

# Joel Louwsma

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| EDUCATION          | <b>California Institute of Technology</b> , Pasadena, California<br>Ph.D. in Mathematics June 2011 <ul style="list-style-type: none"><li>• Advisor: Danny Calegari</li><li>• Thesis: <i>Extremality of the rotation quasimorphism on the modular group</i></li></ul>   |
|                    | <b>University of Michigan</b> , Ann Arbor, Michigan<br>B.S. with Highest Honors in Mathematics April 2005 <ul style="list-style-type: none"><li>• Fall 2004 and Spring 2005 spent at the Math in Moscow program.</li><li>• Spring 2003 spent at the Budapest Semesters in Mathematics program.</li></ul>   |
| EMPLOYMENT         | <b>Niagara University</b> , Lewiston, New York<br>Assistant Professor August 2015–present  |
|                    | <b>Smith College</b> , Northampton, Massachusetts<br>Visiting Assistant Professor July 2014–June 2015  |
|                    | <b>The University of Oklahoma</b> , Norman, Oklahoma<br>Visiting Assistant Professor (Postdoc) August 2011–May 2014  |
| RESEARCH INTERESTS | <b>Geometric group theory</b><br><b>Low-dimensional topology</b>   |
| PUBLICATIONS       | <b>Digital fixed points, approximate fixed points, and universal functions</b> , with Laurence Boxer, Ozgur Ege, Ismet Karaca, and Jonathan Lopez, Appl. Gen. Topol. <b>17</b> (2016), 159–172.<br><b>Stable commutator length in Baumslag–Solitar groups and quasimorphisms for tree actions</b> , with Matt Clay and Max Forester, Trans. Amer. Math. Soc. <b>368</b> (2016) no. 7, 4751–4785.<br><b>Immersed surfaces in the modular orbifold</b> , with Danny Calegari, Proc. Amer. Math. Soc. <b>139</b> (2011) no. 7, 2295–2308. |
| GRANTS             | <b>Research Support Grant</b> 2016–2017<br>Niagara University<br><b>College Committee on Teaching and Learning Grant</b> 2016–2017<br>Niagara University<br><b>Fund for the Improvement of Teaching Award</b> 2016–2017<br>Niagara University  |

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|               | <b>Summer Research Award</b>   | 2016               |
|               | Niagara University   |                    |
| INVITED       | <b>State University of New York at Buffalo</b> , Amherst, New York   |                    |
| HOUR-LONG     | Geometry and Topology Seminar  | October 2, 2015    |
| RESEARCH      | <b>University of Massachusetts, Amherst</b> , Amherst, Massachusetts |                    |
| TALKS         | Geometry and Topology Seminar  | February 6, 2015   |
|               | <b>Brandeis University</b> , Waltham, Massachusetts                  |                    |
|               | Topology Seminar   | October 14, 2014   |
|               | <b>Yale University</b> , New Haven, Connecticut                      |                    |
|               | Geometry and Topology Seminar  | September 2, 2014  |
|               | <b>Cornell University</b> , Ithaca, New York                         |                    |
|               | Topology and Geometric Group Theory Seminar                          | November 12, 2013  |
|               | <b>Fall Redbud Topology Conference</b>                               |                    |
|               | University of Arkansas, Fayetteville, Arkansas                       | November 19, 2011  |
|               | <b>The University of Sydney</b> , Sydney, Australia                  |                    |
|               | Infinite Groups Seminar  | August 1, 2011     |
|               | <b>Workshop on Geometric Group Theory</b>                            |                    |
|               | Louisiana State University, Baton Rouge, Louisiana                   | July 8, 2011       |
|               | <b>The Ohio State University</b> , Columbus, Ohio                    |                    |
|               | Geometric Group Theory Seminar                                       | April 21, 2011     |
|               | <b>CIRGET</b> , Montréal, Canada                                     |                    |
|               | Geometry and Topology Seminar  | November 5, 2010   |
|               | <b>Claremont Colleges</b> , Claremont, California                    |                    |
|               | Claremont Topology Seminar   | March 30, 2010     |
|               | <b>University of Southern California</b> , Los Angeles, California   |                    |
|               | Geometry and Topology Seminar  | March 8, 2010      |
| INVITED SHORT | <b>AMS Fall Eastern Sectional Meeting</b>                            |                    |
| RESEARCH      | Special Session on Geometric Group Theory                            | September 24, 2016 |
| TALKS         | Bowdoin College, Brunswick, Maine                                    |                    |
|               | <b>50th Spring Topology and Dynamics Conference</b>                  |                    |
|               | Special Session on Geometric Topology                                | March 10, 2016     |
|               | Baylor University, Waco, Texas                                       |                    |
|               | <b>AMS Spring Southeastern Sectional Meeting</b>                     |                    |
|               | Special Session on Geometric Topology and Number Theory              |                    |
|               | University of Tennessee, Knoxville, Tennessee                        | March 23, 2014     |
|               | <b>48th Spring Topology and Dynamics Conference</b>                  |                    |
|               | Special Session on Geometric Group Theory                            | March 15, 2014     |
|               | University of Richmond, Richmond, Virginia                           |                    |
|               | <b>Joint Mathematics Meetings</b>                                    |                    |
|               | AMS Special Session on Geometric Group Theory                        | January 16, 2014   |
|               | Baltimore, Maryland  |                    |

