

Colleen E. Quaas, Ph.D.

EDUCATION

PhD-Biomedical Science (Biochemistry and Molecular Biology)

2022

Medical University of South Carolina

Thesis: "Regulation of Chromatin Modifiers During Transcription and Damage Signaling in *Xenopus* egg extract" Advisor: David Long

Bachelor of Science- Biology

2016

College of Charleston Honors College

ACADEMIC APPOINTMENTS

August 2024-	Assistant Professor, The Citadel (Charleston, SC)
Fall 2023- Spring 2024	Adjunct Instructor, College of Charleston (Charleston, SC)
Spring 2023- Spring 2024	Adjunct Instructor, The Citadel (Charleston, SC)
Jan 2022- July 2024	Post-Doctoral Fellow, Hollings Cancer Center, Department of Biochemistry and Molecular Biology, Medical University of South Carolina (Charleston, SC)
Fall 2020- Fall 2021	Private Biology and Chemistry tutor (Charleston, SC)
Spring 2020	Teaching Externship, College of Charleston (Charleston, SC)
Spring 2019-Fall 2020	College of Graduate Studies first year curriculum tutor, Medical University of South Carolina (Charleston, SC)

TEACHING EXPERIENCE

The Citadel

Spring 2025	Assistant Professor, Molecular Genetics (BIOL412), FOB(BIOL 105), 2 sections
Fall 2024	Assistant Professor, Genetics +Lab (BIOL308)
Spring 2024	Instructor, Foundations of Biology (BIOL 105)
Fall 2023	Instructor, Foundations of Biology (BIOL 105)
Spring 2023	Instructor, Foundations of Biology (BIOL 105)
Spring 2023	Instructor, Foundations of Biology Laboratory (BIOL115)

College of Charleston

Spring 2024	Instructor, Genetics and Molecular Biology Laboratory (BIOL315L)
Fall 2023	Instructor, Genetics Laboratory (BIOL 305L)- 2 sections
Fall 2023	Instructor, Cell Biology Laboratory (BIOL 313L)- 2 sections
Spring 2020	Teaching Externship: Evolution, Form and Function of Organisms (BIOL112)
	Teaching mentor for ~50 students (Mentor: Deborah Bidwell)
	<u>Responsibilities:</u> grading, course design, lecture, supplemental instruction, office hours

Medical University of South Carolina

Summer 2021-Present	Guest lecturer, Summer Undergraduate Research Program (SURP) "Gene Expression: Transcription, Regulatory RNAs, and Epigenetics"
Fall 2020	College of Graduate Studies First Year Curriculum tutor

Student Mentorship via MUSC

4 PhD rotation students in my PhD laboratory

SURP student, PREP student, and technicians in my post-doc laboratory

Responsibilities: Experimental techniques and design, data

analysis, manuscript preparation, critical thinking skills, equipment training

Francis Marion University.

Fall 2021-Spring 2023

Senior Thesis Co-mentor

Advisor for an undergraduate with her senior thesis project investigating the effects of genetic variation on SARS-CoV-2 severity

PUBLICATIONS

1. Lin, B., Disharoon, J.A., Ampolini, E. A., Saatci, O., Quesnelle, A., Walton, C., **Quaas, C.E.**, Ogretmen, B., Sahin, O., Long, D.T. ATM-mediated displacement of BRD4 from damaged chromatin. *Nature (submitted)*
2. **Ferretti, G. D. S. and Quaas, C.E.**, Bertolini, I., Zuccotti, A., Saacti, O., Kashatus, A.J., Sharmin, S., Lu, D. Y., Poli, A. N. R., Quesnelle, A.F., Rodriguez-Blanco, J., De Cubas, A., Hobbs, G.A., Liu, Q., O'Bryan, J., Salvino, M.J., Kashatus, D.F., Sahin, O., Barnoud, T. (2024). HSP70-mediated mitochondrial dynamics and autophagy represent a novel vulnerability in pancreatic cancer. *Cell Death and Differentiation*.
3. **Quaas, C.E.**, Lin, B., Long, D.T (2022). Transcription suppression is mediated by the HDAC1-Sin3 complex in *Xenopus* nucleoplasmic extract. *Journal of Biological Chemistry*.
4. Barrows, J. K., Lin, B., **Quaas, C.E.**, Fullbright, G., Wallace, E.N., & Long, D.T. (2022). BRD4 promotes resection and homology-directed repair independent of DNA double-strand breaks. *Nature Communications*.
5. **Quaas, C.E.**, Long, D.T. (2021). Targeting (De)Acetylation: A Diversity of Mechanism and Disease. *Comprehensive Pharmacology*.

RESEARCH

PhD in Biomedical Science (Biochemistry and Molecular Biology).

