

Curriculum Vitae
Harald HELFGOTT

Professional address:

Harald Andrés Helfgott
Mathematisches Institut
Bunsenstraße 3-5
37073 Göttingen
Germany

Personal address:

H. A. Helfgott
18 Schillerstraße
37083 Göttingen
Germany

E-mail: hhelfgo@uni-math.gwdg.de

Web: webusers.imj-prg.fr/~harald.helfgott

Personal data

Name: Harald Andrés HELFGOTT
Date/place of birth: November 25, 1977 in Lima, Peru
Citizenship: Peruvian
Degrees: PhD in Mathematics, Princeton, 2003
Habilitation, Paris-Sud (Orsay), 2011

Education

1998–2003 PhD student at Princeton University. Advisors: H. Iwaniec and P. Sarnak. Thesis jury: H. Iwaniec, N. Katz, P. Sarnak, A. Wiles. Thesis title:

Root numbers and the parity problem

1994–1998 Undergraduate student at Brandeis University. Graduated summa cum laude, with highest honours in mathematics and computer science. Title of B.A. thesis:

*Edge effects on local statistics in lattice dimers:
a study of the Aztec diamond (finite case)*

Professional activity

2015 – Alexander von Humboldt Professor
Georg-August Universität Göttingen
2014– Directeur de Recherche 2ème classe (Senior Researcher, 2nd class)
CNRS, Université de Paris VI/VII
2010–2014 Chargé de Recherche 1ère classe (Researcher, 1st class)
CNRS, École Normale Supérieure
2009–2011 Reader, University of Bristol (on leave 2010–2011)
2006–2009 Lecturer, then Senior Lecturer (2008–2009), University of Bristol
2004–2006 Post-doctoral fellow, CRM-ISM-Université de Montréal
Research Assistant Professor (post-doctoral position), Concordia University
2003–2004 Gibbs Assistant Professor (post-doctoral position), Yale University
1998–2003 Research and Teaching Assistant, Princeton University
1997–1998 Undergraduate research assistant, MIT
1995–1997 Undergraduate teaching assistant, Brandeis University

Research subjects

Analytic number theory, group theory, additive combinatorics, Diophantine geometry, probabilistic number theory.

Prizes

2015 Alexander von Humboldt Professorship (Humboldt Foundation)
2014 Gabriel Lamé Chair (France/Russia: Saint Petersburg State University)
2013 Honorary Professor (Universidad Nacional Mayor de San Marcos, Lima, Peru)
Corresponding member of the Peruvian Academy of Sciences
2011 Adams Prize (Cambridge University)
2010 Whitehead Prize (London Mathematical Society)
2008 Philip Leverhulme Prize
2007 Advanced Research Fellowship (EPSRC)

Courses taught

Oct 2014 – Feb 2015	Growth and expansion in groups	postgraduate	Göttingen
Sept–Nov 2014	Анализ и теория чисел	postgraduate	Saint-Petersburg
Oct–Nov 2012	Teoría de grupos	postgraduate	UAM (Madrid)
Feb 2012	Leçons d'arithmétique	master's	ENS
Nov–Dec 2009	Galois theory	undergraduate	Bristol
Aug–Dec 2006	Group theory	undergraduate	Bristol
Aug–Dec 2005	Ordinary differential equations	undergraduate	Concordia
Aug–Dec 2004	Ordinary differential equations	undergraduate	Concordia
Jan–May 2004	Arithmetic	postgraduate	Yale
Aug–Dec 2003	Introduction to number theory	undergraduate	Yale
Aug–Dec 2003	Multivariable calculus	undergraduate	Yale
Jan–May 2003	Multivariable calculus	undergraduate	Princeton

Extracurricular courses taught

Aug 2015	Crecimiento y expansión en SL_2	UNSAAC (Cusco)
Jul 2014	Growth in groups and applications	IHÉS (Bures-sur-Yvette)
Apr 2012	Crecimiento y diámetro en los grupos finitos	USACH (Santiago, Chili)
Mar 2012	Tzoría analítica de números	IMCA (Lima, Peru)
Jan 2011	La croissance dans les groupes	EPFL (Lausanne, Suisse)
Oct 2010	Ideas analíticas en la teoría de números	UNMSM (Lima, Peru)
Sep 2010	Ideas analíticas en la teoría de números	UMSA (La Paz, Bolivia)
Aug 2010	Growth in linear algebraic groups	TIFR (Mumbai, India)
Mar–Apr 2008	A brief course in arithmetic combinatorics	IMSc (Chennai, India)
Sep 2007	Azar y aritmética. Combinatoria aditiva	U. de Huamanga (Peru)
Summer 2007	Azar y aritmética	UNMSM (Lima, Peru)
Feb 2007	Probabilidades e Teoria dos Números	IMPA (Brazil)
Jun 2005	Normas, desigualdades y dualidad	U. de la Habana (Cuba)
Mar 2004	Ideas geométricas en la teoría de números	IMCA (Lima, Peru)

