

WILLIAM E. HOFFER, III

Riverside, CA

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Dates are entered in the form MM/DD/YYYY or MM/YYYY.

EDUCATION

Doctorate of Philosophy in Mathematics

09/23/2019 - 09/13/2025

University of California, Riverside

Defended 06/03/2025; Conferred 09/13/2025

- Dissertation Advisor: Dr. Michel L. Lapidus
- Overall GPA: 3.99/4.00

Master of Science in Mathematics

09/23/2019 - 06/11/2021

University of California, Riverside

Conferred 06/11/2021

- Overall GPA: 3.98/4.00

Bachelor of Science in Mathematics and Physics

08/26/2025 - 05/05/2019

The Ohio State University

Conferred 05/05/2019

- Graduated *with Honors in the Arts & Sciences* and *Cum Laude*
- Overall GPA: 3.68/4.00

PROFESSIONAL APPOINTMENTS

Lecturer

03/2026 - Present

Department of Mathematics

University of California, Riverside

- I am currently a lecturer at UCR, teaching undergraduate mathematics courses. See the teaching experience section for more information.

Research Fellow

04/2025 - 09/2025

Department of Mathematics

University of California, Riverside

- I was awarded a fellowship to support the completion of my dissertation and publication of my research. See the Fellowships section for more information.

Associate Instructor

01/2022 - 03/2025

Department of Mathematics

University of California, Riverside

- I have been the primary instructor for five undergraduate mathematics courses. See the teaching experience section for more information.

Teaching Fellow

09/2021 - 12/2021

Department of Mathematics

University of California, Riverside

- I provided essential mentorship and teaching training for first year graduate students, including teaching observations, individual meetings, and progress reports.

Graduate Student Mentor

09/2021 - 06/2022

<https://gradmentors.ucr.edu/>

Graduate Division, University of California, Riverside

- I mentor a group of first year graduate students, helping them to adjust and succeed at UCR.

Content Creator for Microtutorials in Mathematics Video Program

04/2020 - 06/2020

<https://microtutorials.ucr.edu/>

University of California, Riverside

- Content creator for UCR's mathematics supplementary instructional videos project

Teaching Assistant

Department of Mathematics

09/2019 - 12/2024

University of California, Riverside

- I have been the teaching assistant, additional lecturer, and/or grader for a variety of different courses, and have taught both online and in-person. See the teaching experience section for more information.

Student Instructional Associate

Department of Mathematics

08/2016 - 05/2019

The Ohio State University

- I was a teaching assistant and grader for lower division courses, and I was a tutor for the Mathematics and Statistics Learning Center. See the teaching experience section for more information.

RESEARCH & PUBLICATIONS

Research Interests

- My research interests include:
 - **Fractal Geometry**, including theory of complex (fractal) dimensions, geometric and spectral zeta functions, and applications of fractality in topological data analysis.
 - **Mathematical Physics**, including partial differential equations, especially on fractals or regions with fractal boundary, quantum mechanics and field theories, and more.
 - **Asymptotic Analysis**, including resurgence theory, Borel summation, and Stokes phenomena.
 - **Analytic Number Theory**, including explicit formulae for counting functions and study of error correcting codes through group algebras.
 - **Knot Theory**, including the study of algebraic invariants and the classification of knots.

Publications (Peer Reviewed)

- W. E. Hoffer and M. L. Lapidus, "On complex dimensions and heat content of self-similar fractals," *Fractal Fract.*, vol. 9, no. 10, 649, 2025, <https://doi.org/10.3390/fractalfract9100649>.
- W. E. Hoffer, "Tube formulae for generalized von Koch fractals through scaling functional equations," *J. Fractal Geom.*, vol. 12, no. 1-2, pp. 135-174, 2025, <https://doi.org/10.4171/jfg/155>.
- W. Hoffer, A. Vengal, and V. Winstein, "The structure of biquandle brackets," *J. Knot Theory Ramif.*, vol. 29, no. 6, 2050042, 2020, <https://doi.org/10.1142/S021821652050042X>.

Doctoral Dissertation

- W. Hoffer, "Shape and Spectrum: On the Heat and Volume of Self-Similar Fractals," 07/11/2025, arXiv:2507.08596, <https://doi.org/10.48550/arXiv.2507.08596>. To appear in ProQuest ETD.