MEDICAL UNIVERSITY OF SOUTH CAROLINA | AUGUST 2016 - JANUARY 2022

Long Lab

- Characterized epigenetic regulation of transcription through histone acetylations in cell-free *Xenopus laevis* egg extract
- Established specific functional differences between HDAC1 and HDAC2 in both transcriptional and developmental contexts
- Identified a novel function of histone methyltransferase SET8 in the repair of DNA inter-strand crosslinks
- **Skills:** *Xenopus laevis* extract preparation, ChIP, protein expression and purification, DNA cloning, chromatin isolation, animal dissection and IP injection (*Xenopus laevis*), fluorescence and light microscopy, sequencing gel electrophoresis, 2DGE, immunoprecipitation, Western blot, RNA/DNA isolation, cDNA synthesis, RT-qPCR, primer design

Post-Doctoral Fellowship

MEDICAL UNIVERSITY OF SOUTH CAROLINA | FEBRUARY 2022 - APRIL 2024

Barnoud Lab

- Investigation of African-centric p53 SNPs in the context of DNA repair and human malignancies
- Investigation of a novel HSP70 inhibitor, AP-4-139B, for the treatment of pancreatic cancer
- Established that inhibition of stress-inducible, mitochondrially localized HSP70 significantly reduces tumor burden and oncogenic signaling in multiple human pancreatic cell lines
- Identified a potential link between HSP70 inhibition and autophagy, highlighting an exciting avenue for synergistic therapy.

- **Skills:** Human cell culture, confocal microscopy, drug synergy assays, siRNA work, cell viability assays and extensive mouse work including: IP injection, tail vein injection, subcutaneous xenograft studies, dissection, and husbandry.

STUDENT MENTORSHIP

Dylan Horne- Citadel student (2025)
 Liam Murphy- Citadel student (2025)
 Austin Hronek- Citadel student (2023)
 Casey Barton- PhD rotation student (2023)
 Mirna Mina Abouda- PhD rotation student (2023)
 Cynara Cooper- College of Charleston student, later accepted into medical school (2023)
 Abigail Quesnelle- Lab Technician, later accepted into PhD program (2022)
 Camille Acevedo- MUSC PREP student (2022)
 Laura Ciccarelli- MUSC SURP student (2022)
 Elizabeth Wallace- PhD rotation student (2019)
 Bridgette Wellslager- PhD rotation student (2018)

PRESENTATIONS

2025 86th Annual meeting of ASB (Poster) “Histone H3 Colocalization with the ER: Insights into Mitochondrial Stress Responses”
2023 Hollings Cancer Center: T32 ITOS Seminar (Oral Presentation) "HSP70 inhibition impacts mitochondrial dynamics with autophagy inhibition in pancreatic cancer"
2022 Hollings Cancer Center: T32 ITOS Seminar (Oral Presentation) "A Novel HSP70 Inhibitor for the Treatment of Pancreatic Cancer”
2021 Department of Biochemistry and Molecular Biology: Research and Methods Seminar (Oral Presentation) “Histone De-Acetylation Regulates Chromatin Maturation in Xenopus Egg Extract”
2020 Department of Biochemistry and Molecular Biology: Research and Methods Seminar (Oral Presentation) “Histone De-Acetylation Regulates Chromatin Maturation in Xenopus Egg Extract”
2019 MUSC Student Research Day (Poster) “Transcription is Suppressed by Replication-Coupled Histone De-Acetylation”
2017 MUSC Student Research Day (Poster) “The Role of Histone H4 in Regulated Repair of DNA Crosslinks”

FUNDING, SERVICE, AND PROFESSIONAL DEVELOPMENT

May 2025	Pre-Medical Advising Network Meeting <i>(Attendee)</i>
April 2024-2025	Accelerate to Academia: Post-doctoral panel workshop Medical University of South Carolina <i>Panelist</i>
2022-2024	T32 Integrative Training in Oncogenic Signaling Fellowship Medical University of South Carolina (Charleston, SC) 2 year NIH-funded fellowship
2021	South Carolina Conference on Innovations in Teaching and Learning <i>Attendee</i>

2020-2021	Diversity and Inclusion book club Medical University of South Carolina (Charleston, SC) <i>Group Leader</i>
2018-2021	College of Graduate Studies teacher of the year committee Medical University of South Carolina (Charleston, SC) <u>Responsibilities:</u> Assembled TOTY search committee, scheduled/lead committee meetings, mediated committee votes, gathered student evaluation data, hosted TOTY luncheon event, ordered/delivered awards <i>Committee Chair</i>

REFERENCES

Dr. David Long Graduate Advisor/ Research Collaborator	Medical University of South Carolina Associate Professor, Director of Graduate Training Research Member, Hollings Cancer Center Department of Biochemistry and Molecular Biology
Dr. Tim Barnoud Post-Doctoral Advisor	Medical University of South Carolina Assistant Professor Research Member, Hollings Cancer Center Department of Biochemistry and Molecular Biology
Deborah Bidwell Teaching Mentor	College of Charleston Senior Instructor of Biology Biology Department