Ellen E. Eischen

PERSONAL DETAILS

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Employment

- University of Oregon, Assistant Professor, June 2015–present
- The University of North Carolina at Chapel Hill, Assistant Professor, July 2012 June 2015
- Northwestern University, Ralph Boas Assistant Professor, September 2009 July 2012

Education

- University of Michigan, Ann Arbor, Ph.D. in Mathematics, 2009 Dissertation advisor: Christopher Skinner
- Princeton University, A. B. *summa cum laude* in Mathematics, 2003 Senior thesis advisor: Andrew Wiles

PAPERS

- Differential operators, pullbacks, and families of automorphic forms. Accepted in 2015 for publication in special issue of Annales Mathématiques du Québec in honor of Glenn Stevens's sixtieth birthday. 31 pages. http://arxiv.org/pdf/1405.0721.pdf.
- *p-adic q-expansion principles on unitary Shimura varieties.* With A. Caraiani, J. Fintzen, E. Mantovan, and I. Varma. Accepted in 2015 for publication in Directions in Number Theory: Proceedings for the 2014 WIN3 workshop. 36 pages. http://arxiv.org/pdf/1411.4350.pdf.
- A p-adic Eisenstein measure for vector-weight automorphic forms. Algebra Number Theory. Vol. 8 (2014), No. 10, 2433-2469. http://dx.doi.org/10.2140/ant.2014.8.2433.
- p-adic families of Klingen Eisenstein series and L-Functions of certain cusp forms on definite unitary groups. With X. Wan. J. Inst. Math. Jussieu. Available on CJO 2014. 40 pages. http://dx.doi.org/10.1017/S1474748014000395.
- A p-adic Eisenstein measure for unitary groups. Ellen Eischen. J. Reine Angew. Math. 699 (2015), 111-142. http://dx.doi.org/10.1515/crelle-2013-0008.
- p-adic differential operators on automorphic forms for unitary groups. Ann. Inst. Fourier (Grenoble). 62, No. 1 (2012), 177-243. http://dx.doi.org/10.5802/aif.2704.
- Decomposition of almost complete tripartite graphs into two isomorphic factors of fixed diameter. Discrete Math. 306 (2006), 745-761. http://dx.doi.org/10.1016/j.disc.2006.02.009.
- Patterns, linesums, and symmetry. With C. Johnson, K. Lange, and D. Stanford. Linear Algebra Appl. 357 (2002), 273-289. http://dx.doi.org/10.1016/S0024-3795(02)00417-2.

TALKS

- Invited Research Talks
 - Galois Representations and Automorphic Forms Conference, Bedlewo, Poland, August 2016 (upcoming)
 - Special Session on "Number Theory and Cryptography", AMS/MAA Joint Meetings, Seattle, WA, January 2016 (upcoming)
 - AMS Special Session on "The Langlands Program and Related Topics", Central Fall Sectional Meeting, Loyola University, Chicago, October 2015
 - Pacific Northwest Number Theory Conference, Eugene, Oregon, May 2015
 - Philadelphia Area Number Theory Seminar, Bryn Mawr College, April 2015
 - Colloquium, University of Washington, January 2015
 - Special session on "Recent Developments in Algebraic Number Theory", AMS/MAA Joint Meetings, San Antonio, TX, January 2015
 - Colloquium, University of Oregon, January 2015
 - Special session on "automorphic forms and related topics", AMS Sectional Meeting, The University of North Carolina, Greensboro, November 2014
 - Connections for Women Workshop: New Geometric Methods in Number Theory and Automorphic Forms, MSRI, Berkeley, August 2014
 - Number Theory Seminar, Caltech, June 2014
 - $p\mbox{-}adic$ Variation in Number Theory (60-minute talk at conference in honor of Glenn Stevens's 60th birthday), Boston University, June 2014
 - Colloquium, Rutgers University, Newark, April 2014
 - WIN3 (project description), Banff International Research Station, Canada, April 2014
 - Number Theory Seminar, Columbia University, April 2013
 - Number Theory Seminar, Clemson University, April 2013
 - Collaborative Number Theory Seminar, CUNY Graduate Center, March 2013
 - Iwasawa 2012 Conference, University of Heidelberg, Germany, August 2012
 - Arithmetic Geometry of Orthogonal and Unitary Shimura Varieties Workshop, Banff International Research Station, Canada, June 2012
 - Number Theory Seminar, Harvard University, May 2012
 - Number Theory Seminar, Emory University, April 2012
 - The Quebec-Vermont Number Theory Seminar, McGill University, April 2012
 - Colloquium, University of Hawaii, August 2010 and February 2012
 - Algebra Seminar, University of Pennsylvania, February 2012
 - Special Colloquium, Duke University, February 2012
 - Colloquium, The University of North Carolina at Chapel Hill, February 2012
 - Special Colloquium, Johns Hopkins University, January 2012
 - Colloquium, University of Minnesota, December 2011
 - Colloquium, University of Massachusetts Amherst, December 2011
 - Galois Representations and Automorphic Forms Conference, Bedlewo, Poland, August 2011
 - Number Theory Seminar, Northwestern University, October 2009 and May 2011

