

BIANCA VIRAY

Brown University bviray@math.brown.edu
Mathematics Department <http://math.brown.edu/~bviray>
310 Kassar-Gould House Last Updated: April 27, 2012
Providence, RI 02912, USA Citizenship: USA

Employment

Spring 2012 Postdoctoral Fellow, Complex and Arithmetic Dynamics program,
 Institute for Computational and Experimental Research Mathematics (ICERM)
2010 – Tamarkin Assistant Professor/ NSF Postdoctoral Fellow, Brown University.
Summer 2009 Intern, Microsoft Research, Cryptography group, (mentor: Kristin Lauter)
Summer 2008 Center for Communications Research, La Jolla, CA

Education

2010 Ph.D., University of California, Berkeley (advisor: Bjorn Poonen)
2005 B.S., University of Maryland, College Park, cum laude

Preprints¹

1. Transcendental Brauer elements via descent on elliptic surfaces. [arXiv:1202.5348](https://arxiv.org/abs/1202.5348) submitted.
2. Computing automorphism groups of rational functions. (with Xander Faber and Michelle Manes.) [arXiv:1202.5557](https://arxiv.org/abs/1202.5557) submitted.
3. On a uniform bound for the number of exceptional linear subvarieties in the Mordell-Lang conjecture. (with Joseph H. Silverman.) [arXiv:1109.0207](https://arxiv.org/abs/1109.0207) submitted.

Publications

1. Failure of the Hasse principle for Châtelet surfaces in characteristic 2. *J. Théor. Nombres Bordeaux*. **24** (2012), no. 1., 231–236.
2. Higher-dimensional analogues of Châtelet surfaces. (with Anthony Várilly-Alvarado.) *Bull. London Math. Soc.* **44** (2012), no. 1, 125–135.
3. Failure of the Hasse principle for Enriques surfaces., (with Anthony Várilly-Alvarado.) *Adv. Math.* **226** (2011), no. 6, 4884–4901.
4. Igusa class polynomials, embeddings of quartic CM fields, and arithmetic intersection theory. (with Helen Grundman, Jennifer Johnson-Leung, Kristin Lauter, Adriana Salerno, Erika Wittenborn) WIN—Women in Numbers, Fields Institute Communications, vol. 60, Amer. Math. Soc., Providence, RI, 2011, pp. 35-60.
5. A family of varieties with exactly one pointless rational fiber. *J. Théor. Nombres Bordeaux*. **22** (2010), no. 3., 741–745.
6. Hilbert schemes of 8 points., (with Dustin A. Cartwright, Daniel Erman, and Mauricio Velasco.) *Algebra Number Theory* **3** (2009) 763–795.

Academic Honors

2010 – NSF Postdoctoral Fellowship
2009 – 2010 Ford Foundation Dissertation Fellowship
2007 – 2008 Mentored Research Award, University of California, Berkeley
2007 Honorable Mention, NSF Graduate Research Fellowship Program
2005 Honorable Mention, NSF Graduate Research Fellowship Program

¹Most recent versions of all preprints are available at <http://math.brown.edu/~bviray>

Invited Conference Talks

- 2012 Mar. University of Massachusetts, Amherst, Algebraic Geometry Northeastern Series (AGNES)
- Mar. Institute for Computational and Experimental Research Mathematics, Global Arithmetic Dynamics
- Jan. Joint Mathematical Meetings, Boston MA, “Arithmetic Geometry”
- Jan. Joint Mathematical Meetings, Boston MA, “Dynamical Systems in Algebraic and Arithmetic Geometry”
- 2011 Nov. Banff International Research Station, Women in Numbers 2
- Oct. The University of Maine, Maine-Québec Number Theory Conference
- Sept. Brown University, 40 Years & Counting: AWM’s Celebration of Women in Mathematics
- Jun. Oberwolfach, Algebraische Zahlentheorie
- May Emory University, Ramification in Algebra and Geometry at Emory
- Apr. AMS Special Sessions, College of the Holy Cross, “Modular Forms, Elliptic Curves, L-functions, and Number Theory”
- Mar. Centre International de Rencontres Mathématiques, Arithmetic, Geometry, Cryptography, and Coding Theory 13
- 2010 Oct. Lorentz Center, Arithmetic of Surfaces
- Oct. Microsoft Research, Workshop on Elliptic Curve Cryptography
- Jul. Schloss Thurnau, Rational Points 3
- Apr. Centre de Recherches Mathématiques, Workshop on Computer Security & Cryptography
- 2009 Nov. AMS Special Sessions, Florida Atlantic University, “Arithmetic Geometry”
- Oct. AMS Special Sessions, Penn State, “Function Fields and their Applications”
- Apr. Hausdorff Institute, Diophantine Equations Workshop
- 2008 Mar. Cornell University, Macaulay 2 Conference

