



1990/91 Member of the Institute for Advanced Study, Princeton.

### **Fellowships and Awards**

1985 Research Fellowship, CIC, Pcia. de Bs. As., Argentina.  
1989/90 Presidential Fellowship, Ohio State University.  
1995/96 Fellow of the John Simon Guggenheim Memorial Foundation.  
1998/99 Alfred P. Sloan Research Fellow.  
Fall 2001 Faculty Research Assignment, UT Austin.  
2002 & 2004 Associates Teaching Fellowship, UT Austin.  
Spring 2008 Dean Fellow, UT Austin.  
2008 Two week stay as RIP in Mathematisches Forschungsinstitut Oberwolfach.  
2008–2009 Fellow of the Cook professorship, UT Austin.  
2009–2010 Clay Research Scholar.  
Fall 2009 Visiting Fellow, All Souls College, Oxford, UK.  
Spring 2010 Visiting Fellow, Wadham College, Oxford, UK.  
2009-2010 Faculty Research Assignment, UT Austin.

### **Grants**

1991/93 NSF grant joint with H. Darmon and N. Katz, Princeton University.  
1994 Summer NSF support through P. Sarnak's grant, Princeton University.  
1995/98 Principal Investigator NSF grant, Princeton University.  
1999/02 Principal Investigator NSF grant, University of Texas at Austin.  
1999/01 Principal Investigator TARP grant, University of Texas at Austin.  
2001/02 Faculty Research Assignment, University of Texas at Austin.  
2003 Co-Principal Investigator NSF SCREMS grant, University of Texas at Austin.  
2002/07 Principal Investigator NSF grant, University of Texas at Austin.  
2002/05 Co-Principal Investigator, Arizona Winter School NSF grant.  
Nov. 2008 Principal Investigator, NSF support for SAGE workshop at UT, Austin.  
2007/10 Principal Investigator NSF grant, University of Texas at Austin.  
2009/10 Master ALGANT (Bordeaux, Leiden, Paris, Pisa).

### **Students and Postdocs**

1993-1994 Senior thesis' advisor to: Kendra Hershey, Peter Braxton. Princeton University.  
1993-1994 Junior papers' advisor to: Mike Finegold, Adam Logan. Princeton University.  
1999-2002 Ricardo Toledano, post-doc, University of Texas at Austin.  
Graduated 02 David Terhune, Ph.D. student, University of Texas at Austin.  
Graduated 03 Ariel Pacetti, Ph.D. student, University of Texas at Austin.  
Graduated 04 John Condon, Ph.D. student, University of Texas at Austin.  
Graduated 05 Matilde Lalín, Ph.D. student University of Texas at Austin.  
Graduated 05 Gonzalo Tornaría, Ph.D. student University of Texas at Austin.  
Graduated 05 Riad Masri, Ph.D. student University of Texas at Austin.  
Spring 06 Cynthia Talbot, Master Thesis, University of Texas at Austin.  
Graduated 08 Patricia Quattrini, Ph.D. student, FCEN, Universidad de Buenos Aires.  
Expected 09 Todd Geldon, Ph.D. student University of Texas at Austin.  
Expected 09 Adriana Salerno, Ph.D. student University of Texas at Austin.  
Expected 09 Salman Butt, Ph.D. student University of Texas at Austin.  
Present Silvia Aducci, Ph.D. student University of Texas at Austin.

Present Kim Hopkins, Ph.D. student University of Texas at Austin.  
 Present Miguel Rodríguez, Ph.D. student University of Texas at Austin.  
 Present Martin Mereb, Ph.D. student University of Texas at Austin.  
 Present Geir Helleloid, post-doc University of Texas at Austin.  
 Present Florent Jouve, post-doc University of Texas at Austin.