Articles

Pure mathematics

28. On the dimension of additive sets (avec P. CANDELA), *Acta Arith.* **167** (2015), 91–100.
27. Random generators of the symmetric group: diameter, mixing time and spectral gap (avec Á. SERESS et A. ZUK), *J. of Algebra* **421** (2015), 349–368.
26. The ternary Goldbach conjecture is true, preprint.
25. Major arcs for Goldbach's problem, preprint.
24. Numerical verification of the ternary Goldbach conjecture up to $8.875e30$ (with D. PLATT), *Experiment. Math.* **22** (2013), no. 4, 406–409.
23. Growth in groups: ideas and perspectives, *Bull. Am. Math. Soc* **52** (2015), no. 3, 357–413.
22. On growth in an abstract plane (with N. GILL and M. RUDNEV), *Proc. Amer. Math. Soc* **143** (2015), no. 8, 3593–3602.
21. Minor arcs for Goldbach's problem, preprint.
20. Bounds on the diameter of Cayley graphs of the symmetric group (with J. BAMBERG, N. GILL, T. HAYES, Á. SERESS, P. SPIGA), *J. Algebraic. Combin.* **40** (2014), no. 1, 1–22.
19. Square-free values of $f(p)$, f cubic, *Acta. Math.* **213** (2014), no. 1, 107–135.
- Th3. Groupes, courbes et croissance, habilitation thesis, Paris-Sud (Orsay).
18. On the diameter of permutation groups (with Á. SERESS), *Annals of Math.* **179** (2014), no. 2, 611–658.
17. Deterministic methods to find primes (as D. H. J. Polymath, with T. TAO et E. CROOT), *Math. Comp.* **81** (2012), no. 278, 1233–1246.
16. Growth in solvable subgroups of $GL_r(\mathbb{Z}/p\mathbb{Z})$ (with N. GILL), *Math. Annalen* **360** (2014), no. 1–2, 157–208.
15. Growth of small generating sets in $SL_n(\mathbb{Z}/p\mathbb{Z})$ (with N. GILL), *Int. Math. Res. Notices*, Vol. 2011, 4226–4251 .
14. An explicit incidence theorem in \mathbb{F}_p (with M. RUDNEV), *Mathematika*, 57 (2011), no. 1, 135–145.

13. Improving Roth's theorem in the primes (with A. de ROTON), *Int. Math. Res. Notices*, Vol. 2011, 767–783.
12. Growth in $SL_3(\mathbb{Z}/p\mathbb{Z})$, *J. Eur. Math. Soc. (JEMS)*, vol. 13, no. 3, pp. 651–851.
11. Power-free values, repulsion between points, different beliefs and the existence of error, *Anatomy of Integers*¹, 81–88, Amer. Math. Soc., Providence, RI, 2008.
10. How small must ill-distributed sets be? A two-dimensional large sieve (with A. VENKATESH), *Analytic number theory: essays in honor of Klaus Roth*, 224–234, Cambridge U. Press, 2009.
9. Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, *Annals of Math.* **167** (2008), no. 2, 601–623.
8. Power-free values, large deviations and integer points on irrational curves, *J. Théor. Nombres Bordeaux* **19** (2007), 433–472.
7. The parity problem for irreducible polynomials, submitted, 11 pages.
6. The parity problem for reducible polynomials, *J. London Math. Soc. (2)* **73** (2006), no. 2, 415–435.
5. Integral points on elliptic curves and 3-torsion in class groups (with A. VENKATESH), *J. Amer. Math. Soc.* **19** (2006), no. 3, 527–550.
4. Root numbers and ranks over global function fields (with B. CONRAD and K. CONRAD), *Adv. Math.* **198** (2005), 684–731.
3. On the square-free sieve, *Acta Arith.* **115** (2004), 349–402.
2. On the behaviour of root numbers in families of elliptic curves, submitted, 65 pages.
- Th2. *Root numbers and the parity problem*, PhD thesis, Princeton University, May 2003.
1. Enumeration of tilings of diamonds and hexagons with defects (with I. M. GESSEL), *Electron. J. Combin.* **6** (1999), no. 1, R16, 26 pp.
- Th1. *Edge effects on local statistics in lattice dimers*, B.A. thesis, Brandeis University, May 1998.

