

RÉSUMÉ

FERNANDO RODRIGUEZ VILLEGAS

Contact Information

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Education

1985 Licenciatura en Ciencias Matemáticas. Universidad de Buenos Aires.
1990 Ph.D. Mathematics. Ohio State University (Advisors: W. Sinnott and K. Rubin).

Language Skills

Spanish (native speaker)
English (fluent)
Italian (fluent)
French (intermediate)

Positions

1990-1991 Member of the Institute for Advanced Study, Princeton.
1991-1993 Princeton University, Instructor.
1993-1997 Princeton University, Assistant Professor.
1997-1999 University of Texas at Austin, Assistant Professor
1999-2005 University of Texas at Austin, Associate Professor.
2005-2012 University of Texas at Austin, Full Professor.
2012-2013 Senior Research Scientist, ICTP.
2014-2017 Head of the Mathematics Section, ICTP.
2018-2024 Senior Research Scientist, ICTP.

Visiting Positions

1994-1995 Max Planck Institut für Mathematik, Bonn, Germany.
March 1994 Université de Bordeaux I, France, Visiting Professor.
March 1995 Universidad de Buenos Aires, Argentina, Visiting Professor.
June 1996 Universidad de Buenos Aires, Argentina, Visiting Professor.
June 1998 Universidad de Buenos Aires, Argentina, Visiting Professor.
June 1999 Universidad de Buenos Aires, Argentina, Visiting Professor.
June 2000 Université de Bordeaux I, France, Visiting Professor.
Fall 2001 Harvard University, Visiting Scholar.
Spring 2002 Harvard University, Visiting Associate Professor.
Nov. 2004 Université de Paris VI, Visiting Professor.
July 2005 Centre de Recerca Matemàtica, Barcelona, Catalonia, Spain, visitor.
June 2008 Universidad de Buenos Aires, Argentina, Visiting Professor.
April 2010 Centre de Recerca Matemàtica, Barcelona, Catalonia, Spain, visitor.

2009-2010 Visiting scholar, Oxford University, (EPSRC grant of T. Hausel).
Fall 2009 Visiting Fellow, All Souls College, Oxford, UK.
Spring 2010 Visiting Fellow, Wadham College, Oxford, UK.
July 2012 Member IHES, Paris, France.
Spring 2018 *Periods in Number Theory, Algebraic Geometry and Physics*, Hausdorff Institute of Mathematics, Bonn, Germany, co-organizer.
Nov 2019 FIM, ETH Zürich, Switzerland, one-week visit.
Spring 2020 Thematic trimester program on Representation Theory. Institut Henri Poincaré, Paris, visitor.

Fellowships and Awards

1985	Research Fellowship, CIC, Pcia. de Bs. As., Argentina.
1989-1990	Presidential Fellowship, Ohio State University.
1995-1996	Fellow of the John Simon Guggenheim Memorial Foundation.
1998-1999	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, Germany.
2008-2009	Fellow of the Cook professorship, UT Austin.
2009-2011	Clay Research Scholar.
2009-2010	Faculty Research Assignment, UT Austin.
2014	Two-week stay as RIP in Mathematisches Forschungsinstitut Oberwolfach, Germany.

Grants

1991-1993	NSF grant joint with H. Darmon and N. Katz, Princeton University.
1994	Summer NSF support through P. Sarnak's grant, Princeton University.
1995-1998	Principal Investigator NSF grant, Princeton University.
1999-2002	Principal Investigator NSF grant, University of Texas at Austin.
1999-2001	Principal Investigator TARP grant, University of Texas at Austin.
2001-2002	Faculty Research Assignment, University of Texas at Austin.
2003	Co-Principal Investigator NSF SCREMS grant, University of Texas at Austin.
2002-2007	Principal Investigator NSF grant, University of Texas at Austin.
2002-2011	Co-Principal Investigator, Arizona Winter School NSF grant.
Nov. 2008	Principal Investigator, NSF support for SAGE workshop at UT, Austin.
2007-2011	Principal Investigator NSF grant, University of Texas at Austin.
2011-2014	Principal Investigator NSF grant, University of Texas at Austin.

