

Anthony Várilly-Alvarado

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Citizenship: Costa Rica, Ireland
Date of Birth: May 22nd, 1980

Education

Ph.D. Mathematics, University of California at Berkeley, 2009 (Expected). Advisor: Bjorn Poonen.
Thesis: *Arithmetic of del Pezzo surfaces of degree 1*.

Early Stage Researcher, Équipe de Géométrie Algébrique, IRMAR, *Université de Rennes 1*, May–August 2007.

Certificate of Advanced Study in Mathematics, *with distinction*, Cambridge University, July 2004.

A.B. Mathematics, Harvard University, June 2003, *Magma Cum Laude*. Advisor: Benedict Gross
Thesis: *Singular and Supersingular moduli*.

Honors and Awards

Herchel Smith Fellowship for study at Emmanuel College, Cambridge University.

Herman Peries Prize, for excellent performance in Part III of the Mathematical Tripos.

Phi Beta Kappa, 2003

John Harvard Scholarship, 1999–2003.

Blumberg Creative Science Prize (for my undergraduate thesis, awarded by Mather House).

The Key Innovator Award for mathematical research using The Geometer's Sketchpad.

Outstanding Graduate Student Instructor Award recipient, UC Berkeley.

Derek Bok Center Certificate of Distinction in Teaching, Fall 2000, Fall 2001, Spring 2002, Fall 2002 (Harvard University).

Publications

Location of incenters and Fermat points in variable triangles, *Math. Mag.* **74** (2001), 123–129.

Weak approximation on del Pezzo surfaces of degree 1, *to appear, Adv. Math.*; [mathNT/0801.2430](#).

(with D. Testa and M. Velasco) Cox rings of degree one del Pezzo surfaces, *submitted*; [mathAG/0803.0353](#).

(with D. Zywina) Arithmetic E_8 -lattices with maximal Galois action, *submitted*; [mathNT/0803.3063](#).

Root numbers and rational points on del Pezzo surfaces of degree 1, *in preparation*.

(with D. Erman) Eulerian numbers and equivariant intersections in spaces of Laurent polynomials, *in preparation*.

Invited Talks

“Weak approximation on del Pezzos of degree 1” Rational points on curves and higher dimensional varieties, Warwick, June 2008

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“Zariski density of rational points on del Pezzo surfaces of degree 1” Séminaire variétés rationnelles, École Normale Supérieure, June 2008.

“Rational Points on del Pezzo surfaces of degree 1 and root numbers of elliptic curves.” Algebra Seminar, Boston University, October 2007.

“On the arithmetic of del Pezzo surfaces of degree 1.” Séminaire de géométrie algébrique, IRMAR, Université de Rennes 1, June 2007.

Seminar Talks

“Weak approximation on del Pezzo surfaces of degree 1.” Algebraic Geometry Seminar, Brown University, November 2007.

“Del Pezzo surfaces of degree 1.” Rational points on curves and higher-dimensional varieties, Bremen, July 2007.

“Weak approximation on del Pezzo surfaces of degree 1.” Number Theory Seminar, UC Berkeley, April 2007.

“Rational Points on del Pezzo surfaces of degree 1 and root numbers of elliptic curves.” Number Theory Seminar, UC Berkeley, November 2006.

“Cohomology of normal sheaves associated to Stanley–Reisner ideals,” Presentation at the Arizona Winter School, 2006 under the supervision of Michael Stillman.

Expository Talks

“Rational Surfaces” Rest of Algebraic Geometry Seminar, UC Berkeley, September 2008.

“Elliptic surfaces” Student Arithmetic and Algebraic Geometry Seminar, UC Berkeley, September 2008.

“GAGA” Student Arithmetic and Algebraic Geometry Seminar, UC Berkeley, May 2008.

“Cox rings of toric varieties.” Student Arithmetic and Algebraic Geometry Seminar, UC Berkeley, April 2008.

“The fundamental group of an algebraic curve over an algebraically closed field of characteristic $p > 0$.” Groupe de travail SGA1, IRMAR, Université de Rennes 1, July 2007

“Brauer-Manin obstructions and Rational Points.” Séminaire Pampers, IRMAR, Université de Rennes 1, June 2007

“Introduction to faithfully flat descent” Rational Points Seminar, UC Berkeley, March 2006.

“Cohomological Intersection Theory of Schemes.” Student Number Theory Seminar, UC Berkeley, February 2007.

Other Mathematical Activities

Organizer of the Student Number Theory Seminar, UC Berkeley: Spring 2007, Spring 2008.

Teaching Experience

Average teaching evaluation score at Berkeley: 6.77/7 (172 students)

Lecturer, Introduction to Number Theory, UC Berkeley, Summer 2008.

Lecturer, Transition to Upper Division Mathematics, UC Berkeley, Spring 2008.

Graduate Student Instructor, Calculus in One Variable I, UC Berkeley, Fall 2004, Fall 2006.

Graduate Student Instructor, Calculus in One Variable II, UC Berkeley, Spring 2005, Spring 2007.

Graduate Student Instructor, Multivariable Calculus, UC Berkeley, Fall 2005.

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Worked with the Professional Development Program, 2006–2007.

Course Assistant, Multivariable Calculus (twice), Honors Advanced Multivariable Calculus, Real Analysis, Complex Analysis, Abstract Algebra II, Harvard University, 2001–2003

Conferences Attended

Arizona Winter School 2005: Arithmetic Fundamental Groups, Albuquerque, NM (March 2005).

Deligne's 61st Birthday Conference, Princeton NJ (October 2005).

Rational Points on Higher Dimensional Varieties, Berkeley CA (January 2006).

Arizona Winter School 2006: Computational Algebraic Geometry, Tucson AZ (March 2006).

Cohomological Methods for finding Rational Points on Varieties, Berkeley CA (March 2006).

Clay Arithmetic Geometry Summer School, Goettingen, Germany (July-August 2006).

Algebraic Stacks, Oberwolfach, Germany (October 2006).

Arizona Winter School 2007: p -adic Geometry, Tucson, AZ (March 2007).

Advances in Algebra and Geometry, Berkeley, CA (April 2007).

Rational points on curves and higher-dimensional varieties, Bremen, Germany (July 2007).

Rational curves and diophantine problems over function fields, Cambridge MA (November 2007).

Géométrie Arithmétique et variétés rationnelles, Luminy, France (December 2007)

Rational points on curves and higher-dimensional varieties, Warwick, United Kingdom (June 2008).

Languages

Spanish (native speaker), English (native speaker), Italian (beginner), French (beginner).