

## Research Interests

I am a PhD candidate at the [University of Oklahoma](#) working under the direction of [Max Forester](#). My research interests lie in the field of [geometric group theory](#).

## Education

- 2014–Present **PhD (Mathematics)**, THE UNIVERSITY OF OKLAHOMA, expected 2018.
- 2012–2014 **MA (Mathematics)**, THE UNIVERSITY OF OKLAHOMA, *GPA – 4.0*.
- 2007–2011 **BA (Mathematics; Computer Science)**, BETHEL COLLEGE, KS, *Summa Cum Laude*.
- Fall 2010 **Budapest Semesters in Mathematics**.

## Teaching experience

- Summer 2016 **Instructor**, CENTER FOR TALENTED YOUTH (*Johns Hopkins University*), Bristol, RI.  
Lead a class called Paradoxes and Infinities for gifted 7th through 10th graders in an immersive setting using active learning techniques.
- 2012–Present **Graduate Teaching Assistant**, THE UNIVERSITY OF OKLAHOMA, Norman, OK.  
Teach sections and lead discussion hours for 1000-level math courses. Grade assignments and exams. Tutor weekly in the mathematics help center.  
**Classes taught**
  - Fall 2017 **Accelerated Calculus II (discussion section)**.
  - Summer 2017 **Calculus II**.
  - Spring 2017 **Accelerated Calculus II Honors (discussion section)**.
  - Fall 2016 **Accelerated Calculus II Honors (discussion section)**.
  - Spring 2016 **Calculus I**.
  - Fall 2015 **Accelerated Calculus III (discussion section)**.
  - Summer 2015 **Accelerated Calculus I**.
  - Spring 2015 **Accelerated Calculus I (discussion section)**.
  - Fall 2014 **Accelerated Calculus I (discussion section)**.
  - Summer 2014 **Calculus I**.
  - Spring 2014 **Calculus I (discussion section)**.
  - Fall 2013 **Pre-Calculus/Trigonometry**.
  - Summer 2013 **Math for Critical Thinking**.
  - Spring 2013 **College Algebra**.
  - Fall 2012 **Math for Critical Thinking (discussion section)**.

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## Other work experience

- 2011 **Information Services Intern**, EXCEL INDUSTRIES, Hesston, KS.  
Used SQL databases and other tools to manage data and aid system administration.
- 2011–2012 **Network Administrator**, LARI MEMORIAL PEACE MUSEUM, Kimende, Kenya.  
Worked with a grassroots nonprofit placing computers in primary and secondary schools.  
Taught students and teachers computer basics in a collaborative setting.

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## Talks

- Fall 2017 **Forcing the continuum hypothesis**, *Student Set Theory Seminar*, University of Oklahoma.
- Fall 2017 **Exotic aspherical manifolds**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Fall 2017 **Mathematics labs: Our efforts and students' reactions (with Sepideh Stewart)**, *RAMP-UP seminar*, University of Oklahoma.
- Fall 2017 **Cardinal arithmetic and relativization**, *Student Set Theory Seminar*, University of Oklahoma.
- Summer 2017 **The Freiheitssatz via stackings**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Summer 2017 **The Freiheitssatz via diagrams**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Spring 2017 **Hartnell's firefighter problem and growth of groups**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Spring 2017 **What is mathematics research?**, *Norman Science Cafe*, Norman Public Library.
- Fall 2016 **One-relator groups and local indicability**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Spring 2016 **The Hopf-Rinow Theorem**, *Differential Geometry II Oral Presentation*, University of Oklahoma.
- Spring 2016 **Quasi-isometry invariants and hyperbolic groups**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Fall 2015 **Degree of a smooth map**, *Differential Geometry I Oral Presentation*, University of Oklahoma.
- Fall 2015 **Applications of graph folding**, *Geometry and Topology Seminar*, University of Oklahoma.
- Fall 2015 **Limits and colimits**, *Student Category Theory Seminar*, University of Oklahoma.
- Fall 2015 **Introduction to Bass-Serre Theory II**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Fall 2015 **Introduction to Bass-Serre Theory I**, *Student Geometry and Topology Seminar*, University of Oklahoma.
- Fall 2014 **The Wirtinger presentation of fundamental groups of knot complements**, *Student Geometry and Topology Seminar*, University of Oklahoma.

Spring 2013 **An algorithmic approach to raising the lower bound of  $R(5,5)$** , *Graduate Student Combinatorics Conference*, University of Minnesota, Twin Cities.

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## Conferences

- Fall 2017 **Redbud Topology Conference**, *University of Oklahoma*, Norman, OK.
- Fall 2017 **Groups explored through geometry and dynamics: A Conference in Celebration of Lee Mosher**, *Princeton University*, Princeton, NJ.
- Spring 2017 **Redbud Topology Conference**, *University of Arkansas*, Fayetteville, AR.
- Spring 2017 **Texas Geometry and Topology Conference**, *Texas Tech University*, Lubbock, TX.
- Fall 2016 **Geometry of Mapping Class Groups and Out(Fn)**, *Mathematical Sciences Research Institute*, Berkeley, CA.
- Fall 2016 **Groups Acting on CAT(0) Spaces**, *Mathematical Sciences Research Institute*, Berkeley, CA.
- Fall 2016 **Introductory Workshop: Geometric Group Theory**, *Mathematical Sciences Research Institute*, Berkeley, CA.
- Spring 2016 **Redbud Topology Conference**, *University of Oklahoma*, Norman, OK.
- Fall 2015 **Redbud Topology Conference**, *University of Arkansas*, Fayetteville, AR.
- Spring 2015 **Redbud Topology Conference**, *Oklahoma State University*, Stillwater, OK.
- Spring 2015 **40th Spring Lecture Series**, *University of Arkansas*, Fayetteville, AR.
- Spring 2015 **Texas Geometry and Topology Conference**, *University of Houston*, Houston, TX.
- Fall 2014 **Redbud Topology Conference**, *University of Arkansas*, Fayetteville, AR.
- Spring 2013 **3rd Graduate Research Conference in Algebra and Representation Theory**, *Kansas State University*, Manhattan, KS.

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## Service and honors

- Fall 2016- **Graduate Mentor**, *University of Oklahoma*.
- Spring 2017 Mentored undergraduate Andy Jarnevic in a survey of graduate-level topology and geometric group theory
- Fall 2016- **Volunteer**, *Math Day*, *University of Oklahoma*.
- Fall 2017 Provided assistance as required during Math Day, an outreach program for high school students.
- Spring 2015 **Head Learning Specialist**, *Math Help Center*, *University of Oklahoma*.
- 2015-2016 **Member**, *Phi Kappa Phi Honor Society*, *University of Oklahoma Chapter*.
- Fall 2014- **Organizer**, *Student Topology and Geometry Seminar*, *University of Oklahoma*.
- Fall 2017
- Spring 2014 **Vice President**, *Mathematics Graduate Student Association*, *University of Oklahoma*.

## Computer skills

JAVA, C/C++, PYTHON, Sage, GAP, Mathematica, HTML, CSS,  $\LaTeX$ , Linux, Windows, AutoCAD, Photoshop

**References available upon request.**