

Postdoctoral Fellow

Cancer Computational Biology

The Faden and Lawrence labs are looking for motivated computational biologists to join our multidisciplinary team working at the forefront of Head and Neck Cancer research and treatment at Harvard Medical School, Mass. General Hospital, Mass. Eye and Ear and the Broad Institute of MIT and Harvard. We use computation as a powerful microscope to study both the fundamental biology of cancer initiation and progression, as well the diagnosis and treatment of cancer patients in the hospital setting.

Required Skills

- Ph.D. in Computational Biology, Bioinformatics, Biology, Computer Science, Mathematics, Physics, or a related field
- Independent drive and motivation to push research forward
- Strong publication record
- Excellent programming skills
- Ability to communicate results and collaborate in a multi-disciplinary team
- Fluency in spoken and written English

Current Research Interests

- *Liquid biopsy*: Novel technologies developed here at MGH now allow us to monitor the progression of cancer before and during treatment through a blood draw. We are actively working to overcome analytical challenges inherent to the study of circulating tumor cells and cell free DNA in Head and Neck Cancer.
- *Mutational Processes*: Our genome accumulates mutations from environmental agents such as tobacco smoke, as well as from intrinsic processes. Some of these processes, such as APOBEC mutagenesis, are particularly common in Head and Neck Cancer. We are studying these patterns of mutations to better understand the evolution of head and neck cancer.
- *Viral Oncogenesis*: A subset of Head and Neck Cancers are caused by Human Papilloma Virus. We are using computational techniques to dissect how HPV leads to mutation acquisition in head and neck cancer.
- *Single Cell Sequencing*: Single cell RNA-Seq has allowed unprecedented resolution of cell types and expression patterns. We are using this powerful technology to understand therapeutic resistance and susceptibility in Head and Neck Cancer.

PI Contacts

Mike Lawrence, PhD: Lawrence@BroadInstitute.org

<https://www.massgeneral.org/cancer-center/clinical-trials-and-research/center-for-cancer-research/investigators/lawrence-lab>

Dan Faden, MD: Daniel_Faden@meei.harvard.edu

<https://scholar.harvard.edu/faden-lab>