### Service

1987 Graduate student representative to the Graduate Studies Committee, The Ohio State University.  
 1988 Co-founder of the Graduate Student Seminar, The Ohio Sate University.  
 1992 Organizer of the Algebra Seminar, Princeton University.  
 Spring 1996 Colloquium Chairman, Princeton University.  
 Oct. 1996 co-organizer (with H. Darmon) of the special session on automorphic forms, AMS meeting, Lawrenceville, NJ.  
 1994-1998 Reviewer for the Mathematical Reviews.  
 March 1998 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.  
 Spring 1998 Talk for High School students, West Lake Hills High School, Austin, Texas.  
 April 1999 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.  
 Fall 1999 Mini-course *Introduction to the Hasse-Weil L-functions*, Mérida, Venezuela.  
 2000 Talk for high school students participants of the New Mexico Math Contest, University of New Mexico, Albuquerque.  
 Spring 2001 Talk on *Birch-Swinnerton-Dyer conjecture*, Millennium Lectures, UT Austin.  
 Spring 2002 Talk at meeting for high-school students organized by the Clay Institute, Harvard University.  
 March 2003 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.  
 April 2003 Co-organizer of conference *The many aspects of Mahler's measure* at Banff research station, Canada.  
 Oct. 2004 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.  
 Spring 2004 Local organizer of workshop, Arizona Winter School *Number Theory and Physics* at UT Austin.  
 June 2005 Scientific Committee *Variations sur la mesure de Mahler*. Marseille (Luminy), France.  
 July 2006 Scientific Committee, 7th Algorithmic Number Theory Symposium, Berlin, Germany.  
 Feb. 2007 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.  
 June 2007 Co-organizer with T. Hausel and E. Letellier, Workshop *Character varieties, Quiver varieties and arithmetic harmonic analysis*, American Institute of Mathematics, Palo Alto, CA.  
 July 2007 Co-organizer with: P. Candelas (U. Oxford), X. de la Ossa (U. Oxford), Workshop *P-adic, Periods and Physics*, Benasque, Spain.  
 Oct. 2007 Judge for the regional chapter of the Siemens High-School science competition.  
 Nov. 2007 Talk for students of the Odyssey program, Continuing Education, UT.

- Jan. 2008 Talk for High School students, Saturday Morning Math Group, University of Texas at Austin.
- May 2008 Organizer of *Tatefest* a conference in honor of John Tate, UT, Austin.
- Nov. 2008 Co-organizer with I. Gamba of SAGE Days 11 workshop at UT Austin.
- March 2009 Organizer of Arizona Winter School *Quadratic forms*.
- July 2009 Co-organizer with: B. Conrey (AIM/Bristol), J.-C. Lario (UPC Barcelona), workshop *Theory and computation of higher rank L-functions*, Benasque, Spain. (Part of an FRG award from the NSF at AIM with B. Conrey and W. Stein as PI's.)
- March 2010 Co-organizer with: E. Letellier (Univ. de Caen) and O. Schiffmann (ENS Paris) workshop *Macdonald polynomials and geometry*, Clay Mathematical Institute.
- 2001–Present Various NSA and NSF grant awarding panels.
- 2005–Present Editor for the Journal of Number Theory

### Selected Invited Talks and Conferences

- July 1984 IV Coloquio Latinoamericano de Algebra, Mendoza, Argentina.
- July 1985 V Coloquio Latinoamericano de Algebra, Santiago de Chile.
- Fall 1987 Univ. of California at Berkeley, Mini-conference on quadratic forms.
- Sep. 1990 University of Pennsylvania, Algebra Seminar.
- March 1991 Columbia University, Number Theory Seminar.
- Feb. 1992 Rutgers University, Harmonic Analysis and Number Theory Seminar.
- March 1992 University of Maryland, College Park, Number Theory Seminar.
- July 1993 The Arithmetic of Elliptic Curves Conference, Crete, Greece.
- March 1994 U.E.R. de Mathématiques et d'Informatique, Université Bordeaux I, France.
- March 1994 Number Theory Seminar, Barcelona, Spain.
- July 1994 Invited speaker, Fourth Conference of the Canadian Number Theory Association, Halifax, Nova Scotia, Canada.
- March 1995 Coloquio, Universidad de Santiago de Chile.
- April 1995 Max-Planck-Institut für Mathematik, Bonn, Germany.
- May 1995 Modular Forms Seminar, University of Mannheim, Germany.
- June 1995 Journées Arithmétiques, Barcelona, Spain.
- Nov. 1995 Harvard University, Number Theory Seminar.
- Feb. 1996 Institute for Advanced Study, Number Theory Seminar.
- March 1996 University of Colorado, Number Theory Seminar.
- May 1996 Colloquium, University of Nijmegen, The Netherlands.
- June 1996 Facultad de Matemáticas, Universidad Nacional de Córdoba, Argentina, Colloquium.
- Aug. 1996 Invited speaker, Fifth Conference of the Canadian Number Theory Association, Ottawa, Canada.
- Oct. 1996 Princeton-Rutgers-IAS Harmonic analysis and number theory seminar.
- Dec. 1996 Columbia University, Number Theory seminar.
- Jan. 1997 Colloquium, University of Texas at Austin.
- Jan. 1997 Max-Planck-Institut für Mathematik, Bonn, Germany.
- Feb. 1997 Colloquium, Duke University.
- Feb. 1997 Colloquium, University of Georgia.
- March 1997 Colloquium, University of Michigan.
- March 1997 Colloquium, University of British Columbia, Vancouver, Canada.

