

William F. Galway

215 Aycrigg Avenue, Apt. 5-I
Passaic, NJ 07055
973-472-7412
galway@math.uiuc.edu
<http://www.math.uiuc.edu/~galway>

Degrees

- Ph.D., Mathematics**, 2004, University of Illinois at Urbana-Champaign
Thesis: Analytic Computation of the Prime-Counting Function. **Advisor:** Professor Harold G. Diamond.
- M.S., Computer Science**, 1984, University of Utah
Thesis: A Generic, Interactive Editor for Portable Standard Lisp.
- B.A., Mathematics**, 1976, University of Utah.

Honors and Fellowships

- Hohn-Nash Award:** Dept. of Math., Univ. of Illinois, 1999. “For outstanding scholarship and promise in applied mathematics, computational science, or scientific computing.”
- Department of Education, Areas of National Need Fellowships:** Sep. 1994–Aug. 1995 and Jan. 1999–May 1999 .
- Research Assistantships:** For Harold G. Diamond, Summer 1996, Spring 1997, Fall 1999. For Michael A. Bennett, Summer 1999, Spring 2000.
- Distinction:** Number Theory Comprehensive Examination, Dept. of Math., Univ. of Illinois, 1994.

Teaching Experience

Dept. of Math., Univ. of Illinois. **Visiting lecturer**, 2000. Teaching a *Mathematica* version of differential equations for undergraduates. **Instructor**, 1995–1998. Prepared and taught undergraduate courses including linear algebra, second and third semester calculus. **Teaching assistant**, 1993. Assisted in a course for elementary education majors using material based on the *Calculus&Mathematica* program.

Other Professional Experience

- Assistant Systems Administrator:** Center for Experimental and Constructive Mathematics, Simon Fraser University, 2001–2003. Dept. of Math., Univ. of Illinois, 1997–2000. Help with system administration, software installation, advising users of the departmental computer system, supervising undergraduate consultants, designing web pages and \LaTeX document styles and classes.
- Systems Programmer: Research Officer**, Univ. of Bath, Computing Group, School of Mathematical Sciences, Bath, England, 1986–1988. **Senior Systems Programmer**, University of Utah Computer Science Department, Salt Lake City, UT, 1983–1986.
- Independent Consultant:** 1977–1979, 1984–1986, 1990–1993. Worked with real-time instrumentation and control; FORTRAN, C, LISP, and assembly language programming; compiler development. Clients included: Los Alamos National Laboratory; Hewlett-Packard Laboratories (Palo Alto CA); University of Utah Departments of Chemistry and Psychology.

Computer Skills

C, \TeX , \LaTeX , HTML, Mathematica, Lisp, Perl, FORTRAN. Experienced with Unix. Some experience with Windows NT and Macintosh computers.

Research Area

Analytic and computational number theory.

Publications

Finding and Excluding b-ary Machin-type Individual Digit Formulae (with Jonathan M. Borwein and David Borwein), to appear in the Canadian Journal of Mathematics.

Computing the Riemann Zeta Function by Numerical Quadrature, Proceedings of the AMS Conference on Dynamical, Spectral and Arithmetic Zeta-Functions (2001).

Dissecting a Sieve to Cut its Need for Space, Proceedings, Algorithmic Number Theory, Fourth International Symposium (ANTS-IV), Leiden, the Netherlands (July 2000), 297–312.

On the Brocard–Ramanujan Diophantine Equation $n! + 1 = m^2$ (with Bruce C. Berndt), Ramanujan Journal **4**, no. 1 (2000), 41–42.

An Asymptotic Expansion of Ramanujan, Proceedings, 5th Conference of the Canadian Number Theory Association, CRM Proceedings and Lecture Notes **19** (1999), 107–110.

Robert Bennion’s Hopping Sieve, Proceedings, Algorithmic Number Theory, Third International Symposium (ANTS-III), Portland OR (June 1998), 169–178.

Implementing and Optimizing Lisp for the Cray (with J. Wayne Anderson, Robert R. Kessler, Herbert Melenk, and Winfried Neun), IEEE Software **4** (July 1987), no. 4., 74–83.

Conference and Invited Seminar Talks

The Density of Pseudoprimes with Two Prime Factors, Contributed paper, Special Session on Analytic Number Theory, AMS Joint Meeting, New Orleans LA, January 2001.

Dissecting a Sieve to Cut its Need for Space, Algorithmic Number Theory, Fourth International Symposium (ANTS-IV), Leiden, the Netherlands, July 2000.

Computing 134 Million Coefficients of a Series, Invited talk, Special Session on Elementary and Analytic Number Theory, AMS Spring Central Section Meeting, Urbana IL, March 1999.

Fast Computation of the Riemann Zeta Function to Arbitrary Accuracy, Invited talk, Special Session on Dynamical, Spectral, and Arithmetic Zeta-Functions, AMS Joint Meeting, San Antonio TX, January 1999.

Robert Bennion’s Hopping Sieve, Algorithmic Number Theory, Third International Symposium (ANTS-III), Portland OR, June 1998.

Implementing the Lagarias-Odlyzko Analytic Algorithm for $\pi(x)$, Illinois Number Theory Conference, DeKalb IL, 1998.

The Modular Relationship for Eisenstein Series (another point of view), Illinois Number Theory Conference, 1997.

An Asymptotic Expansion of Ramanujan, 5th Conference, Canadian Number Theory Association, 1996.

Service

Organizer, Aids for Job Hunting: Dept. of Math., Univ. of Illinois, 1998–2000. Maintaining mailing list and webpage to provide information and technical tools for departmental graduate students searching for jobs.

Member, Computer Steering Committee: Dept. of Math., Univ. of Illinois, Fall 1997–present. This committee makes recommendations on computer policies, expenditures, and staffing.

Graduate Student Mentor: Dept. of Math., Univ. of Illinois, 1997, 1999. Mentored several incoming graduate students as part of the department’s “buddy program”.

Other

Member, American Mathematical Society and Mathematical Association of America. Reading knowledge of French and German. United States citizen.

I enjoy hiking, bicycle touring, and choral singing.