Shelby C Bearrows

Department of Medicine, Division of Hematology
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Education

UNIVERSITY OF IOWA, Iowa City, IA   August 2016
Bachelor of Science, Biology
Minor: English

UNIVERSITY OF OULU, Oulu, Finland   January 2016-June 2016
International Student Exchange Program

Relevant Coursework

Introduction to Computer Science
HARVARDX
-Harvard Universities introduction to computer science
-Programming languages covered include C, python, SQL, and JavaScript as well as CSS and HTML

Fundamentals of Computing
UNIVERSITY OF COLORADO DENVER
-Introduction to the C++ programming language

Research Experience

Research Assistant   September 2018-Present
DEPT. OF MEDICINE, DIV. OF HEMATOLOGY, UNIVERSITY OF COLORADO - ANSCHUTZ MEDICAL CAMPUS
Dr. Daniel Sherbenou, MD, Ph.D.
-Engineered high-throughput pipeline for data analysis and visualization of FACS data using R
-Researched drug resistance in multiple myeloma using patient derived myeloma cells, correlating ex vivo drug sensitivity with clinical outcomes
-Investigated the evolution of minimal residual disease subpopulations using RNAseq, to understand how these discrete populations contribute to drug resistance and relapse in multiple myeloma

Research Assistant   December 2016-June 2018
DEPT. OF INTERNAL MEDICINE, DIV. OF ENDOCRINOLOGY AND METABOLISM, UNIVERSITY OF IOWA
Dr. Samuel Stephens, Ph.D.
-Investigated pancreatic β-cell hormone trafficking and signaling pathways related to insulin secretion in response to glucose stimulation using immunofluorescent confocal microscopy
-Explored regulated secretion and degradation pathways of secretory granule proteins Chromogranin B and Chromogranin A
-Assessed the G-Protein Coupled Response of C3aR1 in response to novel ligand TLQP-21

Research Assistant   January 2016-May 2016
DEPARTMENT OF MOLECULAR GENETICS, UNIVERSITY OF OULU
Dr. Phillip Watts, Ph.D.
-Studied the evolution of DNA repair pathways in response to ionizing radiation in prairie vole populations from radioactive fallout location Chernobyl, Ukraine

Technical Skills

Programming Languages: R, C, C++, Python, SQL, HTML, CSS

Data Analysis: GraphPad Prism, SnapGene, Fiji/ImageJ, Imaris Imaging Software, Huygens Software, MS Office, Flowjo

Biochemical and Cell Biology: Density Gradient Equilibrium Sedimentation Fluorescence Microscopy, Confocal Microscopy, Co-IP, ELISA, Western Blot, Luciferase Reporter Assays, Tissue Culture, In situ Protein Labeling Assays, Flow Cytometry, FACS, Patient Sample Processing

Genetic Engineering: Propagation and purification of recombinant adenovirus, Transfection, Transduction, Gibson Assembly, Gateway Cloning, PCR

Animal: Transgenic mouse colony management, IP injections, Blood sample collection

Presentations and Publications

Bearrows SC, Bauchle CJ, Stephens SB. Loss of Chromogranin B diminishes β-cell function via reduced insulin secretory granule biogenesis. Oral presentation presented at: Midwest Islet Club; May 15, 2018; St. Louis, MO.

Bearrows SC, Bauche CJ, Becker M, Haldeman J, Swaminathan S, Stephens SB. (2019) Chromogranin B regulates early stage insulin granule trafficking dynamics from the trans-Golgi network in pancreatic islet cells. *Journal of Cell Science.* 132(13).

Awards and Certificates

1st place Oral Presentation at the annual Midwest Islet Club; May 15, 2018; St. Louis, MO.

Introduction to Computer Science. HarvardX. Conferred: July 1, 2019.