CURRICULUM VITÆ

MARTÍN SOMBRA

Frames indicate activities totally or partially done in the period 2021-2025

Date: 24/1/2026

1 GENERAL INFORMATION

1.1 Personal information

Born on 7 January 1970 in Ezpeleta, Argentina. Married, two children

1.2 Professional situation

2009– ICREA research professor and *profesor asociado* at Universitat de Barcelona (UB)

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1.3 Other affiliations and memberships

Affiliated to the Centre de Recerca Matemàtica (CRM)

Member of the Barcelona Graduate School of Mathematics (BGSMath)

Member of the UB Institut de Matemàtiques (IMUB)

Member of the UB research group in algebraic, arithmetic and differential geometry (BIGGAMES)

Member of the Spanish network in symbolic computation, computer algebra and applications (Red EACA)

Member of the Spanish network in algebraic geometry and singularities (Red GAS)

1.4 Research fields

Arithmetic and Diophantine geometry, combinatorics, computer algebra

Keywords: heights and equidistribution, toric varieties, polynomial equation solving, complexity of algorithms

1.5 Education

1993–1998 PhD in Mathematics at U. Buenos Aires (UBA), Argentina. Thesis: *Estimates for Hilbert's Nullstellensatz* (advisor J. Heintz)

1988–1993 *Licenciado* in Mathematics at U. La Plata (UNLP), Argentina

1.6 Fellowships and awards (selected)

2008 Best paper award of the Journal of Complexity, for the paper *Factoring bivariate sparse (lacunary) polynomials* by M. Avendaño, T. Krick and M. Sombra

2004 Ramon y Cajal scholarship (Ministry of Education and Science) for a five years research postition at UB

2000 Marie Curie fellowship (European Commission) for a two years postdoctoral stay at the Institut de Mathématiques de Jussieu (IMJ) in Paris, France

1999 Postdoctoral fellowship for a one year postdoctoral stay at the Institute for Advanced Study (IAS) in Princeton, USA

1998 Postdoctoral fellowship for a four months postdoctoral stay at the Mathematical Sciences Research Institute (MSRI) in Berkeley, USA

1992 Undergraduate fellowship (Fundación Antorchas, Argentina) for a two years support of undergraduate studies at UNLP

1.7 Previous positions

2008–2009	Professeur des universités	U. Bordeaux 1, France
2004–2008	Ramón y Cajal researcher	UB
2003–2004	Maître de conférences	U. Lyon 1, France
2001–2003	Postdoctoral fellow	IMJ, Paris, France
1999–2000	Postdoctoral member	IAS, Princeton, USA
8–12/1998	Postdoctoral fellow	MSRI, Berkeley, USA
1996–2001	Instructor[1]	UNLP, Argentina
1994–1996	Assistant[1]	UBA, Argentina
9–12/1993	Assistant[1]	UNLP, Argentina
1992–1993	Antorchas undergraduate fellow	UNLP, Argentina
1991–1993	Assistant	UNLP, Argentina

1.8 Visiting positions

7/2025	*Visiting professor* at U. Caen, France (two weeks)
3/2014	*Senior fellow* of the program "Algebraic techniques for combinatorial and computational geometry" at the Institute for Pure and Applied Mathematics (IPAM) in Los Angeles, USA (one month)
11/2010	*Visiting professor* at UBA, Argentina (one month)
10/2007–2/2008	*Visiting professor* at UBA, Argentina (four months)
1/2006	*General member* of the program "Rational points and integral points on higher dimensional varieties" at MSRI in Berkeley, USA (one month)
9–12/2005	*Visiting Professor* at UBA, Argentina (four months)
5/1997	*Visiting Professor* at U. Alcalá (one month)

1.9 Other research stays (last ten years, selected)

3/2025	U. Católica de Chile (PUC), Santiago, Chile (two weeks)
10/2024	Centre International des Rencontres Mathématiques (CIRM), Marseille, France (1 week)
4/2024	U. Caen, France (two weeks)
3/2023	U. Caen, France (two weeks)
3/2019	U. Rochester, USA (two weeks)
4/2018	Instituto de Ciencias Matemáticas (ICMAT), Madrid (two weeks)
1/2018	IMJ, Paris, France (two weeks)
2/2016	UBA, Buenos Aires, Argentina (two weeks)

[1] Full–time teaching and research positions obtained through public competitions

In the period 2021-2025 I also made one-week research stays at the following institutions:

2025	Politecnico di Torino (Italy)
2024	U. Caen (France)
2023	U. Basel (Switzerland), Humboldt U. Berlin (Germany) and U. Caen (France)
2022	Politecnico di Torino (Italy) and ICMAT (Madrid)
2021	ICMAT (Madrid), Politecnico di Torino (Italy) and U. Regensburg (Germany)

2 PUBLICATIONS

The full texts are available from `http://www.maia.ub.edu/~sombra/publications.html` and `http://arxiv.org/` and their citations are available from my profiles at Google Scholar and MathSciNet. Authors are listed in alphabetical order, as it is the norm for publications in mathematics.

