

# Curriculum Vitae

Peter K. Johnson

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## Basic Information

Contact: Peter K. Johnson  
Department of Mathematics  
P.O. Box 400137  
University of Virginia  
Charlottesville, VA 22904-4137  
Email: [pkj4vj@virginia.edu](mailto:pkj4vj@virginia.edu)  
Website: <https://peterkj1.github.io/>

## Education

Ph.D. Candidate, Mathematics, University of Virginia, (in progress, Fall 2016 - Present).  
Thesis advisor: Thomas Mark.

M.S. in the Division of Physical Sciences, University of Chicago, December 2014.  
Thesis advisor: John Boller. Thesis title: The Conjugacy Classes of  $O(3, q)$ .

B.S. in Mathematical Economics, University of Richmond, May 2012.

The General Course Study Abroad Program, London School of Economics and Political Science, 2010-2011 Academic Year.

## Research Interests

Low dimensional topology. More specifically, using tools from symplectic topology and gauge theory such as Floer homology to study 3- and 4-dimensional manifolds.

## Preprints

- R. Akhmechet, P. K. Johnson, and V. Krushkal. *Lattice cohomology and  $q$ -series invariants of 3-manifolds*. arXiv:2109.14139
- P. K. Johnson. *On the involutive Heegaard Floer homology of negative semi-definite plumbed 3-manifolds with  $b_1 = 1$* . arXiv:2108.13548

## Awards

- Jefferson Scholars Foundation Research Prize, 2021
- All-University Graduate Teaching Award, UVa 2020-2021

**Talks Given**

- Rutgers University - Topology/Geometry Seminar, September 2021 (virtual)
- University of Maryland - Geometry-Topology Seminar, September 2021
- Michigan State University - Geometry and Topology Seminar, September 2021 (virtual)
- University of Alabama - Algebra-Topology Seminar, March 2021 (virtual)
- University of Virginia - Geometry Seminar, March 2021 (virtual)
- University of Virginia - Graduate Students Seminar, April 2020. (virtual)
- Georgia Tech Topology Conference - Lightning Talk, December 2019.

**Teaching**

- UVa Directed Reading Program mentor, Spring 2021.
- TA for UVa REU, Summer 2020 and Summer 2021.
- TA for UVa Math Circle, Fall 2019 and Fall 2018.
- Teaching Mentor for 2nd year UVa math graduate students, Fall 2020 and Fall 2018.
- UVa Flipped Calculus Workshop participant, Summer 2018.
- The following is a list of the courses I've taught at the University of Virginia.
  - MATH 1320 Calculus II, Fall 2021(current) and Fall 2018.
  - MATH 1140 Financial Mathematics, Fall 2020.
  - MATH 1210 A Survey of Calculus I (formerly called Applied Calculus I), Spring 2018, Fall 2017, Spring 2017.
  - TA for two discussion sections of MATH 1310 Calculus I, Fall 2016.

**Conferences Attended**

- Tech Topology Conference, Georgia Institute of Technology, Atlanta, GA, December 2020, December 2019, December 2017.
- Virginia Topology Conference, University of Virginia, Charlottesville, VA, December 2018.

- The topology and geometry of low dimensional manifolds: a celebration of the mathematics of Bob Gompf, University of Texas at Austin, Austin, TX, July 2018.

### **Summer Schools Attended and Other Professional Activities**

- Participant of American Institute of Mathematics 4d Topology Community, Spring 2021 (virtual)
- Current Progress in Low Dimensions Summer School: Institut des sciences mathématiques Université du Québec à Montréal, August 2019
- Park City Mathematics Institute Graduate Summer School: Quantum Field Theory and Manifold Invariants, Park City, Utah, June-July 2019.