

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
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EDUCATION

- University of Michigan, Ann Arbor, Ph.D. in Mathematics (Advisor: Christopher Skinner), 2009
 - Princeton University, A. B. *summa cum laude* in Mathematics (Advisor: Andrew Wiles), 2003
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RESEARCH PUBLICATIONS

- *p-adic Eisenstein series and L-Functions of certain cusp forms on definite unitary groups.* With X. Wan. J. Inst. Math. Jussieu. 15 (2016), no. 3, 471–510.
<http://dx.doi.org/10.1017/S1474748014000395>
- *Differential operators, pullbacks, and families of automorphic forms.* Ann. Math. Qué. 40 (2016), no. 1, 55–82. <http://dx.doi.org/10.1007/s40316-015-0049-z>
- *p-adic q-expansion principles on unitary Shimura varieties.* With A. Caraiani, J. Fintzen, E. Mantovan, and I. Varma. Directions in Number Theory: Proceedings of the 2014 WIN3 Workshop. Springer International Publishing (2016), 197–243.
http://dx.doi.org/10.1007/978-3-319-30976-7_7
- *A p-adic Eisenstein measure for unitary groups.* J. Reine Angew. Math. 699 (2015), 111–142.
<http://dx.doi.org/10.1515/crelle-2013-0008>
- *A p-adic Eisenstein measure for vector-weight automorphic forms.* Algebra Number Theory. 8 (2014), No. 10, 2433–2469. <http://dx.doi.org/10.2140/ant.2014.8.2433>
- *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](http://dx.doi.org/10.1016/S0024-3795(02)00417-2)

SUBMITTED RESEARCH PREPRINTS

- *p-adic L-functions for unitary groups*. With M. Harris, J.-S. Li, and C. Skinner. 135 pages. Submitted. <http://arxiv.org/pdf/1602.01776.pdf>
This paper completes the construction of p-adic L-functions for unitary groups and contains both Parts II and III. For an overview, see these slides: <http://bit.ly/2bjT0eg>
- *Differential operators and families of automorphic forms on unitary groups of arbitrary signature*. With J. Fintzen, E. Mantovan, and I. Varma. 37 pages. Submitted. <http://arxiv.org/pdf/1511.06771.pdf>
- *Bootstrapping estimates of stability for clusters, observations and model selection*. With H. Yu, B. Chapman, A. DiFlorio, D. Gotz, M. Jacob, and R. Hageman Blair. 37 pages. Submitted.

EDITED PROCEEDINGS VOLUME

- *Directions in Number Theory: Proceedings of the 2014 WIN3 Workshop*. Editors: E. Eischen, L. Long, R. Pries, K. Stange. 339 pages. Springer International Publishing (2016). <http://dx.doi.org/10.1007/978-3-319-30976-7>.

SELECTED TALKS DURING PAST FIVE YEARS

- Selected Recent and Upcoming Invited Research Talks
 - Mathematical Congress of the Americas, special session “Galois representations and automorphic forms,” Montreal, Canada, July 2017
 - The Quebec-Vermont Number Theory Seminar, McGill University, May 2017
 - Number Theory Seminar, Caltech, March 2017
 - Number Theory Seminar, Oregon State University, October 2016
 - Clay Mathematics Institute workshop on Recent Developments on Elliptic Curves, Mathematical Institute of the University of Oxford, England, September 2016
 - Plenary speaker, Galois Representations and Automorphic Forms Conference, Bedlewo, Poland, August 2016
 - Topic contributed paper session “The NSF/NIH/SAMSI Workshop on Interdisciplinary Approaches to Biomedical Data Science Challenges,” Joint Statistical Meetings, Chicago, August 2016
 - Invited lecture, Canadian Number Theory Association Conference (CNTA XIV), University of Calgary, Canada, June 2016
 - Number Theory Seminar, University of Chicago, May 2016
 - Number Theory Seminar, Northwestern University, May 2016
 - Plenary lecture, Alberta Number Theory Days, Banff International Research Station, Canada, April 2016
 - Southern California Number Theory Day, UCSD, February 2016
 - Number Theory Seminar, UCLA, February 2016

Selected Invited Research Talks (continued)

- Special Session on “Number Theory and Cryptography,” AMS/MAA Joint Meetings, Seattle, WA, January 2016
- 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
- Special session on “Recent Developments in Algebraic Number Theory,” AMS/MAA Joint Meetings, San Antonio, TX, 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 -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
- Invited Expository Talks
 - College Scholars Freshman Colloquium, U. Oregon College of Arts & Sciences, Feb. 2016
 - 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
- Contributed Research Talks
 - Automorphic Forms Workshop, Ann Arbor, Michigan, March 2015
 - Automorphic Forms Workshop, Moab, Utah, May 2014

