

# CURRICULUM VITAE

CARLOS D'ANDREA

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# 1 PERSONAL INFORMATION

Current position:	Professor Catedràtic
Citizenship	Argentina/Italy
Date & Place of Born	May 10, 1973. Corrientes, Argentina
Mailing Address	Departament de Matemàtiques i Informàtica Facultat de Matemàtiques i Informàtica Universitat de Barcelona Gran Via de les Corts Catalanes 585 08007 Barcelona Spain
Phone	(+34) 93 402 – 1607
Fax	(+34) 93 402 – 1601
Email	cdandrea@ub.edu
Webpage	<a href="http://www.ub.edu/arcades/cdandrea.html">http://www.ub.edu/arcades/cdandrea.html</a>

# 2 SCIENTIFIC EXPERIENCE

## 2.1 Academic degrees

- **Doctor en Ciencias Matemáticas**, Universidad de Buenos Aires, Argentina, July 2001  
Thesis: FÓRMULAS EXPLÍCITAS PARA EL CÁLCULO DE RESULTANTES Y APLICACIONES  
Advisor: Alicia Dickenstein
- **Licenciado en Matemática**, Universidad Nacional del Nordeste, Argentina, March 1997  
Undergraduate Thesis: FUNCIONES ALGEBRAICAS Y SISTEMAS HIPERGEOMÉTRICOS DE ECUACIONES DIFERENCIALES  
Advisor: Alicia Dickenstein

## 2.2 Postdoctoral positions

- 2005 – 2008 *Programa Ramón y Cajal para la Potenciación de Recursos Humanos del Plan Nacional de Investigación Científica, Desarrollo e Innovación Tecnológica*  
Researcher. Universitat de Barcelona, Spain
- 2003 – 2005 *The Adolph C. and Mary Sprague Miller Institute for Basic Research in Science*  
Research Fellow, Department of Mathematics  
University of California, Berkeley
- Fall 2001 *Évaluation - Orientation de la Coopération Scientifique (ECOS), France*  
Postdoctoral Position, INRIA Sophia Antipolis, France

## 2.3 Fellowships

- 1997 – 2001 *Fondo para el Mejoramiento de la Calidad Educativa (FOMECA), Argentina*  
Doctoral Fellowship, Universidad de Buenos Aires, Argentina
- 1994 – 1997 *Olimpiada Matemática Argentina*  
Undergraduate Fellowship, Buenos Aires, Argentina

## RESEARCH PROJECTS

- 2020 – 2023 Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN)  
H2020-MSCA-ITN-2019 “GRAPES”  
learninG, pRocessing And oPtimising shapES (GRAPES)  
Principal Investigator of the Node at the University of Barcelona
- 2020 – 2023 National Program of Research of the Spanish Ministry  
of Science and Innovation PID2019-104047GB-I00  
*Algebraic, Linear and Differential Geometry*  
*Theory and Applications*  
Principal Investigator
- 2020 – 2022 “Excellence Networks” Program from the Spanish Ministry of Economy and Competitivity  
RED2018-102709-T “Red EACA”  
Red Temática de Cálculo Simbólico, Álgebra Computacional y Aplicaciones  
General Researcher
- 2020 – 2022 “Excellence Networks” Program from the Spanish Ministry of Economy and Competitivity  
RED2018-102583-T “Red RGAS”  
Red Temática de Geometría Algebraica y Singularidades  
General Researcher

- 2016 – 2019 Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN)  
H2020-MSCA-ITN-2015 “ARCADES”  
Algebraic Representations in Computer-Aided Design for complex Shapes  
Principal Investigator of the Node at the University of Barcelona
- 2017 – 2019 “Excellence Networks” Program from the Spanish Ministry of Economy and Competitivity  
MTM2016-81932-REDT “Red EACA”  
Red Temática de Cálculo Simbólico, Álgebra Computacional y Aplicaciones  
General Researcher
- 2017 – 2019 “Excellence Networks” Program from the Spanish Ministry of Economy and Competitivity  
MTM2016-81735-REDT “Red RGAS”  
Red Temática de Geometría Algebraica y Singularidades  
General Researcher
- 2015 – 2018 National Program of Research of the Spanish Ministry  
of Economy and Competitivity M2015-65361-P  
*Algebraic, Linear and Differentiable Manifolds,  
Arithmetic and Moduli*  
General Researcher
- 2014 – 2016 “Excellence Networks” Program from the Spanish Ministry of Economy and Competitivity  
MTM2014-56142-REDT “Red EACA”  
Red Temática de Cálculo Simbólico, Álgebra Computacional y Aplicaciones  
General Researcher
- 2014 – 2016 Agencia Nacional de Promoción Científica y Tecnológica  
PICT-2013-0294 (Argentina)  
Álgebra y Aritmética Computacionales  
Principal Investigator of the Spanish team
- 2014 – 2016 Integrated Action French-Spanish CNRS PICS  
*Diophantine Geometry and Computer Algebra*  
General Researcher