July 1997 Invited speaker, Topics in Number Theory, conference at Pennsylvania State University.  
 July 1998 Facultad de Matemáticas, Universidad Nacional de Córdoba, Argentina, Colloquium.  
 July 1998 Instituto Argentino de Matemáticas, Buenos Aires, Argentina.  
 July 1998 Facultad de Matemáticas, Universidad de Santa Fé, Argentina, Colloquium.  
 Oct. 1998 Colloquium, Oklahoma State University.  
 Oct. 1998 Number Theory seminar UBC, Vancouver, Canada.  
 Oct. 1998 Colloquium, University of British Columbia, Vancouver, Canada.  
 Dec. 1998 Colloquium, Harvard University.  
 April 1999 Colloquium, University of Arizona, Tucson, Arizona.  
 April 1999 Special session speaker, AMS meeting, Las Vegas, Nevada.  
 July 1999 Explicit Methods in Number Theory, Oberwolfach, Germany.  
 Sep. 1999 Invited speaker, XII Escuela Venezolana de Matemáticas, Mérida, Venezuela.  
 April 2000 Invited address, AMS meeting Lafayette, LA.  
 May 2000 Millennial Conference on Number Theory, Univ. Illinois at Urbana-Champaign.  
 Fall 2000 Invited speaker, *Recent trends in Number Theory*, IAS, Princeton.  
 Summer 2000 ANTS IV, Leiden, The Netherlands.  
 Fall 2001 Workshop *Random matrices and L-functions*, AIM, Palo Alto, CA.  
 July 2001 Calabi–Yau varieties and mirror symmetry, Fields Inst. Toronto, Canada.  
 Nov. 2001 Québec-Vermont Number Theory Seminar, Montreal, CA.  
 Jan. 2002 University of Michigan, Number Theory Seminar.  
 Jan. 2002 Ohio State University, Number Theory Seminar.  
 Feb. 2002 Boston College, Number Theory Seminar.  
 Feb. 2002 Brandeis University, Number Theory Seminar.  
 March 2002 Periods, Arizona Winter School, University of Arizona.  
 March 2002 Pacific Northwest Number Theory Conference, Vancouver, Canada.  
 Dec. 2002 Rational Points on Higher dimensional varieties workshop, American Institute of Mathematics, Palo Alto, CA.  
 April 2003 The many aspects of Mahler’s measure, Banff research station, Canada.  
 July 2003 Computational Number Theory, Oberwolfach, Germany.  
 Jan. 2004 Random matrices and  $L$ -functions, Newton Insitute, Cambridge, UK.  
 Jan. 2004 Number Theory seminar, University of Nottingham, UK.  
 April 2004 Québec-Vermont Number Theory Seminars, Montreal, CA.  
 May 2004 Number Theory seminar, University of Massachusetts, Amherst.  
 May 2004 Algebraic Geometry seminar, University of Chicago.  
 July 2004 Random matrices and  $L$ -functions, Newton Insitute, Cambridge, UK.  
 July 2004 University of Bristol, UK.  
 Sep. 2004 Number Theory Seminar, Texas A&M University.  
 Oct. 2004 Number Theory Seminar, The Ohio State University.  
 Oct. 2004 Colloquium and Algebra seminar, Baton Rouge, Louisiana.  
 Nov. 2004 Algorithmic Number Theory Seminar, Bordeaux, France.  
 Nov. 2004 Theory Seminar joint Paris 7–IHP, Paris, France.  
 Nov. 2004 Mini-course at workshop on algorithmic Number Theory, IHP, Paris, France.  
 Nov. 2004 Algebra Seminar, Lausanne, Switzerland.