- AMS Spring Central Sectional Meeting**  
 Special Session on Geometric Topology and Group Theory April 1, 2012  
 University of Kansas, Lawrence, Kansas
- AMS Spring Western Sectional Meeting**  
 Special Session on Asymptotic Group Theory March 4, 2012  
 University of Hawai'i at Mānoa, Honolulu, Hawaii
- The Triennial Ahlfors–Bers Colloquium**  
 Dynamics Workshop March 24, 2011  
 Rice University, Houston, Texas
- 45th Spring Topology and Dynamics Conference**  
 Special Session on Geometric Group Theory March 18, 2011  
 Special Session on Geometric Topology March 18, 2011  
 The University of Texas at Tyler, Tyler, Texas
- Joint Mathematics Meetings**  
 AMS Special Session on Geometric Group Theory January 6, 2011  
 New Orleans, Louisiana
- Workshop on Geometric Group Theory**  
 Goa University, Goa, India August 9, 2010
- TEACHING  
 TALKS
- Joint Mathematics Meetings**  
 MAA General Contributed Paper Session on Research in Teaching or  
 Learning Calculus  
 San Antonio, Texas January 12, 2015
- Joint Mathematics Meetings**  
 MAA Session on Assessing Student Learning: Alternative Approaches  
 Baltimore, Maryland January 15, 2014
- TEACHING  
 EXPERIENCE
- Primary Instructor**, Niagara University 2015–present
- **Introductory Statistics**, Fall 2015 (two sections),  
 Spring 2017 (two sections)
  - **Calculus I**, Fall 2015, Spring 2017
  - **Linear Algebra**, Spring 2016
  - **Euclidean Geometry**, Spring 2016
- Primary Instructor**, Smith College 2014–2015
- **Calculus I**, Fall 2014 (two sections)
  - **Calculus II**, Spring 2015 (two sections)
  - **Calculus III**, Fall 2014
- Primary Instructor**, The University of Oklahoma 2011–2014
- **Calculus and Analytic Geometry III**, Fall 2011, Fall 2012
  - **Calculus and Analytic Geometry IV**, Spring 2014 (two sections)
  - **Introduction to Ordinary Differential Equations**, Spring 2012 (two sections), Fall 2012, Spring 2013