Expository monographs – pure mathematics

- M2. *The ternary Goldbach problem*, to appear in *Ann. of Math. Studies*. (This should replace articles 21, 25 and 26 above.)
- M1. *Azar y aritmética*, *Monografías del Instituto de Matemática y Ciencias Afines*, 50. Instituto de Matemáticas y Ciencias Afines (IMCA), Lima, Peru, 2010.

Popularization and exposition – pure mathematics

Note: these three expository articles, while not identical, have some material in common.

- PE3. The ternary Goldbach problem, to appear in *Proc. ICM* (Korea, 2014).
- PE2. La conjecture de Goldbach ternaire. Translated by M. Bilu, revised by the author. *Gaz. Math.* no. 140 (2014), 5–18.
- PE1. La conjetura débil de Goldbach, *Gac. R. Soc. Mat. Esp.* **16** (2013), no. 4.

Pedagogy and history

- PH3. A modern vision of the work of Cardano and Ferrari on quartics, (with M. HELFGOTT) *CONVERGENCE, an online journal of the Mathematical Association of America*, July 2009.
- PH2. A noncalculus proof that Fermat's principle of least time implies the law of refraction (with M. HELFGOTT), *Am. J. Phys.* **70** (2002), no. 12, 1224–1225.
- PH1. Maxima and minima before Calculus (with M. HELFGOTT), *Pro Mathematica XII* (1998), nos. 23–24, 135–158. (with M. HELFGOTT) *CONVERGENCE, an online journal of the Mathematical Association of America*, July 2009.

Computer Science

Note: I am no longer active in this field.

- I3. Lossless image compression by block matching (with J. A. STORER), *Comput. J.* **40** (1997), no. 2/3, 137–145.
- I2. Asymmetry in Ziv/Lempel '78 Parsing (with M. COHN), 320–328, in: *Compression and complexity of sequences: proceedings, 1997*¹, IEEE, Los Alamitos, CA, IEEE Computer Society Press, 1997.
- I1. On Maximal Parsings of Strings (with M. COHN), 291–299, in: *Proceedings DCC '1997: Data Compression Conference*¹, IEEE, Los Alamitos, CA, 1997.

¹Conference proceedings.

Plenary talks and other selected lectures

- 10/2015 The ternary Goldbach problem, Oberwolfach Lecture 2015, annual meeting of the GMF, Oberwolfach, Germany.
- 7/2015 The ternary Goldbach problem, plenary lecture, Journées Arithmétiques 2015, University of Debrecen, Hungary.
- 8/2014 The ternary Goldbach problem, invited lecture, ICM 2014, Seoul, Korea.
- 8/2014 The ternary Goldbach problem, plenary talk, Eleventh Algorithmic Number Theory Symposium ANTS-XI, GyeongJu, Korea.
- 6/2014 Conjecture de Goldbach, Colloque Jeunes Chercheurs, Université de Bordeaux 1. Series of three plenary talks.
- 5/2014 The ternary Goldbach problem, CANT (Combinatorial and Analytic Number Theory) 2014, New York, USA. Series of four plenary talks.
- 4/2014 The ternary Goldbach conjecture, British Mathematical Colloquium 2014, Queen Mary University London. Morning talk.
- 05/2013 The ternary Goldbach conjecture, Mathematische Arbeitstagung 2013, Max Planck Institute for Mathematics, Bonn, Germany.
- 4/2010 Growth in linear algebraic groups, Analytic Number Theory, Göttingen, Germany. Series of three plenary talks.