Undergraduate Research Mentorship

Department of Mathematics

04/2023 - 06/2024

University of California, Riverside

- I led an undergraduate research project in fractal geometry. The participants studied fractal sponges such as the Menger Sponge through their prefractal approximations. During 04/2023 to 06/2023 and 04/2024 to 06/2024, this research program was supported through the University of California, Riverside's Math 197 courses, with independent study taking place in the intermediate time.

FELLOWSHIPS AND AWARDS

Seal of Excellence

02/2026

Marie Skłodowska-Curie Actions - Postdoctoral Fellowship

European Commission

- An award given to grant proposals of sufficiently high quality but which could not be funded due to budget constraints.

Dissertation Completion Fellowship Award

04/2025 - 06/2025

Graduate Division

University of California, Riverside

- I received a fellowship award for my dissertation research to cover tuition fees and a living stipend during my final quarters as a doctoral student.

Best Lightning Talk Award

05/17/2024

<https://pcallart3.wixsite.com/conference/lightning-talk-winners>

Dynamical Systems and Fractal Geometry Conference

- I received the first place award for my research presentation given at the Dynamical Systems and Fractal Geometry Conference, hosted at the University of North Texas.

The Jones Fellowship

01/2023 - 03/2023

<https://mathdept.ucr.edu/jones-fellowship>

University of California, Riverside

- I received a fellowship for academic and research support equivalent to a half-teaching appointment based on academic merit and department service.

The John C. Fay Fellowship

01/2023 - 06/2023

<https://sites.google.com/view/ucr-vsdl-fay-fellowship/>

John C. Fay

- I organized and delivered a series of lectures and discussions to prepare graduate students for the invited Victor L. Shapiro Distinguished Lecture in Mathematics given by Sir Michael Berry.

Vernon A. Kramer Memorial Service Award

Awarded 06/2023

<https://mathdept.ucr.edu/vernon-kramer-memorial-service-award>

U.C. Riverside

- I was awarded for above-and-beyond service to the department including my organization of two seminars, mentorship of graduate students, and leadership in two in student organizations.

University Teaching Certificate

Awarded 06/2023

GradSuccess at University of California, Riverside

- I received university certification for the completion of a training program in research-based pedagogy techniques and theory run through the Graduate Division of UC Riverside.

Outstanding Teaching Assistant Award

Awarded 06/2022

University of California, Riverside

- I received a department-level award through Graduate Division recognizing excellence in my role as a teaching assistant.

Teaching Fellowship

09/2021 - 12/2021

Department of Mathematics

University of California, Riverside

- I mentored and trained first year graduate students becoming university teaching assistants through teaching observations, individual meetings, and progress reports.

Research Poster Competition: First Place Award

10/13/2018

Shenandoah Undergraduate Mathematics and Statistics Conference

James Madison University

- My co-authors Adu Vengal and Vilas Winstein and I were awarded the first place award for our research on knot theory conducted under the guidance of Sergei Chmutov at the Ohio State University.

Additional Academic Accolades

- Member of Phi Beta Kappa Honorary Society (Inducted 05/2019)
- Ohio State Maximus Scholarship Recipient (2015-2019)
- Ohio State Department of Mathematics Scholarship Recipient
- Ohio State Dean's List (Multiple semesters between 2015-2019)

RESEARCH PRESENTATIONS & INVITED TALKS

I have disseminated my research and/or I have been invited to speak at the following venues, with the title of the talk provided. Abstracts, if available, may be found through the provided links.

