

# Victoria Akin

Department of Mathematics  
Duke University  
120 Science Drive  
Durham, NC 27708

toriakin@math.duke.edu  
<https://services.math.duke.edu/~toriakin/>

Citizenship: U.S. citizen

## EDUCATION

- 2012-2017 **University of Chicago**  
M.S. in mathematics  
Ph.D. candidate in mathematics. Advisor: Benson Farb. Secondary Advisor: Jesse Wolfson
- 2008-2012 **University of Georgia**  
B.S. in mathematics, *Summa Cum Laude*, 3.99 GPA

## TEACHING

- 2017- **Duke University Assistant Professor of the Practice**  
*Calculus I* (Fall 2017)
- 2014-2016 **University of Chicago College Lecturer**  
*Inquiry Based Learning Honors Calculus I* (Autumn 2016), *Calculus II* (Winter 2017)  
*Number Theory* (Fall 2015), *Geometry* (Winter 2016)  
Taught and designed curriculum  
*Precalculus* (Fall 2014), *Calculus I* (Winter 2015), *Calculus II* (Spring 2015)
- 2015-2016 **CAAP Summer Academy Mathematics Instructor**  
*Elementary Functions and Real Numbers* (2016)  
Taught and designed curriculum  
*Introductory Number Theory* (2015)
- 2014-2016 **Directed Reading Program (DRP) Mentor**  
Met weekly with undergraduate students to guide a mathematics reading project  
Prepared students for final presentations of their work  
“Discrete Gauss Bonnet” with Zhenying Tian (Winter 2016)  
“Differential Topology” with Robert Green (Spring 2015)  
“Eigenfaces” with Noah Baskes (Winter 2015)
- 2014-2016 **University of Chicago Research Experience for Undergraduates (REU)**  
Directed mentor-student pairings (2016)  
Advised expository papers  
Dehn’s solution to the word problem, Lie algebras (2016)  
Discrete Gauss-Bonnet, Introductory Ramsey theory, Quantum computing (2015)  
Random walks on graphs, Distribution theory (2014)
- 2014-2016 **Tutoring**  
*AP Calculus AB/BC* (2014-2015), *IB Calculus* (2014-2015), *Honors Undergraduate Calculus* (2015-2016), *Linear Algebra* (2016)
- 2013-2014 **University of Chicago College Fellow**  
*Honors Calculus* (Spring 2014), *Point Set Topology* (Winter 2014), *Numerical Analysis* (Fall 2013)

## HONORS

- 2016 **Lawrence and Josephine Graves Prize for Excellence in Undergraduate Teaching**
- 2012 **Alice T. Schafer Prize for Women in Mathematics**  
Earned 1 of 4 national prizes
- 2011 **Barry M. Goldwater Scholarship**  
Received 1 of 300 national scholarships for demonstrated potential in scientific research
- 2010 **Mid-Term Foundation Fellowship**  
Earned 1 of 3 scholarships granted by the University of Georgia, awarding full tuition, living stipend, and travel/conference/research grants as well as enabling close interaction with faculty
- 2008 **National Merit Scholarship**

## TALKS & WORKSHOPS

- Upcoming **Georgia Tech, Tech Topology Conference**  
Upcoming **University of Chicago, No Boundaries Conference**  
Upcoming **AMS Sectional Meeting in Buffalo**  
February 2017 **Columbia University**  
January 2017 **AMS-MAA Joint Mathematics Meetings in Atlanta, GA**  
Title: An algebraic characterization of the point-pushing subgroup  
Abstract number: 1125-VA-426, January 4th at 10 a.m.  
January 2017 **Georgia Tech**  
Title: Point-pushing in the mapping class group  
Summer 2016 **University of Chicago, Graduate Introductory Workshop**  
Title: The uniqueness of the point-pushing subgroup  
Spring 2016 **University of Chicago, Undergraduate Math Club**  
Title: Nets of polyhedra  
Spring 2016 **University of Chicago, Pizza Seminar**  
Title: How smart spiders catch flies  
Spring 2016 **University of Chicago, Student Seminar**  
Title: The Thurston norm  
Spring 2016 **University of Chicago, Geometric Literacy**  
Title: Dehn-Nielsen-Baer  
Winter 2014 **University of Chicago, Morse Theory Seminar**  
Title: Poincaré polynomial  
Summer 2016 **MSRI Introductory Workshop**  
Geometric Group Theory  
Summer 2015 **MSRI Summer School**  
Geometric Group Theory

## SERVICE

- 2016 **QED: Chicago's only youth math symposium**  
Senior division judge  
Advisor for knot theory project  
2016-2017 **Young Scholars Program Math Circle**  
7th and 8th grade extracurricular mathematics  
Curriculum design (Autumn 2016)  
Lead teacher (Autumn 2016)  
Assistant teacher (Winter/Spring 2016)  
2014-2016 **AWM undergraduate coordinator**  
Organized undergraduate study sessions and social events to build community  
2008-2012 **UGA MathCounts Outreach**  
2010-2012 *Competition Coordinator*  
Received Soar Award for Outstanding Small Event  
2009 *Coaching Coordinator*  
Placed more than 100 coaches at 7 middle schools in Athens, GA  
Developed procedures packet for new-coach orientation  
May 2010 **Volunteer Alliance Ambassador**  
Taught math/English for ages 4-7 at African ChildCare Center in Bagamoyo, Tanzania

## PUBLICATIONS

- Akin, Victoria. An algebraic characterization of the point-pushing subgroup. arXiv:1608.03336. Submitted, September 2016.
- Handel, A., Akin, V., Pilyugin, S., Zarnitsyna, V., & Antia, R. (2014). How sticky should a virus be? The impact of virus binding and release on transmission fitness using influenza as an example. *Journal of the Royal Society Interface* (11).
- Akin, V., Johnson, C. R., & Nasser, S.  $TP_K$  completion of partial matrices with unspecified entry. *The Electronic Journal of Linear Algebra* 27 (2014), 426–443.

## PROGRAMMING

Mathematica, L<sup>A</sup>T<sub>E</sub>X, NetLogo, Java