

Christy Fillman

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Education

Ph.D. Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder. July 2007.
Dissertation: Proteins involved in mRNA decapping localize to processing bodies and activate mRNA decay. Advisor: Dr. Jens Lykke-Anderson

B.S., Biochemistry, Colorado State University, Fort Collins, CO, May 1999.

Positions

Teaching Professor of Distinction, Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder 2021-present

Senior Instructor, Department of Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder. 2015-2021

Instructor, Department of Molecular, Cellular, and Developmental Biology. University of Colorado, Boulder 2007-2015

Research Publications

Hanauer, D. I., ...**Fillman, C.L.**, ... Sivanathan, V. (2023). Models of classroom assessment for course-based research experiences. *Frontiers in Education*, 8. <https://doi.org/10.3389/feduc.2023.1279921>

Fillman C, Guild N, et al. and student authors have published 27 complete phage genomes on GenBank (2012-2022).

Doyle, E. L., **Fillman, C. L.**, Reyna, N. S., Tobiasson, D. M., Westholm, D. E., Askins, J. L., [...] Hatfull, G. F. (2018). Genome Sequences of Four Cluster P Mycobacteriophages. *Genome Announcements*, 6(2). <https://doi.org/10.1128/genomea.01101-17>

*This publication includes four MCDB 2161 students as authors.

Hanauer DI [...] **Fillman CL**, et al. An inclusive Research Education Community (iREC): Impact of the SEA-PHAGES program on research outcomes and student learning. *Proc Natl Acad Sci USA*. 2017

Pope WH [...] **Fillman CL**, et al*. Whole genome comparison of a large collection of mycobacteriophages reveals a continuum of phage genetic diversity. *Elife*. 2015;4.

*This publication includes 59 MCDB 2161 students as authors.

Erickson SL, Corpuz EO, Maloy JP, **Fillman C**, Webb K, Bennett EJ, and Lykke-Andersen J. Competition between Decapping Complex Formation and Ubiquitin-Mediated Proteasomal Degradation Controls Human Dcp2 Decapping Activity. *Mol Cell Biol*. 2015;35(12):2144-53.

Fenger-Grøn, M., **Fillman, C.***, Norrild, B., Lykke-Andersen, J. (2005) Multiple Processing Body Factors and the ARE Binding Protein TTP Activate mRNA Decapping Mol. Cell, Dec; 22, (6) 20: 905-915.

***Co-first author**

Fillman, C. and Lykke-Andersen, J. (2005) RNA decapping inside and outside of processing bodies. Curr Opin Cell Biol. Jun;17(3):326-31.

Teaching Authorship

Bollivar, D. W., **Fillman, C.**, Sunnen, C. N., Vega, Q. (2023). Bollivar, D. W., Fillman, C., Sunnen, C. N., Vega, Q. (2023). **Designing a High Quality and Accessible Scientific Poster**. HHMI Science Education Alliance (SEA) Faculty Group, QUBES Educational Resources. doi:10.25334/CGWV-2B93

Beyer, A. R., Connerly, P. L., **Fillman, C.**, Peters, N. T. (2021). **Laboratory Math**. HHMI Science Education Alliance (SEA) Faculty Group, QUBES Educational Resources. doi:10.25334/QD4H-M006

Codon Learning: authored and formatted content for the Genetics Course Evidence Based Teaching platform, 2020-2021.

MCDB 1161 Phage Genomics Lab Laboratory Manual, online (2020-2021), Hayden McNeil, Plymouth, MI (2016-2019), Print, (2008-2015), CU Bookstore, Boulder, CO, Print.

Mastering Genetics: Authored 25 multiple choice questions for Dynamic Study Modules for each of 9 Chapters of Concepts of Genetics by Klug *et. al.* (2018), Pearson 2018.

Mastering Genetics: Authored 25 multipart questions with student feedback on topics including bacterial genetics, DNA replication, cytoplasmic inheritance, recombinant DNA technology, and genomics. Pearson 2014.

Meeting Presentations and Posters

Fillman, C Open-Ended Phage Genomics Project Showed High Student Engagement and Creativity. Poster presented at: SEA PHAGES Faculty Meeting National Symposium, June 2-5 2023, HHMI Headquarters, Chevy Chase, MD

Fillman, C and Guild, N Phage Phandemic: How our Students Survived and Succeeded in the Hybrid Phage Lab. Poster presented at: SEA PHAGES National Faculty Meeting 2021 June 7-9 Zoom.

Feeny D, Nicke D, Guild N, **Fillman C.** Characterizing Genetic Elements in the Cluster O Mycobacteriophage Blessica. Poster presented at: Eleventh Annual HHMI Phage Genomics Symposium 2019 June 7-9 Janelia Farms Research Complex Ashburn, VA.

Johnson J, Hammermeister Suger J, Char E, Chiem G, Do N, Ho S, Lulla S, McAdams I, Ponnappalli M, Guild N and **Fillman C.** C1 Cluster Mycobacteriophage Iota Structural and DNA Metabolism Genes Show Homology to *Gordonia* and *Rhodococcus* Phages, which Suggests a Broader Host Range for Iota. Poster presented at: Ninth Annual HHMI Phage Genomics Symposium 2017 June 9-11 Janelia Farms Research Complex Ashburn, VA.

Fillman C, Guild N, Hyde H, Bartholomay K. Using Phage Therapy to Fight Drug Resistant Diseases. Talk presented with a showing of the film *Extraordinary Measures* at The Dairy Center for the Arts Science on Screen 2015 Boulder, CO.

