

Mark J. Sullivan

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Education

Ph. D. (in progress)

State University of New York at Buffalo - Buffalo, NY

Area: Mathematics - Algebraic number theory

Advisor: Hui-June Zhu, Ph.D.

Anticipated graduation: May 2022

Bachelor of Science *cum laude*

Union College - Schenectady, NY

Majors: Mathematics, Physics

Awarded June 2013

Graduate courses completed:

Abstract algebra, I and II

Introduction to topology, I and II

Differential topology

Algebraic topology

Elementary differential geometry

Algebraic geometry, I and II

Real analysis I

Complex analysis

Elementary number theory

Algebraic number theory

Topics course: knot theory

Topics course: topology of 3-manifolds

Reading course: arithmetic topology

Reading course: representation theory of 3-manifolds

Graduate qualifying exams:

Initial qualifying exam, passed May 2015

Algebra, passed January 2016

Geometry and Topology, passed August 2017

Employment

Research assistant University at Buffalo, January 2020-July 2020

Adjunct instructor University at Buffalo, May-July 2018, May-December 2019

Teaching assistant University at Buffalo, Aug. 2014-May 2019

Tutor Wyzant.com, Nov. 2013-present

Temporary instructor Union College, July-Aug. 2013

Tutor Union College Academic Opportunity Program, Sep. 2010- June 2013

Teaching experience

Union College:

As instructor:

Pre-calculus

University at Buffalo:

As instructor:

College Calculus I

College Calculus II

As teaching assistant:

College Calculus I

College Calculus II

College Calculus III

Introduction to Differential Equations

Introductory Linear Algebra

Introduction to Higher Mathematics

Introduction to Abstract Algebra

Real Analysis I

Real Analysis II

Theses

”An Algebraic Approach to Number Theory using Unique Factorization”

Undergraduate honors thesis in mathematics, 2013

”Visual Analysis of the Inflaton Field Potential”

Undergraduate thesis in physics, 2013

Presentations

“Fermat’s Theorem on Sums of Squares”

Williams College - Williamstown, MA

Hudson River Undergraduate Mathematics Conference, 2013

“3-Manifolds: Character Varieties and Skein Modules”

University at Buffalo - Buffalo, NY

Mathematics Department Graduate Student Lecture Series, 2018

Grants, awards and honors

NSF EDGE Grant (awarded by University at Buffalo as compensation for a research internship in applied mathematics), 2020

Award for outstanding teaching, University at Buffalo, 2017-2018

Graduate student teaching assistantship, University at Buffalo, 2014-present

Dean’s List, Union College, 2010-2012

NSF REU Fellowship, Baylor University, 2011

James Henry Turnbull Prize (awarded by Union College to a sophomore student who has excelled in physics), 2011

Other

Ph. D. candidate, University at Buffalo

Member, American Mathematical Society

Charter member of New York’s Alpha Tau chapter of Pi Mu Epsilon