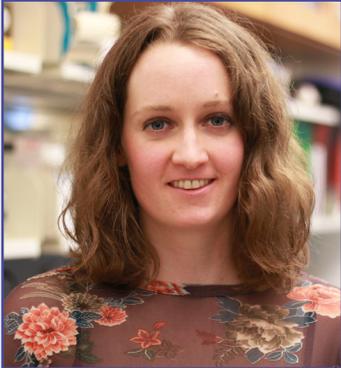


Finding Links Between Inflammation and Infection

Samantha Genardi, Driskill Graduate Program in Life Sciences



Samantha Genardi, a fourth-year student in the Driskill Graduate Program (DGP), studies cell response to bacterial infection in the laboratory of [Chyung-Ru Wang, PhD](#), professor of [Microbiology Immunology](#).

Q&A

Where is your hometown?

I am from Dover, New Hampshire. I was born in New York City and spent the first few years of my life in New Jersey. My family moved to New Hampshire when I was young, and it was the place I spent my formative years. I went to undergraduate school in Boston, where I first developed my interests in biomedical research, and moved to Chicago for graduate school shortly after completing my undergraduate degree. Chicago's been my home ever since!

What are your research interests?

Biomedical research with a focus on translational medicine has been my primary interest since undergraduate school. I had the opportunity to work in cancer research at Dana-Farber Cancer Institute during my undergrad years. This opportunity is what initially interested me in immunology and cancer immunotherapy. Coming into graduate school, I thought I would end up in a cancer immunology lab. After rotating in a few labs, I discovered microbial immunity and have been hooked ever since. I love studying the immune system as it intersects most aspects of human health, from microbial diseases to cancer to autoimmunity and inflammation.

What exciting projects are you working on?

I work in the laboratory of Chyung-Ru Wang, PhD, in the Department of Microbiology-Immunology, where we study T-cell responses to bacterial infections. The T-cells we work with are unique in that they recognize lipid antigens (CD1-restricted T-cells), and have important implications for human health. My project focuses on the role of CD1-restricted T-cells in the context of methicillin-resistant *Staphylococcus aureus* (MRSA), a common hospital-acquired pathogen. In addition to identifying basic mechanisms these T-cells have in recognizing and promoting immunity against MRSA, we are working with a lipid biochemist to identify dominant lipid antigens isolated from the cell membrane of MRSA that can be used in vaccine candidate design. I am also working on identifying

the role of these T-cells in the context of staph infection and hyperlipidemia, a condition characterized by high blood lipid content. Hyperlipidemia can lead to inflammation, which is a risk factor for a host of complications, including autoimmunity (which my lab will be publishing a review paper on next month, of which I will be a co-author). The link between hyperlipidemia and infection is not well understood, and I believe the work I am doing will be important for public health and how we treat patients with hyperlipidemia and infection.

What attracted you to the PhD program?

I was initially attracted to the PhD program because of the high quality of biomedical research that is done at Feinberg and the access to a clinical environment. My lab has worked in the past with clinicians in exchanging ideas and blood samples from infected patients. I believe Feinberg has the perfect mix of basic science research and access to translational medicine approaches. I was also particularly interested in the Driskill Graduate Program due to the wide range of research students are engaged in, while maintaining a sense of community and work-life balance. I believe DGP and Feinberg really care for their students, and there is a great support system for students through various stages of graduate school.

What has been your best experience at Feinberg?

My best experiences at Feinberg so far have been through the student organizations and research experiences I've participated in outside of the lab. My first two years of graduate school, I was involved in the Feinberg Salseros club, where I learned to dance salsa with other graduate and medical students, performing at events such as In Vivo, a student-run show put on by the medical school. I've also been a member of the Chicago Graduate Student Association for the past two years as acting treasurer, managing funds for events such as graduate student appreciation week. I also founded a yoga club with one of my classmates called NU Pose Yoga. We teach free yoga once a week to members of the Feinberg community. For research related activities, I was part of a two-year intercampus training grant assignment, the Cellular and Molecular Basis of Disease training grant, where I presented my work in the form of chalk talks to a general biology audience. I've also had the opportunity to travel and present my work at conferences, such as the Gordon Research Conference, "Staphylococcal Diseases 2017," where I won an award for best poster presentation. All of these opportunities have strengthened my oral presentation skills and allowed me to give back to the community and form connections across the university and in my field of study.

Connect with Samantha on [LinkedIn](#).