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.
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.
Graduated 09	Todd Geldon, Ph.D. student University of Texas at Austin.
Graduated 09	Adriana Salerno, Ph.D. student University of Texas at Austin.
Graduated 09	Salman Butt, Ph.D. student University of Texas at Austin.
Graduated 10	Silvia Aducci, Ph.D. student University of Texas at Austin.
Graduated 10	Kim Hopkins, Ph.D. student University of Texas at Austin.
Graduated 10	Miguel Rodríguez, Ph.D. student University of Texas at Austin.
Graduated 10	Martin Mereb, Ph.D. student University of Texas at Austin.
2015-2019	Gabriele Bogo, Ph.D. SISSA (co-supervisor with D. Zagier).
2014-2017	Vicenzo Cambó, Ph.D. student, SISSA.
2017-2021	Mathieu Ballandras Ph.D. (Univ. of Paris/SISSA), co-supervisor with E. Letellier.
2021-Present	Asem Abdelraouf, Ph.D. ICTP-SISSA
2022-Present	Vadym Kurilenko, Ph.D. SISSA
2023-Present	Mohammed Aliouane, Ph.D. ICTP-SISSA
1999-2002	Ricardo Toledano, post-doc, University of Texas at Austin.
2007-2008	Geir Helleloid, post-doc University of Texas at Austin.
2008-2009	Florent Jouve, post-doc University of Texas at Austin.
2013-2016	Anton Mellit, post-doc, ICTP.
2014-2016	Erik Carlsson, post-doc, ICTP.
2015-2017	Danylo Radchenko, post-doc, ICTP.
2015-2018	Shehryar Sikander, post-doc, ICTP.
2016-2019	Victoria Farfan-Cantoral, post-doc, ICTP.
2017-2020	Tarig Abdelgadir, post-doc, ICTP.
2021-2023	Giulia Gugiatti, post-doc, ICTP.

Service

- 1987 Graduate student representative to the Graduate Studies Committee, The Ohio State University.
- 1988 Co-founder of the Graduate Student Seminar, The Ohio State 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.
- April 2003 Co-organizer of conference *The many aspects of Mahler's measure* at Banff research station, Canada.
- 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.
- 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, USA.
- 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.
- 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.
- June 2010 Panel discussion on open problems, *Number Theory and Representation Theory*, a conference in honor of 60th birthday of Benedict Gross. Harvard University, Cambridge, MA.
- Nov. 2010 Judge for the regional chapter of the Siemens high school science competition.
- 2010 Scientific Committee, ANTS, San Diego.
- 2001-2012 Various NSA and NSF grant awarding panels.
- 2005-2012 Editor for the Journal of Number Theory.
- January 2012 Scientific Committee, Théorie des nombres et applications, CIRM, Luminy, France.
- June 2012 Co-organizer, two-week workshop *Computational Number Theory and Algebra*, in ICTP, Trieste.
- June 2012 Co-organizer, AIM workshop *Hypergeometric Motives*, ICTP, Trieste.
- 2013-2015 Chair of the Ramanujan Prize Selection Committee.
- July 2013 Co-organizer, *Advanced School and Workshop on Matrix Geometries and Applications*, ICTP, Trieste

- 2013 Part of ICTP delegation to: Argentina, Costa Rica, Kuwait, Nigeria, Panama, Paraguay, South Africa, UAE
- July 2014 Co-organizer, ICTP-CIMPA school *Algebraic Number Theory and Applications*, Dagbo, Benin
- Fall 2014 Founder of the Basic Notions Seminar at ICTP.
- Sep 2014 Co-organizer, ICTP school and workshop *Workshop on L-functions and Modular Forms* ICTP, Trieste. Co-funded by EPSRC grant at Univ. of Warwick, EP/K034383/1.
- Dec, 2014 Co-organizer ICTP school *Computational Algebra and Number Theory* (satellite to FOCM'14) Montevideo, Uruguay
- April 2015 Co-organizer, ICTP-CIMPA School on *Minimal surfaces, overdetermined problems and geometric analysis*, Santiago, Chile.
- July 2015 Co-organizer, *Campionato Matematico Mediterraneo*, ICTP.
- July 2015 Co-organizer, *Explicit Methods in Number Theory*, MFO, Oberwolfach, Germany.
- Aug 2015 Co-organizer, ICTP-CIMPA School, *AGRA 2: Aritmética, grupos y analisis*, Cuzco, Perú.
- 2015-2022 Member of the Committee for Developing Countries of the European Mathematical Society.
- May 2016 Co-organizer, Advanced School on *Geometric Group Theory and Low-Dimensional Topology: Recent Connections and Advances*, ICTP.
- July 2016 Co-organizer, *EAUMP-ICTP School in Number Theory*, Kigali, Rwanda.
- Aug 2016 Co-organizer, ICTP-CIMPA Mathematics Research School on *Lattices and Application to Cryptography and Coding Theory*, Ho Chi Minh City, VietNam.
- Feb 2017 Co-organizer ICTP School, *Noncommutative Geometry and Applications*, ICTP.
- May 2017 Co-organizer ICTP-SISSA School, *School on Artin L-functions, Artin's Primitive Roots Conjecture and Applications*, Nesin Mathematical Village, Şirince, Turkey.
- June 2017 Scientific Committee, *SWAGP2017 School and Workshop in Algebraic Geometry and Physics*, SISSA, Trieste, Italy.
- Spring 2017 Selection Committee, Premio Fundación Bunge y Born, Buenos Aires, Argentina.
- Aug 2017 Co-organizer ICTP School, *Advanced School and Workshop on Arithmetic of Hyperelliptic Curves*, ICTP. Co-funded by EPSRC grant at Univ. of Bristol, EP/M016838/1
- Dec 2017 Co-organizer ICTP School, *School and Workshop on Geometry and Physics of Moduli Spaces*, Bangalore, India.
- July 2018 Co-organizer, *EAUMP-ICTP school and workshop on homological methods in algebra and geometry II*, Bagamoyo, Tanzania. July 9 - 28, 2018
- July 2018 Co-organizer, *Explicit Methods in Number Theory*, MFO, Oberwolfach, Germany.
- 2018-2024 Head of the Library Committee, ICTP.
- 2018-2024 Faculty Board, ICTP.
- July 2019 Co-organizer, *2019 EAUMP School on Algebraic Topology and its applications*, Kampala, Uganda.
- 2019-2024 Math section Liaison with ICTP's partner institute EAIFR in Kigali, Rwanda.
- July 2020 (cancelled) Co-organizer, *International Conference in the Representation of Algebras*, ICTP.
- 2020-2021 Head of Faculty Board, ICTP.
- 2020-2021 Liaison with More Partnership during consulting period, ICTP.
- 2021 Head of ICTP hiring committee for a fundraising officer.
- August 2021 Co-organizer, *2020 EAUMP School on Mathematical Tools*, (online), Kigali, Rwanda.