SELECTED OTHER WORKSHOP PARTICIPATION DURING PAST THREE YEARS

- SQuaRE collaborative research meeting, American Institute of Mathematics, San Jose, CA, January 2018
- Selected to co-present poster at NSF/NIH Big Data to Knowledge (BD2K) All Hands Grantee Meeting, Bethesda, Maryland, November 2016
- Selected participant at the NSF/NIH “Data Science Innovation Lab 2016: Mobile Health,” UCLA Lake Arrowhead Conference Center, June 2016
- Presented poster at Big Data to Knowledge (BD2K) All Hands Grantee Meeting, NIH, Bethesda, Maryland, November 2015
- Invited participant at Computational Aspects of the Langlands Program, ICERM, Brown University, Providence, Rhode Island, November 2015
- Attended the Applied Topology and High-Dimensional Data Analysis meeting, University of Victoria, Canada, August 2015
- Selected participant at the NSF/NIH/SAMSI Innovation Lab on “Interdisciplinary Approaches to Biomedical Data Science Challenges,” SAMSI, Raleigh, North Carolina, July 2015
- Participant at the Mathematics in Data Science workshop, ICERM, Brown University, Providence, Rhode Island, July 2015
- Collaborated with (and co-organized) Focused Research Group on “Geometric aspects of p -adic automorphic forms,” Banff International Research Station, Banff, Canada, October 2014
- Invited participant at Algebraische Zahlentheorie, Oberwolfach, Germany, July 2014
- Attended MSRI Hot Topics workshop on perfectoid spaces and applications, MSRI, Berkeley, CA, February 2014

TEACHING EXPERIENCE DURING PAST FIVE YEARS

- Introduction to Abstract Algebra III (Math 446/546), U. Oregon, spring 2017
- Linear Algebra (Math 441/541), U. Oregon, spring 2017
- Mathematical Methods of Statistics I (Math 461/561), U. Oregon, fall 2016
- Reading course on elliptic curves, U. Oregon, fall 2016
- Introduction to Mathematical Cryptography (Math 458), U. Oregon, spring 2016
- Multivariable Calculus (Math 281–282), U. Oregon, fall 2015–winter 2016
- 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

(Teaching experience during past five years, continued)

- Reading courses in Algebraic Number Theory, UNC, 2012–2015 (every semester)
- Abstract Algebra (Math 330-1, 2, 3), Northwestern University, 2010–2012

GRANTS AND HONORS

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

- National Science Foundation (NSF) Grant DMS-1559609, standard research grant from Algebra and Number Theory program, August 2015–July 2018
- NSF Grant DMS-1557642, collaborative research grant on quantitative approaches to biomedical big data (QuBBD), funded through NIH Big Data to Knowledge (BD2K) initiative in partnership with the NSF Division of Mathematical Sciences, September 2015–August 2017 (co-PIs: B. Chapman, D. Gotz, R. Hageman Blair, M. Jacob)
- NSF Grant DMS-1601959, conference grant for the Workshop on Automorphic Forms and Related Topics, 2016
- Awarded NSA-AMS Young Investigators Award (declined, to accept NSF grant), 2015
- Awarded Simons Collaboration Grant (declined, to accept NSF grant), 2015
- NSF Grant DMS-1249384, standard research grant from Algebra and Number Theory program, 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

THESIS SUPERVISION

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

OTHER SUPERVISION OF STUDENT PROJECTS

- Max Dickinson, undergraduate data science project, University of Oregon, spring 2016
- Robert Macy, undergraduate data science project, University of Oregon, spring 2016

POSTDOCTORAL MENTORING

- Vivek Pal, University of Oregon, September 2016–present

RECENT AND CURRENT SERVICE

Note: All anonymous or confidential service is omitted from this CV.

- Editing and Reviewing
 - Served as co-editor for the WIN3 Conference Proceedings Volume, 2014–2016
 - Reviewed articles for the AMS’s *Mathematical Reviews*, 2013–2015
 - Served as external examiner for M. Flander’s PhD thesis, Univ. Melbourne, Fall 2013
- Conference and Seminar Organization
 - Co-organizing the AMS/MAA Joint Mathematics Meetings AWM Workshop (Special Session on Number Theory), Atlanta, GA, 2017
 - Co-organized the 30th Automorphic Forms Workshop, Wake Forest University, 2016
 - Organizing The Oregon Distinguished Mathematics Lectures for Students, U. Oregon, 2015–present (website: <http://blogs.uoregon.edu/mathisawesome/>)
 - 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
- Committees
 - Serve on AWM Joint Mathematics Meetings committee (national, full year), 2016
 - Served on Leila Vaden’s oral exam committee, Oregon, 2016
 - Served on Ph.D. Comprehensive Exam Committee, UNC, Summer 2013 to Winter 2015
 - Served on UNC’s selection committee for Rhodes & Marshall Scholarships, August 2014
 - Served on Ph.D. Entrance Exam Committee, UNC, Summer 2014

- Mentoring, Advising, and Women in Math
 - Served as invited panelist on AWM Panel on Research Collaboration Conferences, Joint Mathematics Meetings, Seattle, January 2016
 - 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 led research project, WIN3, Banff International Research Station, 2014
 - Served on professional development panels (at WIN3, Automorphic Forms Workshop (thrice), Connections for Women, MAA Southeastern section meeting), 2014–2016
 - Served as course advisor to two Ph.D. students and several undergraduate students, The University of North Carolina at Chapel Hill, 2013–2015
 - Mentored two undergraduate math majors, Northwestern University, 2010–2012
 - Organized Women in Math lunch discussions, Northwestern University, 2009–2011

NON-TECHNICAL ARTICLES WRITTEN FOR THE BROADER COMMUNITY

- *Improv-ing a Mathematician's Professional Skills*. MAA FOCUS. December 2016/January 2017. Vol. 36, No. 6, 22–24. <http://bit.ly/2ikwVg9>. Article, in the Mathematical Association of America's newsmagazine, about the impact of improv training.
- *5 Key Takeaways from the Innovations Lab*. [Blog post] (August 2015). <http://bit.ly/2igAjwK>. Report, in the blog of SAMSI (Statistical and Mathematical Sciences Institute), on the first NIH/NSF Innovations Lab collaborative research workshop.

LONG-TERM VISITS

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

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