

Curriculum Vitae

Jayce R. Getz

Citizenship USA

Place of Birth Missoula, Montana

Education

- PhD, Pure Mathematics, University of Wisconsin-Madison, Aug. 2007
(Advisor: Ken Ono)
- AB, Pure Mathematics, Harvard University, June 2004
(with High Honors)

Professional Positions

- January 2010 - Present Assistant Professor
McGill University
- September 2007 - January 2010 Veblen Research Instructor
Princeton University and IAS
- January 2007 - May 2007 Visiting Research Scientist
University of Toronto

Research Interest

Number theory: Arithmetic geometry and automorphic forms.

Publications

1. *Algebraic cycles and Tate classes on Hilbert modular varieties*,
(Co-author: Heekyoung Hahn), submitted.
2. *An approach to nonsolvable base change and descent*, accepted for publication in the
Journal of the Ramanujan Mathematical Society.
3. *Twisted relative trace formula with a view towards unitary groups*,
(Co-author: Eric Wambach), submitted.
4. **Hilbert Modular Forms with Coefficients in Intersection Homology and
Quadratic Base Change** (Co-author: Mark Goresky), winner of the 2011 Ferran
Sunyer i Balaguer prize, to be published in Progress in Mathematics.
5. *Intersection numbers of Hecke cycles on Hilbert modular varieties*,
accepted for publication in the American Journal of Mathematics.
6. *Systems of orthogonal polynomials arising from the modular j -function*,
(Co-authors: Stephanie Basha, Harris Nover, Emma Smith), Journal of Mathematical
Analysis and Applications, Vol. 289, No. 1 (2004), 336-354.

7. *Partition identities and a theorem of Zagier*,
(Co-author: Karl Mahlburg), *Journal of Combinatorial Theory (A)*, 100 (2002), 27-43.
8. *Extension of a theorem of Kiming and Olsson for the partition function*,
The Ramanujan Journal, Vol. 5, No. 1 (2001), 47-51.
9. *On congruence properties of the partition function*, *International Journal of Mathematics and Mathematical Sciences*, Volume 23, No. 7 (2000), 493-496.

Awards

- 2011 Ferran Sunyer i Balaguer Prize for **Hilbert Modular Forms with Coefficients in Intersection Homology and Quadratic Base Change**, a book with Mark Goresky, \$ 15,000 Euros.
- 2010 National Sciences and Engineering Research Council of Canada Discovery Grant (\$75,000 over five years).
- 2007 National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship (\$108,000 over three years).
- 2007 University of Wisconsin at Madison Mathematics Department Excellence in Mathematical Research Award (\$400).
- 2004 National Defense Science and Engineering Graduate Fellowship (\$84,000 stipend over three years).
- 2004 Phi Beta Kappa member.
- Harvard Dean's List, Rank I (highest ranking) 2000-2004.
- Harvard Detur Book Prize.
- 2nd place (\$75,000) - 2000 *Intel Science Talent Search* (Note: This was formerly known as the Westinghouse Talent Search).
- 1st place Karl Menger Memorial Award (administered by the American Mathematical Society), 2000 *International Science and Engineering Fair*.
- 2nd place overall, 2000 *International Science and Engineering Fair*.
- 1st place in Mathematics, 2000 *International Science and Engineering Fair*.

Seminars

- February 2012, *Colloquium*, Duke University, "An approach to nonsolvable base change and descent."
- January 2012, *Colloquium*, University of Maryland, College Park, "An approach to nonsolvable base change and descent."
- January 2012, *Colloquium*, Johns Hopkins University, "An approach to nonsolvable base change and descent."
- November 2011, *Colloquium*, Cornell University, "An approach to nonsolvable base change and descent."

- May 2011, *Number Theory Seminar*, Chicago University, “Distinction, special cycles, and twisted relative trace formulae.”
- March 2011, *Number Theory and Algebraic Geometry Seminar*, Yale University, “Twisted relative endoscopy.”
- October 2010 *Number Theory Seminar*, Kyoto University, “Relative endoscopy and arithmetic of Shimura varieties.”
- October 2009 *Lie theory seminar*, Cornell University, “Twisted relative trace formulae.”
- February 2009 *Algebraic Geometry/Number Theory Seminar*, Johns Hopkins University, “Twisted relative trace formulae with applications to unitary groups.”
- January 2009 *Colloquium*, Boston College, “Trace formulae and locally symmetric spaces.”
- December 2008 *Colloquium*, McGill University, “Trace formulae and locally symmetric spaces.”
- December 2008 *Québec-Vermont Number theory seminar*, McGill University, “Twisted relative trace formulae with applications to unitary groups.”
- December 2008 *Members’ Seminar*, Institute for Advanced Study, “Trace formulae and locally symmetric spaces.”
- November 2008 *Shimura Varieties and Trace Formula Seminar*, Institute for Advanced Study, “Twisted relative trace formulae with applications to unitary groups I and II.”
- November 2008 *Number Theory/Representation Theory Seminar*, University of Toronto, “Twisted relative trace formulae with applications to unitary groups.”
- November 2008 *Number Theory Seminar*, McMaster University, “Twisted relative trace formulae with applications to unitary groups.”
- September 2008 *Number Theory Seminar*, University of Maryland, “Twisted relative trace formulae with applications to unitary groups.”
- September 2008 *Automorphic Forms and Number Theory Seminar*, University of Minnesota, “Twisted relative trace formulae with applications to unitary groups.”
- September 2008 *Colloquium*, University of Minnesota, “Twisted relative trace formulae.”
- February 2008 *Number Theory Seminar*, UCLA, “Jacquet-Langlands transfer and distinction.”
- February 2008 *Number Theory Seminar*, Caltech, “Jacquet-Langlands transfer and distinction.”
- February 2008 *Number Theory/Representation Theory Seminar*, University of Michigan, “Relative trace formulae with a view towards simple Shimura varieties.”
- November 2007 *Algebra and Number Theory Seminar*, Penn State University, “Hilbert modular generating functions with coefficients in intersection homology.”
- October 2007 *Algebraic Geometry Seminar*, Duke University, “Hilbert modular gener-