2021-2024 ICTP advancement office.
July 2022 Co-organizer, *EAUMP-ICTP School in School on Mathematical Programming and Algorithms*, Nairobi, Kenya.
August 2022 Co-organizer, *VIASM - ICTP Summer School Summer School in Group Theory and Representation Theory*, Hanoi, Vietnam.
2022-2023 Part of ICTP team developing a Mathematics Masters at EAIFR in Kigali, Rwanda.
April 2024 Follow-up workshop *Periods in Number Theory, Algebraic Geometry and Physics*, Special Trimester, HIM, Bonn, Germany.
Sept 2024 Co-organizer, *Explicit Methods in Number Theory* Oberwolfach, Germany.

Mini-courses and Public Talks

- March 1998 Talk for high school students, Saturday Morning Math Group, *Lattice Polygons: What's twelve got to do with it?*, 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, *Nimbles for a nimble Nim: The mathematics of games*, 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 2002 Talk at meeting for high-school students organized by the Clay Institute, Harvard University.
- March 2002 Lecture series, *Periods*, Arizona Winter School, University of Arizona.
- March 2003 Talk for high school students, *Nimmity, Nimmity, Nimmity: More Mathematical Games* Saturday Morning Math Group, University of Texas at Austin.
- Oct. 2004 Talk for high school students, *Shuffle and Slide*, Saturday Morning Math Group, University of Texas at Austin.
- Nov. 2004 Mini-course at workshop *Algorithmic Number Theory*, IHP, Paris, France.
- Feb. 2007 Talk for high school students, *Ready, Set, Go!*, Saturday Morning Math Group, University of Texas at Austin.
- Nov. 2007 Talk for students of the Odyssey program, Continuing Education, UT.
- Jan. 2008 Talk for high school students, *Making Up Numbers: The Art of the Cheat*, Saturday Morning Math Group, University of Texas at Austin.
- June 2009 Mini-course at *Interactions Between Hyperbolic Geometry, Quantum Topology and Number Theory* workshop, Columbia University.
- Nov 2009 Talk for ALGANT students, Bordeaux, France.
- Summer 2011 Talk at workshop of the Mathematics Teacher's Circle of Austin, *Dizzying the memory of arithmetic (or what is new in the world of addition)*.
- April 2011 Talk at workshop of the Mathematics Teacher's Circle of Austin, *The 15-Puzzle*.
- Oct 2013 Public Talk (in Spanish): *Algebra y el mundo real*, Costa Rica, Panama.
- Sep 2014 Basic Notions Seminar, *Impartial Games*, ICTP.
- Jan 2015 Talk for high school students (in Italian): *La matematica di ogni giorno*, ICTP.
- May 2017 Mini-course (10 hours). *Arithmetic of differential equations, with emphasis on the hypergeometric and modular cases* part of *Modular Forms are Everywhere*, MPI, Bonn, Germany.
- May 2017 Mini-course (4 hours). *CIMPA-ICTP research school on Artin L-functions, Artin's primitive roots conjecture and applications*, Nesin Mathematics Village, Şirince, Turkey.
- June 2017 Mini-course (4 hours): *Geometry of character varieties via arithmetic techniques* SWAGP2017 School and Workshop in Algebraic Geometry and Physics, SISSA, Trieste, Italy.
- Jan 2018 Mini-course (4.5 hours): *Character Varieties*, SISSA, Trieste, Italy.
- June 2018 Public talk (in Spanish), *Matemáticas y Fútbol*, Cafés de las Ciencias IILA, Argentine Embassy, Rome, Italy.
- July 2018 Talk for ICTP Staff, *World Cup Mathematics*, ICTP.
- July 2018 Public talk (in Italian), *Matematica e Calcio*, Minimaker Fair, ICTP.