2.1 Monograph

1. J. I. Burgos Gil, P. Philippon, M. Sombra, *Arithmetic geometry of toric varieties. Metrics, measures and heights*, Astérisque, vol. 360, Société Mathématique de France, 2014, vi + 222 pages, ISBN 978-2-85629-783-4.

2.2 Published papers

2. R. Gualdi and M. Sombra, *Limit heights and special values of the Riemann zeta function*, Journal of Experimental Mathematics **1** (2025) 322-374.
3. C. D'Andrea, G. Jeronimo, and M. Sombra, *The Canny-Emiris conjecture for the sparse resultant*, Foundations of Computational Mathematics **23** (2023) 741-801.
4. M. Sombra and A. Yger, *Bounds for multivariate residues and for the polynomials in the elimination theorem*, Moscow Mathematical Journal **21** (2021) 129-173.
5. Y. Bilu, J. I. Burgos Gil and M. Sombra, *La casa de los números pequeños*, Gaceta de la Real Sociedad Matemática Española **25** (2022) 577-575.
6. A. M. Botero, J. I. Burgos Gil, and M. Sombra, *Convex analysis on polyhedral spaces*, Mathematische Zeitschrift **301** (2022) 1631-1674.
7. L. Busé, C. D'Andrea, M. Sombra, and M. Weimann, *The geometry of the flex locus of a hypersurface*, Pacific Journal of Mathematics **304** (2020) 419-437.
8. J. I. Burgos Gil, P. Philippon, J. Rivera-Letelier, and M. Sombra, *The distribution of Galois orbits of points of small height in toric varieties*, American Journal of Mathematics **141** (2019) 309-381.
9. F. Amoroso and M. Sombra, *Factorization of bivariate sparse polynomials*, Acta Arithmetica **191** (2019) 361-381.
10. C. Martínez and M. Sombra, *An arithmetic Bernštein-Kušnirenko inequality*, Mathematische Zeitschrift **291** (2019) 1211-1244.
11. C. D'Andrea, A. Ostafe, I. E. Shparlinski, and M. Sombra, *Reduction modulo primes of systems of polynomial equations and algebraic dynamical systems*, Transactions of the American Mathematical Society **371** (2019) 1169-1198.
12. J. I. Burgos Gil and M. Sombra, *Appendix* to the paper by W. Gubler, Ph. Jell, K. Künnemann, and F. Martin, *Continuity of plurisubharmonic envelopes in non-Archimedean geometry and test ideals*, Annales de l'Institut Fourier (Grenoble) **69** (2019) 2331-2376.
13. M.-C. Chang, C. D'Andrea, A. Ostafe, I. E. Shparlinski, and M. Sombra, *Orbits of polynomial dynamical systems modulo primes*, Proceedings of the American Mathematical Society **146** (2018) 2015-2025.
14. C. D'Andrea, M. Narváez-Clauss, and M. Sombra, *Quantitative equidistribution of Galois orbits of small points in the N-dimensional torus*, Algebra & Number Theory **11** (2017) 1627-1655.

