

Katharine (Katie) Faulkner

Education

2013-2017	B.S. Applied Mathematical Sciences B.A. Biology (Honors) Cumulative GPA: 3.65/4.0	Bucknell University, Lewisburg, PA
2017-2019	M.Sc. Mathematics Concentration in Mathematical Biology Cumulative average: 83% (3.72/4.0)	The University of British Columbia, Vancouver, BC
2019-present	Ph.D. Mathematics Concentration in Mathematical Biology	The University of British Columbia, Vancouver, BC

Honors & Awards

2013-2017	Dean's List I have achieved semester GPAs of 3.5 or higher during six out of eight academic semesters at Bucknell University during this time period.	Bucknell University
2017	Honors in Biology I completed and successfully defended a thesis for Honors in Biology.	Bucknell University
2017	Cum Laude I graduated with a cumulative GPA above 3.5.	Bucknell University

Research

2019-present	PhD Dissertation Research mentor: Dr. Eric Cytrynbaum My PhD work is on analyzing glucose homeostasis and the progression to diabetes using mathematical modeling.	The University of British Columbia
2017-2019	Master's Thesis Research mentor: Dr. Eric Cytrynbaum My Master's Thesis in Mathematics is the formation of two models relating to lactation: one to describe the effects of the mother's physiology and stimuli from the infant on milk production, and one to describe the infant's metabolism and growth throughout the lactation period.	The University of British Columbia
2016-2017	Honors Thesis Research mentors: Dr. Matthew McTammany and Dr. Abby Flynt My Honors Thesis in Biology was the analysis of long-term changes in daily ecosystem metabolism in the Susquehanna River with the intent of determining when the river is a source or sink of carbon dioxide.	Bucknell University
2015	Workshop on Applications of Mathematics to Physiology and Medicine Research mentor: Dr. Michael Reed In this two week summer workshop, I worked on a project in evaluating a model for the volumes and pressures of blood in the adult and fetal human circulatory system.	Duke University

Research Presentations

2019, 2020	Mathematical Biology Seminar I have presented results and updates on my progress during my Master's and PhD in talks to the mathematical biology research group that are open to the general public.	The University of British Columbia
2017	Honors Thesis Defense I presented my research on the analysis of methods for estimating ecosystem metabolism and results of the metabolism estimates for the Susquehanna River to receive Honors in Biology.	Bucknell University
2016	Susquehanna River Symposium I presented a poster on my research on the analysis of methods for estimating ecosystem metabolism and the progress of my Honors Thesis research project.	Bucknell University
2016	NIMBioS Undergraduate Research Conference I presented a poster on my research on the analysis of methods for estimating ecosystem metabolism.	University of Tennessee, Knoxville

Teaching Experience

2018-present	Graduate Facilitator As a graduate facilitator, I design and lead professional development workshops for the Mathematics Department TAs and graduate TAs at UBC. I have also mentored new facilitators and developed programming for supporting new facilitators as part of this role.	The University of British Columbia
2017-present	Mathematics Teaching Assistant As a TA, I have graded assignments and exams, lead workshops, and worked as a tutor in the Mathematics Learning Center.	The University of British Columbia
2020, 2021	Mathematics Instructor As an instructor, I have taught two courses, MATH 102 (Differential Calculus with Applications to Life Sciences) and MATH 256 (Differential Equations). This involved designing my own lectures for each class, with support from the instructor in charge, and helping to write exams.	The University of British Columbia
2018	Facilitator Development Workshop I attended a workshop in which I learned how to lead an Instructional Skills Workshop and practiced my facilitation skills.	The University of British Columbia
2018	Instructional Skills Workshop I attended a workshop in which I learned some theory of teaching and honed my instructional skills through practice and peer feedback.	The University of British Columbia
2015-2017	Mathematics Department Calculus Help Session Tutor I provided guidance and assistance with homework and studying at the drop-in help sessions offered by the mathematics department for students in all Bucknell calculus courses.	Bucknell University
2014-2017	Teaching and Learning Center Peer Tutor I individually tutored students in introductory mathematics courses, including Calculus 1 and 2.	Bucknell University
2014-2017	Teaching and Learning Center Study Group Leader I lead one study group (3-10 students) per semester for introductory mathematics courses, including Calculus 1 and Statistics 1. I also assisted in the training new study group leaders.	Bucknell University
2014-2016	Mathematics Department Grader I graded weekly homework and lab assignments for Bucknell's Statistics 1 courses.	Bucknell University

Interests

- **Academic:** Differential equations, mathematical modeling, endocrinology, neuroscience, biophysics
- **Personal:** Education and outreach, knitting, swimming, painting