- July 2018 Mini-course (in Spanish) (3 hours): *Representaciones de Galois*, ICTP-CIMPA school AGRA 3, Cordoba, Argentina.
- Sep 2018 Mini-course (4 hours) *Rigid Local Systems* at school *Arithmetic of Differential Equations*, Lukecin, Poland part of the Simons semester *Varieties: Arithmetic and Transformations*, Banach Center, IMPAN, Warsaw, Poland.
- Nov 2018 Mini-course (5 hours): *Combinatorics, groups and algebraic varieties*, Univ. of Vienna, Vienna, Austria.
- Dec 2018 Basic Notions Seminar, *Blet, a mathematical puzzle*, ICTP.
- Feb 2019 Mini-course (3 hours): CIMPA Research School *Elliptic Curves: Arithmetic and Computation*, Univ. de la República Montevideo, Uruguay.
- Feb 2019 Talk for high-school student (in Spanish): *Matemáticas y Fútbol*, Montevideo, Uruguay.
- May 2019 Public talk (in Italian), *Matematica e Calcio*, Minimizer Fair, ICTP.
- Nov 2020 Talk for high-school teachers (in Italian) *La geometria della palla di calcio* in the program *I Lincei per una nuova didattica nella scuola: una rete nazionale*
- May 2021 Talk for young students, *Mathematics of the football*, Gonit Sora, Assam, India (online)
- May 2024 Presentation for primary school class on the binary system, ICTP.

Special Lectures

- April 2000 Invited address, *Periods, L-functions, and Arithmetic*, 2000 Southeastern Section Meeting AMS, Lafayette, LA, USA.
- Spring 2001 Clay Mathematical Institute Millennium Lectures, *The Birch-Swinnerton-Dyer Conjecture*, UT Austin.
- March 2007 The Ivan and Betty Niven Distinguished Lectures, *Combinatorics as Geometry* (Math Colloquium), *Puzzles and Groups* (Student Lecture), Univ. of British Columbia, Vancouver, Canada.
- Aug 2013 Invited speaker, *Combinatorics and geometry*, Mathematics Congress of the Americas, Guanajuato, Mexico.
- Oct 2013 Invited speaker, *The Birch-Swinnerton-Dyer Conjecture: a Status Report*, Clay Mathematics Institute Conference, Oxford.
- Sep 2015 Public talk (in Spanish): *Los motivos de Grothendieck*, Charla Rey Pastor, UMA annual meeting, Santa Fé, Argentina.
- April 2018 Beeger Lecture, *Hypergeometric Motives*, Netherlands Mathematical Congress, The Netherlands.
- April 2018 Maxson Lectures, *Hypergeometric Functions and L-series, Combinatorics and geometry*, Texas A&M University, Texas, USA.
- Nov 2018 Arf Lecture, *Combinatorics and Geometry*, Middle East Technical University, Ankara, Turkey.

Invited Talks and Conferences

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

- Aug. 1996 Invited speaker, Fifth Conference of the Canadian Number Theory Association, Ottawa, Canada.
- Oct. 1996 Seminar talk, Princeton-Rutgers-IAS Harmonic analysis and number theory Seminar.
- Dec. 1996 Seminar talk, Columbia University, Number Theory Seminar.
- Jan. 1997 Colloquium, University of Texas at Austin.
- Jan. 1997 Seminar talk, 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 Colloquium, Facultad de Matemáticas, Universidad Nacional de Córdoba, Argentina
- July 1998 Colloquium, Instituto Argentino de Matemáticas, Buenos Aires, Argentina.
- July 1998 Colloquium, Facultad de Matemáticas, Universidad de Santa Fé, Argentina, Colloquium.
- Oct. 1998 Colloquium, Oklahoma State University.
- Oct. 1998 Seminar talk, 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 Talk, *Explicit Methods in Number Theory*, Oberwolfach, Germany.
- Sep. 1999 Invited speaker, XII Escuela Venezolana de Matemáticas, Mérida, Venezuela.
- May 2000 Invited speaker, *Millennial Conference on Number Theory*, Univ. Illinois at Urbana-Champaign.
- Fall 2000 Invited speaker, *Recent trends in Number Theory*, IAS, Princeton.
- Summer 2000 Talk, ANTS IV, Leiden, The Netherlands.
- Fall 2001 Talk, Workshop *Random matrices and L-functions*, AIM, Palo Alto, CA, USA.
- July 2001 Talk, Calabi–Yau varieties and mirror symmetry, Fields Inst. Toronto, Canada.
- Nov. 2001 Seminar talk, Québec-Vermont Number Theory Seminar, Montreal, Canada.
- Jan. 2002 Seminar talk, University of Michigan, Number Theory Seminar.
- Jan. 2002 Seminar talk, Ohio State University, Number Theory Seminar.
- Feb. 2002 Seminar talk, Boston College, Number Theory Seminar.
- Feb. 2002 Seminar talk, Brandeis University, Number Theory Seminar.
- March 2002 Pacific Northwest Number Theory Conference, Vancouver, Canada.
- Dec. 2002 Talk, *Rational Points on Higher dimensional varieties* workshop, American Institute of Mathematics, Palo Alto, CA, USA.
- April 2003 Talk, *The many aspects of Mahler’s measure*, Banff research station, Canada.
- July 2003 Talk, Computational Number Theory, Oberwolfach, Germany.
- Jan. 2004 Talk, *Random matrices and L-functions*, Newton Institute, Cambridge, UK.
- Jan. 2004 Seminar talk, Number Theory Seminar, University of Nottingham, UK.
- April 2004 Invited speaker, Québec-Vermont Number Theory Seminars, Montreal, Canada.

