

*Department of Mathematics
University of Washington, Seattle WA 98125
skayf@uw.edu*

EDUCATION

Ph. D. Mathematics (Expected May 2021)

University of Washington, started Fall 2015.

Advisor: Jayadev Athreya (email: *jathreya@uw.edu*)

Master of Science in Mathematics, June 2018

University of Washington

B.A. Mathematics, May 2015

Houghton College

Class Valedictorian, summa cum laude

Honors Thesis Advisor: Dr. Rebekah Yates

Honors Project: Variations on multiplicative preservers of the C -numerical range and radius

TEACHING
EXPERIENCE**Math 530B (Complex Preliminary Exam Preparation)**

Instructor: Su 2019

Math 307 (Into to Differential Equations)

Instructor: Su 2019

Math 444/5 (Geometry for Teachers)

Active Classroom TA and grader: Wi 2019, Sp 2019

Math 301 (Elementary Number Theory)

Active Classroom TA and grader: Sp 2018

Math 324 (Multivariable Calculus)

Instructor: Au 2017, Wi 2018

Math 124 (Differential Calculus and Analytic Geometry)

Teaching Assistant: Au 2016, Su 2016, Au 2015

Math 125 (Integral Calculus)

Teaching Assistant: Sp 2016, Wi 2016, Au 2018

Math 126 (Taylor Series and Vector Calculus)

Teaching Assistant: Sp 2017

Math 112 (Business Calculus)

Teaching Assistant: Wi 2017

RELEVANT
WORK
EXPERIENCE**Undergraduate Teaching Assistant, August 2012- May 2015**

Houghton College

Grader for Calculus I and II, Linear Algebra

In-Class TA for Calculus I

Help Sessions for Calculus I,II, Linear Algebra, and Differential Equations

Tutoring for Calculus II

HONORS AND
AWARDS*Excellence in Teaching*

University of Washington Math Department, 2018

McKibben and Merner Fellow

University of Washington Math Department, 2016

Outstanding Senior in Mathematics

Houghton College, May 2015

Hazel L. Crocker Mathematics Scholarship

Houghton College, 2012-2015

President's List for 4.0 GPA

Houghton College: Fall 2011, 2012; Spring 2012, 2013,2014, 2015

Extra Mile in Mathematics Award

Houghton College, 2014

Outstanding Homework in "Number Theory in the Spirit of Ramanujan"

Pennsylvania State University MASS Program, 2013

Outstanding Sophomore in Mathematics

Houghton College, 2013

SERVICE

Washington Directed Reading Program

Started the program with Kellie MacPhee in Autumn 2018

Served as member of graduate student committee 2018-2019 school year

Applied and received seed funding grant from WDRP network Fall 2018

AMS Special Session on Number Theoretic Methods in Hyperbolic Geometry

Co-organizer, JMM January 17 2019

Graduate mentor for PCMI experimental mathematics lab

July 1-21 2018

AWM student chapter

Vice President, Autumn 2018

Mentor both undergraduates and incoming graduate students. Spring 2017-present

Served as a referee for:

Expositiones Mathematicae (Summer 2017)

Washington Experimental Mathematics Lab (WXML) Mentor

Counting k -tuples in Discrete Sets (Au 2017, Wi 2018, Sp 2018, Au 2018, Wi 2019)

Jayadev Athreya (Faculty), Kimberly Bautista, Andrew Lim, Maddy Brown

Trees, Forests, and Entropy (Winter 2017)

Doug Lind (Faculty), Melissa Stadt, Will Dana, Lalith Deviredy, Xinwei Fan

Limiting Behavior in Infinite Graphs (Autumn 2016)

Doug Lind (Faculty), Melissa Stadt, Will Dana

PRESENTATIONS

The Hyperbolic Geometry of irrational Numbers

Graduate Student Analysis Seminar, University of Washington, 6 April 2017

The Cantor Function

EDGE Final Presentations, Howard University, 25 June 2015

The Abelian Sandpile Model on Fractal Graphs

2015 February Fourier Talks, University of Maryland, 19 February 2015

2015 Joint Mathematics Meetings, 13 January 2015

2014 REU Summer Undergraduate Research Forum, Cornell University, 7 August 2014

Rigidity Results for Tilings by L -Tiles and Notched Rectangles

2014 MAA Undergraduate Poster Session, Joint Mathematics Meetings, 17 January 2014

2013 Shenandoah Undergraduate Mathematics and Statistics Conference Poster Session,

James Madison University, 28 September 2013

Undergraduate Research Poster Session,

The Pennsylvania State University, 2 August 2013.

Rigid Tilings of Quadrants by L-ominos and Notched Rectangles
 MASS Fest Conference, The Pennsylvania State University, 7 August 2013
 Shenandoah Undergraduate Mathematics and Statistics Conference,
 James Madison University, 28 September 2013

MEMBERSHIPS

American Mathematical Society
 Mathematical Association of America
 Association for Women in Mathematics

ACADEMIC
EXPERIENCES

Summer School on Teichmüller Theory and its Connection to Geometry, Topology, and Dynamics
 Fields Institute, August 20-24

AMS Math Research Community (Number theoretic methods in hyperbolic geometry)
 June 11-15 2018

Séminaire de Mathématiques Supérieures 2017: Contemporary Dynamical Systems
 MSRI sponsored summer school, July 10-21 2017

Houston Summer School On Dynamical Systems
 University of Houston, May 17-25 2017

Enhancing Diversity in Graduate Education (EDGE) Program
 Howard University, June 2015

Cornell 2014 Summer REU Program
 Cornell University, Summer 2014

SAMSI Interdisciplinary Undergraduate Workshop
 Data Modeling with Networks, North Carolina State University, May 2014

Mathematics Advanced Study Semester
 The Pennsylvania State University, Fall 2013

2013 Summer REU Program
 The Pennsylvania State University, Summer 2013

RESEARCH
RESULTS

A higher moment formula for the Siegel–Veech transform over quotients by Hecke triangle groups
 2019 Pre-print. <https://arxiv.org/abs/1901.10115>

The Abelian Sandpile Model on Fractal Graphs
 2016 Pre-print, Joint with Robert Strichartz, Rafael Setra, Travis Westura, Ilse Haim.

CONFERENCES
ATTENDED

Homogeneous Spaces, Diophantine Approximation and Stationary Measures
 Centre International de Rencontres Mathématiques (CIRM) Marseille, France
 February 6-10, 2017

2015 February Fourier Talks
 University of Maryland, 19-20 February 2015.

AMS/MAA Joint Mathematics Meetings

Baltimore 2019, Seattle 2016, San Antonio 2015, Baltimore 2014.

2014 REU Summer Undergraduate Research Forum

Cornell University, 7 August 2014.

Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals

Cornell University, 11-15 June 2014.

Shenandoah Undergraduate Mathematics and Statistics Conference

James Madison University, 28 September 2013.

MASS Fest Conference

The Pennsylvania State University, 7 August 2013.

OTHER
EXPERIENCE

Horseback Riding Instructor, 2010-present

Certified Horsemanship Association certified instructor (Western: 2, English:3)

Taught basic horsemanship through intermediate jumping ages 8 to 80.