15. F. Amoroso, M. Sombra, and U. Zannier, *Unlikely intersections and multiple roots of sparse polynomials*, Mathematische Zeitschrift **287** (2017) 1065-1081.
16. J. I. Burgos Gil, P. Philippon, and M. Sombra, *Height of varieties over finitely generated fields*, Kyoto Journal of Mathematics **56** (2016) 13-32.
17. J.I. Burgos Gil, A. Moriwaki, P. Philippon, and M. Sombra, *Arithmetic positivity on toric varieties*, Journal of Algebraic Geometry **25** (2016) 201-272.
18. S. Basu and M. Sombra, *Polynomial partitioning on varieties of codimension two and point-hypersurface incidences in four dimensions*, Discrete & Computational Geometry **55** (2016) 158-184.
19. C. D'Andrea and M. Sombra, *A Poisson formula for the sparse resultant*, Proceedings of the London Mathematical Society **11** (2015) 932-964.
20. F. Amoroso, L. Leroux, and M. Sombra, *Overdetermined systems of sparse polynomial equations*, Foundations of Computational Mathematics **15** (2015) 53-87.
21. J. I. Burgos Gil, P. Philippon, and M. Sombra, *Successive minima of toric height functions*, Annales de l'Institut Fourier (Grenoble) **65** (2015) 2145-2197.
22. J. I. Burgos Gil, P. Philippon, and M. Sombra, *Height of toric varieties, entropy and integration over polytopes*, in F. Nielsen and F. Barbaresco (eds.), *Geometric Science of Information*, Lecture Notes in Computer Science **9389** (2015) 286-295.
23. C. D'Andrea, A. Galligo, and M. Sombra, *Quantitative equidistribution for the solutions of a system of sparse polynomial equations*, American Journal of Mathematics **136** (2014) 1543-1579.
24. C. D'Andrea, T. Krick, and M. Sombra, *Height of varieties in multiprojective spaces and arithmetic Nullstellensätze*, Annales Scientifiques de l'École Normale Supérieure **46** (2013) 549-627.
25. J. I. Burgos Gil and M. Sombra, *When do the recession cones of a polyhedral complex form a fan?*, Discrete & Computational Geometry **46** (2011) 789-798.
26. D'Andrea and M. Sombra, *The Newton polygon of a rational plane curve*, Mathematics of Computer Science **4** (2010) 3-24.
27. J.I. Burgos Gil, P. Philippon, and M. Sombra, *Hauteur des sous-schémas toriques et dualité de Legendre-Fenchel*, Comptes Rendus de l'Académie des Sciences de Paris **347** (2009) 589-594.
28. D'Andrea and M. Sombra, *Rational parametrizations, intersection theory and Newton polytopes*, in I. Emiris, F. Sottile, and T. Theobald (eds.), *Non–linear computational geometry*, IMA Volumes in Mathematics and its Applications **151** (2009) 35-50, Springer–Verlag.
29. P. Philippon and M. Sombra, *A refinement of the Bernštein-Kušnirenko estimate*, Advances in Mathematics **218** (2008) 1370-1418.
30. P. Philippon and M. Sombra, *Minimum essentiel et degrés d'obstruction des translatés de sous–tores*, Acta Arithmetica **133** (2008) 1-24.
31. C. D'Andrea and M. Sombra, *Sobre curvas paramétricas y polígonos de Newton*, Gaceta de la Real Sociedad Matemática Española **11** (2008) 317-336.
32. C. D'Andrea and M. Sombra, *Sobre corbes paramètriques i polígons de Newton,* Butlletí de la Societat Catalana de Matemàtiques **23** (2008) 201-219.
33. P. Philippon and M. Sombra, *Quelques aspects diophantiens des variétés toriques*, in H.P. Schlickewei and R. Tichy (eds.), *Diophantine Approximation: Festschrift for Wolfgang Schmidt*, Developments in Mathematics **16** (2008) 295-338, Springer–Verlag.

34. P. Philippon and M. Sombra, *Hauteur normalisée des variétés toriques projectives*, Journal of the Institute of Mathematics of Jussieu **7** (2008) 327-373.
35. P. Philippon and M. Sombra, *Une nouvelle majoration pour le nombre de solutions d'un système d'équations polynomiales*, Comptes Rendus de l'Académie des Sciences de Paris **345** (2007) 335-340.
36. M. Avendaño, T. Krick, and M. Sombra, *Factoring bivariate sparse (lacunary) polynomials*, Journal of Complexity **23** (2007) 193-216.
37. P. Philippon and M. Sombra, *Géométrie diophantienne et variétés toriques*, Comptes Rendus de l'Académie des Sciences de Paris **340** (2005) 507-512.
38. D'Andrea and M. Sombra, *The Cayley-Menger determinant is irreducible for* $n \geq 3$, Sibirskij Matematicheskij Zhurnal **46** (2005) 90-97. English translation: Siberian Mathematical Journal **46** (2005) 71-76.
39. M. Sombra, *Minimums successifs des variétés toriques projectives*, Journal für die reine und angewandte Mathematik (Crelle's Journal) **586** (2005) 207-233.
40. M. Sombra, *The height of the mixed sparse resultant*, American Journal of Mathematics **126** (2004) 1253-1260.
41. G. Jeronimo, T. Krick, J. Sabia, and M. Sombra, *The computational complexity of the Chow form*, Foundations of Computational Mathematics **4** (2004) 41-117.
42. A.J. Di Scala and M. Sombra, *Instrinsic palindromes*, Fibonnacci Quarterly Journal **42** (2004) 76-81.
43. T. Krick, L. M. Pardo, and M. Sombra, *Sharp estimates for the arithmetic Nullstellensatz*, Duke Mathematical Journal **109** (2001) 521-598.
44. K. Hägele, J. E. Morais, L. M. Pardo, and M. Sombra, *On the intrinsic complexity of the arithmetic Nullstellensatz*, Journal of Pure and Applied Algebra **146** (2000) 103-183.
45. M. Sombra, *A sparse effective Nullstellensatz*, Advances in Applied Mathematics **22** (1999) 271-295.
46. M. Sombra, *Bounds for the Hilbert function of polynomial ideals and for the degrees in the Nullstellensatz*, Journal of Pure and Applied Algebra **117 & 118** (1997) 565-599.

The conjectures from the paper [18] were solved by Walsh (Inventiones, 2020) and included in the book Grechuk, *Landscape of 21th century mathematics*, Springer, 2021, as one of the remarkable advances of mathematics in the period 2001–2020.