May 2004 Seminar talk, Number Theory Seminar, University of Massachusetts, Amherst.
 May 2004 Seminar talk, Algebraic Geometry Seminar, University of Chicago.
 July 2004 Talk, University of Bristol, UK.
 Sep. 2004 Seminar talk, Number Theory Seminar, Texas A&M University.
 Oct. 2004 Seminar talk, Number Theory Seminar, The Ohio State University.
 Oct. 2004 Colloquium and Algebra Seminar talk, Baton Rouge, Louisiana.
 Nov. 2004 Seminar talk, Algorithmic Number Theory Seminar, Bordeaux, France.
 Nov. 2004 Seminar talk, Theory Seminar joint Paris 7–IHP, Paris, France.
 Nov. 2004 Seminar talk, Algebra Seminar, Lausanne, Switzerland.
 June 2005 Talk, workshop *Variations sur la mesure de Mahler*, Marseille (Luminy), France.
 July 2005 Talk, *Explicit Methods in Number Theory*, Oberwolfach, Germany.
 July 2005 Invited speaker, Primeras Jornadas de Teoría de Números (de Espanya), Vilanova i la Geltrú, Spain.
 March 2006 Seminar talk, Algebra and Topology Seminar, Georgia Tech.
 May 2006 Colloquium, University of Massachusetts, Amherst.
 May 2006 Seminar talk, Algebraic Geometry Seminar, University of Chicago.
 June 2006 Colloquium, Universidad de la República, Uruguay.
 June 2006 Colloquium, Instituto Argentino de Matematicas, Buenos Aires, Argentina.
 July 2006 Invited speaker, CNTA VI, Vancouver, Canada.
 March 2007 Seminar talk, Number Theory Seminar, Princeton University.
 Oct. 2007 Talk, workshop SAGE Day 5, Clay Mathematical Institute, Cambridge, MA.
 Oct. 2007 Seminar talk, Number Theory Seminar, MIT, Cambridge, MA.
 Oct. 2007 Talk, workshop, *Low dimensional topology and number theory*, Banff Research Station, Banff, Canada.
 Feb. 2008 Invited speaker, Québec-Vermont Number Theory Seminars, Montreal, Canada.
 Feb. 2008 Colloquium, Montreal, Canada.
 March 2008 Seminar talk, Seminaire Chevalley, Paris 6, France
 March 2008 Seminar talk, Number Theory Seminar, Université de Caen, France.
 June 2008 Colloquium, Universidad de la República, Uruguay.
 Sept. 2008 Seminar talk, Combinatorics Seminar, Oxford University, UK.
 Sept. 2008 Talk, workshop, *Number Theory and Physics*, Banff Research Station, Banff, Canada.
 Oct. 2008 Colloquium, Emory University.
 April 2009 Seminar talk, Algebra and Combinatorics Seminar, Texas A&M University.
 July 2009 Talk, workshop, *Explicit Methods in Number Theory* Oberwolfach, Germany.
 July 2009 Talk, workshop, *Theory and computation of higher rank L-functions* workshop, Benasque, Spain.
 Oct 2009 Seminar talk, Oxford University, Oxford, UK, Number Theory Seminar.
 Nov 2009 Talk, workshop, *Number Theory and applications*, C.I.R.M., Luminy (France)
 Nov 2009 Colloquium, York University, UK.
 Nov 2009 Colloquium, Durham University, UK.
 Dec 2009 Invited speaker, *Anabelian Geometry, final workshop*, Newton Institute, Cambridge, UK.
 Jan 2010 Seminar talk, University of Warwick, UK, Number Theory Seminar.
 Jan 2010 Seminar talk, University College Dublin, Ireland, Number Theory Seminar.
 Jan 2010 Seminar talk, University College London, UK, Number Theory Seminar.

Feb 2010 Seminar talk, University of Bristol, UK, Number Theory Seminar.

March 2010 Colloquium, University of Edinburgh, Scotland.

March 2010 Talk, workshop, *Macdonald polynomials and geometry*, Clay Mathematical Institute, Cambridge, MA.

March 2010 Talk, workshop, *Effective methods in p -adic cohomology*, Oxford University, UK.

March 2010 Invited talk, *Journée d’algèbre, Developpements et perspectives en théorie des groupes*, Univ. de Caen, France.

April 2010 Talk, workshop, CRM, Barcelona, Spain. Special year in Arithmetic Geometry.

June 2010 Invited talk, *Number Theory and Representation Theory*, a conference in honor of D. Gross 60th birthday, Harvard University.

