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*November 1, 22, 2021*

Three NIH-funded post-doctoral positions are available for enthusiastic, driven, hard-working individuals to conduct research into the mechanisms that impact T cell function and immune regulation in Dr. Dario Vignali’ s laboratories at the University of Pittsburgh and UPMC Hillman Cancer Center.

***Position #1***: With the support of a new seven-year NCI R35 grant, the successful applicant will investigate the role of regulatory T cells (Tregs) within the human tumor microenvironment with the goal of understanding novel mechanisms that control their function and survival, and identifying and developing Treg-specific targets for therapeutic intervention. This project will emphasize analysis of complex mouse models and fresh samples/tissue sections from a variety of human cancers using a variety of complex system biology approaches (scRNAseq and CRISPR), several multispectral imaging approaches and other sophisticated immunological and computational techniques. The successful applicant may also be involved in the development of novel biologics for proof-of-concept therapeutic experiments in mouse models.

***Position #2***: With the support of a recently renewed NIH P01, the successful applicant will investigate the mechanisms that control CD4+ T cell exhaustion in mouse models of cancer. This project will emphasize use of, system biology approaches, sophisticated immunological techniques (scRNAseq and CRISPR) and novel mouse model systems. The successful applicant may also be involved in the development of novel biologics for proof-of-concept therapeutic experiments in mouse models.

***Position #3***: The successful applicant will work on two related projects, supported by two NIH R01 grants, that will examine perform structure-function analysis of the inhibitory receptor LAG3 and the TCR:CD3 complex using advanced single molecule microscopy techniques, a variety of signaling techniques, complex mouse models, and other sophisticated immunological techniques. The successful applicant will work with our structural biology collaborators at the University of Maryland who are applying NMR, crystallographic and cryo EM approaches in the project.

These positions will focus on gaining a mechanistic understanding and therapeutic development of pathways and processes under investigation. Candidates should have a PhD or MD/PhD (no more than 2 years post second degree), a solid understanding of basic immunology, and ideally practical experience with mouse models of disease (Positions #2 & #3) or analysis of human tumor samples (Position #1). Training grant eligible candidates (US citizens and green card holders) are strongly encouraged to apply. Candidates will also develop skills in wide variety of techniques, such as mouse models of cancer, analysis of human tumor samples, immune function assays, flow cytometry, single molecule microscopy techniques, a variety of signaling techniques, system biology approaches (scRNAseq and CRISPR), several multispectral imaging approaches, molecular biology techniques, etc. The candidate will also gain considerable experience writing manuscripts, reviews and grants along with oral presentations. Additional duties will include mouse colony management (Positions #1 & #2), training of undergraduate and graduate students, participation in department activities, presentations at lab, local and national meetings and any other assignments that the PI may request. Additional information about the Vignali Lab can be found at:

Twitter: @Vignali\_Lab

Websites: <https://www.vignali-lab.com>

<http://www.immunology.pitt.edu/person/dario-vignali-phd>

Interested candidates should send (a) a cover letter noting the position of interest listed above, a brief description of research interests and future career goals, (b) CV, and (c) contact information for three references to Barb Beatty (E-mail: [Beattyb@pitt.edu](mailto:Beattyb@pitt.edu)).