The paper [36] received the *2007 Best Paper Award* of the Journal of Complexity.

The sequences of k-palindromic numbers introduced in the paper [42] were included by N. Sloane in his *Encyclopedia of Integer Sequences* (`https://oeis.org/`).

The paper [43] received the *Featured Review MR 2002h:11060* of the American Mathematical Society.

2.3 Papers submitted for publication

47. J. I. Burgos Gil, R. Menares, B. Qu and M. Sombra, *Closing the gap around the essential minimum of height functions with linear programming*, e-print arXiv:2601.18978, 42 pages.
48. A. J. Di Scala and M. Sombra, *Kähler-Einstein toric submanifolds of the projective space*, e-print arXiv:2512.03617, 26 pages.
49. R. Gualdi and M. Sombra, *Heights of complete intersections in toric varieties* e-print arXiv:2412.16308, 46 pages.
50. F. Ballaÿ and M. Sombra, *Approximation of adelic divisors and equidistribution of small points*, e-print arXiv:2407.14978, 79 pages.

2.4 Thesis

51. *Estimaciones para el teorema de ceros de Hilbert*, PhD thesis UBA, viii+125 pages, 1998.
52. *Fórmulas de traza en la teoría de funciones L*, Licenciatura thesis UNLP, 49 pages, 1993.

2.5 Edition of journals and conference proceedings

53. A. Cohen, W. Dahmen, H. Munthe-Kaas, M. Sombra, and A. Szanto (eds.), *Special issue on the occasion of the FoCM 2017 conference*, Foundations of Computational Mathematics 19 (2019) 963-1190.
54. J. Elias, J. Fernández Sánchez, and M. Sombra (eds.), *Encuentros de álgebra computacional y aplicaciones (EACA 2014)*, Barcelona, 2014, 178 pages, ISBN 978-84-697-0651-0.

3 TALKS

3.1 Advanced courses at conferences and research schools

11-12/2017	*La distribution des orbites de Galois des points algébriques*, CIMPA research school "Géométrie complexe et applications", Ziguinchor, Senegal (8 hs)
3/2016	*Arithmetic geometry of toric varieties*, Rencontre ANR Gardio/Okounkov, Paris, France (4.5 hs, joint with J. I. Burgos and P. Philippon)
1/2016	*Arithmetic intersection theory on toric varieties*, CIMPA-ICTP research school "Toric methods in geometry, arithmetic and dynamics", Santiago, Chile (6 hs)
6-7/2015	*Arithmetic geometry of toric varieties*, Sino-french research institute on arithmetic geometry, Beijing, China (4.5 hs, joint with J. I. Burgos and P. Philippon)
1/2015	*Arithmetic geometry of toric varieties*, Workshop on geometry and differential varieties, Santiago, Chile (4 hs).
12/2014	*Arithmetic geometry of toric varieties*, XX Coloquio latinoamericano de álgebra, Lima, Perú (4 hs)

3.2 Conferences (last ten years)

All listed talks were invited, except those explicitly marked as "contributed". In conferences with parallel sessions, the corresponding talks are marked as either "session" or "plenary".

1/2027	Conference "Encuentro de teoría de números", Talca, Chile
7/2026	Foundations of Computational Mathematics (FoCM 2026), Vienna, Austria
6/2026	Conference AG80. Nice, France
2/2026	Workshop "Talks in number theory" (TINT II), Consenza, Italy
5/2025	Conference "Arithmetic geometry", Cabourg, France
3/2025	Conference "Combinatorial sinergies in geometry and number theory", IMPA, Rio de Janeiro, Brasil
9/2024	Conference "Intercity seminar in Arakelov geometry", Kyoto, Japan
6/2024	Conference "Géométrie algébrique effective et calcul formel", Caen, France
6/2023	Conference "XXXIèmes rencontres arithmétiques de Caen", Île de Tatihou, France
5/2022	Conference "La grandezza dei punti piccoli" Pisa, Italy
12/2021	Conference "Symbolic and numerical algorithms in algebraic geometry" Buenos Aires, Argentina
9/2021	Conference "Arakelov geometry", Regensburg, Germany
7/2021	Mathematical congress of the Americas (MCA 2021), Buenos Aires, Argentina (session)
9/2019	Workshop "Toric geometry", Mathematisches Forschungsinstitut Oberwolfach (MFO), Germany (participation by invitation)
8/2019	Workshop "Complexity of numerical computation", Berlin, Germany
6/2019	BGSMath María de Maeztu unit of excellence closing workshop, UB
9/2018	ARCADES Doctoral School II and ESR Days, UB

