Dr. Cody Appa, PhD

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linkedin.com/in/cody-appa-a91787379/ cody-appa.github.io/Cody_Website/

Skills

Cell Culture

- Mammalian cell culture: Cos-7 cells and Hela cells
- Bacterial/yeast culture and transformation
- *Chlamydia* infectious co-culture
- Maintained multiple cell lines.
- Isolated and screened single cells
- Lipid Based transfection of Cos-7 cells
- Flow-cytometry and cell screening

PCR and Vector Cloning

- PCR, qPCR, RT-PCR, ddPCR
- Plasmid design and cloning (Benchling, NCBI)
- PCR primer design/troubleshooting

Microscopy

- Live-cell and confocal fluorescent microscopy
- Immunohistochemistry
- Immunofluorescence
- Fluorescent In-situ hybridization (FISH)

DNA/RNA/Protein assays

- Isolations and purification
- Bradford, ELISA, RNA-seq
- Gel electrophoresis, SDS-PAGE, Immunoprecipitation
- ChIP-seq, restriction enzyme digestion
- Molecular modeling: GROMACS and Alphafold

Data Analysis

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

Professional Summary:

Accomplished 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.

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.

August 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.

April 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.

March 2023

doi.org/10.1128/msystems.00053-23

Nicole A. Grieshaber, Travis J. Chiarelli, **Cody R. Appa**, Grace Neiswanger, Kristina Peretti, Scott Grieshaber. Translational gene expression control in *Chlamydia trachomatis*.

January 2022

doi.org/10.1371/journal.pone.0257259

Nicole A. Grieshaber, 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

July 2021

doi.org/10.3389/fcimb.2021.692224

Education

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

BS in Biology
University of Idaho
May 2019

Honors

University of Idaho College of Science Student Research Expo

- Best Graduate Student Poster

-March 2025

Max and Sharon Walker College of Science Scholarship

-November 2024

Editor's Pick First Author Publication

- https://doi.org/10.1128/msphere.00437-24

-August 2024

***Chlamydia* Basic Research Society International Conference**

- Jane Raulston Award for Best Graduate Student Poster

-March 2023

Presentations

UIdaho Student Research Exposition

-March 2025

INBRE Statewide Research Conference

-July 2024

Chlamydia Basic Research Society Conference

-March 2023

American Society of Microbiology Northwestern Branch Conference.

-November 2022

References

Available on request.

Work Experience:

Graduate Student (MMBB): **January 2021 - August 2025**

- Method Development and Innovation: 8+ years of research experience; developing and driving molecular biology experiments culminating in discovering the Saturn Body; a transitional cell form in *Chlamydia trachomatis* development.

- Advanced DNA Manipulation & Synthesis: Designed and executed complex molecular cloning projects including plasmid engineering for *Chlamydia* genetic systems including CRISPR interference with deep knowledge of DNA synthesis and manipulation methods.

- Independent Project Leadership: Led multi-year research initiatives from experimental design through data analysis and publication, consistently meeting project milestones while managing multiple concurrent studies.

- Technical Documentation & Communication: Maintained detailed experimental records, authored research publications, and presented findings to diverse scientific audiences.

- Quantitative Analysis & Bioinformatics: Applied computational tools (Python, R) for experimental data analysis, sequence alignment, and statistical modeling, bridging wet lab work with data science.

- Mentorship & Teaching: Trained multiple undergraduate researchers in advanced molecular biology techniques, demonstrating ability to share technical expertise and develop others.

- Presenting and Communication: Multiple award-winning presentations and an Editor's Pick first author publication demonstrate ability to effectively communicate complex data.

Research Technician: **August 2019 – December 2020**

- Research Experience: Created promoter reporter vector constructs for multiple genes of interest.

- Lab Maintenance and Upkeep: Maintained lab equipment and assisted with orders and reagent prep.

Undergraduate Research Assistant: **January 2017 – May 2019**

- Research Experience: Developed E- riboswitch repression vectors. Transformed plasmids into *E. coli* and *Chlamydia*.

- Education: Maintained a high GPA while concurrently conducting research.