GRAHAM NORTHRUP

(734) 660-0043 · gnorthrup@berkeley.edu

EDUCATION

- **PhD,** Computational Biology, University of California, Berkeley 2018 – 2024
- **BS,** Computational and Applied Mathematics, University of Chicago 2018

PUBLICATIONS

In Press

- Brook CE, Rozins C, Bohl JA, Ahyong V, Chea S, Fahsbender L, Huy R, Lay S, Leang R, Li Y, Lon C, Man S, Oum M, **Northrup GR**, Oliveira F, Pacheco AR, Parker DM, Young K, Boots M, Tato CM, DeRisi JL, Yek C, Manning JE. Climate, demography, immunology, and virology combine to drive two decades of dengue virus dynamics in Cambodia. Preprint on *MedRxiv* 2022. doi:10.1101/2022.06.08.22276171v3

Submitted

- **Northrup GR**, Boots M, Saad-Roy CM. Shape of waning vaccinal immunity: implications for control.
- O'Neill X, White AR, **Northrup GR**, Saad-Roy CM, White PS, Boots M. Superspreading and the evolution of virulence.

Published

- Lewnard JA, Liu VX, Jackson ML, Schmidt MA, Jewell BL, Flores JP, Jentz C, **Northrup GR**, Mahmud A, Reingold AR, Petersen M, Jewell NP, Young S, Bellows J. Incidence, clinical outcomes, and transmission dynamics of severe coronavirus disease 2019 in California and Washington: prospective cohort study. *BMJ* 2020. doi:10.1136/bmj.m1923
- **Northrup GR**, Qian L, Bruxvoort K, Marx FM, Whittles LK, Lewnard JA. Inference of naturally-acquired immunity using a self-matched negative control design. *Epidemiology* 2020. doi:10.1097/EDE.0000000000001305
- Head JR, Andrejko K, Cheng Q, Collender PA, Phillips S, Boser A, Heaney AK, Hoover CM, Wu SL, **Northrup GR,** Click K, Bardach NS, Lewnard JA, Remais JV. The effect of school closures and reopening strategies on COVID-19 infection dynamics in the San Francisco Bay Area: a cross-sectional survey and modeling analysis. *J. R. Soc. Interface* 2021. doi:10.1098/rsif.2020.0970
- Brook CE, **Northrup GR,** Ehrenberg AJ, The IGI Testing Consortium, Doudna JA, Boots M. Optimizing COVID-19 control with asymptomatic surveillance testing in a university environment. *Epidemics* 2021. doi:10.1016/j.epidem.2021.100527
- **Northrup GR**, White AR, Parratt SR, Rozins C, Laine AL, Boots M. The evolutionary dynamics of hyperparasites. *Journal of Theoretical Biology* 2024. doi:10.1016/j.jtbi.2024.111741

TEACHING

<u>Guest Lecturer:</u> University of California, Berkeley

- Berkeley Connect in Computational Biology Spring 2024

Tutor: University of California, Berkeley

- Introduction to Probability at an Advanced Level — Fall 2023
- Introduction to Statistics at an Advanced Level — Fall 2023

Graduate Student Instructor: University of California, Berkeley

- Infectious Disease Dynamics — Spring 2020, Spring 2021

Teaching Assistant: University of Chicago

- Introduction to Quantitative Modeling in Biology — Spring 2018
- Introduction to Quantitative Modeling in Biology (advanced) — Spring 2017
- Mathematical Methods for Biological Sciences I & II — Fall 2017 & Winter 2018

PRESENTATIONS

- Quantitative Biology Summer Fellows Program, Chicago, IL. 2024. *Oral presentation*
- Ecology and Evolution of Infectious Disease, Palo Alto, CA. 2024. *Poster presentation*
- Demystifying the PhD, Berkeley, CA. 2024 *Oral presentation*
- Joint Math Meetings, San Francisco, CA. 2024 *Oral presentation*
- Seminar Series for the Quantitatively Curious, Turlock, CA. 2023. *Oral presentation*
- Ecology and Evolution of Infectious Diseases Research Seminar, Berkeley, CA. 2023. *Oral presentation*
- Center for Computational Biology Annual Retreat, Los Gatos, CA. 2023. *Oral presentation*
- Center for Computational Biology Fall Research Symposium, Berkeley, CA. 2023. *Oral presentation*
- Ecology and Evolution of Infectious Disease, State College, PA. 2023. *Poster presentation*
- Bay Area Ecology and Evolution of Infectious Disease, San Francisco, CA. 2023. *Poster presentation*
- Center for Computational Biology Annual Retreat, Los Gatos, CA. 2022. *Poster presentation*
- Ecology and Evolution of Infectious Disease, Atlanta, GA. 2022. *Poster presentation*
- Computational Biology Core Skills Seminar, Berkeley, CA. 2021. *Oral presentation (hybrid format)*
- Ecology and Evolution of Infectious Diseases Research Seminar, Berkeley, CA. 2021. *Oral presentation*
- Center for Computational Biology Student Seminar, Berkeley, CA. 2021. *Oral presentation*
- Bay Area Ecology and Evolution of Infectious Disease, Davis, CA. 2021. *Oral presentation (remote)*
- Center for Computational Biology Annual Retreat, Berkeley, CA. 2021. *Poster presentation (remote)*
- Quantitative Biology Summer Fellows Program, Chicago, IL. 2020. *Oral presentation (remote)*
- Ecology and Evolution of Infectious Diseases Research Seminar, Berkeley, CA. 2020. *Oral presentation*
- Center for Computational Biology Annual Retreat, Berkeley, CA. 2019. *Oral presentation*
- Infectious Diseases and Immunology Research Seminar, Berkeley, CA. 2019. *Oral presentation*
- Center for Computational Biology Fall Research Symposium, Berkeley, CA. 2019. *Oral presentation*
- Center for Computational Biology Student Seminar, Berkeley, CA. 2019. *Oral presentation*

AWARDS

- Graduate Division Conference Travel Grant
- Center for Computational Biology Annual Retreat Best Talk, Runner-up

- Bay Area Ecology and Evolution of Infectious Disease, Audience favorite talk
- Center for Computational Biology Annual Retreat Best Poster, Runner-up
- National Human Genome Research Institute T32 Trainee
- SMACNA College of Fellows
- University of Chicago Scholar Award
- National Merit Scholar

SERVICE

- Reviewer, PLoS Computational Biology
- Peer Mentor, UC Berkeley Center for Computational Biology (2022 – 2024)
- Student Lunch Seminar Coordinator, UC Berkeley Center for Computational Biology (2021 – 2022)
- Retreat Planning Committee, UC Berkeley Center for Computational Biology (2019)
- Center for Computational Biology Representative, UC Berkeley Graduate Assembly (2018 – 2023)
- Rules Committee, UC Berkeley Graduate Assembly (2019 – 2024)
- Rules Officer, UC Berkeley Graduate Assembly (2023 – 2024

TECHNICAL SKILLS

- Proficient with Python, MATLAB, R, LaTeX; Working knowledge of Microsoft Excel, Julia, Maple and Mathematica; Basic knowledge of HTML, SQL, C, C++, and Stan