- June 2005 Workshop *Variations sur la mesure de Mahler*. Marseille (Luminy), France.
- July 2005 *Explicit Methods in Number Theory*, Oberwolfach, Germany.
- July 2005 Primeras Jornadas de Teoría de Números (de Espanya), Vilanova i la Geltrú, Spain.
- March 2006 Algebra and Topology seminar, Georgia Tech.
- May 2006 Colloquium, University of Massachusetts, Amherst.
- May 2006 Algebraic Geometry seminar, University of Chicago.
- June 2006 Colloquium, Universidad de la Republica, Uruguay.
- June 2006 Instituto Argentino de Matematicas, Buenos Aires, Argentina.
- July 2006 CNTA VI, Vancouver, Canada.
- March 2007 The Ivan and Betty Niven Distinguished Lectures, University of British Columbia, Vancouver, Canada.
- March 2007 Number Theory Seminar, Princeton University.
- Oct. 2007 SAGE Day 5, Clay Mathematical Insitute, Cambridge, MA.
- Oct. 2007 Number Theory Seminar, MIT, Cambridge, MA.
- Oct. 2007 Low dimensional topology and number theory, workshop, Banff Research Station, Banff, Canada.
- Feb. 2008 Québec-Vermont Number Theory Seminars, Montreal, CA.
- Feb. 2008 Colloquium, Montreal, CA.
- March 2008 Seminaire Chevalley, Paris 6, France
- March 2008 Number Theory Seminar, Université de Caen, France.
- June 2008 Universidad de la Republica, Uruguay, Colloquium.
- Sept. 2008 Combinatorics seminar, Oxford University, UK.
- Sept. 2008 Number Theory and Physics, workshop, Banff Research Station, Banff, Canada.
- Oct. 2008 Colloquium, Emory University.
- April 2009 Algebra and Combinatorics seminar, Texas A&M University.
- June 2009 Mini-course at *Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory* workshop, Columbia University.
- June 2009 *Terceras Jornadas de Teoría de Números (de Espanya)*, Salamanca, Spain.
- July 2009 *Explicit Methods in Number Theory*, Oberwolfach, Germany.
- July 2009 *Theory and computation of higher rank L-functions* workshop, Benasque, Spain.
- Nov 2009 *Number of theory and applications*, C.I.R.M., Luminy (France)
- Nov 2009 York University, UK, Colloquium.
- Nov 2009 Durham University, UK, Colloquium.

### Publications

1. *Quaternionic extensions* (in Spanish) Proceedings of the IV Coloquio Latinoamericano de Algebra, Mendoza, Argentina, (1984).
2. *Quaternionic extensions and rotations* (in Spanish) Notas de la Sociedad Matemática de Chile, **5** No. 1 (1986).
3. *Relations between quadratic forms and certain Galois extensions* (unpublished) (1987).
4. *On the square root of special values of certain L-series*. Invent. Math. **106**, 549-573 (1991).
5. (with D. Zagier) *Square roots of central values of Hecke L-series*, Advances in Number Theory, (F. Q. Gouvêa and N. Yui, eds.), Clarendon Press, Oxford, 1993, pp. 81-99.
6. *Square root formulas for central values of Hecke L-series II*, Duke Math. J. **72** (1993), 431-440.
7. *On the Taylor coefficients of theta functions of CM elliptic curves*, Arithmetic Geometry (N. Childress and J.W. Jones, eds.), Contemporary Mathematics **174**, AMS, 1994.