Other talks at conferences and colloquia

- 12/2015 The ternary Goldbach conjecture, N^3 days III, Chalmers University of Technology, Göteborg, Sweden.
- 10/2015 The diameter of the symmetric group: ideas and tools, Groups, graphs, action!, Université de Neuchâtel, Switzerland.
- 10/2015 Soficity, recurrence and short cycles of exponential maps, Conference on statistical physics on transitive graphs, Centre Bernoulli, EPFL, Lausanne, Switzerland.
- 9/2015 The ternary Goldbach conjecture, Colloque de Mathématiques, Université de Genève, Switzerland.
- 9/2015 Growth in groups: probabilistic methods, deterministic results. Bernoulli Lecture, Centre Bernoulli, EPFL, Lausanne, Switzerland.
- 8/2015 Soficity, recurrence and short cycles of exponential maps, IMPA, Rio de Janeiro, Brazil.
- 5/2015 The ternary Goldbach conjecture, Atkin Memorial Workshop, University of Illinois at Chicago, USA.
- 4/2015 The ternary Goldbach conjecture, Colloquium, Université Clermont-Ferrand, France.
- 2/2015 The ternary Goldbach conjecture, BMS Days, Berlin, Germany.
- 1/2015 The ternary Goldbach conjecture, Mathematical Colloquium, Heidelberg University, Germany.
- 1/2015 The ternary Goldbach conjecture, Mathematical Colloquium, Darmstadt Technical University, Germany.
- 12/2014 The ternary Goldbach conjecture, 93rd Mathematical Colloquium, Charles University, Prague, Czech Republic.
- 12/2014 La conjetura ternaria de Goldbach, XX Coloquio Latinoamericano de Álgebra, Lima, Peru.
- 12/2014 The ternary Goldbach conjecture, Conference Zeta functions 5 (cross-listed with Globus seminar), Independent Moscow University, Russia.
- 11/2014 Soficity, recurrence and short cycles of exponential maps, Arithmetic and allied subjects on the bank of the Neva, Euler International Mathematical Institute, St. Petersburg, Russia.
- 11/2014 The ternary Goldbach conjecture, Colloquium, University of Vienna, Austria.
- 10/2014 The ternary Goldbach problem, Clay Workshop in Analytic Number Theory, Oxford, UK.

Other talks at conferences and colloquia (cont.)

- 9/2014 The ternary Goldbach problem, Colloquium, Chebyshev Laboratory, Saint Petersburg State University, Russia.
- 7/2014 The ternary Goldbach problem, First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI, Bilbao, Spain.
- 6/2014 Growth in groups: ideas and perspectives, Mathematics Colloquium, Göttingen, Germany.
- 6/2014 Die schwache Goldbachsche Vermutung, Marburg-Gießen Kolloquium, Marburg, Germany.
- 5/2014 Random generators of the symmetric group: diameter, mixing time and spectral gap, Workshop: Finding Algebraic Structures in Extremal Combinatorial Configurations, IPAM, UCLA, USA.
- 5/2014 Growth in groups: ideas and perspectives, MSRI, Berkeley, USA.
- 5/2014 The ternary Goldbach conjecture, Helvetic Algebraic Geometry, Château Mercier, Sierre, Switzerland.
- 2/2014 La conjetura débil de Goldbach, ICMAT, Madrid, Spain.
- 2/2014 The ternary Goldbach problem, Automorphic forms and arithmetic, Göttingen, Germany.
- 10/2013 The ternary Goldbach problem, Analytic number theory, MFO (Mathematisches Forschungsinstitut Oberwolfach), Oberwolfach, Germany.
- 08/2013 The ternary Goldbach problem, Workshop on Combinatorics, Number Theorys and Dynamical Systems, IMPA, Rio de Janeiro, Brazil.
- 06/2013 La conjecture ternaire de Goldbach, Etienne Fouvry 60th birthday conference, CIRM, Luminy, France.
- 11/2012 Towards the ternary Goldbach conjecture, Conference on Zeta functions, Moscow Independent University.
- 11/2012 Hacia la conjetura ternaria de Goldbach, Coloquio de matemáticas, Universidad Autónoma de Madrid, Spain.
- 10/2012 Higher-dimensional sieves, Arithmetic Geometry, Centro di Ricerca Matematica Ennio de Giorgi, Scuola Normale Superiore, Pisa, Italy.
- 7/2012 On the diameter of permutation groups, Additive Combinatorics in Paris, Institut Henri Poincaré, Paris.
- 6/2012 Minor arcs for Goldbach's problem, Analytic methods for diophantine problems, Mathematisches Institut, Göttingen, Germany.
- 6/2012 Minor arcs for Goldbach's problem, Annual Meeting of the Canadian Number Theory Association, Lethbridge, AB, Canada.
- 3/2012 The diameter of permutation groups, International Number Theory Conference in Memory of Alf van der Poorten, Newcastle, Australia.
- 12/2011 Growth in permutation groups, International Meeting on Number Theory, Harish-Chandra Research Institute, Allahabad, India.
- 6/2011 Growth in groups: an overview, Young workshop in arithmetics and combinatorics, Madrid, Spain.
- 5/2011 Growth in solvable groups, Resonances in mathematical physics, Peyresq, France.
- 3/2011 Finding primes deterministically, Discrete analysis, Newton Institute, Cambridge, UK.
- 3/2011 Finding primes deterministically, Colloquium, Durham University, UK.
- 2/2011 Growth in solvable groups, Group Actions in Analytic Number Theory, Lausanne, Switzerland.
- 1/2011 Growth and expansion in groups, Group Actions in Analytic Number Theory, Lausanne, Switzerland (three talks).
- 12/2010 Comment améliorer le théorème de Roth sur les nombres premiers, Arithmétique Lille-Litoral 2010, Lille, France.
- 8/2010 Improving Roth's theorem in the primes, ICM-Zeta satellite conference, IMSc, Chennai, India.
- 6/2010 Growth in solvable groups, Conference on Zeta functions, Moscow Independent University, Russia.

