

# Aaron Calderon

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U.S. Citizen

## Research Interests

Teichmüller geometry, flat surfaces, geometric group theory, formal language theory

## Education

**Yale University**, New Haven, CT 2016 –  
Ph.D. Student in Mathematics. Advisor: Yair Minsky  
Lang Fellowship

**The University of Nebraska–Lincoln**, Lincoln, NE 2016  
B.S. in Mathematics, minor in Philosophy, University Honors Program  
Highest Distinction, Phi Beta Kappa, Chair’s Prize for Mathematics

## Other Educational Experiences

**The Independent University of Moscow**, Moscow, Russia Spring 2015  
Math in Moscow  
AMS Math in Moscow Scholarship, Diploma with Distinction

**The Pennsylvania State University**, University Park, PA Fall 2013  
Mathematics Advanced Study Semesters  
MASS Fellowship, Diploma with Distinction

## Honors & Awards

NSF Graduate Research Fellowship 2016 – 2022  
Barry Goldwater Scholar 2015  
Dean H. and Floreen G. Eastman Scholarship 2012 – 2016

## Publications & Preprints

**Constructing a billiard table from its bounce spectrum**  
(with S. Coles, D. Davis, J. Lanier, and A. Oliveira)  
*Preprint.* arXiv:1806.09644.

**Generalized bipyramids and hyperbolic volumes of alternating  $k$ -uniform tiling links**  
(with C. Adams and N. Mayer)  
*Submitted.* arxiv:1709.00432.

**Volume and determinant densities of hyperbolic rational links**  
(with C. Adams, X. Jiang, A. Kastner, G. Kehne, N. Mayer, and M. Smith)  
*J. Knot Theory and its Ramifications* **26** (2017), No. 1 1750002. arXiv:1510.06050

**Conjugacy geodesics of Coxeter groups**  
(with S. Hermiller and T. Susse)  
*Senior Thesis* (2016).

## Selected Presentations

### INVITED TALKS

Tufts Geometric Group Theory and Topology Seminar	February 2017
William Jewell College KME Colloquium	November 2014

### CONTRIBUTED TALKS

Yale Graduate Student Seminar, Yale University	March 2018
Yale Geometry and Topology Learning Seminar, Yale University	February 2018
Yale Geometry and Topology Learning Seminar, Yale University	November 2017
Yale Graduate Student Seminar, Yale University	September 2017
Yale Graduate Student Seminar, Yale University	October 2016
Topology Students Workshop, Georgia Tech	June 2016
AMS Special Session in Topological and Smooth Dynamics, North Dakota State University	April 2016
Undergraduate thesis defense, University of Nebraska–Lincoln	March 2016
AMS–MAA Joint Meetings Poster Session, Seattle (with N. Mayer) Outstanding Student Presenter	January 2016
Univ. of Nebraska–Lincoln Groups, Semigroups and Topology Seminar	October 2015
Univ. of Nebraska–Lincoln Groups, Semigroups and Topology Seminar	December 2014
SUMS, James Madison University (with S. Fairchild)	September 2013
MASSfest, Penn State (with S. Fairchild, S. Simon)	August 2013

## Teaching Experience

### **Yale University**

Coach (assigned group tutor), Math 120 Calculus 3	Fall 2016
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### **The University of Nebraska–Lincoln**

Teaching assistant, Math 106 Calculus 1	Spring 2016
Teaching assistant, Math 106 Calculus 1	Fall 2015
Teaching assistant, Math 208 Calculus 3	Fall 2014

## Workshops & Programs Attended

Teichmüller dynamics, mapping class groups and applications Summer school and conference at the Institut Fourier.	June 2018
Geometry and topology of 3-manifolds workshop Okinawa Institute of Science and Technology.	May 2018
Introduction to geometry, dynamics, and moduli in low dimensions LMS–CMI Research School at the University of Warwick.	September 2017
Polygonal Billiards Research Cluster, Tufts University	July – August 2017
Workshop in Geometric Topology, Provo, UT	June 2017

Topology Students Workshop, Georgia Tech. June 2016

Undergraduate Research Experience

**Undergraduate Research**, The University of Nebraska–Lincoln 2014 – 2016  
NSF grant [DMS–1313559], Nebraska UCARE grant  
Research in geometric group theory under the direction of Professor Susan Hermiller

**SMALL REU**, Williams College 2015  
Research in hyperbolic knot theory under the direction of Professor Colin Adams

**Penn State REU**, Penn State University 2013  
Research on lattice tilings under the direction of Professor Viorel Nitica

Service & Outreach

Graduate student mentor, SUMRY, Yale Univ. Summer 2018

Invited graduate student, CeSMUR Conference, Univ. of Nebraska–Lincoln April 2018

Co-organizer of Yale Graduate Student Seminar Fall 2017

Actor in Mathematically Bent Theater, AMS-MAA Joint Meetings. January 2016  
Played the roles of Mathematicus in *Mathematicus* and Cratchitch in *A Pi Day Carol*.

Univ. of Nebraska–Lincoln Academic Program Review student representative 2015

Pi Mu Epsilon National Mathematics Honorary Society 2012 – 2016