidemiological prediction & inference 6/2018
NetSci: International School and Conference on Network Science, Paris, France. Satellite Session: Integration of empirical data in network epidemiology, 10 minute talk

The interplay between human behavior change and infectious disease dynamics 2/2018
Graduate Research Symposium, Georgetown University Department of Biology, Poster

TEACHING & MENTORING

Mentoring of Undergraduate Students Fall 2019-present

- Madeline Kuney, Project: *Characterization of influenza vaccination accessibility, affordability and availability across spatial scales in the United States* 9/2019-present
- Anushka Desai, Project: *The role of network structure and symptoms in assessing the controllability of infectious disease outbreaks* 2/2020-present
- Andrew Tiu, Project: *Understanding the role of indoor and outdoor humidity on influenza spatial dynamics* 3/2020-present

Guest Lecture, *Mathematical modeling of influenza transmission* 11/2018
BIOL 401 Senior Seminar in Biology, Georgetown University

Teaching Fellow 1/2017-5/2017 & 8/2017-12/2017
BIOL 422/522 Modeling Biological Populations, Georgetown University

Lead Teaching Assistant 8/2015-5/2016
BIOL 142 Physiology Laboratory, The Pennsylvania State University

Lecture Assistant 8/2014-12/2014
BIOL 110 Basic Concepts and Biodiversity, The Pennsylvania State University

SERVICE & LEADERSHIP

Peer-Review 2/2020
BMJ Open, F1000 Research (DOI: 10.5256/f1000research.23276.r57787)

Co-President 8/2019 - present
Georgetown Biology Organization of Graduate Students

Epidemiology Team Captain, Pandemic Influenza Simulation Experiment 8/2019-11/2019
Georgetown University Global Health Initiative

Bargaining Committee Member Georgetown Alliance of Graduate Employees	<i>2/2018 - 5/2018</i>
General Assembly Representative for the Department of Biology Georgetown University Graduate Student Government	<i>10/2017 - 8/2019</i>
Administration Captain Relay for Life Penn State	<i>10/2015-4/2016</i>
Overall Competitor Liaison Penn State Homecoming, Organization Relations Committee	<i>2/2014-9/2014</i>

PROFESSIONAL DEVELOPMENT

The 65th IEEE International Conference on Data Science and Advanced Analytics- Washington, DC	<i>10/2019</i>
MIDAS (Models of Infectious Disease Agent Study) Network Meeting- Bethesda, MD	<i>4/2018</i>
Teaching Workshops, The Center for New Designs in Learning and Scholarship (CNDLS), Georgetown University- Washington, DC	<i>8/2016- 12/2017</i>
Summer Institute in Statistics and Modeling in Infectious Diseases, University of Washington- Seattle, WA	<i>6/2017</i>
Clinic on Dynamical Approaches to Infectious Disease Data, ICI3D- Jacksonville, FL	<i>12/2016</i>

PROFESSIONAL EXPERIENCE

Health Resource Center Intern, Independence Blue Cross- Philadelphia, PA	<i>6/2014-8/2014 & 6/2015-8/2015 & 6/2016-8/2016</i>
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RELEVANT COURSES AND SKILLS

Graduate Courses

Mathematical & Statistical Computing, Applied Statistical Methods II, Applied Time Series Analysis, Mathematics of Social Networks, Linear Algebra, Infectious Disease & Conflict, Ecological Analysis, Ecology and Evolutionary Biology Journal Club (7 semesters)

Undergraduate Courses

Ecology of Infectious Disease, Principles of Epidemiology, Integrated Biobehavioral Health, Health Systems Management, Health Services Policy Issues, Introduction to Microbiology

Technical Skills

Python, R, AWS, MySQL