Jeffrey S. Meyer

Work Address
Department of Mathematics
University of Oklahoma
601 Elm Avenue
Norman, OK 73019 USA

Personal Information
jmeyer@math.ou.edu
1-303-619-6303
www2.math.ou.edu/~jmeyer
U.S. Citizen

PRESENT POSITION:

2013 August - Present   Postdoctoral Visiting Professor, University of Oklahoma

EDUCATION:

2013   May   University of Michigan, *Ph.D., Mathematics.* Advisor: Matthew Stover
2007   June   University of Chicago, *B.S., Mathematics* (with honors)
University of Chicago, *B.A., Physics*

RESEARCH INTERESTS:

Hyperbolic orbifolds, quadratic forms, algebraic groups over local and global fields, Lie groups, arithmetic groups, lattices, geometric group theory, arithmetic locally symmetric spaces, spectral geometry, division algebras, Bruhat–Tits theory, mathematics education.

PUBLICATIONS, PREPRINTS, AND WORKS IN PREPARATION:

1. *Counting Commensurability Classes of Totally Geodesic Subspace* (with B. Linowitz), In Preparation.

2. *Constructing Geometrically Equivalent Hyperbolic Orbifolds*
   (with D.B. McReynolds and M. Stover),
   ArXiv Preprint: `arxiv.org/abs/1507.06708`, (2015).

3. *Systolic Surfaces of Arithmetic Hyperbolic 3-Manifolds* (with B. Linowitz),
   To appear in In the Tradition of Ahlfors-Bers, VII.
   ArXiv Preprint: `arxiv.org/abs/1506.08341`, (2015).

4. *The length spectra of arithmetic hyperbolic 3-manifolds and their totally geodesic surfaces*
   (with B. Linowitz and P. Pollack),
   To appear in New York J. Math.
   ArXiv Preprint: `arxiv.org/abs/1505.04652`, (2015).

5. *Totally Geodesic Spectra of Quaternionic Hyperbolic Orbifolds*,
   ArXiv Preprint: `arxiv.org/abs/1505.03643`, (2015).

6. *On the isospectral orbifold-manifold problem for nonpositively curved locally symmetric spaces* (with B. Linowitz),
   ArXiv Preprint: `arxiv.org/abs/1504.01805`, (2015).

7. *Totally Geodesic Spectra of Arithmetic Hyperbolic Spaces*,
   ArXiv Preprint: `arxiv.org/abs/1408.2579`, (2014).

8. *Division Algebras With Infinite Genus*,
   Bull. Lond. Math. Soc. 46 no. 3, (2014) 463-468.
   ArXiv Preprint: arxiv.org/abs/1301.5632, (2013).

9. *On the Totally Geodesic Commensurability Spectrum of Arithmetic Locally Symmetric Spaces*,
   Ph.D. Thesis (2013).

10. *Students' perceptions of lesson objectives in introductory mathematics courses taught by teaching assistants* (with M. Elsey & V. Mesa),
    Studies in Graduate and Professional Student Development, 13, (2010) 103-121.
    Preprint: Here, (2010).

11. *Teaching time savers: Activities that make every minute count*
    (with M. Elsey & V. Mesa),
    MAA Focus, 29(6), (2009) 12.

INVITED CONFERENCE TALKS:

1. *Geodesics & Surfaces: A Rigid Interaction.* Fall Redbud Conference. University of Arkansas. October 3, 2015.

2. *Totally Geodesic Spectra and Rigidity.* 49th Annual Spring Topology & Dynamics Conference. Bowling Green State University. May 14-16, 2015.

3. *Totally geodesic submanifold rigidity of arithmetic hyperbolic manifolds.* AMS Special Session in Number Theory & Topology. University of Tennessee. March 21-23, 2014.

4. *Totally geodesic submanifold rigidity of arithmetic hyperbolic manifolds.* 48th Annual Spring Topology & Dynamics Conference. University of Richmond. March 13-15, 2014.

5. *On the totally geodesic commensurability spectrum of arithmetic hyperbolic manifolds* AMS Special Session in Geometric Aspects in Topology & Number Theory. Temple University. October 11-13, 2013.

POSTER SESSIONS:

1. *Can an Orbifold and a Manifold be Isospectral?* IPAM Zariski-dense Subgroups Workshop. Institute for Pure & Applied Mathematics. February 9-13, 2015

RESEARCH SEMINAR TALKS:

1. *Geodesics & Surfaces: A Rigid Interaction.* University of Oklahoma Geometry & Topology Seminar. September 9, 2015.

