

Jeremy Booher | Curriculum Vitae

Department of Mathematics, University of Arizona, 617 N. Santa Rita Ave.
Tucson, AZ 85721

✉ jeremybooher@math.arizona.edu • 🏠 math.arizona.edu/~jeremybooher

Research Interests

Algebraic number theory and arithmetic geometry, especially:

- geometry of Galois deformation rings
- geometry of curves in characteristic p

Education

- 2011-2016 **PhD in Mathematics**, *Stanford University*.
Thesis: *Geometric Deformations of Orthogonal and Symplectic Galois Representations*,
advised by Brian Conrad.
- 2010-2011 **Master of Advanced Study in Mathematics**, *Cambridge University*.
- 2006-2010 **A.B. in Mathematics**, *Harvard University*.
Secondary Field: computer science

Employment

- 2016-present **Postdoctoral Research Associate**, *University of Arizona*.
Mentor: Bryden Cais

Publications

- with B. Cais, a -Numbers in Artin-Schreier Covers, submitted.
- with S. Patrikis, G -Valued Galois Deformation Rings when $\ell \neq p$, to appear in MRL.
- Minimally Ramified Deformations when $\ell \neq p$, to appear in *Compositio Mathematica*.
- Producing Geometric Deformations of Orthogonal and Symplectic Galois Representations, to appear in *The Journal of Number Theory*.
- Geometric Deformations of Orthogonal and Symplectic Galois Representations, thesis, split up into the two papers above.
- with A. Etropolski, and A. Hittson, Evaluations of cubic twisted Kloosterman sheaf sums, *International Journal of Number Theory*, 6 (2010), pages 1349-1365.

Awards and Fellowships

- 2018-2020 AMS-Simons Travel Grant

- 2010-2011 Harvard Herschel Smith Fellowship for study at Cambridge
- 2008 Certificates of Excellence and Distinction in Teaching from Harvard (for linear algebra)

Research Talks

- September 2018 Front Range Number Theory Day, *a-Numbers in Artin-Schreier Covers*
- September 2018 University of Arizona Number Theory Seminar, *a-Numbers in Artin-Schreier Covers*
- November 2017 UCSD Number Theory Seminar, *G-Valued Galois Deformation Rings when $\ell \neq p$*
- October 2017 University of Arizona Algebra and Number Theory Seminar, *G-Valued Galois Deformation Rings when $\ell \neq p$*
- July 2017 Journées Arithmétique, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*
- September 2016 University of Arizona Algebra and Number Theory Seminar, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*
- December 2015 Bay Area Algebraic Number Theory and Arithmetic Geometry Day, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*
- November 2015 Junior Number Theory Day at Rutgers University-Newark, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*
- November 2015 Princeton and IAS Number Theory Seminar, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*
- November 2015 University of Utah Representation Theory and Number Theory Seminar, *Geometric Deformations of Symplectic and Orthogonal Galois Representations*

Teaching Experience

At University of Arizona

- fall 2018 Math 313: Linear Algebra (two sections)
- spring 2018 Math 432/532: Topological Spaces
- fall 2017 Math 313: Linear Algebra (two sections)
- spring 2017 Math 446: Theory of Numbers
- spring 2017 Math 129: Calculus II
- fall 2016 Math 125: Calculus I

Other Teaching

- 2017-present Tucson Math Circle
- summer 2013, 2014, 2015 Teaching Assistant at Stanford University Mathematics Camp
- summer 2007, 2008, 2010, 2011 Counselor at PROMYS

Teaching Assistant at Stanford

- winter 2016 Math 51: Linear Algebra and Differential Calculus of Several Variables
- spring 2015 Math 53: Differential Equations
- spring 2014 Math 51: Linear Algebra and Differential Calculus of Several Variables
- fall 2012 Math 51: Linear Algebra and Differential Calculus of Several Variables

Course Assistant at Stanford

- multiple Course Assistant for various algebra courses

Mentoring

- 2017,2018 Mentor for Undergraduate Teaching Assistant Program
- 2017-2018 Undergraduate Reading Course on Elementary Number Theory and p -adic Numbers
- 2017 Mentor for Linear Algebra Honors Project
- 2015-2016 Enhancing Diversity in Graduate Education
- 2014-2016 Mathematics Department Mentoring for new graduate students
- winter 2015 Mentoring for first time TA's
- summer 2012 Mentored a project on class numbers in Stanford Undergraduate Research in Mathematics

Other Service

- 2016-present Organizer of University of Arizona Algebra and Number Theory Seminar
- Reviewer for Algebra and Number Theory, Research in Number Theory