

Hannah C. Wastyk

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EDUCATION

Stanford University

Stanford, CA

Ph.D. Student in the Department of Engineering and Stanford School of Medicine

June 2017-Present

- **Advisor:** Dr. Justin Sonnenburg, Department of Microbiology and Immunology
- **Funding:** *National Science Foundation Fellowship, The EDGE Fellowship, The Fletcher Jones Foundation NSF Graduate Fellowship, The Weiland Family Fellowship, The Timothy G. Shi Graduate Fellowship, and the Anonymous Bioengineering Fellowship*
- **Relevant course work:** Engineering Concepts Applied to Physiology, Immunology in Health and Disease, Tumor Immunology, Introduction to Computational Tools in Immunology, Essential Methods in Computational and Systems Immunology

University of Delaware

Newark, DE

B.S. in Biochemistry, Honors Degree with Distinction

June 2017

Honors Program, Eugene du Pont Distinguished Full Scholarship

- **Cumulative GPA:** 3.94 (4.0 scale), *Summa Cum Laude*
- **Relevant course work:** Biochemistry 1 & 2 (graduate level), Metabolism (graduate level), Organic Chemistry 1 & 2, Molecular Biology, Physical Chemistry 1 & 2, Calculus 1,2 & 3, Differential Equations, Introduction to Computer Science for Engineers, Biochemical Engineering, Biological Data Analysis (graduate level)

RESEARCH EXPERIENCE

Department of Microbiology & Immunology, Stanford University

Stanford, CA

Graduate Student under Dr. Justin Sonnenburg

Jan 2018- Mar 2018

- Analyzing data from dietary intervention trials that track changes in the immune system and the microbiota over time
- Developing different methods of data analysis that investigate the relationship between multiple large data sets
- Collection and analysis of 16S data, metagenomics, and immune profiling

Department of Immunology, Stanford University

Stanford, CA

Graduate Student (Rotation) under Dr. Edgar Engleman

Jan 2018- Mar 2018

- Worked on a project entitled "Investigation of mechanism driving alloantibody-based cancer immunotherapy"
- Laboratory techniques include mice handling for monitoring and modeling cancer growth, production and staining of tumor histology slides, and flow cytometry

Department of Microbiology & Immunology, Stanford University

Stanford, CA

Graduate Student (Rotation) under Dr. Garry Nolan & Dr. Wendy Fantl

Sept 2017- Dec 2017

- Worked on a project entitled "Investigating the efficacy of IL-12 secreting tumor-targeted chimeric antigen receptor T cells to eradicate ovarian tumors via mass cytometry"
- Laboratory techniques include mass cytometry via CyTOF, collection of white blood cells from whole blood samples, and large-scale data analysis of a clinical trial

Department of Bioengineering, Stanford University

Stanford, CA

Graduate Student (Rotation) under Dr. Jennifer Cochran

June 2017- Sept 2017

- Worked on a project entitled "Engineering LIF Inhibitors as Pancreatic Cancer Therapeutics"
- Laboratory techniques included protein engineering, genetic directed evolution, flow cytometry, Fluorescence activated cell sorting

Chemical Glycobiology & Innate Immunity, University of Delaware

Newark, DE

Undergraduate Research Assistant under Dr. Catherine Grimes

Oct 2013- Present

- Conduct independent research on Crohn's disease and the biochemical interactions between its mutant proteins with chaperone molecule, Hsp70. Combine biological and organic synthesis methodology to increase mutant stability, thereby decreasing aberrant inflammation seen in Crohn's disease.

Thayer School of Engineering, Dartmouth

Hanover, NH

Undergraduate Research Assistant under Dr. Margie Ackerman, MD/PhD Undergraduate Summer Fellowship June 2014-Dec 2014

- 2014 summer work involved constructing 40 different computational-designed humanized antibodies and testing their affinity to a cancer cell ligand.
- Continued work after 2014 summer involved evaluating antibody recognition of antigen, and thorough analysis of the resulting characterization data
- First freshman to be chosen in the history of the MPUS program

Melanoma Institute, Pennsylvania State University Cancer Institute

Hershey, PA

Research Assistant under Dr. Gavin Robertson

June 2011-Aug 2013

- Studied the effects of inhibiting a novel target associated with amino acid metabolism. Inhibition of the gene showed decreasing viability and proliferation in cancer cells, while leaving normal cells relatively unaffected.

PUBLICATIONS

Schaefer AK, **Wastyk HC**, Mohanan V, Hou CW, Lauro M, Melnyk J, Grimes CL, "Critical Contact Region of Hsp70 stabilizes Crohn's Disease variants of Nod2" *ACS Biochemistry*. (2017)

Kardos GR, **Wastyk HC**, Robertson GP. "Disruption of Proline Synthesis in Melanoma Inhibits Protein Production Mediated by the GCN2 Pathway" *Molecular Cancer Research* (2015)

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Biomedical Association for the Interest of Minority Students

Stanford, CA

Advocacy Chair

Jul 2018 - Present

- Run "advocacy roundtables" as a town hall-style open space for members of the graduate school to discuss concerns and issues relevant to both the on-campus Stanford community and around the globe.
- Facilitate activist events that are initiated after the advocacy roundtables

ADVANCE Summer Institute

Stanford, CA

Peer Leader

- The ADVANCE Summer Institute is an "intensive 8-week transition program for incoming graduate students from diverse backgrounds. "
- Responsible for facilitating multiple workshops and events that support the successful transition to graduate school for students in the program
 - Created and held an introductory R workshop and multiple writing workshops
 - Mentored 17 students in the program about the professional, academic, and social life of graduate school at Stanford

HONORS AND AWARDS

National Science Foundation Graduate Fellowship

March 2017

Enhancing Diversity in Graduate Education Doctoral Fellowship Program

March 2017

Elizabeth Dyer Award for Excellence in Chemistry and Biochemistry

May 2017

Frank W. Collins Scholarship

May 2017

Goldwater Scholarship

April 2016

First Place at the Experimental Biology Annual Meeting

April 2016

First Place at the 2016 Delaware American Chemical Society and Industry Poster Session

April 2016

First Place at the Intercollegiate Student Chemists Convention

April 2015, 2016

ASBMB Student Chapters Travel Award

Mar 2016

Quaesita Drake Scholarship

Feb 2016

First Place at the UMBC Undergraduate Research Symposium in the Chemical and Biological Sciences	Oct 2014, 2015
Hofmann Scholar	May 2015
Wallace H. Carothers Scholarship	May 2015
Invited and attended the 2013 Nobel Prize Ceremonies under the <i>Dudley R. Herschbach Award</i>	December 2013