American Mathematical Society, Western Sectional Meeting 05/04/2025
https://www.ams.org/meetings/sectional/2325_progfull.html California Polytechnic, San Luis Obispo

- *Heat Equations on Self-Similar Fractals*

Joint Mathematics Meeting 01/10/2025
https://jointmathematicsm meetings.org/meetings/national/jmm2025/2314_program_ss51.html Seattle, WA

- *On Complex Dimensions of Self-Similar Attractors*

Claremont Center for Mathematical Sciences: Topology Seminar 10/22/2024
<https://pzacad.pitzer.edu/math/TopologySeminar/> The Claremont Colleges

- *Tube Formulae for Fractal Snowflakes*

Dynamical Systems and Fractal Geometry Conference 05/16/2024
<https://pcallaart3.wixsite.com/conference> University of North Texas

- *Complex Dimensions of Fractal Snowflakes*
- Received the award for the best lightning talk for this presentation

Joint Mathematics Meeting 01/05/2024
<https://meetings.ams.org/math/jmm2024/meetingapp.cgi/Paper/31918> San Francisco, CA

- *Tube Formulae for Generalized von Koch Fractals through Scaling Functional Equations*

California State University: Graduate Mathematics Seminar 04/03/2023
<https://math.csuci.edu/current-students/seminar.htm> California State University: Channel Islands

- *On Inexact Explicit Formulae in Fractal Geometry and Number Theory*

California State University: Undergraduate Mathematics Seminar 04/03/2023
<https://math.csuci.edu/current-students/seminar.htm> California State University: Channel Islands

- *Can One Hear the Shape of a Fractal Drum?*

Joint Mathematics Meeting 01/06/2023
https://www.jointmathematicsm meetings.org/meetings/national/jmm2023/2270_program_spectss1.html Botson, MA

- *On Asymptotic Expansions with Complex Exponents and their Applications*

7th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals

06/05/2022

<https://alexander-teplyaev.uconn.edu/cornell7/speakers/>

Cornell University

- *Tube Formulae for Generalized von Koch Fractals*

American Mathematical Society, Western Sectional Meeting

05/14/2022

<https://meetings.ams.org/math/spring2022w/meetingapp.cgi>

(Virtual)

- *Borel Summability and Series with Complex Powers*

American Mathematical Society, Western Sectional Meeting

10/23/2021

http://www.ams.org/amsmtgs/2283_abstracts/1172-30-203.pdf

(Virtual)

- *On Stokes Phenomena and Geometric Zeta Functions*

American Mathematical Society, Western Sectional Meeting

05/01/2021

https://www.ams.org/amsmtgs/2282_abstracts/1167-51-151.pdf

(Virtual)

- *On resurgent analysis of explicit formulae in fractal geometry*

Functional Analysis and Mathematical Physics Seminar

12/11/2020

<https://www.fresnostate.edu/csm/math/colloquia-seminars/famp.html>

California State University: Fresno

- *From Rainbows to Resurgence: Asymptotics of the Airy Function*

CONFERENCES, WORKSHOPS, & RESEARCH PROGRAMS

These are the conferences, workshops, and research programs which I have attended, presented at, and/or been an active participant in.

American Mathematical Society, Western Sectional Meeting

05/2025

https://www.ams.org/meetings/sectional/2325_progfull.html California Polytechnic, San Luis Obispo

- I attended the Special Session on Fractal Geometry and Complex Dynamics and presented my research therein.

Joint Mathematics Meeting

01/2025

https://jointmathematicsm meetings.org/meetings/national/jmm2025/2314_program_ss51.html

- I presented my research on the complex dimensions of self-similar attractors in the AMS Special Session on Fractal Geometry with Applications to Analysis, Number Theory and Mathematical Physics.

American Mathematical Society, Western Sectional Meeting

10/2024

https://www.ams.org/meetings/sectional/2304_program.html

- I attended mathematical sessions on structures in mathematical physics and on the study of wave equations.

Joint Mathematics Meeting

01/2024

https://jointmathematicsm meetings.org/meetings/national/jmm2024/2300_program_spectss1.html

- I presented my research at the Joint Mathematics Meeting the the Spectra Special Session on Research by LGBTQ+ Mathematicians.

Machine Learning

06/26/2023 - 07/07/2023

Summer Graduate School SLMATH Institute (Formerly MSRI) and the University of California, San Diego

- I participated in a series of lectures and problem sessions on topics in machine learning and topological data analysis, including topics such as deep neural nets, kernel methods, persistence homology and its implementation, and more.

Rethinking Number Theory

06/12/2023 - 06/23/2023

AIM Research Community

American Institute of Mathematics

- I contributed to a research project in number theory as well as discussions about how to improve social justice, equity, and inclusion in the mathematical community.

