

Cheryl H. Chang

Personal Information

Tel: (669) 234-6415

Email: Cheryl.H.Chang.18@dartmouth.edu

Mail: Hinman Box 3852, Dartmouth College, Hanover, NH 03755

Education

Dartmouth College

Class of 2018

Intended Biology major

Intended Music major

Sample of courses taken:

Bio 12: Cell Structure and Function

Bio 13: Gene Expression and Inheritance

Bio 14: Physiology

Bio 37: Endocrinology

Bio 45: Molecular biology

Bio 46: Microbiology

Engs 35: Biotechnology and Biochemical Engineering

Chem 51: Organic Chemistry I

Chem 52: Organic Chemistry II

Research

College

2015 January – 2015 November: Undergraduate researcher through Dartmouth Women in Science Project (WISP) and Sophomore Science Scholars

Thayer School of Engineering, Dartmouth College

Principal Investigator: Margaret Ackerman

Project title: Engineering of therapeutic antibodies

Produced fully functional human antibodies and investigated the effects of manipulating antibody structure on antibody effector function via phagocytosis assay.

Techniques:

- Cell and tissue culture techniques
- Recombinant DNA techniques, deletion mutation, site-directed mutagenesis
- Bacterial transformation, plasmid preparation
- Transfection and selection, gene expression
- SDS-PAGE, Western blot analysis
- Analytical size exclusion chromatography, protein purification using FPLC
- Phagocytosis assay, flow cytometry

2015 December – 2016 March: Winter quarter intern

Stanford University Department of Bioengineering

Principal Investigator: Jennifer Cochran

Project title: Engineering a better inhibitor for matriptase

Created a mutant library for KD, the binding domain in HAI which is the natural inhibitor of matriptase. Selected the mutants to increase binding or expression and worked to increase half life of KD by attaching an Fc region. Worked to increase binding capabilities after addition of Fc region by introducing linker regions.

Techniques:

- Various cell culture techniques
 - HEK293T
 - MDCK
 - MDA-MB-231
 - A549
- Yeast transformation, yeast hybrid display
- Binding and off-rate assay using yeast hybrid display
- Protein A purification
- FPLC protein purification
- SDS-PAGE, Western blot analysis
- FACS and flow cytometry analysis
- Competitive inhibition Ki assay
- Cell-based assays
 - scatter assay
 - proliferation assay
 - indirect co-culture invasion assay

High School

2011, 2012, 2013 summer: Summer Student

School of Medicine, Division of Pulmonary & Critical Care Medicine, Stanford University

Principal Investigator: Dr. Glenn D. Rosen

Project title: Interfering myofibroblast differentiation by mTORC2 inhibitors *in vitro*.

Studied the effects of mTORC2 inhibitors in TGF-beta induced myofibroblast differentiation by Western blot analysis.

Techniques:

- Gene transduction by retroviral/lentiviral constructs, transfection and infection
- Fluorescent microscopy with GFP expression
- SDS-PAGE and Western blot analysis

2013, co-authored paper:

A critical role for the mTORC2 pathway in lung fibrosis. Chang WT, Wei K, Ho L, Berry GJ, Jacobs SS, Chang CH, Rosen GD PLoS One. 2014 Aug 27;9(8):e106155.

Medical Experience

July 2016-September 2016

Dartmouth Nathan Smith Society (NSS) Shadowing Program

Shadowed in the NICU at Dartmouth-Hitchcock Medical Center, followed the team on their weekend rounds

July 2015

Dartmouth Nathan Smith Society (NSS) Shadowing Program

Shadowed an organ transplant surgeon at the Dartmouth-Hitchcock Medical Center, observed a kidney transplant procedure

March 2015

Dartmouth Nathan Smith Society (NSS) Shadowing Program

Shadowed a retired cardiac surgeon at the Dartmouth-Hitchcock Medical Center, observed coronary bypass procedure

Volunteer Experience

June 2015 – present

Member of the Dartmouth Cancer and Patient Services

Volunteer at the local hostel to provide meals for families of patients

September 2015 – November 2015

Volunteer at the Dartmouth Hitchcock Medical Center

Norris Cotton Cancer Center Infusion Services – providing patients with amenities

Work Experience

June 2016-November 2016

September 2015-November 2015

Dartmouth College Undergraduate Advisor

Responsible for supporting an upperclassmen community in college dormitories

June 2016-November 2016

Dartmouth College Paddock Music Library Circulation Desk

Responsible for managing the main circulation desk, as well as basic shelving and storage of library material

January 2015-Present

Dartmouth College Dining Services Employee

East Wheelock Snack Bar Supervisor

January 2015-Present

Dartmouth Hitchcock Medical Center Psychiatry Department

Childcare Services

Extracurricular Activities

Flute performance

2014-present

Dartmouth Symphony Orchestra: Flutist

Dartmouth Symphony Orchestra soloist – November 2016

Powerlifitng club

2015-present

Ran team practices, helped set up fundraisers and organize team events