9/2018	Conference "Diophantine approximation and transcendence", CIRM, Marseille, France
12/2017	RSME-UMA congress, Buenos Aires, Argentina (plenary talk)
7/2017	Foundations of computational mathematics (FoCM 2017), Barcelona (session)
6/2017	MEGA 2017, Nice, France (plenary)
9/2016	Conference "Arakelov geometry: Archimedean and non-Archimedean aspects", Regensburg, Germany
6–7/2016	Workshop "Geometric and combinatorial methods in number theory", Iaşi, Romania

3.3 Colloquia and seminars (last ten years)

7/2025	Séminaire de théorie des nombres, U. Caen, France
6/2025	Oberseminar in Diophantine geometry, Göttingen, Germany (online)
3/2025	Santiago number theory and algebra seminar (SaNTAS), Santiago, Chile
5/2024	Number theory study group, UB
2/2024	Seminari de geometria algebraica (SGA), UB
10/2023	Number theory seminar, U. Basel, Switzerland
3/2023	Séminaire de théorie des nombres, U. Caen, France
1/2023	Arithmetic geometry seminar, Humboldt U. Berlin, Germany
4/2022	SGA, UB
11/2021	Seminario del CMaLP, La Plata, Argentina (online)
9/2021	Number theory web seminar, Basel, Switzerland (online)
2/2020	Séminaire de théorie des nombres, U. Caen, France
12/2019	Oberseminar über Arakelov-Theorie, U. Regensburg, Germany
3/2019	Algebra and number theory seminar, U. Rochester, USA
1/2019	Seminario de teoría de números, U. Autónoma de Madrid (UAM)
11/2018	Complex analysis seminar, Chalmers and U. Gothenburg
10/2018	Oberseminar über Arakelov-Theorie, U. Regensburg, Germany
9/2018	SGA, UB
4/2018	Seminario de teoría de números, UAM
2/2018	Seminari d'anàlisi de Barcelona, UB and U. Autònoma de Barcelona (UAB)
1/2018	Groupe d'étude sur les problèmes diophantiens (GEPbD), IMJ, Paris, France
12/2017	Seminario de aritmética y geometría, U. Católica de Valparaíso (PUCV), Chile
6/2017	Seminari tropical, UAB (two sessions)
12/2016	Colloquium of the department of mathematics, UNLP, La Plata, Argentina
12/2016	Seminario de ecuaciones polinomiales, UBA, Argentina

3.4 Outreach activities (last ten years)

2/2019 Taller for the "International day of women and girls in science" at the Institut d'Estudis Catalans (IEC), Barcelona

11/2016 Talk at Espai Cultural Cèntric, El Prat de Llobregat, for high-school students from four schools, 21a setmana de la ciència, Fundació Catalana per a la Recerca i la Innovació (FCRI)

11/2015 Xerrades-taller de la Facultat de Matemàtiques de l'UB: four talks and computer laboratories for 400 high-school students (1ro and 2do años de bachillerato, opción ciencias) and their teachers, from 26 schools all over Catalonia

4 ORGANIZATION

4.1 Meetings (last ten years)

2026 Conference "Effective methods in algebraic geometry" (MEGA 2026), Durham, UK, (member of the advisory board)

2025 Congress "III Encuentro RSME-UMA", Bariloche, Argentina (member of the scientific committee)

2024 Research in residence "Kähler-Einstein toric subvarieties", CIRM, Marseille, France

2024 Conference MEGA 2024, Leipzig, Germany (member of the advisory board)

2023 Conference "Global invariants of arithmetic varieties", CIRM, Marseille, France (chair of the organizing committee)

2023 Conference FoCM 2023, Paris, France (coorganizer of the workshop "Computational algebraic geometry" and member of the workshops and the Stephen Smale prize committees)

2022 Conference "Intercity seminar on Arakelov geometry", Madrid (coorganizer)

2022 Conference MEGA 2022, Kraków, Poland (member of the advisory board)

2021 Conference "Symbolic and numerical algorithms in algebraic geometry", Buenos Aires, Argentina (coorganizer)

2021 Conference MEGA 2021, Tromso, Norway (member of the advisory board)

2019 *MEGA 2109*, Madrid, 17-21/6/2019 (member of the advisory board)

2017 *CIMPA research school "Géométrie complexe et applications"*, Ziguinchor, Senegal, 20/11–2/12/2017 (member of the scientific committee)

2017 *Foundations of Computational Mathematics (FoCM 2017)*, Barcelona, 10–19/7/2017 (chair of the organizing committee, and member of the workshops and the Stephen Smale prize committees)

2017 *MEGA 2017*, Nice, France, 12-16/6/2017 (member of the advisory board)

2016 *Algebra and Geometry Meeting*, Barcelona, 30/11–2/12/2016 (coorganizer)

2016 *CIMPA-ICTP research school "Toric methods in geometry, arithmetic and dynamics"*, Santiago, Chile, 11/22–1/2016 (co-chair of the organizing committee)

4.2 Colloquia, seminars, and study groups (last ten years)

2026 Number theory study group (organizer)

2025 Seminari de geometria algebraica, UB (coorganizer)

2015–2018 IMUB Colloquium, UB (coorganizer)

4.3 Hosting of researchers (last ten years)

I hosted (or will host) the following visitors to develop joint research projects and give talks at seminars, colloquia and short courses at UB for periods between one and three weeks (unless otherwise indicated).

