Stanford Postdoctoral Research Fellow – microfluidics & immunology

A joint postdoc position between the labs of Sindy Tang, Stephen Galli and Kari Nadeau is immediately available in the area of microfluidics and food allergy. We are looking for a candidate with a background in microfluidics for blood-based lymphocyte analysis. This position will allow exciting opportunities to learn human immunology including gene expression and epigenetic analysis with a focus on allergy and anaphylaxis.

Application

For questions or applications (see below), please feel free to reach out to Prof. Sindy Tang (sindy@stanford.edu).

Application: please email in a single PDF including:

- CV with publication list
- A 1/2 to 1-page summary of research accomplishment, why you are interested in this project, and your expected contributions
- Contact information of at least 3 references
- Links to 3 representative papers

Project description

Anaphylaxis is a poorly understood, severe, systemic, and potentially fatal allergic reaction. Food allergy is a common cause of anaphylaxis. However, metrics to predict anaphylaxis risk in a patient are essentially non-existent. Basophils, the least abundant circulating leukocyte (typically, 0.5-1% of WBC), have been identified to play important roles in allergic inflammation and the onset of anaphylaxis. This project aims to test the hypothesis that basophil function correlates with allergic reaction severity. Our approach includes using whole blood samples from clinically-proven and well-characterized peanut allergic subjects and healthy controls, and leveraging our interdisciplinary team's expertise in innovative microfluidic technology and human immunology. This study will determine whether basophil characteristics can be used to stratify patient risk for anaphylaxis. Upon further clinical validation, our method has potential utility as a metric for the stratification and management of anaphylaxis risk. Our contribution will be significant, as it is expected to lower the number and the associated medical costs of adverse allergic reactions, including anaphylaxis, due to food allergy.

Skills useful for this project include:

- Microfluidics and related areas
- Bioinstrumentation
- Impedance cytometry
- Blood-based leukocyte handling and analysis

This position has exciting opportunities for learning human immunology, including gene expression and epigenetic analysis, with a focus on allergy and anaphylaxis. Drs. Galli and Nadeau are among the world's foremost experts in allergy and immunology. The project will be performed in close collaboration with the Sean N. Parker Center for Allergy and Asthma Research at Stanford, where Dr. Nadeau is the director.