Invited Research Talks (continued)

- Number Theory Seminar, University of Chicago, June 2010
- Number Theory Seminar, University of British Columbia, Vancouver, March 2010
- Arithmetic Geometry Seminar, McMaster University, December 2009
- Number Theory Seminar, University of Illinois, Chicago, September 2009
- Algebra and Number Theory Seminar, University of Maryland, April 2009
- Algebra Seminar, Boston University, February 2009
- Number Theory Seminar, University of Copenhagen, January 2009
- Contributed Research Talks
 - Automorphic Forms Workshop, Ann Arbor, Michigan, March 2015
 - Automorphic Forms Workshop, Moab, Utah, May 2014
- Invited Expository Talks
 - Distinguished Lecture for Students, MAA Southeastern Section Meeting, UNC-Wilmington, March 2015
 - Undergraduate Math Club, UNC, November 2013
 - RTG Graduate/Postdoctoral Number Theory Seminar, Columbia University, April 2013
 - Graduate Math Association Visions Seminar, UNC, December 2012
 - Northwestern Undergraduate Mathematics Society, Northwestern University, May 2012
 - Math Seminar, Bell Labs (Lucent) Math Sciences Research Center, August 2003

TEACHING EXPERIENCE

- Multivariable Calculus (Math 281), University of Oregon, fall 2015
- Algebraic Structures (Math 578), UNC, spring 2015
- Graduate Abstract Algebra (Math 677), UNC, spring 2013 and spring 2015
- Multivariable Calculus (Math 233), UNC, fall 2013
- Linear Algebra (Math 577), UNC, fall 2012, 2013
- Reading Courses in Algebraic Number Theory, UNC, fall 2012–present (every semester)
- Abstact Algebra (Math 330), Northwestern University:
 - Galois Theory, spring 2010, 2011, and 2012
 - Ring Theory, winter 2010, 2011, and 2012
 - $-\,$ Group Theory, fall 2010 and 2011 $\,$
- Calculus I (Math 220), Northwestern University, fall 2011
- Graduate Algebraic Number Theory (Math 482–1), Northwestern University, fall 2010
- Multivariable Calculus (Math 230), Northwestern University, fall 2009
- Number Theory, Science Honors Program at Columbia University, 2008-2009
- Calculus I (Math 115), University of Michigan, Ann Arbor, MI, fall 2007

THESIS ADVISING

- Ph.D.: Catherine Hsu, University of Oregon, current
- Masters: Catherine Hsu, UNC, 2015
- Undergraduate: Heidi van Batenburg-Stafford, Northwestern University, 2012

GRANTS AND HONORS

Unless otherwise indicated, I am the sole PI on each grant listed below.