2. *Analysis Of Classroom Objectives: Conception to Perception.* University of Oklahoma Research in Undergraduate Mathematics Education (RUME) Seminar. Date: October 18, 2013.

3. *An algebraic introduction to arithmetic groups and my research* (Two Parts). University of Oklahoma Algebra & Representation Theory Seminar. August 23 & September 9, 2013.

4. *A geometric introduction to arithmetic groups and my research* (Two Parts). University of Oklahoma Geometry & Topology Seminar. August 28 & September 4, 2013.

5. *On the totally geodesic commensurability spectrum of arithmetic hyperbolic manifolds.* University of Michigan Dissertation Defense. April 24, 2013.

6. *On the totally geodesic commensurability spectrum of arithmetic hyperbolic manifolds.* Michigan State University Geometric Group Theory Seminar. April 3, 2013.

7. *On the totally geodesic commensurability spectrum of arithmetic hyperbolic manifolds.* Ohio State University Geometric Group Theory Seminar. March 28, 2013.

8. *Analysis Of Classroom Objectives: Conception to Perception.* University of Michigan Teaching Mathematics Seminar. February 16, 2009.

EXPOSITORY TALKS (GRAD SCHOOL AND EARLIER)

1. *Fourier Analysis On Groups.* University of Michigan Student Analysis Seminar. November 16, 2011.

2. *History of Lie Groups.* University of Michigan Student Geometry & Topology Seminar. October 4, 2011.

3. *Arithmetic Hyperbolic 2-Manifolds.* University of Michigan Student Geometry & Topology Seminar. November 16, 2010.

4. *Semisimple Lie Groups.* University of Michigan Student Geometry & Topology Seminar. September 29, 2009.

5. *Cohomology Operations.* University of Michigan Student Geometry & Topology Seminar. September 26, 2008

6. *Symplectic Geometry: Darboux's Theorem.* University of Chicago VIGRE REU. August 11, 2006.

7. *Group Structure of Elliptic Curves.* University of Chicago VIGRE REU. August 11, 2005.

8. *Classification of Simple Singularities.* University of Chicago VIGRE DRP. March 31, 2005.

9. *Two Dimensional Topological Quantum Field Theories.* University of Chicago VIGRE DRP. January 6, 2005.

10. *The Complete Reducibility of Semisimple Lie Algebras.* University of Chicago VIGRE REU. August 14, 2004.

ADDITIONAL MATHEMATICS RESEARCH EXPERIENCES

1. VIGRE REU Summer Program participant at the University of Chicago. 2004, 2005, and 2006.

2. VIGRE DRP participant at the University of Chicago. Fall 2004 and Spring 2005.

Teaching Experience in Mathematics:

I have had teaching experiences at three universities: University of Oklahoma (OU), University of Michigan (UM), and the University of Chicago (UC).

As Instructor: Prepared and enacted lectures. Wrote and graded quizzes, homework, and exams. Held several weekly office hours.

2016	Winter	*Math 3333 - Linear Algebra*	OU
2015	Fall	*Math 3113 - Differential Equations (2 Sections)*	OU
2015	Spring	*Math 3333 - Linear Algebra*	OU
2014	Fall	*Math 2443 - Calculus IV: Multivariable Integration (2 Sections)*	OU
2014	Spring	*Math 3333 - Linear Algebra (2 Sections)*	OU
2013	Fall	*Math 2433 - Calculus III: Series & Intro to Vector Calculus*	OU
2013	Spring	*Math 116 - Calculus II: Integrals & Series*	UM
2012	Summer	*Math 116 - Calculus II: Integrals & Series*	UM
2011	Winter	*Math 116 - Calculus II: Integrals & Series*	UM
2009	Fall	*Math 115 - Calculus I: Differentiation*	UM
2009	Winter	*Math 115 - Calculus I: Differentiation*	UM
2008	Fall	*Math 115 - Calculus I: Differentiation*	UM
2008	Winter	*Math 115 - Calculus I: Differentiation*	UM
2007	Fall	*Math 115 - Calculus I: Differentiation*	UM

As Teaching Assistant (TA): Graded homework and exams. Held weekly office hours and review sessions. For Math 215, I ran weekly computer labs in which I guided students through worksheets requiring them to use Maple's graphing and computational tools.

