JOHNS HOPKINS
MEDICINE
THE SIDNEY KIMMEL COMPREHENSIVE CANCER CENTER

JOB DESCRIPTION

Job Title: Postdoctoral Fellow in Cancer Genomics and Liquid Biopsies

Department: Molecular Oncology Laboratory, Thoracic Oncology, Sidney Kimmel Cancer Center

Faculty mentor: Valsamo Anagnostou, MD, PhD
https://anagnostoulab.org/principal-investigator/

Overview

We are seeking a highly motivated post-doctoral fellow to join our cutting-edge research team in the Molecular Oncology laboratory within Thoracic Oncology at the Johns Hopkins School of Medicine. The candidate will work on pioneering wet lab projects in the field of integrative genomics, multi-omics and liquid biopsy analyses, ultimately contributing to the development of innovative diagnostic and therapeutic strategies. This position offers an exciting opportunity to engage in high-impact research and collaborate with leading experts in oncology, cancer genomics, and bioinformatics. This is a 2-3 year scholarship position under the Robyn Adler Fellowship in Cancer Genomics and Liquid Biopsies, that is also endorsed by the International Society of Liquid Biopsy (ISLB).

Our group

We are a dynamic and diverse group focusing on studying tumor evolution under selective pressure of cancer therapies, especially immunotherapy. We have discovered novel genomic mechanisms of response and resistance to cancer immunotherapy and tied those to evolutionary trajectories of circulating tumor DNA in peripheral blood. We are particularly interested in translating our scientific discoveries in clinical cancer care, with clinical trials underway that capitalize on our liquid biopsy discoveries. Ongoing studies include, but are not limited to studying genomic mechanisms of response and resistance to immunotherapy, cancer

cell and tumor microenvironment evolution, development of minimally invasive methodologies to capture minimal residual disease and identification of tissue and blood-derived genomic biomarkers of response to therapies, including immunotherapy. For more information about our group and our cancer research can visit our website at https://anagnostoulab.org/.

Mentorship

We have a keen focus on mentorship and career development of our lab members and employ a personalized mentorship approach. Lab members meet with Dr. Anagnostou on a weekly basis as well as participate in several weekly meetings, where they have the opportunity to interact with clinical oncologists, cancer immunologists, cancer genomics experts and bioinformaticians. Post-doctoral fellows are encouraged to apply for awards (if desired in order to build their grantsmanship), present their work at national meetings and compile high-impact manuscript in a mentored manner. Under this scholarship, post-doctoral fellows have the opportunity to participate in the ISLB Annual Meetings, present their work, and engage with world renown experts as well as participate in the ISLB Young Committee, which offers additional mentorship, networking and professional development opportunities, aimed at empowering the pos-doctoral fellows to become future leaders in the field.

Key responsibilities

- **Research and Development:** Independently conduct complex established protocols related to whole genome, exome, transcriptome, T cell receptor sequencing, targeted next-generation sequencing, spatial transcriptomics, single-cell DNA sequencing and circulating cell-free tumor DNA. Optimize bench techniques and evaluate new protocols that are not established in the lab, when relevant to ongoing projects.
- **Data Analysis:** Work closely with our bioinformatics team to analyze and interpret cutting-edge, high-dimensional genomic data sets generated by next generation sequencing in conjunction with transcriptomic, single-cell and liquid biopsy sequence data. Competency in R programming preferred.

- **Collaboration:** Work closely with our multidisciplinary teams within Thoracic Oncology, the Johns Hopkins Molecular Tumor board and external collaborators to integrate molecular data with clinical insights.
- **Publication and Presentation:** Prepare high-quality manuscripts for publication in peer-reviewed journals and present findings at national and international conferences.
- **Mentorship:** Provide guidance to and serve as a resource for junior researchers, graduate students, and laboratory technicians.

Qualifications

- **Education**: PhD in Cancer Biology, Genomics & Genetics, or equivalent
- **Technical skills:** Proficient in PCR-based methods, DNA/cRNA library preparation, next-generation sequencing, single cell suspension preparation and encapsulation, cell culture.
- **Research experience:** Demonstrated experience in cancer genomics research, with a strong publication record.
- **Analytical skills:** Ability to work together with the bioinformatics team to analyze and interpret complex genomic datasets.
- **Problem solving skills:** Decision making capacity regarding research projects that may require assessment, revision of objectives, or altering scientific direction based on lab priorities.
- **Communication skills:** Demonstrated performance to provide constructive guidance to entry-level and peer lab members in a collegial manner. Ability to provide leadership, training, and problem-solving for junior members of the laboratory team. Maintenance of closed communication loops with other lab members and faculty mentor.
- **Innovation and Change Skills:** Ability to incorporate scientific innovations regarding protocol development and research goals and propose ideas for new projects to faculty mentor.