

# Joseph Wells - Curriculum Vitae

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## Education

- Spring 2013**    BS Mathematics - Arizona State University
- Spring 2016**    MA Mathematics - Arizona State University
- Current**        PhD Candidate in Mathematics - Arizona State University  
*Research in complex hyperbolic geometry, geometric group theory, algebraic topology.*  
Advisor: Dr. Julien Paupert

## Research Interests

My research interests are in algebraic topology, complex hyperbolic geometry, and geometric group theory. Current research under the guidance of Dr. Julien Paupert is aimed at exploring concrete examples of lattices and thin subgroups acting on complex hyperbolic 2-space.

## Teaching Experience

- Aug 2013 -  
Current**        Arizona State University, Tempe, AZ 85281  
*Teaching Assistant*
- Courses Graded:**
- Mathematical Structures (Fall 2013).
  - Introduction to Geometry (Spring 2014-2015).
- Courses Assisted:**
- Calculus with Analytic Geometry I (Fall 2013).
  - Calculus with Analytic Geometry II (Spring/Fall 2014).
  - Calculus with Analytic Geometry III (Spring 2015).
  - Geometry and Topology of Manifolds I (Fall 2015,2016).
  - Geometry and Topology of Manifolds II (Spring 2017).
- Courses Taught:**
- Precalculus (Summer 2015).
  - Calculus for Engineering I (Spring 2016).
  - Calculus for Engineering II (Summer 2016).

## Non-Teaching Experience

- May 2017 -  
Aug 2017**        Air Force Research Labs, Wright State University, Dayton, OH 45435  
*ATR Center Research Intern*
- Information geometry and applying techniques from Riemannian geometry to covariance estimation.

## Conference Participation

- *Southwest Undergraduate Mathematics Research Conference* at University of Arizona. March 30 - April 1, 2012.
- *Curves and Automorphic Forms* at Arizona State University. March 10 - 14, 2014.
- *Geometric Structures and Representation Varieties Junior Retreat* at University of Michigan. May 23 - June 1, 2014.
- *Texas Geometry and Topology Conference* at University of Texas, Austin. November 14 - 16, 2014.
- *Graduate Student Topology and Geometry Conference* at University of Illinois, Urbana-Champaign. March 28 - 29, 2015.
- *First Chicago Summer School in Geometry and Topology* at University of Chicago. June 22 - 26, 2015.
- *Tech Topology Conference* at Georgia Institute of Technology. December 4 - 6, 2015.
- *Graduate Student Conference in Algebra, Geometry, and Topology* at Temple University. May 14 - 15, 2016.
- *Joelfest* at University of California, Berkeley. May 20 - 22, 2016.
- *Topology Students Workshop* at Georgia Institute of Technology. Short talk: “A geometric construction of thin subgroups in  $SU(2, 1)$ ”. June 6 - 10, 2016.
- *MSRI Workshop: Groups acting on  $CAT(0)$  spaces* at University of California, Berkeley. September 27 - 30, 2016.
- *Conference on Low-Dimensional Topology and Geometry and 32<sup>nd</sup> annual Shanks Lecture* at Vanderbilt University. May 15 - 19, 2017.
- *4th Annual AFRL Workshop on the Mathematical Foundations of Probability, Uncertainty, and Decision* at Wright State University. June 20 - 21, 2017.
- *Geometric Structures and Representation Varieties Junior Retreat* at Stanford University. July 30 - August 5, 2017.

## Departmental Talks

- Differential Geometry Seminar: *The Hairy Ball Theorem*. April 16, 2014.
- School of Mathematical and Statistical Sciences Research Fair: *Lattices and Complex Hyperbolic Space*. November 19, 2014.
- Differential Geometry Seminar: *Mapping Class Groups and Surface Automorphisms*. November 13, 2015.
- Differential Geometry Seminar: *Exploring Lattices in Complex Hyperbolic Space*. April 15, 2016.
- Topology Students Workshop: *A geometric construction of thin subgroups of  $SU(2, 1)$* . June 10, 2016.
- Candidacy Advancement: *Discrete Subgroups of Complex Hyperbolic Isometries*. November 21, 2016.
- Differential Geometry Seminar: *A Short Introduction to  $CAT(0)$  Cube Complexes*. April 14, 2017.

## Outreach

- 2013 - 2017: Arizona State University’s annual *CryptoRally* (a cryptography-based scavenger hunt).
- 2014, 2017: Arizona State University’s annual *Night of the Open Door* (a community outreach event).