

# Victor W. Summers

Division of Mathematics & Computer Science  
University of South Carolina Upstate  
800 University Way, Spartanburg, SC 29303

June 13, 2024

vsummers@uscupstate.edu  
Office: Hodge Building Room 231

## Education

- **Ph.D. in Mathematics** **GPA 4.0**  
*North Carolina State University* *2014 - 2019*
- **Master's Degree in Mathematics** **First Class with Honors**  
*University of Sussex, UK* *2009 - 2013*

## Academic Appointments

- **Assistant Professor of Mathematics**  
*University of South Carolina Upstate, Division of Mathematics and CS* *2019 - present*

## Teaching

### Assistant Professor of Mathematics at University of South Carolina Upstate

- MATH U141 - Calculus I FA19, SP20, FA20, SP21, FA21, SP22, FA22, SP23, SU23, SP24
- MATH U142 - Calculus II FA23
- MATH U122 - Calculus for Management and Social Sciences SU20, FA23
- MATH U346 - Modern Algebra I FA19, FA20, FA21, FA22, FA23
- MATH U546 - Modern Algebra II SP20, SP21, SP22, SP24
- MATH U344 - Linear Algebra I SP20, SU20, SP21, SU21, SP22, SP23, SP24
- MATH U544 - Linear Algebra II FA19, FA20, FA21, FA22
- MATH U340 - Mathematical Structures and Proofs FA22, SU23

### Honors Algebra Supplemental Lecturer at North Carolina State University (2018)

Duties include: Holding supplemental lectures on advanced algebra topics not covered in regular classes.

### Instructor of Mathematics at North Carolina State University

Duties include: Lecturing, test writing, grading, office hours.

- **Math 405 - Introduction to Linear Algebra and Matrices** SP19
- **Math 241 - Calculus II** SP17, SU17, FA17, SP18, SU18

### Recitation Leader at North Carolina State University

Duties include: Providing guidance for practice problems, occasional lecturing, test grading, office hours, tutoring center hours.

- **Math 241 - Calculus II** FA14, SP16
- **Math 131 - Calculus I** SP16

### Lecture Assistant at North Carolina State University

Duties include: Test grading, final exam grading, taking attendance, office hours.

- **Math 242 Calculus III** SP15
- **Math 341 Applied Differential Equations** FA15

### Workshop Leader at University of Sussex

Duties include: Providing guidance for practice problems, grading homework, taking attendance.

- **G5087 Introduction to Pure Mathematics (UK)** FA14
- **G5085 Analysis (UK)** SP14

### Research Interests

Algebraic topology, graph theory, knot theory, category theory.

### Publications

1. Chandler, A., Lowrance, A., Sazdanovi, R., Summers, V. (2021). Torsion in thin regions of Khovanov homology. *Canadian Journal of Mathematics*, 1-27. doi:10.4153/S0008414X21000043. arXiv link: <https://par.nsf.gov/servlets/purl/10252130>
2. Sazdanovic, R., Summers, V. (Accepted for publication on March 30th 2021). Torsion in the Magnitude Homology of Graphs. *Journal of Homotopy and Related Structures*. arXiv link: <https://link.springer.com/content/pdf/10.1007/s40062-021-00281-9.pdf>

### Works in Progress

1. Expository paper: *Categories, Functors, Natural transformations and the Yoneda Lemma*.

### Student Research

1. Poster presentation with Cenya Neal: *Visualizing Abstract Mathematics*.

## Conference Presentations

- **Torsion in Thin Regions of Khovanov Homology** SP22  
*Central Botswana Mathematics and Statistical Sciences Conference* Botswana Int. Univ.
- **Torsion in Magnitude Homology** SP19  
*Joint Mathematics Meetings* Baltimore Convention Center
- **An Application of Spectral Sequences to 3-braids** FA18  
*UNCG Regional Mathematics and Statistics Conference* UNC Greensboro
- **Odd Torsion in the Khovanov Homology of 3-Braids** SP18  
*Knots in Washington XLVI* George Washington University
- **Torsion in the Magnitude Homology of Graphs** SP18  
*AMS Sectional Meeting* Portland State University
- **Torsion in the Magnitude Homology of Graphs** SP18  
*Graduate Student Combinatorics Conference* UT Dallas
- **Introduction to the Magnitude Homology of Graphs** SP17  
*Triangle Area Graduate Mathematics Conference* Duke University

## Service at USC Upstate

- System Faculty Leadership Council 2024 - Present
- Fab Friday recruitment event for MCS division March 2023
- Open House recruitment event for MCS division March 2023
- Academic Affairs Committee member at USC Upstate 2020 - 2023
- Academic Affairs Committee Recording Secretary 2021 - 2023

## Awards and Honors

- Excellence for Teaching and Advising Award 2024 (Nomination)
- Excellence for Teaching and Advising Award 2023 (Nomination)
- Excellence for Teaching and Advising Award 2022 (Nomination)
- J. W. P. Hirschfeld Prize for Undergraduate Mathematics (2013)
- Highest scoring master's dissertation in class of 2013 (University of Sussex, UK)

## Outreach

- Elementary school book readings - *Hilburn Academy, Raleigh, 2017 & 2018*
- Assembly talk on Mathematics and being British - *The Trilogy School, Raleigh, 2015 & 2016*
- Galois Theory lecture aimed at undergraduates as part of the MAPS lecture mini-series - *University of Sussex, 2013-2014*
- MAPS blog contributor ([theundefinedlimit.wordpress.com](http://theundefinedlimit.wordpress.com)) for getting students excited about topology, set theory and algebra - *University of Sussex, 2013-2014*
- Cofounder and organizer of Maths and Physics Society (MAPS) - *University of Sussex 2013-2014*