2026 R. Menares (PUC, Santiago, Chile, visiting professor at CRM for two months), A. Di Scala (Politecnico di Torino, Italy)

2025 J. I. Burgos Gil (ICMAT, Madrid), B. Qu (ICMAT, Madrid), Di Scala, Menares
2024 Burgos Gil, Di Scala
2023 F. Ballaÿ (U. Caen, France), Burgos Gil
2022 Ballaÿ, Burgos Gil
2021 R. Gualdi (U. Regensburg, Germany), Di Scala

2020 Burgos Gil, Gualdi
2019 Burgos Gil, Gualdi
2018 J. Rivera-Letelier (U. Rochester, USA, visiting professor at UB for two months), D. Coronel (PUC, Santiago, Chile), Ch. Favre (École Polytechnique, Palaiseau, France), S. Herrero (Chalmers and U. Gothemburg, Sweden), Burgos Gil, Gualdi
2017 P. Philippon (IMJ, Paris, France), A. Yger (U. Bordeaux, France), Burgos Gil, Di Scala, Gualdi
2016 F. Amoroso (U. Caen), F. Babaee (U. Bristol, UK), A. Chambert-Loir (IMJ, Paris, France), C. Martínez (U. Caen), M. Weimann (U. Caen, France), Rivera-Letelier , Philippon

5 FUNDING

5.1 Research grants (last ten years)

2024–2028	*Birational geometry, group actions and moduli spaces*, proyecto de I+D fundamental no orientada (PID2023-147642NB-I00), MCIUN. PIs M. Lahoz (UB) and J. C. Naranjo (UB), 8 researchers and 5 PhD students, amount 206.250 € (researcher)
2022–2024	*Seminari de teoria de nombres*, Suport als grups de recerca (2021 SGR 01468), AGAUR, GenCat. PI L. Dieulefait (UB), 15 researchers, amount 60.000 € (researcher)
2022-2025	*Centre de Recerca Matemàtica (CRM)*, María de Maeztu program for centers and units of excellence in R&D (CEX2020-001084-M), MCIUN. PI M. Guàrdia (UB), amount 2.000.000 € (researcher)
2020–2024	*Algebraic, linear and differential geometry: theory and applications*, proyecto de I+D fundamental no orientada (PID2019-104047GB-I00), MCIUN. PIs C. D'Andrea (UB) and M. Lahoz (UB), 7 researchers and 2 PhD students, amount 86.636 € (researcher)
2017–2021	*Algebra i geometria algebraica*, Suport als grups de recerca, AGAUR, GenCat. PI R. Mirò (UB), 23 researchers, amount 45.000 € (researcher)
2018-2019	*Algebra and algebraic geometry*, Suport als grups de recerca (2017 SGR 585), AGAUR, GenCat. PI R. Miró (UB), 21 researchers, amount 44.800 € (researcher)
2016–2020	*Algebraic, linear and differential varieties, arithmetics and moduli*, proyecto de I+D fundamental no orientada (MTM2015-65361-P), Ministerio de Economía y Competitividad (MINECO). PI I. Mundet (UB), 5 researchers and 2 PhD students, amount 59.895 € (researcher)
2015-2019	*Barcelona Graduate School of Mathematics*, unidad de excelencia Maria de Maetzu (MDM-2014-0445), MINECO. PI M. Noy (UPC), amount 2.000.000 € (researcher and scientific guarantor)
2015-2017	*Computational algebra and arithmetics*, project for scientific and technological research (PICT-2013-0294), Ministerio de Ciencia, Argentina. PI T. Krick (UBA, Buenos Aires, Argentina), 13 researchers, amount 45.000 € (researcher)
2014-2016	*Diophantine geometry and computer algebra*, international project of scientific cooperation (PICS 6381), Centre National de la Recherche Scientifique (CNRS), France. PI's F. Amoroso (U. Caen, France) and M. Sombra, 8 researchers, amount 24.000 € (co-PI)
2014-2016	*Algebra and algebraic geometry*, Suport als grups de recerca (2014 SGR 114), AGAUR, GenCat. PI R. Miró (UB), 17 researchers, amount 30.000 € (researcher)

5.2 Conference and travel support (last ten years)

2024	Société Mathématique de France *in-kind* support for the research program "Kähler-Einstein toric subvarieties" estimated at 2.000 € (PI)
2023	Société Mathématique de France *in-kind* support for the conference "Global invariants of arithmetic varieties" estimated at 20.000 € (PI)
2023	Foundation Compositio Mathematica support for the conference "Global invariants of arithmetic varieties", amount 4.000 €(PI)
2022	Foundation Compositio Mathematica support for the conference "Intercity seminar on Arakelov geometry", amount 7.000 €(co-PI)
2022	UB support for the conference "Intercity seminar on Arakelov geometry", amount 2.000 €(PI)