Other talks at conferences and colloquia (cont.)

- 5/2010 Growth and expansion : an overview, Expansion in Groups, Imperial College, Londres, UK.
- 4/2010 Growth in finite simple groups, Number theory days, ETHZ, Zurich, Switzerland.
- 3/2010 Growth in simple groups of Lie type, Conference in honor of Laci Babai's 60th Birthday, OSU, Columbus, Ohio, USA.
- 3/2010 Growth in simple groups of Lie type, Workshop on graphs and arithmetic, CRM, Montréal, QC, Canada.
- 11/2009 Growth of small subsets in $SL_n(\mathbb{F}_p)$, Géométrie, dynamique et représentations des groupes, CIRM, Luminy, France.
- 7/2009 Exponential sums and the large sieve, Activités analytiques et additives à Lille, U. de Lille 1, France.
- 11/2008 Growth in $SL_3(\mathbb{F}_p)$, Discrete rigidity phenomena in additive combinatorics, MSRI, Berkeley, CA, USA.
- 4/2008 Growth in $SL_3(\mathbb{F}_p)$, Groups and geometries, Oberwolfach, Germany.
- 4/2008 Growth in $SL_3(\mathbb{F}_p)$, Clay-Fields conference on additive combinatorics, number theory and harmonic analysis, Fields Institute, Toronto, ON, Canada.
- 4/2008 Growth in $SL_3(\mathbb{F}_p)$, Analytic number theory, Oberwolfach, Germany
- 2/2008 Growth in linear algebraic groups: an approach via incidence, Expanders in pure and applied mathematics, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA, USA.
- 7/2007 $p^3 + 2$ is square-free infinitely often, Diophantine equations via analytic number theory, University of Bristol, UK.
- 5/2007 $p^3 + 2$ is square-free infinitely often, School and conference on analytic number theory, International Centre for Theoretical Physics, Trieste, Italy.
- 9/2006 $p^3 + 2$ is square-free infinitely often, India-UK number theory conference, Institute of Mathematical Sciences, Chennai (Madras), India.
- 4/2006 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Workshop on additive combinatorics, CRM (Centre de Recherches Mathématiques), Montréal, QC, Canada.
- 3/2006 Power-free values, points on curves, large deviations and modularity, Anatomy of Integers, CRM (Centre de Recherches Mathématiques), Montréal, QC, Canada.
- 12/2005 Larger and better sieves?, Workshop on gaps between primes, AIM, Palo Alto, CA, USA.
- 11/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Workshop on Lie groups, representations and discrete mathematics, Institute for Advanced Studies, Princeton, NJ, USA.
- 10/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Colloque en l'honneur d'Henryk Iwaniec, Bordeaux, France.
- 7/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Journées arithmétiques, Marseille, France.
- 6/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Canadian Mathematical Society summer meeting, Waterloo, ON, Canada.
- 5/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Conférence en théorie analytique des nombres, Université Laval, QC, Canada.
- 4/2005 Growth and generation in $SL_2(\mathbb{Z}/p\mathbb{Z})$, Conference in Honor of Paul Monsky, Brandeis, Waltham, MA, USA.
- 12/2004 Power-free values of polynomials with prime arguments, CMS winter meeting, Montréal, QC, Canada.
- 11/2004 Power-free values of polynomials and integer points on irrational curves, Diophantine approximation and analytic number theory, Banff International Research Station, Banff, AB, Canada.
- 4/2004 Integral points on elliptic curves and 3-torsion in class groups, AMS sectional meeting, Lawrenceville, NJ, USA.
- 4/2004 On the behavior of root numbers in families of elliptic curves, Atelier sur la théorie spectrale et les formes automorphes, Montréal, QC, Canada.
- 12/2003 Elliptic curves, square-free numbers and class groups, Brandeis-Harvard-MIT-Northeastern joint mathematics colloquium, Brandeis U., Waltham, MA, USA.