California State University Invited Talks

04/03/2023

<https://math.csuci.edu/current-students/seminar.htm>

- I was invited to speak at California State University, and I gave two talks: one to undergraduate mathematicians and another about my PhD research.

Joint Mathematics Meeting

01/2023

https://www.jointmathematicsm meetings.org/meetings/national/jmm2023/2270_program_spectss1.html

- I presented my research at the Joint Mathematics Meeting the the Spectra Special Session on Research by LGBTQ+ Mathematicians.

LGBTQ+ Math Day

11/18/2020, 11/18/2021

<http://www.fields.utoronto.ca/activities/22-23/LGBTQplus>

The Fields Institute

- I attend the LGBTQ+ Math day conferences about research and experiences of LGBTQ+ mathematicians in 2020 and 2021.

7th Cornell Conference on Analysis, Probability, and Mathematical Physics on Fractals

06/2022

<https://alexander-teplyaev.uconn.edu/cornell7/speakers/>

- I presented on my current research regarding tube formula and von Koch snowflakes.

American Mathematical Society, Western Sectional Meeting

10/2021

http://www.ams.org/amsmtg/2283_abstracts/1172-30-203.pdf

- I was an invited speaker for the Special Session on Research in Mathematics by Early Career Graduate Students.

Spectra LGBTQ+ in Mathematics Conference

08/2021

https://icerm.brown.edu/topical_workshops/tw-21-smc/

- I attended the first official mathematics conference hosted by Spectra, which included both mathematical research and discussion of obstacles and current work to advance diversity, inclusion, and equity in the field of mathematics.

Summer Graduate School on Random Conformal Geometry

07/2021

Program– The Analysis and Geometry of Random Spaces

https://www.msri.org/summer_schools/922 *Mathematical Sciences Research Institute (MSRI)*

- I was an active participant in a series of lectures and associated problem sessions.
- We covered topics such as Schramm-Loewner evolution (SLE), conformal and quasi-conformal geometry, conformal quantum field theories, etc.

American Mathematical Society, Western Sectional Meeting

05/2021

https://www.ams.org/amsmtg/2282_abstracts/1167-51-151.pdf

- I was an invited speaker for the Special Session on Research in Mathematics by Early Career Graduate Students.

Spring school on asymptotic methods and applications

03/2021

Program– Applicable resurgent asymptotics: towards a universal theory<https://www.newton.ac.uk/event/araw01/>*Isaac Newton Institute (INI)*

- I was an active participant in a series of lectures and associated problem sessions.
- We covered resurgence as it appears in many forms, including topics such as saddle-point analysis, WKB semiclassical asymptotics, partial differential equations, and Jean Écalle's general theory.

Southern California Analysis and Partial Differential Equations Conference

11/2019

University of California, San Diego

- I attended the conference, with talks described here: https://mathweb.ucsd.edu/~scapde/2019/S-CAPDE_2019_TA.pdf.

American Mathematical Society, Western Sectional Meetings

2019 - Present

- I have been an attendee at many western sectional meetings, held twice a year in the fall and spring (with the exception of the year 2020.) I have listed those in which I was an active speaker separately.

Shenandoah Undergraduate Mathematics and Statistics Conference

10/13/2018

<http://www.jmu.edu/mathstat/sums/index.shtml>*James Madison University*

- My collaborators and I presented our research poster on our work entitled: *Combining Biquandle Knot Invariants*.

Young Mathematicians Conference

09/2018

<https://ymc.math.osu.edu/2018/program.php>*Ohio State/National Science Foundation*

- My collaborators and I presented our research in a talk entitled: *Combining Quandle Cohomological and State-Sum Polynomial Knot Invariants*.

Denman Research Forum

03/2018

<https://ugresearch.osu.edu/Pages/Initiatives-%20Denman-%20Accepted%20Abstracts.aspx>*Ohio State*

- I presented a research poster entitled: *Invariants for tricolorable knots & links*.

Knots & Graphs Program

05/2017 - 08/2017 & 05/2018 - 08/2018

<https://people.math.osu.edu/chmutov.1/wor-gr-su18/wor-gr.htm>*The Ohio State University*

- I participated in a research program focused on the mathematical theory of knots. As part of the program, I gave a series of talks with my collaborators and produced research that went on to be published in an academic journal.

