

## Education

PhD in Molecular Biology,  
Microbiology, and  
Biochemistry  
University of Idaho  
**August 2025**

BS in Biology  
University of Idaho  
**May 2019**

## Skills

### Microscopy

- Fluorescent microscopy both live-cell and confocal.
- Immunohistochemistry
- Immunofluorescence
- Fluorescent In-situ hybridization (FISH)

### PCR and Vector Cloning

- PCR of DNA fragments for *Chlamydia* plasmid engineering and cloning
- ddPCR for gene expression quantification and chromosome counting as well as IREP
- RTPCR and qPCR

### Cell Culture

- Mammalian cell culture: Cos-7 cells and Hela cells
- Bacterial culture: *E. coli* culture, preps, and plating. *Chlamydia* infectious culture of mammalian cell lines
- Experience with lipid-based transfection of Cos-7 cells

### DNA/RNA/Protein assays

- Performed isolations for all three macromolecules
- Western Blot, RNA-seq, Sanger-seq, gel electrophoresis

### Data Analysis

- Proficient in Python (matplotlib/pandas) and R (ggplot2) coding languages for data analysis and visualization

# Dr. Cody Appa, PhD

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8+ years of wet lab research experience. High levels of experience in PCR cloning, CRISPR-I, Microscopy, and cell culture. Multiple journal publications including Editor's Pick honors for a first author publication in mSphere uncovering the Saturn body transitional cell form in *Chlamydia trachomatis*.

## Publications:

**Appa CR**, Grieshaber NA, Yang H, Omsland A, McCormick S, Chiarelli TJ, Grieshaber SS. The chlamydial transcriptional regulator *Euo* is a key switch in cell form developmental progression but is not involved in the committed step to the formation of the infectious form.

**Summer 2024**

<https://journals.asm.org/doi/10.1128/msphere.00437-24>

Nicole A. Grieshaber, **Cody Appa**, Megan Ward, Alorah Grossman, Sean McCormick, Brendan S. Grieshaber, Travis Chiarelli, Hong Yang, Anders Omsland, Scott S. Grieshaber. The T3SS structural and effector genes of *Chlamydia trachomatis* are expressed in distinct phenotypic cell forms

**Summer 2024**

<https://www.biorxiv.org/content/10.1101/2024.04.25.591156v1.full>

Chiarelli TJ, Grieshaber NA, **Appa C**, Grieshaber SS. 2023. Computational Modeling of the Chlamydial Developmental Cycle Reveals a Potential Role for Asymmetric Division.

**Spring 2023**

<https://doi.org/10.1128/msystems.00053-23>

Nicole A. Grishaber, Justin Runac, Sierra Turner, Marissa Dean, **Cody Appa**, Anders Omsland, Scott Grieshaber. The sRNA Regulated Protein DdbA Is Involved in Development and Maintenance of the *Chlamydia trachomatis* EB Cell Form.

**Summer 2021**

<https://doi.org/10.3389/fcimb.2021.692224>



<https://www.linkedin.com/in/cody-appa-a91787379/>



[https://cody-appa.github.io/Cody\\_Website/](https://cody-appa.github.io/Cody_Website/)

## Honors

### University of Idaho College of Science Student Research Expo

- Best Graduate Student Poster  
-Fall 2025

### Editor's Pick First Author Publication

- <https://doi.org/10.1128/msphere.00437-24>  
-Summer 2024

### Chlamydia Basic Research Society International Conference

- Jane Raulston Award for Best Graduate Student Poster  
-Spring 2023

## Presentations

- INBRE Statewide Research Conference  
-Fall 2025
- Uldaho Student Research Exposition  
-Fall 2025
- Chlamydia Basic Research Society Conference  
-Spring 2023
- American Society of Microbiology Northwestern Branch Conference.  
-Fall 2022

## References

**Scott Grieshaber:**  
Primary investigator,  
Professor of Microbiology.  
University of Idaho.  
[sgreishaber@uidaho.edu](mailto:sgreishaber@uidaho.edu)

**Nicole Grieshaber:**  
Associate Professor of  
Microbiology, University  
of Idaho.  
[ngrieshaber@uidaho.edu](mailto:ngrieshaber@uidaho.edu)

## Research Experience:

### Graduate Student (MMBB): 2021-2025

- Research experience in the Grieshaber Lab on *Chlamydia trachomatis* cell cycle transitions
- Research uncovered the Saturn Body; a transitional cell form for *Chlamydia trachomatis*
- Conducted research in a Biosafety 2+ environment
- Teaching experience: Cell and Molecular Biology, Biochemistry, Biology and Society
- Trained multiple undergraduates in wet lab protocols and procedures
- Projects include: flag-tagged overexpression assays, mutagenesis studies, digital droplet PCR for QPCR as well as IRep assays, IFU reinfection assays, Fluorescent In-Situ Hybridization (FISH), live-cell and confocal microscopy
- Experience with inducible CRISPR interference plasmid cloning and transforming into *Chlamydia*
- Experience with fluorescent microscopes, confocal and live cell microscopy as well as NIS elements, Micromanager, and ImageJ.
- Competent in python using matplotlib and pandas packages for data visualization as well as using R ggplot2 package.
- Familiar with protein modeling software and performed single molecule molecular dynamics simulations

### Research Technician: 2019-2021

- Researched under Scott and Nicole Grieshaber with Travis Chiarelli.
- Created promoter reporter vector constructs for multiple genes of interest.
- Performed many techniques such as: PCR, western analysis, IFU-reinfection assay, antibody staining, live-cell imaging, confocal microscopy, as well as various lab work such as mini/midipreps and creating media/buffers.

### Undergraduate Research: 2017-2019

- Researched under Scott and Nicole Grieshaber on *Chlamydia trachomatis*.
- Performed studies on flag tagged protein overexpression IFU assays.
- Gained experience in PCR and plasmid cloning for *Chlamydia* transformation