

Curriculum Vitae

Jim Sauerberg

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PROFESSIONAL EXPERIENCE

- 2004–present: Professor, Saint Mary's College of California
Mathematics and Computer Science
Integrated Liberal Arts
- 1999–2004: Associate Professor, Saint Mary's College
- 1996–1999: Assistant Professor, Saint Mary's College
- 1993–1996: Post-Doctoral Research and Teaching Fellow, Union College
- 1988–1993: Teaching Fellow and Teaching Assistant, Brown University

EDUCATION

- Brown University**, Providence, Rhode Island, 1988–1993
Degree: Ph.D., Mathematics *Advisor:* Michael Rosen
- University of Wisconsin**, Madison, Wisconsin, 1984–1988
Degree: Bachelor of Science, Mathematics

TEACHING EXPERIENCE

- ◇ Courses taught at Saint Mary's College
 - Seminar Program: Greek Thought, Roman Christian and Medieval Thought
 - January Term: Artificial Life, Cryptography, Programming for Fun and Profit, Computer Programming using Linux
 - Integral Program: Freshmen Mathematics I&II, Junior Mathematics I&II
 - Computer Science: Introduction to Programming I
 - Mathematics: Fundamental Mathematical Concepts I&II, Elementary Functions, Finite Mathematics, Art and Practice of Mathematics, Calculus and Elementary Functions II, Non-Majors Calculus I&II, Calculus I&II, Linear Algebra, Discrete Mathematics, Abstract Algebra I&II, Probability and Statistics, Number Theory, Mathematical Dialog, History of Mathematics, Senior Essay.
- ◇ Served as mentor for six students in SMC's Summer Research Program.
- ◇ Advisor and supervisor for eleven undergraduate theses.
- ◇ Courses taught at Union College include Calculus I, II, III, and IV, Linear Algebra for Non-Math Majors, Complex Analysis for Engineers, Number Theory, Combinatorics, and Linear Algebra for Math Majors.
- ◇ Courses taught at Brown University include Integrated Pre-Calculus and Calculus, Calculus I, II and III, and Linear Algebra.
- ◇ Instructor, Brown Learning Community, Brown University 1991–1993. Co-taught three-week preparatory sessions for the GRE and SAT exams.
- ◇ Instructor, College Initiative Program, Brown University Summer 1991. Taught college-level number theory course for high-school students in introduction-to-college program.
- ◇ Coordinator, Math Resource Center, Brown University 1990–1992. Organized all aspect of this 4-times weekly, walk-in tutoring program.

PUBLICATIONS

- ◇ *Cryptology: A Historical Introduction*, in preparation.
- ◇ *Can the Fibonacci Numbers be Characterized by Divisibility?*, in preparation.
- ◇ *Reed–Solomon Codes: An Application of Linear Algebra*, with Steve Leonhardi and Lidia Luquet, published 2008 in Rutger’s DIMACS Module Series in Discrete Mathematical & Theoretical Computer Science.
- ◇ *From Private to Public Key Ciphers in Three Easy Steps*, published as a theme essay as part of Mathematical Awareness Month, 2006, link at www.mathaware.org/mam/06.
- ◇ *Route Ciphers in the Civil War*, published as a theme essay as part of Mathematical Awareness Month, 2006, link at www.mathaware.org/mam/06.
- ◇ *Centering*, with Alan Tarr, Number 1, Volume 33, January 2002. *The College Mathematics Journal*.
- ◇ *Fixed Points and Fermat: A Dynamical Systems Approach to Number Theory*, with Mike Frame and Brenda Johnson, Number 5, Volume 107, May 2000. *The America Mathematical Monthly*.
In *Polynomial Formal Groups, Hopf Algebras and Raynaud Orders*, American Mathematical Society Memoir Number 651, Volume 136, November 1998.
 - ◇ *Introduction to Polynomial Formal Groups and Hopf Algebras*, with Lindsay Childs, David Moss, and Karl Zimmermann, pp. 1–10.
 - ◇ *Dimension One Polynomial Formal Groups*, with Lindsay Childs, David Moss, and Karl Zimmermann, pp. 11–20.
 - ◇ *Dimension Two Polynomial Formal Groups and Hopf Algebras*, with Lindsay Childs, David Moss, and Karl Zimmermann, pp. 21–54.
 - ◇ *Degree Two Commutative Formal Groups and Hopf Algebras*, with Lindsay Childs, pp. 55–90.
- ◇ *Fermat Quotients over Function Fields*, with Lingsueh Shu, *Finite Fields and their Applications*, Volume 3, October 1997, pages 275–286.
- ◇ *The Long and Short of Counting Sequences*, with Lingsueh Shu, *The American Mathematical Monthly*, Volume 104, April 1997, pages 306–317.