August 2010 Talk, workshop *Low dimensional topology and number theory*, Oberwolfach, Germany.

October 2010 Talk, workshop on L -functions and modular forms, Paris, France.

January 2011 Coloquio de Matemáticas 2010-11, UAM, Madrid, España.

Feb 2011 Talk, workshop, *Representation Theory of Quivers and Finite Dimensional Algebras*, Oberwolfach, Germany.

April 2011 Invited speaker, *Bay Area Algebraic Number Theory and Arithmetic Geometry Day II*, UC, Berkeley.

April 2011 Seminar talk, Algebra Seminar, Georgia Tech.

March 2011 Talk, workshop *Number Theory and Physics at the Crossroads*, BIRS, Canada.

June 2011 Seminar talk, Seminario de Geometría Algebraica, Universidad de Buenos Aires, Argentina.

July 2011 Talk, workshop, *Explicit Methods in Number Theory*, Oberwolfach, Germany.

October 2011 Seminar talk, Boston College - MIT Number Theory Seminar.

October 2011 Invited speaker, *Southern California Number Theory Day*, University of California, Irvine.

January 2012 Talk, workshop *Théorie des Nombres et applications* C.I.R.M. Luminy, France.

May 2012 Invited speaker, 23rd rencontres arithmétiques de Caen, France.

Nov 2012 Talk, workshop, *Journée Hypergéométrique*, College de France, Paris.

Oct 2012 Colloquium, ICTP.

Oct 2012 Number Theory Seminar, University of Leiden, The Netherlands.

Dec 2012 Seminar talk, Geometry Seminar, EPFL Lausanne.

Feb 2013 Seminar talk, Universidad de Buenos Aires, Argentina.

June 2013 Talk, workshop on *DT invariants*, Paris, France.

July 2013 Talk, workshop, *Explicit Methods in Number Theory*, Oberwolfach, Germany.

Sep 2013 Talk, workshop, *Hamiltonian PDEs, Frobenius Manifolds and Deligne Mumford Moduli Spaces*, SISSA, Trieste, Italy.

Nov 2013 Seminar talk, Number Theory Seminar, ETH, Zürich, Switzerland.

Feb 2014 Talk, workshop, *Representation Theory of Quivers and Finite Dimensional Algebras*, Oberwolfach, Germany.

Aug 2014 Talk, workshop, *Impact of computation on number theory*, NCTS, Hsinchu, Taiwan.

Sep 2014 Seminar talk, *Families of Calabi-Yau motives*, MPI, Bonn, Germany.

Dec 2014 Colloquium, *Motivos Hipergeométricos*, Univ. de Buenos Aires, Argentina.

Feb 2015 Talk, workshop *Mirror Symmetry and Pencils of Calabi-Yau Motives*, Imperial College, UK.

- March 2015 Invited speaker, *Hypergeometric Motives, Constructive Methods in Number Theory*, Bethe Forum, Univ. of Bonn, Germany.
- May 2015 Invited speaker, *Hypergeometric Motives*, conference *Arithmetic Algebraic Geometry*, in honor of Professor Nicholas Katz's 71st birthday. Academy of Mathematics and Systems Science, the Chinese Academy of Sciences, Beijing, China.
- June 2015 Invited speaker, *Geometry of Character Varieties, International Conference in Number Theory and Physics*, IMPA, Rio de Janeiro, Brazil.
- Nov 2015 Seminar talk, *Identities among P -adic polylogarithms*, Meeting of the London-Bonn-Moscow-Trieste lab, ICTP.
- March 2016 Invited speaker, Zeta functions, *Explicit p -adic Methods in Number Theory*, workshop (Sage Days 71), University of Oxford, UK.
- May 2016 Colloquium, Univ. di Padova, Italy.
- May 2016 Seminar talk, Univ. de Paris VI, Paris, France.
- Nov 2016 Invited speaker, workshop on *Hall Algebras, Enumerative Invariants and Gauge Theories*, Fields Institute, Toronto, Canada.
- Nov 2016 Seminar talk, Hausel Research Group Seminar, IST, Vienna, Austria.
- Jan 2017 Lecture series, *Hypergeometric motives and Calabi–Yau differential equations*, MATRIX, Univ. Melbourne, Australia
- March 2017 Talk, School and Workshop on *Geometry and Physics of Moduli Spaces*, Bangalore, India.
- April 2017 Invited speaker, *Third mini-symposium of the Roman Number Theory Association*, Univ. Roma 3, Rome, Italy.
- April 2017 Invited speaker, *Modular Forms are Everywhere*, MPI, Bonn, Germany.
- July 2017 Talk, workshop on curves of low genus, UPC, Barcelona, Spain.
- Aug 2017 Seminar talk, IPMU, Tokyo, Japan.
- Aug 2017 Talk, workshop, *Arithmetic Geometry and Quantum Field Theory*, KIAS, Korea.
- Aug 2017 Talk, workshop, *Low-dimensional Topology and Number Theory*, MFO, Oberwolfach, Germany.
- Nov 2017 Seminar talk, Hausel Research Group Seminar, IST, Vienna.
- Jan 2018 *Periods in Number Theory, Algebraic Geometry and Physics*, Special Trimester, HIM, Bonn, Germany.
- June 2018 Invited speaker, *Hodge numbers of Hypergeometric Motives*, conference *Perspectives on the Riemann Hypothesis Conference*, Bristol University, UK.
- June 2018 Seminar talk, *Goursat rank 4 rigid local systems*, Oxford University Seminar, Oxford, UK.
- Nov 2018 Colloquium, Univ. Vienna, Vienna, Austria.
- Nov 2018 Seminar talk, Hausel Research Group Seminar, IST, Vienna, Austria.
- Nov 2018 Colloquium, *Combinatorics as Geometry* Istanbul Center for Mathematical Sciences, Istanbul, Turkey.
- Jan 2019 Seminar talk, *Hypergeometric Motives*, Univ. di Udine, Udine, Italy.
- Feb 2019 *Hodge numbers of rigid local systems*, Workshop *Algebraic Marvels in Differential Equations*, Univ. of Lisboa, Lisboa, Portugal.
- June 2019 Invited speaker, *Mixed Hodge Numbers and Factorial Ratios*, Conference *Arithmetic, geometry and modular forms: A conference in honor of William Duke*, ETH, Zürich, Switzerland.