IN RESIDENCE PRESENTATIONS

These are the research or expository presentations that I have given at my home institution to either colleagues, students, or a mixed audience.

Fractal Analysis, Dynamical Systems, and Mathematical Physics Seminar

2020 - 2025

<http://www.math.ucr.edu/~frgmpds/seminars.html>*University of California, Riverside*

- *Shape and Spectrum* 02/13/2025, 05/01/2025
- *Heat Equations on Fractals* 10/17/2024

- *On Complex Dimensions of the Attractors of Self-Similar Iterated Function Systems* 05/23/2024
- *Fractal Tube Formula through Scaling Functional Equations* 02/01/2024
- *Tube Formulae for Generalized von Koch Fractals* 10/12/2023
- *On Complex Dynamics and Fractal Geometry - Orbits, Conjugacy, and Modern Machinery* 06/02/2023
- *Studying Parabolic Diffeomorphisms through Resurgence and Fractal Analysis* 05/11/2023
- *On Spaces of Formal and Analytic Expansions with Exponents in the Complex Plane* 02/23/2023
- *Toward Tube Formulae for Generalized von Koch Fractals* 05/20/2022
- *Borel Summation and Series with Complex Powers* 02/17/2022
- *On the Stirling Series for the Gamma Function* 02/10/2022
- *On Heat Content Asymptotics of some Planar Fractals* 11/04/2021
- *On Zeta Functions and the Stokes Phenomenon* 04/15/2021
- *Rainbows Quantum Billiards, and the Birth of Reflections: Segue into Resurgence* 11/12/2020
- *Rainbows Quantum Billiards, and the Birth of Reflections: Stokes Phenomena Exemplified* 10/22/2020
- *A First Introduction to Resurgence, Part II* 05/27/2020
- *A First Introduction to Resurgence, Part I* 04/16/2020

Mathematical Physics: Experiment, Structure, & Framework Seminar 2022 - 2025
University of California, Riverside

- *Discussion on Geometric Optics, Mathematical Catastrophes, and Related Topics* 04/14/2023
- *Classifying Optical Caustics with Elementary Catastrophes* 02/24/2023
- *Asymptotics of the Airy Function* 03/03/2022

Analysis Seminar 01/2022 - 03/2022
<https://sites.google.com/ucr.edu/ucranalysisseminar/home> *University of California, Riverside*

- *On the Stirling Series for the Gamma Function* 02/10/2022

Graduate Student Seminar 2020 - 2025
<https://ams-at-ucr.github.io/gradsem/> *University of California, Riverside*

- *Shape and Spectrum* 05/16/2025
- *Lightning Talk (5 min) on my Research* 10/06/2023
- *Snow White Light & the Seven Elementary Catastrophes* 02/17/2023
- *Functions that Count* 01/27/2023
- *Divergence is only the Beginning* 01/14/2022
- *Sites & Bytes: Website Workshop* 11/19/2021
- *Melting Snowflake Fractals* 11/12/2021
- *This is not the title of this talk* 10/08/2021
- *On Resurgent Analysis of Explicit Formulae in Fractal Geometry* 04/30/2021
- *Resurgence & Fractals* 01/15/2021
- *Keeping up with the Bernoulli's* 01/31/2020

Analytic Number Theory 09/2021 - 12/2021
Mathematics Course Presentation (Math 245) *University of California, Riverside*

- *Explicit Formulae in Number Theory* 12/07/2021

Fractal Geometry, Complex Dimensions, & Zeta Functions 09/2020 - 12/2020
Mathematics Course Presentation (Math 260) *University of California, Riverside*

- *Proof of the Pointwise Explicit Formula* 12/17/2020

Mathematics of Quantum Mechanics

01/2020 - 03/2020

*Mathematics Course Presentation (Math 242)**University of California, Riverside*

- *Deriving the Schrodinger Equation from Feynman's Path Integral* 03/13/2020

Wave Equations and General Relativity Seminar

2021 - 2020

University of California, Riverside

- *The Einstein Equation Cauchy Problem* 05/11/2020
- *Introduction to the Physics of Relativity* 04/13/2020
- *Calculus on Manifolds, Part II* 01/07/2020
- *Calculus on Manifolds, Part I* 12/03/2019

