Education

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

BS in Biology
University of Idaho
May 2019

Dr. Cody Appa, PhD

Codyrappa@yahoo.com | 208-315-2638

Molecular biologist with 8+ years of research experience specializing in microbiology and cell cycle development. Recent PhD graduate with expertise in CRISPR interference, advanced microscopy, and mammalian cell culture. Published researcher with multiple peer-reviewed publications including an Editor's Pick first-author paper in mSphere. Proven track record in mentoring students and translating complex research into practical applications.

Skills

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

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

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

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

doi.org/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

doi.org/10.1101/2024.04.25.591156

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

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

doi.org/10.3389/fcimb.2021.692224

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

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
- UIdaho 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

Nicole Grieshaber:
Associate Professor of Microbiology, University of Idaho.
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