2017	IMUB and UB Facultat de Matemàtiques travel grant, amount 1.000 €
2017	European Mathematical Society (EMS) support for the conference FoCM 2017, financing the participation of a plenary speaker (PI)
2016-2017	Foundation Compositio Mathematica support for the conference FoCM 2017, amount 5.000 € (PI)
2016-2017	SCM support for the conference FoCM 2017, amount 500 € (PI)
2016-2017	IMUB and UB Facultat de Matemàtiques support for the conference FoCM 2017, amount 4.000 € (PI)
2015-2016	Foundation Compositio Mathematica support for the research school "Toric methods in geometry, arithmetic and dynamics", amount 6.000 € (co-PI)
2014-2016	CIMPA and ICTP support for the research school "Toric methods in geometry, arithmetic and dynamics", amount 24.000 € (CIMPA 12.000 €, ICTP 10.000 €) (co-PI)

6 TRAINING and TEACHING

6.1 Training of postdoctoral researchers

2/2023–1/2025	Souvik Goswami, *María Zambrano postdoctoral fellow* at UB
3–8/2022	François Ballaÿ, *María Zambrano postdoctoral fellow* at UB. Current position: *maître de conférences* at U. Caen, France
10/2018–1/2019	Ana Belén de Felipe, *IMUB posdoctoral fellow* at UB. Current position: *assistant professor at UPC*
10–12/2018	Roberto Gualdi, *Ferràn Sunyer i Balaguer posdoctoral fellow* at CRM, Bellaterra. Current position: *assistant professor at UPC*
2–8/2011	Rafael von Kanel, *postdoctoral fellow* at UB (joint with J. I. Burgos Gil). Current position: *associate professor* at Tsinghua U., China
10/2008–9/2010	Martin Weimann, *Beatriu de Pinós postdoctoral fellow* (AGAUR, Gen-Cat) at UB (joint with J. I. Burgos Gil) Current position: *maître de conférences* at U. Caen, France

6.2 Supervision of PhD students

10/2021–9/2023	Shenxiong Li, UB (he resigned for family reasons)
10/2014–9/2018	Roberto Gualdi, U. Bordeaux, France (joint with A. Yger). Thesis: *Height of cycles in toric varieties*
9/2013–9/2017	César Martínez, UB and U. Caen, France (joint with F. Amoroso). Thesis: *Two problems in arithmetic geometry. Explicit Manin-Mumford, and arithmetic Bernštein-Kušnirenko*
9/2011–6/2016	Marta Narváez, UB (joint with C. D'Andrea). Thesis: *Quantitative equidistribution of Galois orbits of points of small height on the algebraic torus* (*Premi Extraordinari de Doctorat 2015-2016* of the UB Faculty of Mathematics)
9/2008–3/2011	Louis Leroux, U. Caen, France (joint with F. Amoroso). Thesis: *Algorithmes pour les polynômes lacunaires*

6.3 Other supervisions

1–9/2024	Eduard Valcarce, *master student* at UB. Thesis: *Auxiliary polynomials for transcendence results*
10/2023–2/2024	Oriol Reig, *master student* at UB. Thesis: *Introduction to Berkovich spaces*
10/2022–2/2023	Eduard Valcarce, *undergraduate student* at UB. Thesis: *Diophantine approximation in the framework of Roth's theorem*
7–9/2022	Juan Brieva, *undergraduate student* at UPC for the CRM-UB summer program "Introduction to mathematical research". Project: *Flexible polyhedra and the bellows conjecture*
5/2021–2/2022	Marta Fernández, *undergraduate student* at UB. Thesis: *Aproximació als conjunts de Julia i al conjunt de Mandelbrot*
4/2021–2/2022	Andriana Karuk, *master student* at UB. Thesis: *Unlikely intersections in dynamics*
4–9/2020	Andrés Mebarek, master student at UB. Thesis: *Bounds for the height of an algebraic number*
8/2018–9/2019	Sergi Rovira, *master student* at UB. Thesis: *The polynomial method over varieties*
7/2019	Joan Hernanz, *undergraduate student* at UPC doing a one month ACER training stay at UB
6/2013–1/2014	Martin Lippert, *master student* at UB. Thesis: *Toric varieties and error-correcting codes*
9/2012–9/2013	Gilles Bonnet, *master student* at UB. Subject: *Amoebas of algebraic varieties.*
9/2012–7/2013	Albert Rodríguez, *master student* at UB. Thesis: *A Riemann-Roch theorem in tropical geometry*
9/2009–10/2011	Alberto Montero, undergraduate student in Computer Science at UB. Project: *Binary BCH codes*
1–6/2009	Alice Le Coz, Caroline Le Harper, and Hector Coudrin, *master students* at U. Bordeaux 1, France. Thesis: *Le problème de Lehmer pour les polynômes à coefficients impaires*
6–7/2007	Pierre Le Boudec, *undergraduate student* at the ENS Lyon doing a two months training stage at UB. Project: *Flexible polyhedra*