2013	Winter	*Math 489 - Mathematics for Elementary & Middle School Teachers*	UM
2012	Winter	*Math 215 - Calculus III: Multivariable Differentiation & Integration*	UM
2011	Fall	*Math 215 - Calculus III: Multivariable Differentiation & Integration*	UM
2005	Winter	*Math 132 - Calculus II: Integration*	UC
2004	Fall	*Math 131 - Calculus I: Continuity & Differentiation*	UC

As Grader: Graded weekly homework sets.

2012	Winter	*Math 594 - Graduate Groups and Galois Theory*	UM
2008	Winter	*Math 513 - Introductory Linear Algebra*	UM

As Tutor: Tutor in math help centers. Answered students' questions from a wide range of undergraduate courses.

2007 Fall - 2012 Fall	*Math Lab*	UM
2007 Summer - 2005 Fall	*Harper Math Tutor*	UC

Professional Development:

1. Attended the *Legacy of R.L. Moore – IBL Conference*   **2015**
   This is a three day conference focused on the use of inquiry based learning (IBL) in the college classroom.

2. Received *MERLOT Certification*   **2010**
   MERLOT is a curated collection of free and open online teaching, learning, and faculty development services contributed and used by an international education community.

3. Took *EDUC 737 - Topics in Education: College Teaching* with Vilma Mesa **Fall 2008**
   EDUC 737 is a graduate seminar that explores issues of teaching, learning, and curriculum in science, technology, mathematics, and engineering college programs.

4. *University of Michigan Graduate Student Instructor Training* **2007**
   This is a rigorous weeklong teacher training workshop.

Synergistic Activities:

1. **Organizer**
   a) *University of Oklahoma Geometry and Topology Seminar* **2014-2015**
   b) *University of Oklahoma RAMP UP Seminar* **2014-2015**
   c) *University of Michigan Student Geometry and Topology Seminar* **2010-2011**

2. **Public Outreach**
   a) *OU Math Club Blog* **September 2015 - Present**
   I currently run the University of Oklahoma's Math Club blog:
   https://oumathclub.wordpress.com

   b) *OU Math Movie Nights* **September 2015 - Present**
   I started and am currently running bi-monthly math movie nights for undergraduate and graduate students.

   c) *OU Math Day* **Fall 2014, Fall 2015**
   High school students from around Oklahoma come and participate in the Sooner Math Bowl. I helped grade written exams.

   d) *The History of Mathematics.* Science Café at the Norman Public Library. May 1, 2014.

   e) *Young Scholar's Program Counselor* **September 2004 - June 2007**
   YSP is a University of Chicago program which offers mathematically talented seventh through twelfth graders an opportunity to explore mathematical concepts that are not generally taught in schools. Students are encouraged to engage in active problem solving and are challenged to broaden their understanding of mathematics. I ran discussion sessions for small groups of students on topics ranging from modular arithmetic to Euclidean geometry. I participated in the weekend program during the academic year as well as the month long summer program.

   f) *SESAME Counselor* **July 2004**
   SESAME (Seminars for Endorsement of Science and Mathematics Educators) is a professional development program at the University of Chicago designed for Illinois middle grade mathematics teachers. I ran discussion sessions for classes with topics ranging from basic algebra to Euclidean geometry.

3. **Mathematic Education**
   a) Lectures on Math Pedagogy:
      a) *Group Work in the OU Classroom.* RAMP UP Seminar. February 6, 2015.

   b) *Graduate Student Instructor Training* **Fall 2008, Fall 2009, Fall 2015**
   Involved in various capacities to help run graduate student instructor training at the

beginning of the academic year. These activities have been from running practice classrooms, to leading discussions on ethical behavior, to serving on panels about classroom practices.

c) *MELO (Michigan Education through Learning Objects)*   **April 2009 - May 2010**
As graduate students Michelle Lee and I studied ways to bring online learning objects (such as applets) into introductory calculus courses. We created the team homework instructional video:

   http://instruct.math.lsa.umich.edu/support/teamhomework/index.html

which is linked to on both the introductory math web pages. We also designed an online learning object and created a poster for it which was presented in May 2010.

4. **Undergraduate Math Club and Graduate Seminar Lectures**
   a) *The Story of the Figure-Eight Knot.* Northwestern Graduate Student Seminar. May 22, 2015.

   b) *The Story of the Figure-Eight Knot.* University of Oklahoma Graduate Student Seminar. March 2, 2015.

   c) *Babylon to Bourbaki: A Whirlwind Tour of Mathematics.* University of Oklahoma Math Club. September 18, 2013.