Knots & Graphs Program

2017 - 2018

<https://people.math.osu.edu/chmutov.1/wor-gr-su18/wor-gr.htm> *The Ohio State University*

- *Cohomology, biquandles, and bracket invariants* 07/23/2018
- *Two cocycles of quandles and the state sum invariants* 07/09/2018
- *Tricolorings, Keis, and Quandles* 06/25/2018
- *Tricoloring number of links* 07/21/2017
- *Enhanced Kauffman bracket* 07/07/2017

Reading Classics Seminar

2017 - 2018

<https://people.math.osu.edu/sinnott.1/ReadingClassics/> *The Ohio State University*

- *Euler's 'Principia pro motu de sanguinis per arterias determinando'* 10/31/2018
- *Kepler's Laws in Newton's 'Philosophiae Naturalis Principia Mathematica'* 09/11/2018
- *Origami & Geometry - Paper Folding and Greek Geometry* 03/28/2018

What Is...? Seminar

06/14/2018

<https://math.osu.edu/whatis> *The Ohio State University*

- *What is the Yang-Baxter Equation?*

Abstract Algebra, Math 5590H

11/29/2018

<https://people.math.osu.edu/gautam.42/A18/calendar.html> *The Ohio State University*

- *The Stone-von Neumann-Mackey Theorem: Equivalence of Heisenberg Group Representations*

TEACHING EXPERIENCE**Lecturer**

03/2026 - Present

*Department of Mathematics**University of California, Riverside*

- I have been the primary instructor of record for the following courses at UCR:
 - *Introduction to College Mathematics for Business and Social Sciences - Math 4 (Spring 2026)*
Undergraduate; Size: ~291 Students; Format: In-Person
 - *Precalculus: An Introduction to Functions - Math 6B (Spring 2026)*
Undergraduate; Size: ~123 Students; Format: In-Person

Associate Instructor

01/2022 - 04/2025

*Department of Mathematics**University of California, Riverside*

- I have been the primary instructor of record for the following courses at UCR:
 - *Calculus for Life Sciences - Math 7B (Winter 2025)*
Undergraduate; Size: 100 Students; Format: In-Person

- Calculus for Life Sciences - Math 7A (Fall 2023)
Undergraduate; Size: 101 Students; Format: In-Person
- Calculus of Several Variables - Math 10B (Summer 2023)
Undergraduate; Size: 20 Students; Format: In-Person
- Calculus for Life Sciences - Math 7B (Fall 2022)
Undergraduate; Size: 88 Students; Format: In-Person
- Calculus for Life Sciences - Math 7B (Spring 2022)
Undergraduate; Size: 69 Students; Format: In-Person
- Calculus for Life Sciences - Math 7A (Winter 2022)
Undergraduate; Size: 91 Students; Format: Hybrid (Online & In-Person)

Department Instructor

Department of Mathematics

06/2022 - 09/2024

University of California, Riverside

- I have been employed as the primary instructor for several graduate level courses/workshops.
 - Real Analysis Qualification Exam Workshop (Summer 2024)
Graduate; Size: 7 Students; Format: Hybrid (Online & In-Person)
 - Real Analysis Qualification Exam Workshop (Summer 2023)
Graduate; Size: 6 Students; Format: In-Person
 - Real Analysis Qualification Exam Preparation Seminar (Summer 2022)
Graduate; Size: 4 Students; Format: Hybrid (Online & In-Person)
 - Complex Analysis Qualification Exam Preparation Seminar (Summer 2022)
Graduate; Size: 8 Students; Format: Hybrid (Online & In-Person)

Teaching Fellow

Department of Mathematics

09/2021 - 12/2021

University of California, Riverside

- I mentored and trained new graduate students, in particular those who are new to teaching.
- I observed graduate student teaching and provided feedback to the students. At the end of the quarter, I wrote reports on their progress to the department.

Microtutorials in Mathematics Video Program

<https://microtutorials.ucr.edu/>

04/2020 - 06/2020

University of California, Riverside

- I created content for UCR's mathematics supplementary instructional videos project. These instructional videos and materials are used as assignments in mathematics courses.