8. *The congruences of Clausen-von Staudt and Kummer for half-integral weight Eisenstein series.* Math. Nachr. **162**, 187–191, (1993).
9. (with D. Zagier) *Which primes are sums of two cubes?* Number Theory (K. Dilcher ed.), CMS Conference Proceedings **15**, AMS-CMS, Providence, Rhode Island (1995).
10. (with F. Hajir) *Explicit Elliptic units I*, Duke Math. J. **90**, 495–521, (1997).
11. *Modular Mahler Measures I*, Topics in Number Theory, In Honor of B. Gordon and S. Chowla, (eds. S. D. Ahlgren, G. E. Andrews, K. Ono), Mathematics and its Applications, **467**, Kluwer Acad. Publ. (1999)
12. (with F. Hajir) *The order ideal of Sha of CM elliptic curves*, Math. Res. Letters **5** (1998), 637–655
13. (with Tonghai Yang) *Central Values of Hecke L-functions of CM number fields*, Central values of Hecke L-functions of CM number fields. Duke Math. J. **98** (1999), no. 3, 541–564
14. (with J. Pila) *Concordant sequences and integral-valued entire functions* Acta Arith. **88** (1999), 239–268
15. (with F. Voloch) *On certain plane curves with many integral points* Exp. Math. **8** (1999), 57–62.
16. (with B. Poonen) *Lattice polygons and the number 12*, Amer. Math. Monthly **107** (2000), no. 3, 238–250.
17. *Explicit models of genus 2 curves with split CM* Algorithmic number theory (Leiden, 2000), 505–513, Lecture Notes in Comput. Sci., 1838, Springer, Berlin, 2000
18. (with H. Cohen and D. Zagier) *Convergence acceleration of alternating series*, Exp. Math. **9** (2000), no. 1, 3–12.
19. *Introducción a la funciones zeta de Hasse–Weil* (in Spanish) (50 pages, lecture notes published by the Asociación Matemática Venezolana).
20. (with F. Voloch and D. Zagier) *On certain plane curves with many integral points II*, Acta Arith. **49** (2001), 85–96.
21. (with D. Boyd) *Mahler’s Measure and the Dilogarithm I*, Canad. J. of Math. **54** (2002), 468–492.
22. (with L. Sadun and F. Voloch) *Blet: A mathematical puzzle*, Amer. Math. Monthly **109** (2002), no. 8, 729–740.
23. *Identities between Mahler measures*, in *Number Theory for the Millenium* eds. M. A. Bennett, B.C. Berndt, N. Boston, H. G. Diamond, A. J. Hildebrand, and W. Philipp. A K Peters, 2002.
24. *On the zeros of certain polynomials*, Proc. Amer. Math. Soc. **130** (2002) 2251–2254.
25. (with P. Candelas and X. de la Ossa) *Calabi-Yau Manifolds Over Finite Fields, I* <http://xxx.lanl.gov/abs/hep-th/0012233>
26. *Hypergeometric families of Calabi-Yau manifolds* Calabi-Yau varieties and mirror symmetry (Toronto, ON, 2001), 223–231, Fields Inst. Commun., 38, Amer. Math. Soc., Providence, RI, 2003.
27. (with P. Candelas and X. de la Ossa) *Calabi-Yau manifolds over finite fields. II* Calabi-Yau varieties and mirror symmetry (Toronto, ON, 2001), 121–157, Fields Inst. Commun., 38, Amer. Math. Soc., Providence, RI, 2003
28. (with R. Toledano and J. Vaaler) *Estimates for Mahler’s Measure of a Linear Form*, Proc. of the Edinburgh Math. Soc., **47** (2004) 1–22.
29. (with A. Pacetti and appendix by B. Gross) *Computing Weight 2 Modular forms of level  $p^2$*  Math. Comp. **251**, (2004), 1545–1557.
30. (with M. Artin and J. Tate) *On the Jacobians of plane cubics* Advances in Mathematics, **198**, (2005), 366–382.
31. *Counting colorings on varieties*. Proceedings of the Primeras Jornadas de Teoría de Números (de Espanya), Vilanova i la Geltrú, Spain. Publicacions Matemàtiques Departament de Matemàtiques. Universitat Autònoma de Barcelona Vol. extra 2007

32. *Integral ratios of factorials and algebraic hypergeometric functions* Oberwolfach reports, July 2005, math/0701362.
33. (with Z. Mao and G. Tornaría) *Computation of central value of quadratic twists of modular L-functions*, Ranks of elliptic curves and random matrix theory, 273–288, London Math. Soc. Lecture Note Ser., 341, Cambridge Univ. Press, Cambridge, 2007.
34. *Computing central values of L-series*, Ranks of elliptic curves and random matrix theory, 273–288, London Math. Soc. Lecture Note Ser., 341, Cambridge Univ. Press, Cambridge, 2007.
35. *Experimental Number Theory* Oxford Graduate Texts in Mathematics, 13. Oxford University Press, Oxford, 2007. xvi+214 pp. ISBN: 978-0-19-922730-3
36. (with P. Gunnells) *Lattice polygons, Hecke operators and the Ehrhart polynomial*, Selecta Math. **13** (2007), no. 2, 253–276.
37. (with T. Hausel, with an appendix by N. Katz) *Mixed Hodge polynomials of character varieties*, 57 pages, math.AG/0612668 Invent. Math. **174** 555–624(2008).
38. (with G. Helleloid) *Counting Quiver Representations over Finite Fields Via Graph Enumeration*, math.RT/0810.2127, J. of Alg. 322 (2009) 1689–1704.
39. (with T. Hausel and E. Letellier) *Arithmetic harmonic analysis on character and quiver varieties* math.RT/0810.2076, 43 pages, 2008 (submitted).