- July 2019 Invited speaker, *Mixed Hodge numbers of hypergeometric motives*, School on *Arithmetic of connections*, ETH Monte Verità, Ascona, Switzerland.
- Oct 2019 Seminar talk, Hausel Research Group Seminar, IST, Vienna, Austria.
- Nov 2019 Seminar talk, Number Theory Seminar, ETH, Zürich, Switzerland.
- Oct 2020 Saint Petersburg Number Theory Seminar, Saint Petersburg, Russia (online).
- Oct 2020 Seminar talk, Hausel Research Group Seminar, IST, Vienna, Austria (online).
- Oct 2020 Latinoamerican Number Theory Seminar, *Cocientes enteros de factoriales y números de Hodge* (online)
- Nov 2020 Seminario Latinoamericano de Algebra, Colombia (online)
- Jan 2022 Séminaire Equations Différentielles, IHES, France (online)
- June 2022 Two talks for program *Triangle Groups, Belyi Uniformization, and Modularity* at Bhaskaracharya Pratishthana, Pune, India (online)
- Sept 2024 CMI workshop *The $P=W$ Conjecture in Non Abelian Hodge Theory*, Oxford, UK
- Nov 2024 Simons Center workshop *Murmurations in Arithmetic Geometry and Related Topics*, NY, USA

Books

1. *Experimental Number Theory* Oxford Graduate Texts in Mathematics, 13. Oxford University Press, Oxford, 2007. xvi+214 pp. ISBN: 978-0-19-922730-3

Articles

2. *Quaternionic extensions* (in Spanish) Proceedings of the IV Coloquio Latinoamericano de Algebra, Mendoza, Argentina, (1984).
3. *Quaternionic extensions and rotations* (in Spanish) Notas de la Sociedad Matemática de Chile, **5** No. 1 (1986).
4. *Relations between quadratic forms and certain Galois extensions* (unpublished) (1987).
5. *On the square root of special values of certain L -series*. Invent. Math. **106**, 549–573 (1991).
6. (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.
7. *Square root formulas for central values of Hecke L -series II*, Duke Math. J. **72** (1993), 431–440.
8. *The congruences of Clausen-von Staudt and Kummer for half-integral weight Eisenstein series*. Math. Nachr. **162**, 187–191, (1993).
9. *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.
10. (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).
11. (with F. Hajir) *Explicit Elliptic units I*, Duke Math. J. **90**, 495–521, (1997).
12. *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)
13. (with F. Hajir) *The order ideal of Sha of CM elliptic curves*, Math. Res. Letters **5** (1998), 637–655
14. (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
15. (with J. Pila) *Concordant sequences and integral-valued entire functions* Acta Arith. **88** (1999), 239–268
16. (with F. Voloch) *On certain plane curves with many integral points* Exp. Math. **8** (1999), 57–62.
17. (with B. Poonen) *Lattice polygons and the number 12*, Amer. Math. Monthly **107** (2000), no. 3, 238–250.
18. *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
19. (with H. Cohen and D. Zagier) *Convergence acceleration of alternating series*, Exp. Math. **9** (2000), no. 1, 3–12.
20. (with P. Candelas and X. de la Ossa) *Calabi-Yau Manifolds Over Finite Fields, I*, arXiv:hep-th/0012233v1 (2000)
21. *Introducción a la funciones zeta de Hasse–Weil* (in Spanish) (50 pages, lecture notes published by the Asociación Matemática Venezolana) (2001).
22. (with F. Voloch and D. Zagier) *On certain plane curves with many integral points II*, Acta Arith. **49** (2001), 85–96.
23. (with D. Boyd) *Mahler’s Measure and the Dilogarithm I*, Canad. J. of Math. **54** (2002), 468–492.
24. (with L. Sadun and F. Voloch) *Blet: A mathematical puzzle*, Amer. Math. Monthly **109** (2002), no. 8, 729–740.
25. *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.