- NSF Grant DMS-1559609, National Science Foundation, August 2015-July 2018
- NSF Grant DMS-1557642, National Institutes of Health Big Data to Knowledge (BD2K) initiative in partnership with the National Science Foundation Division of Mathematical Sciences, September 2015-August 2016 (co-PIs: Brian Chapman, David Gotz, Rachael Hageman Blair, Mathews Jacob)
- Awarded NSA-AMS Young Investigators Award (declined, in order to accept NSF grant), 2015
- Awarded Simons Collaboration Grant (declined, in order to accept NSF grant), 2015
- NSF Grant DMS-1249384, National Science Foundation, July 2012-June 2015
- US Junior Oberwolfach Fellow, July 2014
- Junior Faculty Development Award, UNC, January 2013-December 2013
- AMS-Simons Travel Grant, Simons Foundation, July 2011-June 2012
- AWM-NSF Travel Grant, Association for Women in Mathematics, June 2012
- Excellence in Teaching Award (awarded to two non-tenure track faculty per year), Mathematics Department, Northwestern University, 2011
- Bell Labs (Lucent Technologies) Graduate Research Fellowship, 2003-2008 (except fall 2007, when I went off fellowship to teach)
- Phi Kappa Phi (awarded to top 10% of grad students at University of Michigan), 2008
- Phi Beta Kappa, Princeton University, 2003
- The Peter A. Greenberg '77 Prize (awarded to a senior "for outstanding accomplishments in mathematics"), Mathematics Department, Princeton University, 2003
- Sigma Xi (research honor society), Princeton University, 2003

LONG-TERM VISITS

- Columbia University, Visiting Scholar, spring 2014 and 2006-2008 (except fall 2007)
- Princeton University, Visiting Student Research Collaborator, 2008-2009

RECENT AND CURRENT SERVICE

Note: All anonymous service is omitted from this CV.

- Editing and Reviewing
 - Serving as co-editor for the WIN 3 Conference Proceedings Volume, Summer 2014–present
 - Review articles for the AMS's *Mathematical Reviews*, 2013–present
 - Served as external examiner for M. Flander's PhD thesis, Univ. Melbourne, Fall 2013
- Seminar and Conference Organization
 - Co-organizing Mathematics Lecture Series for Undergraduates, U. Oregon, 2015-present
 - Co-organizing Automorphic Forms Workshop (with J. Rouse and K. Thompson), Wake Forest University, 2016
 - Organized (and founded) the Number Theory Seminar, UNC, 2012–2015
 - Organized the Number Theory Seminar, Northwestern University, 2010-2012
 - Organized (and founded) number theory pre-seminar for graduate students, Northwestern University, 2010-2012
- Mentoring, Advising, and Women in Math
 - Served as Faculty Advisor for the Joint Duke & UNC-CH Mathematics Colloquium for Students, funded by an award from the Kenan-Biddle Partnership, 2015
 - Designed and co-led research project, Women in Numbers 3, Banff International Research Station, 2014
 - Served on professional development panels (at WIN3, Automorphic Forms Workshop (twice), Connections for Women, MAA Southeastern section meeting), 2014–2015
 - Served as course advisor to two Ph.D. students and several undergraduate students, The University of North Carolina at Chapel Hill, 2013-present
 - Mentored two undergraduate math majors, Northwestern University, 2010-2012
 - Organized Women in Math lunch discussions, Northwestern University, 2009-2011
- Committees
 - Served on the Ph.D. Comprehensive Exam Committee, UNC, Summer 2013 to Winter 2015
 - Served on UNC's selection committee for Rhodes and Marshall Scholarships, August 2014
 - Served on the Ph.D. Entrance Exam Committee, UNC, Summer 2014

OTHER EMPLOYMENT

- Graduate research fellow, Bell Labs (Lucent Technologies) Mathematical Sciences Research Center, Murray Hill, NJ, summer 2003
- Researcher, The Duluth Undergraduate Mathematics Research Program, summer 2002
- Intern, Applied Computer Science and Math Group, Merck Research Labs, Merck & Co, Rahway, NJ, summer 2001