William A. Stein   *Biographical Sketch*

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Professional Preparation

Northern Arizona University	Mathematics, B.S. 1994
University of California at **Berkeley**	Mathematics, Ph.D. 2000
Harvard University	NSF Postdoc, 2000–2004

Appointments

- Professor of Mathematics (with tenure), University of Washington, September 2010–present.
- Associate Professor of Mathematics (with tenure), University of Washington, September 2006–2010.
- Associate Professor of Mathematics (with tenure), UC San Diego, July 2005–June 2006.
- Benjamin Peirce Assistant Professor of Mathematics, Harvard University, July 2001–May 2005.
- NSF Postdoctoral Research Fellowship under Barry Mazur at Harvard University, August 2000–May 2004.
- Clay Mathematics Institute Liftoff Fellow, Summer 2000.

Most Relevant Publications

- *Toward a Generalization of the Gross-Zagier Conjecture* (17 pages), 2010, to appear in Int. Math. Res. Notices.
- *Fast Computation of Hermite Normal Forms of Random Integer Matrices* (16 pages), with Clement Pernet, 2010, to appear in J. Number Theory.
- *Average Ranks of Elliptic Curves: Tension Between Data and Conjecture*, with B. Bektemirov, B. Mazur, and M. Watkins, Bulletins of the AMS **44** (2007), no. 2, 233–254.
- *Modular forms, a computational approach* (xvi+268 pp.) Graduate Studies in Mathematics (AMS) 79 2007, with an appendix by Paul Gunnells.
- *Verification of the Birch and Swinnerton-Dyer Conjecture for Specific Elliptic Curves*, with G. Grigorov, A. Jorza, S. Patrikis, and C. Patrascu (26 pages), 2005, to appear in Mathematics of Computation.

Other Publications

- *Computation of p-Adic Heights and Log Convergence*, with B. Mazur and J. Tate (36 pages), Documenta Mathematica, 2006, Extra Vol., 577–614.
- *The Manin Constant*, with A. Agashe and K. Ribet, Pure Appl. Math., (2006), no. 2., 617–636.
- *Studying the Birch and Swinnerton-Dyer Conjecture for Modular Abelian Varieties Using Magma* (22 pages), a chapter in the Springer–Verlag book "Computational Experiments in Algebra and Geometry".
- *Shafarevich-Tate Groups of Nonsquare Order*, Progress in Math., **224** (2004), 277–289, Birkhauser.
- $J_1(p)$ *has connected fibers*, with B. Conrad and B. Edixhoven, Documenta Math., **8** (2003), 331–408.

Synergistic Activities

- **Research Tools:** Principal author of Sage, which is a major new piece of software (over 100,000 lines of code by the PI). Author of the modular forms, modular symbols, and modular abelian varieties parts of the Magma computer algebra system (425 pages (26000 lines) of code plus documentation).
- **Databases:** Created and maintain the Modular Forms Database. This contains continually expanding data about elliptic curves and modular forms: http://www.wstein.org/Tables/.
- **Outreach:** SIMUW 2006, 2007, 2008; Canada/USA MathCamp mentor (2002); Several Math Circles talks in Boston.

Collaborators and Other Affiliations

- **Coauthors:** A. Agashe (Florida State U.), K. Buzzard (Imperial College, London), R. Coleman (UC Berkeley), B. Conrad (Univ. of Michigan), N. Dummigan (Sheffield, UK), S. Edixhoven (Leiden, Netherlands), F. Leprévost (Univ. Joseph Fourier, Technische Univ. Berlin), E. V. Flynn (Liverpool, UK), D. Kohel (Univ. of Sydney), B. Mazur (Harvard), L. Merel (Paris 6), K. Ribet (UC Berkeley), E. F. Schaefer (Santa Clara Univ.), M. Stoll (Inter. Univ. Bremen, Germany), J. Tate, H. A. Verrill (Louisiana State), M. Watkins (Bristol.), J. L. Wetherell (CCR, San Diego), C. Wuthrich (Nottingham)
- **Graduate and Postdoctoral Advisors:**
    - **Ph.D. advisor:** Hendrik Lenstra, University of Leiden, Netherlands.
    - **NSF Postdoctoral advisor:** Barry Mazur, Harvard University.
- **Thesis Students:** 3 Ph.D. students at UW: Robert Bradshaw's 2010 Ph.D. on *Provable Computation of Motivic L-functions*; Robert Miller's 2010 Ph.D. on *Computational Verification of the Birch and Swinnerton-Dyer Conjecture*; currently advising Alyson Dienes's Ph.D. thesis. Advised eight undergraduate senior theses at Harvard and two at UW.