SERVICE at SAINT MARY’S COLLEGE

- ◇ Rank and Tenure Committee 2007–2008.
- ◇ Faculty Welfare Committee 2006–2009, Chairperson 2006–2007, 2008–2009.
- ◇ Chairperson, Department of Mathematics and Computer Science 2003–2007.
- ◇ Faculty Senate 2003–2006, Chairperson 2004–2005.
- ◇ Webmaster, Department of Mathematics and Computer Science 2000–present.
- ◇ Library Committee 2000–2002.
- ◇ Committee on Academic Appeals 2000–2002.
- ◇ Educational Policies Board and Program Review Committee 1999–2002.
- ◇ Science Center Steering Committee (designed Brousseau Hall) 1998–2000.
- ◇ Governing Board and Advisor, Liberal and Civic Studies Program 1997–2001.
- ◇ Speaker and organizer for numerous department, school and college events, including Math Mondays, Department Seminars, School of Science Colloquia, Brousseau Lectures, Dean’s Honor Reception, New Faculty Orientation.

RESEARCH INTERESTS

- ◊ Algebraic Number Theory
- ◊ Formal Groups
- ◊ Cryptography
- ◊ Reciprocity Laws
- ◊ Elementary Number Theory
- ◊ Function Fields

PRESENTATIONS OUTSIDE of SAINT MARY'S COLLEGE

Have given numerous talks and presentations, locations include

- ◊ Project NExT (New Experiences in Teaching), Los Angeles
- ◊ Academia Sinica (Taiwan) – Number Theory Seminar
- ◊ Trinity College – Undergraduate Colloquium
- ◊ SUNY-Albany – Capital Region Algebra and Number Theory Seminar
- ◊ AMS/MAA Joint Meetings – Special Session on Diophantine Equations
- ◊ AMS Meetings – Special Session on Number Theory
- ◊ Ohio State University – Number Theory Seminar Skidmore College – Capital Region Algebra and Number Theory Seminar
- ◊ SUNY-Albany – Mathematics Colloquium
- ◊ Amherst College – Five Colleges Number Theory Seminar
- ◊ McMaster University – Number Theory Seminar

CONFERENCE PARTICIPATION

- ◊ DIMACS ReConnect, Salem State College, June 2003.
- ◊ AAC&U: Faculty Work and Student Learning, November 2002.
- ◊ PKAL National Convention. November 2001, November 2000.
- ◊ Joint Meetings of the AMS/MAA. 1993, 1997, 2002, 2003, 2006.
- ◊ *Mathematica in the Mountains*, July 1997.
- ◊ MAA/NSF *Mathematica* in Calculus Workshop, Bowdoin College, 1995.
- ◊ MAA session on Computational Number Theory, John Carroll University, 1994.

AWARDS and HONORS

Reviewer: The Journal of Number Theory, The College Mathematics Journal, and The American Journal for Undergraduate Research.

Presidential Award for Teaching Excellence, Brown University, 1993.

Sigma Xi, Brown University, 1993.

Research and Teaching Fellowships, Brown University, 1988-1992.

Phi Beta Kappa, University of Wisconsin, 1988.

Phi Eta Sigma (Freshman honor society), 1985.

Knapp Fellowship, University of Wisconsin, 1984.

MEMBER

American Mathematical Society

Mathematical Association of America

Association for Women in Mathematics

Phi Beta Kappa