6.4 Courses (last ten years)

2021–2025	*Numerical linear algebra*, UB master *Foundations of data science* (lectures, 30 hs, five times)
2016–2021	*Numerical linear algebra*, UB master *Foundations of data science* (lectures, 30 hs, five times)

7 PROFESSIONAL SERVICE AND MANAGERIAL ACTIVITIES

7.1 Committees (last ten years)

1–3/2024	Chair of the committee of the 2023 Emmy Noether prize of the Catalan Mathematical Society (SCM)
11/2023	Member of the evaluation panel of the AEI *Consolidación Investigadora* call
3–4/2022	Member of the evaluation panel for the 2021 CRM-MdM postdoctoral call
4–6/2021	Member of the hiring committee for an assistant professorship in algebra at U. Buenos Aires, Argentina
3/2021	Member of the review committee of a DFG Collaborative Research Center (CRC Transregio), Germany
2017–	Member of the board of directors of the Society for the Foundations of Computational Mathematics (FoCM Society)
2014–2021	Member of the IMUB steering committee
2012–	Member of the advisory board of the series of international conferences "Effective Methods in Algebraic Geometry" (MEGA)

6/2019 Member of the hiring committee of an IMUB postdoctoral fellowship

7.2 Evaluations (last ten years)

5/2026 Member of the jury of the PhD thesis of Rolf Andreasson at Chalmers U., Sweden, supervised by R. Berman

9/2024	Member of the jury of two UB master theses
6–7/2024	Reviewer for a permanent professorship (W2) in algebra/algebraic geometry at Göttingen U., Germany
6/2024	Reviewer *(rapporteur)* and chair of the jury of the *Habilitation à diriger des recherches* of Martin Weimann at U. Caen, France
3/2024	Reviewer and member of the jury of the PhD thesis of Juan Menconi at U. Buenos Aires, Argentina, supervised by R. Sasyk
10/2023	Reviewer and member of the jury of the PhD thesis of Gerold Scheffer at U. Basel, Switzerland, supervised by Ph. Habegger
7/2023	Member of the jury of five UB undergraduate projects
6/2023	Member of the jury of the PhD thesis of Njaka Andriamandratomanana at U. Caen, France, supervised by F. Amoroso and D. Simon
3/2023	Reviewer *(rapporteur)* and member of the jury of the PhD thesis of Marcos Morales at U. Católica de Chile, supervised by R. Menares
1–7/2022	Member of the jury of three UB master theses
1/2021	Reviewer *(rapporteur)* and member of the jury of the PhD thesis of Milan Perera at Sorbonne U., France, supervised by S. Boucksom and G. Freixas

2021–2025	Referee of papers submitted to the journals Mém. Soc. Math. France, Selecta Math., J. Number Theory, Manuscripta Math, AAECC, Algebra Number Theory, Compositio Math, Int. Math. Res. Not. (2), J. Found. Comput. Math. (4), J. Théor. Nombres Bordeaux (2), Math. Z., Rev. U. Mat. Argentina (3) and Res. Number Theory (1)
2021	Referee of the book A. Vidras and A. Yger, *Multidimensional residues and applications*, American Mathematical Society

7/2020	Member of the jury of a UB master thesis
6/2020	Member of the jury of two UB undergraduate projects
7/2019	Reviewer for the promotion of an assistant professor at the Indian Institute of Science Education and Research (IISER) at Pune, India
9/2018	Member of the jury of the PhD thesis of Roberto Gualdi at U. Bordeaux, France
6/2018	Member of the jury of four UB master thesis
1/2018	Reviewer of an application to an ERC advanced grant, European Commission
9/2017	Member of the jury of the PhD thesis of César Martínez at U. Caen, France
6–7/2017	Reviewer and member of the jury of the PhD thesis of Iago Giné at UAB
4/2017	Reviewer for the promotion of a researcher at the Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina
3/2017	Member of the evaluation panel of two BGSMath postdoctoral fellowships
11/2016	Reviewer *(rapporteur)* of the Habilitation of Aurélien Galateau at U. Franche-Compté, France
6/2016	Member of the jury of four UB undergraduate projects
2016–2020	Referee of papers submitted to the journals Inventiones Mathematicae, Journal of Algebraic Geometry, Discrete & Computational Geometry, Journal of Algebra (twice), Journal of Number Theory (three times), Journal of Complexity, and Journal de Théorie des Nombres de Bordeaux (twice)