Simon Rubinstein-Salzedo

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Education

2012	PhD Mathematics, Stanford University. Thesis: "Controlling ramification in number fields," advisor Akshay Venkatesh.
2007	BS Mathematics, Minor Music, College of Creative Studies, University of California, Santa Barbara. Thesis: "Finitistic dimensions of monomial algebras," advisor Birge Huisgen-Zimmermann.

Academic positions held

2012–	**Dartmouth College, Department of Mathematics.** Visiting assistant professor

Research interests

Number theory, algebraic geometry, Galois theory

Papers

1. "Period computations for covers of elliptic curves." To appear, *Mathematics of Computation*. Preprint at http://arxiv.org/abs/1210.4721.
2. "Totally ramified branched covers of elliptic curves." Submitted. Preprint at http://arxiv.org/abs/1210.3195.
3. "Invariants for A_4 fields and the Cohen-Lenstra Heuristics." Submitted. Preprint at http://arxiv.org/abs/1210.2773.
4. "A Hilbert space approach to bounded analytic interpolation." *Complex Analysis and Operator Theory* **1**, no. 4, 2007, pp. 523–532. (With J. Danciger.)

Teaching jobs

Academic year

2012–	**Dartmouth College.** Instructor for Math 8 (calculus of one and several variables), Math 10 (elementary statistics), Math 11 (multivariable calculus), Math 20 (discrete probability).
2009–2012	**Stanford University.** Teaching assistant for Math 51 (linear algebra and multivariable calculus), Math 53 (ordinary differential equations).
2007–2012	**Stanford University.** Course assistant for Math 19 (differential calculus), Math 114 (advanced honors linear algebra), Math 121 (advanced undergraduate abstract algebra), Math 210A,B (graduate algebra), algebra qualifying exam preparation.
2007	**University of California, Santa Barbara.** Instructor for Math 10 (combinatorial game theory), a course entirely of my own design.
2006–2007	**University of California, Santa Barbara.** Instructor for Putnam seminar.
2003–2005	**Art of Problem Solving.** Taught and designed classes to help advanced middle-school and high-school students win mathematics competitions.

Summer teaching

2012	**Stanford Undergraduate Research Institute in Mathematics.** Graduate mentor for number theory group.
2009–2012	**Stanford University Mathematics Camp.** Teaching advanced high-school students about abstract algebra, number theory, and algebraic topology.

Other teaching experience

2010–2012	**Julia Robinson Mathematics Festival.** Directed mathematical activities for middle-school students.
2008–2012	**Stanford Splash.** Taught classes for students in grades 7–12 on various topics, including combinatorial games, cryptography, algebraic topology, prisoner puzzles, and chess.

Talks

Research talks

December 2012	**CMS Winter Meeting.** "The Cohen-Lenstra Heuristics and roots of unity."
October 2012	**Dartmouth Colloquium.** "Dessins d'enfants and origamis."
October 2012	**Dartmouth Number Theory Seminar.** "Branched covers of algebraic curves."
September 2012	**Québec-Maine Number Theory Conference.** "Explicit branched covers of elliptic curves."
June 2012	**Thesis Defense.** "Branched covers of elliptic curves."
June 2011	**AIM Workshop on the Cohen-Lenstra Heuristics.** "The Cohen-Lenstra Heuristics and roots of unity."

Expository talks for mathematicians

May 2012	**Student Algebraic Geometry Seminar.** "Fundamental groups in characteristic p."
May 2012	**Area Exam.** "Lifting invariants."
February 2012	**Stanford Graduate Student Colloquium.** "Global arithmetic dynamics."
December 2011	**Student Algebraic Geometry Seminar.** "Humbert surfaces."
March 2011	**Stanford Graduate Student Colloquium.** "Lexicographic codes."
February 2011	**Student Algebraic Geometry Seminar.** "Tschirnhaus transformations."
November 2010	**Student Algebraic Geometry Seminar.** "The distribution of class groups of function fields."
February 2010	**Student Algebraic Geometry Seminar.** "The Beilinson Conjecture for curves."
October 2009	**Stanford Undergraduate Mathematical Organization.** "Integer partitions."
October 2009	**Student Algebraic Geometry Seminar.** "Rigid p-adic geometry and Berkovich spaces."
April 2009	**Stanford Graduate Student Colloquium.** "Preperiodic points of dynamical systems."
November 2008	**Stanford Undergraduate Mathematical Organization.** "Combinatorial games."
November 2007	**Stanford Graduate Student Colloquium.** "Error-correcting codes and the game of nim."
January 2007	**UCSB Math Club.** "Consequences of the *abc* Conjecture."
October 2006	**UCSB Seminar on Operator Algebras and Functional Analysis.** "A prelude to Pick-Nevanlinna interpolation."

Expository talks for general audiences

August 2012	**SIYP Middle School Math League.** "Binary sequences, graphs, and card tricks."
August 2012	**SIYP Singapore.** "Behavioral economics, game theory, and rationality."
August 2012	**EPGY Games and Puzzles Class.** "Games and codes."
July 2012	**SUMaC.** "Wishful thinking in mathematics."
July 2012	**EPGY Game Theory Class.** "Combinatorial games."
March 2012	**Stanford Math Circle.** "Wishful thinking in mathematics."
October 2011	**Stanford Math Circle.** "Mathematical games."
July 2011	**EPGY Number Theory Class.** "Combinatorial games."
July 2011	**SUMaC.** "Games and codes."
December 2010	**San Jose Math Circle.** "Quadratic reciprocity."

Students mentored

2011–	Ashvin Swaminathan, The Harker School. "Surreal analysis," paper for high school research competitions. Regional finalist in Siemens Competition 2012, semifinalist in Intel Science Talent Search 2013.