Morgan B, Stanton W, **Fillman C** and Guild N. Comparing Codon Usage and tRNAs Present in a C1 Phage, Sprinklers, and a A6 Phage, ToneTone. Poster presented at: Seventh Annual HHMI Phage Genomics Symposium. 2015 June 12-15 Janelia Farms Research Complex Ashburn, VA.

Fillman C, Guild N. Moving Phage into the Traditional Biology Lab. Poster presented at Fourth Annual HHMI Phage Genomics Symposium. 2012 June 8-10 Janelia Farms Research Complex Ashburn, VA.

Guild N, Shi J, **Fillman C**. A Comparison of Learning Gains, Class Performance and Science Attitudes in Introductory Biology Students. Poster presented at Third Annual HHMI Phage Genomics Symposium. 2011 June 10-12 Janelia Farms Research Complex Ashburn, VA.

Fillman C, Guild N. Teaching Investigative Phage Biology at the University of Colorado. Poster presented at Second Annual HHMI Phage Genomics Symposium. 2010 June 12-13 Janelia Farms Research Complex Ashburn, VA.

Fillman C, Guild N. What Worked and What Didn't Teaching the First Year of Phage Genomics at the University of Colorado. Talk presented at HHMI *In Situ* Workshop. 2010 June Janelia Farms Research Complex Ashburn, VA.

Fillman C, Fenger-Groen M, Norrild B, and Lykke-Andersen J. A Decapping Sub-Complex of human Processing Bodies contains co-activators of mRNA decay. Plenary session talk presented at RNA Society Meeting. 2005 May 16-19 Banff, Alberta, Canada.

Teaching Experience

Introduction to the MCDB Major (MCDB 1020): taught 4 semesters, 1 credit, 1 hour/week, 140 students.

Phage Genomics Lab I (MCDB 1161): taught 20 semesters, 2 credits, 5 hours/week, 24 students/section. Starting in the fall of 2017, this course had 7 sections of 24 students with one hour of common lecture.

Principles of Genetics Lecture section (MCDB 2150): taught 13 semesters, 3 credits, 3 hours/week, 180-350 students.

Problem Solving in Genetics (MCDB 2152): taught 22 semesters, 1 credit, 1 hour/week, 3-9 sections/semester, 25 students/section. I supervise 3-6 Learning Assistants each semester.

Phage Genomics Lab II (MCDB 2161): taught 12 semesters, 2 credits, 4 hours/week, 15 students.

Independent Study (MCDB 4840): taught 7 semesters, variable credits, variable hours, 7 students total. I supervised a student completing a biotech internship, a student continuing a research project from MCDB 4111, and 5 students working on advanced phage genomics projects.

Principles of Genetics Laboratory (MCDB 2151): Taught 13 semesters 2007-2015, 1 credit, 2 hours/week, 6-9 sections/semester, 22 students/section.

Experimental Design and Research (MCDB 4111): taught 8 semesters 2008-2014, 3 credits, 6 hours/week, 10 students.

Principles of Genetics Baker Residence Academic Program (MCDB 2150): taught 4 semesters 2008-2011, 3 credits, 3 hours/week, 20 students/section.

Molecular Cell Physiology (MCDB 3280): taught 1 semester 2008, 3 credits, 3 hours/week, 18 students.

Activities and Workshops

- ASSETT CTL Active Learning Academy: Learning by Design, Fall 2023
- ASSETT CTL Faculty Fellow, 2022-2023
- HHMI SEA Phages Professional Identity Workshop, Fall 2022
- HHMI SEA Phages Mini Assessment Workshop, July 2022
- Facilitator for Cohort 13/14 HHMI SEA-PHAGES Phage Genomics *In Situ* Workshop. Summer 2021, remote.
- Mental Health First Aid Certificate, June 2021.
- Faculty Scholars Group for International Student Success. Summer-Fall 2020 University of Colorado, Boulder.
- ASSETT Summer Course Design Workshop: Strategic Course Design for Flexible Teaching Modes. Summer 2020 University of Colorado, Boulder
- SEA PHAGES Faculty Hack-a-Thon Phage Genome Annotation Workshop, Winter 2018, 2019, 2020, remote.
- ASSETT Summer Course Design Workshop: Flipping the Class and Designing Hybrid Classes. Summer 2019 University of Colorado, Boulder.
- TRESTLE Scholars Learning Community Member Exploring course-based undergraduate research experiences. Fall 2017 University of Colorado, Boulder.
- FTEP Summer Institute for Assessing Classroom Learning. 2017 June 19-23 University of Colorado, Boulder.
- SEA Phages Advanced Genome Workshop: Genome Announcements. 2017 June 11-13 Chevy Chase, MD.
- National Genomics Research Initiative *In Silico* Workshop. 2010 December Janelia Farms Research Campus, Ashburn, VA.
- National Genomics Research Initiative *In Situ* Workshop. 2009 June 22-26 Janelia Research Campus, Ashburn, VA.

Service

Arts and Sciences Welcome Fair	2022, 2023
UROP Proposal Review Board	2022, 2023
Norlin Scholars Selection	2021-2023
MCDB Faculty Coordinator for the Learning Assistant Program	2017-present
Honors Council Member (MCDB), Chair starting Fall 2023	2011-present
Pre Professional Interview Advisory Committee	2011-2022
HHMI Science Education Alliance Member	2008-present

College of Arts and Sciences Curriculum Committee Member
Student Faculty Mentor Program
Boulder Valley High School Science Research Mentor

2018-2021
2014
2014-2015, 2022, 2023