ating functions with coefficients in intersection homology.”

- September 2007 *Joint Number Theory Seminar*, Princeton University and the Institute for Advanced Study, “Hilbert modular generating functions with coefficients in intersection homology.”
- May 2007 *Algebraic Geometry Seminar*, University of Chicago, “Hilbert modular generating functions with coefficients in intersection homology.”
- March 2007 *Number Theory/Representation Theory Seminar*, University of Toronto, “Hilbert modular generating functions with coefficients in intersection homology I and II.”
- March 2007 *Automorphic Forms Seminar*, University of Minnesota, “Hilbert modular generating functions with coefficients in intersection homology.”
- February 2007 *Number Theory Seminar*, Boston College, “Hilbert modular generating functions with coefficients in intersection homology.”
- January 2007 *Johns Hopkins Mathematics Seminar*, Johns Hopkins University, “Intersection homology theory of Hilbert modular varieties.”
- November 2006 *Automorphic Forms and Representation Theory Seminar*, Purdue University, “Hilbert modular forms with coefficients in intersection homology and quadratic base change.”
- October 2006 *Number Theory Seminar*, The Ohio State University, “Hilbert modular forms with coefficients in intersection homology and quadratic base change.”
- July 2006 *Arithmetic Geometry Seminar*, Humboldt University, Berlin, Germany “Hilbert modular forms with coefficients in intersection homology and quadratic base change.”
- April 2006 *Combinatorics, Algebra and Number Theory Seminar*, Iowa State University, “Hilbert modular generating functions with coefficients in intersection homology.”
- January 2006 *Seminar*, Osaka University “Introduction to intersection homology.”
- November 2005 *Number Theory Seminar*, Johns Hopkins University, “Hilbert modular generating functions with coefficients in intersection homology.”
- November 2005 *Number Theory Seminar*, Brown University, “Hilbert modular generating functions with coefficients in intersection homology.”
- October 2005 *Number Theory Seminar*, UCLA, “Hilbert modular generating functions with coefficients in intersection homology.”
- March 2005 *Number Theory Seminar*, University of Rochester, “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- February 2005 *Number Theory Seminar*, University of Wisconsin, “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- April 2004, *Joint Trivial Notions and Modular Seminar*, Harvard University, “Classical and p -adic modular forms arising from the Borcherds exponents of other modular forms (senior thesis).”
- September 2003, *Modular Curves Seminar*, Harvard University, “Systems of orthogonal

polynomials arising from the modular j -function.”

- July 2003, *Number Theory Seminar*, University of Wisconsin, “Systems of orthogonal polynomials arising from the modular j -function.”
- July 2002, *Number Theory Seminar*, University of Wisconsin, “A generalization of a theorem of Rankin and Swinnerton-Dyer on zeros of modular forms.”
- November 2001, *Modular Forms Seminar*, Harvard University, “Partition identities and a theorem of Zagier.”
- November 2001 *Math Table Seminar*, Harvard University, “Partition identities and a theorem of Zagier.”
- July 2001, *Number Theory Seminar*, University of Wisconsin, “Partition identities and a theorem of Zagier.”