- **Linear Algebra I**, Fall 2013

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| TEACHING<br>AWARDS          | <b>Apostol Award for Excellence in Teaching in Mathematics</b><br>California Institute of Technology  | May 2010              |
| MENTORING                   | <b>Supervised semester-long research project</b> by Jasmine VanExel<br>Smith College  | Spring 2015           |
| PROFESSIONAL<br>DEVELOPMENT | <b>Faculty Mentorship Program</b><br>Niagara University   | November 2016–present |
|                             | <b>16th Annual CCTL Conference on Teaching and Learning</b><br>Niagara University   | January 2017          |
|                             | <b>TIMES Summer Workshop</b><br>North Carolina State University, Raleigh, North Carolina  | June 2016             |
|                             | <b>Seaway NExt Workshop</b><br>State University of New York at Geneseo, Geneseo, New York   | April 2016            |
|                             | <b>Faculty Learning Community</b><br>Niagara University   | Spring 2016           |
|                             | <b>15th Annual CCTL Conference on Teaching and Learning</b><br>Niagara University   | January 2016          |
|                             | <b>Workshop on Inquiry-Based Learning in Calculus</b><br>St. Lawrence University, Canton, New York  | November 2015         |
|                             | <b>PCMI Workshop for Mentors of Undergraduate Mathematics</b><br><b>Research by Minority Students</b><br>Zermatt Resort, Utah   | July 2015             |
|                             | <b>17th Annual Legacy of R.L. Moore Conference</b><br>Denver, Colorado  | June 2014             |
|                             | <b>Teaching Scholars Initiative</b><br>The University of Oklahoma   | Fall 2011, Fall 2013  |
|                             | <b>MAA PREP Inquiry-Based Learning Workshop</b><br>California State Polytechnic University, San Luis Obispo, California   | June 2013             |
|                             | <b>16th Annual Legacy of R.L. Moore Conference</b><br>The University of Texas at Austin, Austin, Texas  | June 2013             |
|                             | <b>Project NExt</b><br>A program of the Mathematical Association of America for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. It addresses the full range of faculty responsibilities in teaching, research, and service. | 2012–2013             |
|                             | <b>Faculty Learning Community</b><br>The University of Oklahoma   | Spring 2013           |
|                             | <b>New Faculty Seminar</b><br>The University of Oklahoma  | Fall 2011             |

- EXTENDED VISITS**
- Mathematical Sciences Research Institute**, Berkeley, California Fall 2016  
(program on Geometric Group Theory)
  - The Ohio State University**, Columbus, Ohio Spring 2011  
(part of Special Year in Topology and Geometric Group Theory)
  - Centre de Recherches Mathématiques**, Montréal, Canada Fall 2010  
(program on Geometric, Combinatorial and Computational Group Theory)
- ORGANIZATION**
- Special Session on Geometric Group Theory**, Co-organizer  
AMS Fall Eastern Sectional Meeting September 16–17, 2017 (upcoming)  
State University of New York at Buffalo, Amherst, New York
  - Spring Redbud Topology Conference**, Co-organizer  
The University of Oklahoma, Norman, Oklahoma April 11–13, 2014
  - Geometry and Topology Seminar**, Organizer  
The University of Oklahoma, Norman, Oklahoma Fall 2012–Spring 2014
  - How to make peer learning and small groups work in class**, Co-organizer  
Panel discussion at Project NExT Workshop July 31, 2013  
Hartford, Connecticut
  - Fall Redbud Topology Conference**, Co-organizer  
The University of Oklahoma, Norman, Oklahoma November 3, 2012
  - Special Session on Geometric Group Theory and Dynamics**, Co-organizer  
AMS Spring Western Section Meeting April 30–May 1, 2011  
University of Nevada, Las Vegas, Nevada
- SERVICE**
- Referee** for Bulletin of the London Mathematical Society
  - Interviewer** for Scholarship Invitational  
Niagara University January 2017
  - Took a group of students** to Hudson River Undergraduate Math Conference  
Smith College April 2015
  - Volunteered to help with **Women in Mathematics in New England**  
Smith College September 2014
  - Led preparatory sessions** for the topology qualifying exam  
The University of Oklahoma July 2013, May 2014
  - Volunteer for **Math Day** for high school students  
The University of Oklahoma November 2011, November 2013
  - Judge** for the Undergraduate Poster Session  
Joint Mathematics Meetings January 2013
  - Committee** to determine mathematics placement of incoming undergraduates  
California Institute of Technology Summer 2009
  - Coordinated **TA training** for incoming mathematics graduate students in conjunction with the Caltech Project for Effective Teaching Fall 2008
- MEMBERSHIPS**
- American Mathematical Society**
  - Mathematical Association of America**