26. *On the zeros of certain polynomials*, Proc. Amer. Math. Soc. **130** (2002) 2251–2254.
27. *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.
28. (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
29. (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.
30. (with A. Pacetti and appendix by B. Gross) *Computing Weight 2 Modular forms of level p^2* , Math. Comp. **251**, (2004), 1545–1557.
31. (with M. Artin and J. Tate) *On the Jacobians of plane cubics*, Advances in Mathematics, **198**, (2005), 366–382.
32. *Integral ratios of factorials and algebraic hypergeometric functions*, math/0701362, Oberwolfach reports, July 2005
33. *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
34. (with Z. Mao and G. Tornarà) *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
35. *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
36. (with P. Gunnells) *Lattice polygons, Hecke operators and the Ehrhart polynomial*, Selecta Math. **13** (2007), no. 2, 253–276
37. (with T. Hausel and 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) *Topology of character varieties and representations of quivers*, math.RT/0905.3491v1, C. R. Math. Acad. Sci. Paris **348** (2010), no. 3–4, 131–135
40. (with T. Hausel and E. Letellier) *Arithmetic harmonic analysis on character and quiver varieties* math.RT/0810.2076, Duke Math. J. **160** (2011) 323–400
41. (with E. Cattani and A. Dickenstein) *On the of bivariate rational hypergeometric functions*, math.AG/0907.0790, Int. Math. Res. Not., (2011) Issue **11**, 2496–2533
42. *A refinement of the A -polynomial of quivers*, math.RT/1102.5308v1, (2011)
43. (with Cameron Gordon) *On the divisibility of $\#\text{Hom}(\Gamma, G)$ by $|G|$* , math.GR 1105.6066v1 J. Algebra **350** (2012), 300–307
44. (with T. Hausel and E. Letellier and an appendix by G. Harcos) *Arithmetic harmonic analysis on character and quiver varieties II*, math.RT/1109.5202v1 Adv. Math. **234** (2013), 85–128
45. (with T. Hausel and E. Letellier) *Positivity of Kac polynomials and DT-invariants of quivers* Ann. of Math. **177** (2013), no. 3, 1147–1168
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47. (with T. Hausel) *Cohomology of large semiprojective hyperkaehler varieties*, arXiv:1309.4914 Astérisque **370** (2015), 113–156.
48. *Combinatorics and Geometry*, Mathematical Congress of the Americas, 141–147, Contemp. Math., **656**, Amer. Math. Soc., Providence, RI, 2016.

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51. (with D. Radchenko) *Goursat rigid local systems of rank four*, [arXiv:1803.08379v1](#), Res. Math. Sci. **5** (2018), no. 4, Paper No. 38
52. (with D. Roberts) *Hypergeometric supercongruences*, [arXiv:1803.10834v1](#), 2017 MATRIX Annals, Springer Verlag (2018)
53. *p-adic hypergeometrics*, [arXiv:1803.10802v1](#), 2017 MATRIX Annals, Springer Verlag (2018)
54. (Appendix) T. Chinburg, E. Friedman, J. Sundstrom, *A case of the Rodriguez Villegas conjecture*, [arXiv:1903.01384v1](#), Pacific Journal of Mathematics, **321** 119-165
55. *Mixed Hodge numbers and factorial ratios*, [arXiv:1907.02722v1](#)
56. *Arithmetic as tomography* (Spanish) Gac. R. Soc. Mat. Esp. **24** (2021), no. 3, 577-596.
57. (with D. Radchenko) *Independence polynomials and hypergeometric series*, [arXiv:1908.11231](#) Bull. Lond. Math. Soc. **53** (2021), 1834-1848
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60. (with A. Corti and G. Gugiatti) *A Prym Hypergeometric*, [arXiv:2210.14344](#)
61. (with E. Letellier) *E-series of character varieties of non-orientable surfaces* Ann. Inst. Fourier (Grenoble) **73** (2023), 1385-1420
62. (with K. Ono) Preface [Special issue in honor of Don Zagier]. Pure Appl. Math. Q. **19** (2023)
63. (with T. Hausel and E. Letellier) *Locally free representations of quivers over commutative Frobenius algebras*, [arXiv:1810.01818v1](#), Selecta Math. **30** (2024, Paper No. 20
64. (with G. Gugiatti) *Hypergeometric local systems over \mathbb{Q} with Hodge vector $(1, 1, 1, 1)$* , [arXiv:2401.13529](#)
65. (with L. Dieulefait and A. Pacetti) *Galois representations* Publ. Mat. Urug. **18** (2023), 105–161.
66. (with F. Brunault, R. de Jeu, H. Liu) *K_2 of families of elliptic curves over non-Abelian cubic and quartic fields*, [arXiv:2401.04510](#)
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