Presentations and conferences

- October 2010, *Special values of L-functions and arithmetic geometry*, Miyama, Kyoto, Japan: “Relative endoscopy and arithmetic geometry of Shimura varieties.”
- July 2010, *Canadian Number Theory Association XI*, Acadia University: “Elliptic descent of global orbital integrals.”
- May 2008, *Locally Symmetric Spaces*, Banff International Research Station, “Twisted relative trace formulae with a view towards unitary groups.”
- October 2006, *Midwest Number Theory Conference for Graduate Students and Recent PhDs IV*, University of Illinois at Urbana-Champaign, contributed talk: “Hilbert modular forms with coefficients in intersection homology and quadratic base change.”
- July 2006, *Recent Developments in the Arithmetic of Shimura Varieties and Arakelov Geometry*, Centre de Recerca Matemàtica, Bellaterra, Spain, contributed talk: “Hilbert modular forms with coefficients in intersection homology and quadratic base change.”
- April 2006, *American Mathematical Society Special Session on Computational Arithmetic Geometry*, American Mathematical Society Spring Western Section Meeting in San Francisco, CA, invited speaker: “Hilbert modular generating functions with coefficients in intersection homology.”
- January 2006, *Automorphic representations, L-functions, and Periods*, Research Institute of Mathematical Sciences in Kyoto, Japan, invited speaker: “Hilbert modular generating functions with coefficients in intersection homology.”
- January 2006, *American Mathematical Society Special Session on Arithmetic Geometry and Modular Forms*, American Mathematical Society Joint Annual Meeting in San Antonio, TX, invited speaker: “Hilbert modular generating functions with coefficients in intersection homology.”
- December 2005, *Intersection of Arithmetic Cycles and Automorphic Forms*, Centre de Recherches Mathématiques, invited talk: “Hilbert modular generating functions with coefficients in intersection homology.”

- November 2005, *Midwest Number Theory Conference for Graduate Students III*, University of Wisconsin-Madison, contributed talk: “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- October 2005, *NSF Focused Research Group workshop*, University of Maryland, invited talk: “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- April 2005, *ArithmeTexas*, Texas A&M, contributed talk: “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- March 2005, *19th Annual Automorphic Forms Workshop*, University of Texas at Denton, contributed talk: “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- February 2005, *Midwest Number Theory Conference for Graduate Students and Recent PhDs II*, University of Illinois at Urbana-Champaign, contributed talk: “Intersection numbers of Hecke cycles on Hilbert modular varieties.”
- November 20, 2004, *Additive number theory conference*, University of Florida, contributed talk: “Systems of orthogonal polynomials arising from the modular j -function.”
- May 2004, *NSF Give a Day, Make a Difference Outreach*, Missoula, MT, invited panelist with Leon Lederman (1988 Nobel Laureate in Physics) and Ken Ono.
- January 2004, *American Mathematical Society Special Session on Continued Fractions*, American Mathematical Society Joint Annual Meeting in Phoenix, AZ, invited speaker: “Systems of orthogonal polynomials arising from the modular j -function.”
- September 2003, *Big Sky Conference on Discrete Mathematics*, University of Montana, contributed talk: “Systems of orthogonal polynomials arising from the modular j -function.”
- July 2001, *International Mathematics Olympiad Awards Ceremony*, Washington, DC., invited student research presentation.
- May 2001, *NSF 50 Scientists and Engineers in the Schools Outreach*, Missoula, MT, invited panelist with Leon Lederman (1988 Nobel Laureate in Physics) and Ken Ono.

Service

- Organizer of the *Bellairs Workshop in Number Theory*, 2010.
- Co-organizer of the *CRM-ISM Colloquium*, 2010-2011.
- Co-organizer of the *Quebec-Vermont Number Theory Seminar*, 2010-2011.

Teaching

- *Honors Algebra 3 and 4*, McGill University, Fall 2010 and Winter 2011.
- *Automorphic Representations*, McGill University, Winter 2010.
- *Numbers, equations, and proofs: an introduction to higher mathematics through number theory*, instructor, Princeton University, Fall 2007-Spring 2008.

- *Calculus*, teaching assistant, University of Wisconsin at Madison, Fall 2006.
- *Abstract algebra*, course assistant, Harvard, Fall 2002 & 2003, Spring 2004

Refereeing work:

- Bulletin of the London Mathematical Society
- Canadian Mathematical Bulletin.
- International Journal of Number Theory.
- Journal of the Mathematical Society of Japan.
- Proceedings of the American Mathematical Society.

Further Activities

- Participant in workshop “Relative trace formula and periods of automorphic forms,” American Institute of Mathematics, August 2009.
- Participant in workshop “The stable trace formula, automorphic forms, and Galois representations,” Banff International Research Station, August 2008.
- Participant in FRG workshop “Recent Developments in Number Theory: Selmer Groups, L-functions, and Galois Deformations,” UCLA, March 2008.
- Participant in AIM workshop “The Tate conjecture,” AIM, July 2007.
- Participant in FRG workshop “Automorphic Galois Representations, L -functions and Arithmetic,” Columbia University, June 2006.
- Participant in “Advanced Course on Arakelov Geometry and Shimura Varieties, Centre de Recerca Matemàtica,” Barcelona, Spain, February 20-26, 2006.
- Participant in 2003 Research Experience for Undergraduates in Number Theory at the University of Wisconsin-Madison.
- Studied at Spring 2003 Budapest Semesters in Mathematics.
- Math Tutor and/or general instructor at Peabody Middle School After School Program, Fall 2002, Fall 2003, Spring 2004.
- Honored in 2000 by Japanese American Citizens League for work memorializing the unjust internment of Japanese Americans during World War II.