

WILL HOFFER

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EDUCATION

University of California, Riverside

Pursuing a PhD in Mathematics

Advisor: Michel Lapidus

September 2019 - Present

Overall GPA: 4.0/4.0

The Ohio State University

Bachelors of Science in Mathematics and Physics, *cum laude*; with Honors in the Arts & Sciences

August 2015 - May 2019

RESEARCH

Research Interests

- Resurgence and its applications
- Non-commutative geometry, von Neumann algebras, and operator theory
- Quantum mechanics and Feynmann-like integrals
- Einstein's equations of general relativity

Publications

- W. Hoffer, A. Vengal, and V. Winstein, "The Structure of Biquandle Brackets," *Journal of Knot Theory and its Ramifications*, Vol. 29, Is. 6 (May 2020.) <https://doi.org/10.1142/S021821652050042X>

SELECTED SEMINAR AND CONFERENCE PRESENTATIONS

Fractal Research Group/Mathematical Physics and Dynamical Systems Seminar Spring 2020

<http://www.math.ucr.edu/frgmpds/seminars.html>

University of California, Riverside

- *A First Introduction to Resurgence, Part I* 4/16/20
- *A First Introduction to Resurgence, Part II* 5/27/20

Young Mathematicians Conference

8/10/18 - 8/12/18

<https://ymc.osu.edu/program-schedule>

Ohio State/National Science Foundation

- *Combining Quandle Cohomological and State-Sum Polynomial Knot Invariants*

Shenandoah Undergraduate Mathematics and Statistics Conference

10/13/18

<http://www.jmu.edu/mathstat/sums/index.shtml>

James Madison University

- *Combining Biquandle Knot Invariants*

Knots & Graphs Program

Summers 2017, 2018

<https://people.math.osu.edu/chmutov.1/wor-gr-su18/wor-gr.htm>

Ohio State

- *Enhanced Kauffman bracket* 7/7/17
- *Tricoloring number of links* 7/21/17
- *Tricolorings, Keis, and Quandles* 6/25/18
- *Two cocycles of quandles and the state sum invariants* 7/9/18
- *Cohomology, biquandles, and bracket invariants* 7/23/18

RELEVANT EMPLOYMENT

Microtutorial Video Program

Mathematics Department

Spring 2020

University of California, Riverside

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

Teaching Assistant

Mathematics Department

September 2019 - Spring 2020

University of California, Riverside

- TA & grader for courses including calculus and linear algebra

Student Instructional Associate

Mathematics Department

August 2016 - Spring 2019

Ohio State

- TA & Grader for courses including precalculus, trigonometry, and algebra
- Tutor for the Mathematics and Statistics Learning Center

ACADEMIC ACHIEVEMENTS & ACCOLADES

First Place in the Research Poster Competition at James Madison's SUMS Conference 2018

Phi Beta Kappa Honor Society Member

Ohio State Maximus Scholarship & Mathematics Department Scholarship Recipient

Honor Student in both Mathematics & Physics Programs

Ohio State Dean's List (Multiple Semesters/Years)

SOFTWARE PROFICIENCY

Computer Languages

HTML/CSS, Ruby, R, C/C++, Java

Software & Tools

Mathematica, LaTeX, MatLab, RStudio

LEADERSHIP, VOLUNTEERING, & EXTRA-CURRICULARS

Peer Mentor Programs

Student Mentor

August 2016- May 2019

Ohio State

- Arts & Sciences Honors Program - Assist & acclimate new freshman in the honors program; help conduct & lead group discussions in a freshman survey course
- Mathematics Department - Individually paired with freshman in the department; meet and discuss progress and difficulties

Arts & Sciences Honors Committee

Student Representative

August 2017 - May 2019

Ohio State

- Student input at full committee meetings discussing budgets, university schedule overhaul, etc.

Club Leadership & Involvement

- Sigma Pi Sigma Physics Honorary Society, Vice President (2018-2019)
- Holography Club, Vice President (2015-2019)
- Radical Pi Mathematics Club, Society of Physics Students

Holography Gallery Showings

Conducted biannually

Winter 2015 - 2018

Hosted by Ohio State

- Featuring student and professional holographic artworks
- Multiple pieces and techniques, including pulse laser holography