

# Jacob D. Holt, Ph.D. Candidate

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## Education

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- 2020 – 2026 • **Dartmouth College**  
Ph.D. Candidate in Biology
- 2017 – 2020 • **Georgia Institute of Technology**  
B.S. in Biology  
Thesis title: *Effect of Hydrodynamic Regime on Snowflake Yeast Evolution*
- 2016 – 2017 • **Georgia Southern University**


## Publications

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**J. D. Holt**, E. Zhang, D. Kadouri, and C. D. Nadell, “Growth on chitin alters *Vibrio cholerae* biofilm architecture and susceptibility to *Bdellovibrio bacteriovorus* predation,” *In prep*, Mar. 2025.

**J. D. Holt**, Y. Peng, T. N. Dalia, A. B. Dalia, and C. D. Nadell, “DNA adsorption to chitin drives horizontal gene transfer by natural transformation under flow,” *In review*, *PNAS*, Nov. 2024.

**J. D. Holt**, D. Schultz, and C. D. Nadell, “Dispersal of a dominant competitor can drive multispecies coexistence in biofilms,” *Current Biology*, vol. 34, no. 18, 4129–4142.e4, Sep. 2024, ISSN: 09609822.  DOI: 10.1016/j.cub.2024.07.078. (visited on 11/18/2024).

G. Doing, A. J. Lee, S. L. Neff, *et al.*, “Computationally efficient assembly of *Pseudomonas aeruginosa* gene expression compendia,” *mSystems*, vol. 8, no. 1, J. A. Gilbert, Ed., e00341–22, Feb. 23, 2023, ISSN: 2379-5077.  DOI: 10.1128/msystems.00341–22. (visited on 03/13/2024).

## Presentations

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### Talks

- 2025 • DNA adsorption to chitin gives insight into type IV pili retraction mechanics.  
M2P2 Retreat. Lake Morey, VT.
- 2024 • Growth on chitin alters *Vibrio cholerae* biofilm architecture and susceptibility to *Bdellovibrio bacteriovorus* predation.  
BALO Symposium, Virtual.
- Growth on chitin alters *Vibrio cholerae* biofilm architecture and susceptibility to *Bdellovibrio bacteriovorus* predation.  
JEMMM Retreat. Norwich, VT.
- Dispersal of a dominant competitor can drive multispecies coexistence in biofilms.  
Boston Bacterial Meeting. Boston, MA
- Biofilm ecology of *V. cholerae* on chitin.  
M2P2 Retreat. Lake Morey, VT.
- 2022 • Mediating social microbes.  
Dartmouth College 3MT. Hanover, NH

### Selected Poster Abstracts

- 2025 • Growth on chitin alters *Vibrio cholerae* biofilm architecture and susceptibility to *Bdellovibrio bacteriovorus* predation.  
GRC Microbial Population Dynamics Proctor, New Hampshire.  
**J. Holt**, E. Zhang, D. Kadouri, and C. Nadell

## Presentations (continued)

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- 2024 • Competitive advantage of parental lysogens in biofilms.  
M2P2 Retreat Lake Morey, Vermont.  
J. Peng, **J. Holt**, A. Dalia, and C. Nadell
- 2023 • Dispersal of a dominant competitor can modulate coexistence in multispecies biofilms.  
GRC Microbial Population Dynamics Proctor, New Hampshire  
**J. Holt** and C. Nadell
- 2022 • Dispersal of a dominant competitor can modulate coexistence in multispecies biofilms.  
ASM Biofilms Charlotte, NC.  
**J. Holt** and C. Nadell
- Growth of *E. coli* and *E. faecalis* on a titanium bead model.  
ASM Biofilms Charlotte, NC.  
M. Bond, **J. Holt**, and C. Nadell

## Awards

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- 2024 • **MCB Student Representative Fellowship**  
Awarded in recognition of service to the MCB graduate program.
- 2020 • **MCB Award**  
Award given to competitive applicants to the MCB graduate program.
- **President's Undergraduate Research Award**  
Funding awarded by the Georgia Institute of Technology for undergraduate thesis project.
- 2016 • **Presidential Scholar**  
Awarded by Georgia Southern University.
- 2016-2020 • **HOPE Scholar**  
Tuition scholarship awarded by the University System of Georgia.

## Committees and Service

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### Dartmouth College

- 2025 • **GRS Microbial Population Dynamics Session Chair**
- 2024-2026 • **BALO Symposium Planning Committee**
- 2023 – 2024 • **Biology student representative to the graduate committee**  
Dartmouth College Molecular and Cellular Biology Ph.D. Program  
Responsibilities included; serving on the admissions committee, organizing recruitment weekends, organizing the MCB retreat, and voting on elective courses and faculty appointments to MCB.
- 2021 – 2023 • **Peer mentor**  
Dartmouth College Molecular and Cellular Biology Ph.D. Program
- 2020 – 2022 • **Peer research mentor**  
Dartmouth College Geisel School of Medicine.

### Georgia Institute of Technology

- 2018-2020 • **Undergraduate research ambassador**  
Georgia Institute of Technology Vertically Integrated Projects.

## Professional Work Experience

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- 2022 • **Genetics teaching assistant**  
Biological Sciences, Dartmouth College Molecular and Cellular Biology Ph.D. Program
- 2019 • **Undergraduate research assistant**  
Yunker Lab, Georgia Institute of Technology
- 2016 – 2017 • **Math and science tutor**  
Armstrong TRiO, Georgia Southern University

## Society Memberships

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- 2021 – Present • **American Society of Microbiologists**