

CQB Newsletter, October 2024

Welcome Dr. Lauren Walker to the CQB



[Dr. Lauren Walker](#), Assistant Professor of Molecular and Systems Biology at Geisel School of Medicine, joined us on August 1st as a project leader. She received her PhD in Neurosciences from Washington University in St. Louis with Dr. Aaron DiAntonio and trained as a postdoctoral fellow with Dr. Michael Granato at the University of Pennsylvania. Research in the Walker Lab couples *in vivo* live imaging, molecular and cellular biology, and single-cell and spatial transcriptomics to gain mechanistic insight into the cells and signals that build, maintain, and regenerate neuronal circuitry. The long-term goal of Dr. Walker's research is to identify therapeutic targets that may improve regeneration outcomes across the mammalian nervous system. In her current project "[Neuronal guidance landscape across development and regeneration](#)", Dr. Walker will use single cell RNA sequencing analysis and spatial transcriptomics to study axon regeneration in zebrafish.

Welcome Michael J. Martinez to Genomic Data Science Core



We welcome Michael J. Martinez to the CQB! He will be working in the Genomic Data Science Core where he will analyze next generation sequencing data and provide biological insight to the results.

"I received both my Bachelor's and Master's degree at the University of Connecticut where I focused on prokaryotic genomics. During my Master's studies, I worked on understanding the microbiome of fungus cultivating ants and worked with a small biotech start-up to help develop new analysis pipelines for studying the human microbiome with long-read sequencing. I love messing around in both prokaryotic and eukaryotic genomic data and my specialty is bulk RNA sequencing. In my free time I like going to the gym and playing the drums!" - Mike Martinez

Congratulations to CQB Graduates Dr. Daniel Schultz and Dr. Siming Zhao



Dr. Daniel Shultz and Dr. Siming Zhao

Project leader, [Dr. Daniel Schultz](#), recently received an NSF grant for his project, "Emergence of Heterogeneity in Bacteria During Antibiotic Responses," and successfully graduated off the CQB grant on June 30th, 2024. Dr. Schultz's research is to understand the evolution of cellular programs in light of their highly dynamic behavior. He has a special interest in the changes in gene regulation that allow antibiotic responses in bacteria to adapt to new ecosystems with remarkably different selective pressures, such as in the typical transition from natural environments to clinical settings.

Project leader, [Dr. Siming Zhao](#), recently received a MIRA grant from NIGMS grant for her project, "Statistical methods and analyses to study genetic variants and their roles in diseases leveraging functional genomics data." Graduating from the CQB in July 2024, Dr. Zhao's work focuses on developing novel algorithms to integrate and analyze multi-omic datasets, aiming to uncover new insights into the genetic etiology of human diseases. Dr. Zhao shared, "The collaborative environment and guidance from CQB mentors have been instrumental in shaping my research direction and securing this new funding." Moving forward, she plans to continue leveraging CQB resources and collaborations to advance her research and contribute to the field of computational genomics.

Changes to the Advisory Committee

As we shifted to phase two of our grant we said goodbye to Dr. Cathy Wu and welcomed Dr. Mary Jo Turk and Dr. Dean Madden to our Advisory Committee.



[Cathy Wu](#)

Unidel Edward G. Jefferson Chair in Engineering and Computer Science
Director, Center for Bioinformatics & Computational Biology (CBCB)
Director, Data Science Institute (DSI)
Director, Protein Information Resource (PIR)
Professor, Computer & Information Sciences
Professor, Biological Sciences
University of Delaware

[Mary Jo Turk, Ph.D.](#)

Professor of Microbiology and Immunology
O. Ross McIntyre, M.D. Endowed Professor
Co-Director, Immunology and Cancer Immunotherapy Program
Norris-Cotton Cancer Center

[Dean R. Madden, Ph.D](#)

Professor of Biochemistry and Cell Biology
Vice Provost for Research
Director, Dartmouth Institute for Biomolecular Targeting
Director, DartCF -- the Dartmouth Cystic Fibrosis Research Center

Dr. Britt Goods Quoted in The Scientist



Project leader [Britt Goods](#) was quoted in the The Scientist! Read the article here: [“Viral Activation Can Shape Breast Milk Composition”](#).

Two New Supplements Awarded

Women's Health Supplement: “Estrogen Regulation of Macrophage Activation in Systemic Sclerosis”



Dr. Patricia Pioli, Associate Professor of Microbiology and Immunology, was awarded a Women's Health Supplement for her project “Estrogen Regulation of Macrophage Activation in Systemic Sclerosis”. She will investigate the effect of the sex hormone estrogen on the activation of macrophages, a type of white blood cell that has been implicated in systemic sclerosis pathogenesis.

Team Science Supplement: “Attacking Fibrosis with Armored CAR T Cells”



Dr. Yina Huang, Professor of Microbiology and Immunology, Dr. Patricia Pioli, Associate Professor of Microbiology and Immunology, and Dr. Fred Kolling, Director of Single Cell Genomics Core were awarded a Team Science Supplement for their project "Attaching Fibrosis with Armored CAR T Cells." They will use multiomic and spatial transcriptomic approaches to investigate the pathological relationship between macrophages, fibroblasts, and other cells that contribute to fibrosis, and determine how these interactions are altered by their novel therapeutic intervention.

Single Cell and Spatial Transcriptomics Symposium 11/5/2024

The Center for Quantitative Biology and Genomics Shared Resource are hosting a symposium to showcase ongoing single cell and spatial transcriptomics projects by Dartmouth Cancer Center investigators.

Please join us on Tuesday, November 5, from 9 am to 3 pm for exciting presentations from 8 DCC faculty members. Lunch will be provided.

Please [register here](#). We hope you can join us!

Be in the Next Newsletter

Do you have an open position in your lab? Anyone in particular deserve a shoutout? Have you received a grant recently? Published a paper you would like us to highlight? We would love to share your news in the next edition of our newsletter! You can submit your entries anytime at <https://sites.dartmouth.edu/cqb/newsletter-submission-form/>.

<https://sites.dartmouth.edu/cqb/>

Please CITE US! CQB COBRE grant from NIGMS (P20GM130454) For more information on citing the grant, <https://sites.dartmouth.edu/cqb/cite-cqb-support/>