Teaching Assistant

Department of Mathematics

09/2019 - 12/2024

University of California, Riverside

- I have been the teaching assistant, additional lecturer, and/or grader for a variety of different courses, and have taught both online and in-person.
- Upper Division Courses:
 - Ordinary and Partial Differential Equations
 - Analysis/Introduction to Measure Theory
 - Introduction to Chaotic and Complex Dynamical Systems
 - Euclidean and non-Euclidean Geometry
 - Undergraduate Research Projects
- Lower Division Courses:

- Introduction to College Mathematics for Business and the Social Sciences
- Precalculus (Study of Elementary Functions, Roots of Polynomials, etc.)
- First Year Calculus
- Calculus for Life Sciences
- Applied Linear Algebra
- Calculus of Several Variables

Student Instructional Associate

Department of Mathematics

08/2016 - 05/2019

The Ohio State University

- I was a teaching assistant and grader for lower division courses, and I was a tutor for the Mathematics and Statistics Learning Center.
- Courses Taught:
 - College Algebra
 - Trigonometry
 - Precalculus

LEADERSHIP, PROFESSIONAL SERVICE, & OUTREACH

President of the UCR Student Chapter of Spectra

09/2023 - 06/2024

University of California, Riverside (UCR) Spectra: The Association for LGBTQ+ Mathematicians

- I helped to officially found and subsequently lead a student chapter of Spectra at the University of California, Riverside.

Co-Organizer and Scheduling Coordinator

09/2021 - 12/2023

*Fractal Analysis, Dynamical Systems,
and Mathematical Physics Seminar*

University of California, Riverside

- I invite and schedule the speakers for the FDMP seminar at UCR and collect and announce titles and abstracts on a weekly basis. Formerly, this seminar consisted of two distinct seminars (Fractal Research Group and the Mathematical Physics and Dynamical Systems seminars) before they were merged in 2022.

President of the AMS Graduate Student Chapter

09/2021 - 06/2024

Local to the University of California, Riverside (UCR) American Mathematical Society (AMS)

- I am the lead officer, and I am in charge of running UCR's Graduate Student Seminar.

Vice President of UCR's GSA Department Chapter

09/2022 - 06/2023

Graduate Student Association (GSA)

University of California, Riverside

- I served as an officer for the department's local chapter of the university wide graduate student association. We interface with the organization as a whole and plan department events.

Recruitment Ambassador

09/2022 - 06/2023

Department of Mathematics

University of California, Riverside

- I helped recruit graduate students to our program through events such as Q&A sessions, meeting individually with students, giving tours, and attending recruitment events.

Spectra Outlist/D.E.I. Recruitment

01/2021 - Present

Spectra: The Association for LGBTQ+ Mathematicians

- I am part of the Spectra Outlist, and in particular provide my contact information and university affiliation. I meet with interested students who reach out to me to tell them about the climate and mathematics program at my university, as well as any other questions they may have.

Professional Memberships

- American Mathematical Society (AMS) Member Joined 09/2019
 - I served as the president of the University of California, Riverside's student chapter of the AMS for four years.
- Spectra: The Association for LGBTQ+ Mathematicians Member Joined 11/2020
 - I helped found the University of California, Riverside's student chapter of Spectra and served as its first president.

Mentorship Positions (Volunteer & Employment)

- University of California, Riverside: Graduate Student Mentor (09/2021 - 06/2022)
- University of California, Riverside: Teaching Fellow (09/2021 - 12/2021)
- University of California, Riverside: Women's Resource Center Graduate Mentor (09/2020 - 06/2021)
- Ohio State University Honors & Scholars Program Peer Mentor (08/2016 - 05/2019)

SOFTWARE PROFICIENCY

Programming Languages

- Proficient: Python, Java/Javascript, C/C++, HTML/CSS/SCSS
- Familiar: Ruby, R, Liquid, Julia

Software Programs/Tools

- Proficient: Mathematica, SageMath, $\text{\LaTeX}$, Git/GitHub, VSCode
- Familiar: MatLab, RStudio, PyTorch