Seminar Talks

- 2012 Apr. Harvard University, Number Theory Seminar
- Mar. California Institute of Technology, Algebraic Geometry Seminar
- 2011 Nov. Boston College, Number Theory Seminar
- Apr. Brown University, Algebraic Geometry Seminar
- Apr. University of Wisconsin, Madison, Number Theory Seminar
- Apr. Amherst College, Five College Number Theory Seminar
- Mar. École normale supérieure/Université Paris-Sud, Variétés rationnelles
- 2010 Nov. Boston University, Algebra Seminar
- Nov. University of Connecticut, Algebra Seminar
- Mar. Rice University, Algebraic Geometry Seminar
- Feb. Stanford University, Number Theory Seminar
- 2009 Dec. University of Michigan, Algebraic Geometry Seminar
- Nov. New York University, Number Theory Seminar
- Nov. Brown University, Algebra Seminar
- Nov. Harvard University, Number Theory Seminar
- Nov. Massachusetts Institute of Technology, Number Theory Seminar
- Oct. University of California, Berkeley, Graduate Student Colloquium
- Aug. Microsoft Research, End-of-internship talk
- Feb. University of California, Berkeley, Number Theory Seminar
- 2008 June University of Warwick, Algebraic Geometry Seminar
- Apr. University of Maryland College Park, Algebra and Number Theory Seminar
- 2007 Oct. Harvard/MIT, Baby Algebraic Geometry Seminar

Teaching

- 2011 Fall Primary Instructor, Brown University, Abstract Algebra I (undergraduate)
- 2011 Fall Primary Instructor, Brown University, Linear Algebra
- 2008 Fall Graduate Student Instructor, UC Berkeley, Analytical Geometry and Calculus II
- 2007 Spring Graduate Student Instructor, UC Berkeley, Advanced Linear Algebra
- 2006 Fall Graduate Student Instructor, UC Berkeley, Multivariable Calculus
- 2006 Spring Graduate Student Instructor, UC Berkeley, Linear Algebra and Differential Equations
- 2005 Fall Graduate Student Instructor, UC Berkeley, Calculus II
- 2005 Spring Strauss Teaching Assistant, University of Maryland, College Park, Calculus II
- 2004 Fall Strauss Teaching Assistant, University of Maryland, College Park, Calculus I

Organizing activities for conferences and meetings

- 2013 Feb. Co-organizer of AIM workshop on "Brauer groups and obstruction problems: moduli spaces and arithmetic"
- 2012 Jun. Program Committee, Tenth Algorithmic Number Theory Symposium
- 2012 Jan. Co-organizer of a special session on "Rational Points on Varieties" at the Joint Mathematics Meetings

Service

- 2011 Project leader at Women in Numbers 2.
- 2011 – Active member in the Rose Whelan society, a student organization for women mathematicians at Brown University.
- 2011 – Member of Girls' Angle advisory board.
- 2011 – Member of graduate admissions committee, Brown University.
- 2010 – Mentor at Girls' Angle, a math club for girls.
- 2009 – 2010 Organizer of Graduate Student Colloquium, a venue for graduate students nearing completion to give colloquium-style talks connected to their theses.
- 2009 – 2010 Graduate student mentor.
- 2008 – 2010 Active member and co-founder of Unbounded Representation, a student group focused on issues of diversity in mathematics at UC Berkeley.
- 2006 – 2010 Active member in Noetherian Ring, a student organization for women mathematicians at UC Berkeley.
- 2006 – 2008 Officer of Mathematics Graduate Student Association(MGSA) at UC Berkeley.
- 2005 – 2006 Co-organizer of Mentor Lecture Series.