Other talks at conferences and colloquia (cont.)

- 5/2003 Root numbers, the square-free sieve and elliptic curves, Workshop on automorphic L-functions, Fields Institute, Toronto, ON, Canada.
- 6/2001 The average of the Moebius function on polynomials and the average root number of a family of elliptic curves, Premières journées du Nord sur les nombres premiers, Lille I, France.
- 5/2001 The average of μ on integers represented by a polynomial of degree greater than two and its relation to the average root number in families of elliptic curves, Seaway number theory conference, Carleton University, Ottawa, ON, Canada.
- 7/2000 Curvas elípticas y números primos, XX Coloquio de la Sociedad Matemática Peruana, Lima, Perú.

More than 63 invited talks at seminars.

Supervision of graduate students and post-docs

- 2015– 1 doctoral student (Sebastian Zúñiga) at Paris VII and Göttingen
- 2013– 1 doctoral student (Alisa Sedunova) at Paris-Sud (Orsay) and Göttingen
- 2012–2014 1 Postdoc (Pablo Candela) at Paris (FSM/ENS)
- 2010–2014 Supervision of master's level students, École Normale Supérieure, Paris
- 2006–2010 1 Postdoc (Nick Gill), 1 doctoral student (Dave Mendes da Costa)
Bristol University, UK

I have also advised undergraduates on independent study and research projects, starting in 2004 (Nahid Walji, at Yale).

Conference organization

- 2015 AGRA 2015 (Aritmética, grupos y análisis), summer school, Cusco, Peru. Coorganisers (scientific committee): G. Tornaría, C. G. Moreira.
- 2015 Growth, symbolic dynamics and combinatorics of words in groups, conférence, ENS, Paris, France. Coorganisers: A. Erschler, K. Juschenko.
- 2014 Arithmetic and allied subjects on the banks of the Neva, Saint-Petersburg, Russia. Coorganiser (scientific committee): K. Juschenko.
- 2012 AGRA (Aritmética, grupos y análisis), summer school, Santiago, Chili. Coorganisers: A. Navas, C. G. Moreira.
- 2010 AQUA (Analytic questions in arithmetic), summer school, Tata Institute, Mumbai, Inde. Coorganisers: A. Gorodnik, J. Sengupta.

Administrative tasks and academic citizenship

- 2013– Member of the editorial board at *Revista Matemática Iberoamericana*
- 2013– Corresponding member of the *Academia Nacional de Ciencias del Perú*.
- 2012/13 Directed the student seminar on analytic number theory at ENS
- 2008/09 Coorganised working groups on number theory and ergodic theory at Bristol
- 2005 Organised an additive-combinatorics working group at Montréal
- 2005/06 Coorganised an analytic number theory working group at Montréal
- 2004/05 Organised the number-theory seminar at Yale University

Member of doctoral, habilitation and hiring committees.

Referee for several mathematical journals (including *Ann. of Math.* and *Invent. Math.*), for *Engineering and Physical Sciences Research Council (EPSRC)* (project evaluation) and for *Mathematical reviews*.

Computing experience

Programming: C, Scheme.

Tools: SAGE, PARI, Gnuplot, LaTeX, various mathematical packages.

Usage of interval arithmetic and validated numerics.

Languages

Spanish:	Mother tongue. Used in professional contexts.
English, French, German:	Fluent. Used in professional contexts.
Esperanto:	Fluent.
Russe:	Advanced intermediate. Used in professional contexts.
Classical Greek:	Intermediate.
Quechua, Polish:	Basic knowledge.