- 2013 – 2015 National Program of Research of the Spanish Ministry of Economy and Competitiveness MTM2013-40775-P  
*Local rings and graded algebras: classification, cohomological properties and effectivity*  
General Researcher
- 2010 – 2012 National Program of Research of the Ministry of Science and Innovation of Spain MTM2010-20279  
*Structure of Free Resolutions: Effective, Geometric and homological aspects*  
General Researcher
- 2009 – 2011 Consolidated Research Group of Catalonia 2009 SGR 993  
*Algebraic Geometry*  
General Researcher
- 2009 – 2011 Integrated Action French-Spanish CNRS PICS  
*Properties of the heights of arithmetic varieties*  
General Researcher
- 2007 – 2009 National Program of Research of the Ministry of Education and Sciences of Spain MTM2007-67493  
*Effectivity, uniformity and asymptotic behaviour of multigraded structures*  
General Researcher
- 2007 – 2008 Integrated Action French-Spanish (PAI) HF 2006-0220  
*Elimination Theory: Formalism, Formulations and Applications*  
Principal Investigator of the Spanish team
- 2001 – 2003 ECOS Program of International Cooperation French-Argentina A00E02  
*Robust Resolution of Polynomial Systems of Equations and applications in Design Engineering*  
Postdoctoral Fellow
- 2000 – 2002 Agencia Nacional de Promoción Científica y Tecnológica ANPCYT 3-6568 (Argentina)  
*Hypergeometric Functions, Residues and Resultants*  
General Researcher
- 1997 – 2001 Universidad de Buenos Aires UBACY EX 258  
*Algebraic and Analytic Geometry*  
Ph.D. Student

## 2.4 Visiting positions

- Visiting Researcher, University of Buenos Aires, Argentina, September 2015
- Visiting Researcher, Fields Institute, Toronto, Canada, Fall 2009
- Visiting Researcher, INRIA Sophia-Antipolis, France, November 2007 and July 2008
- Visiting Researcher, Institute of Mathematics and its Applications, Minneapolis, June 2007
- Participant of the *the Summer School in Toric Varieties for Graduate Students*, Institute Joseph Fourier, Grenoble, France, June 2000
- Visiting Researcher, INRIA Sophia-Antipolis, France, September 1999 and July 2000
- General Member of the Program *Symbolic Computation in Geometry and Analysis*, MSRI, Berkeley, Fall 1998
- Participant of the *Summer Graduate Program in Algorithmic Algebra and Geometry*, MSRI, Berkeley, July 1998

## 2.5 Academic accreditations

- Accreditation as Senior Researcher (catedràtic) by the “Agència per a la Qualitat del Sistema Universitari de Catalunya”, October 2017
- Periods of Research Experience recognized by the “Agència per a la Qualitat del Sistema Universitari de Catalunya”: 1997–2002, 2003–2009 and 2010–2015
- Accreditation as Junior Researcher (agregat) by the “Agència per a la Qualitat del Sistema Universitari de Catalunya”, March 2007

## 2.6 Supervision of students

- *Yairon Cid Ruiz*, Ph.D. thesis in Mathematics (University of Barcelona) “Blow-up algebras in Algebra, Geometry and Combinatorics”, 2016–2019
- *Marta Narváez Clauss*, Ph.D. thesis in Mathematics (University of Barcelona) “Quantitative equidistribution of Galois orbits of points of small height on the algebraic torus”, 2016. Extraordinary Doctorate Award by the University of Barcelona 2015–2016
- *Marta Narváez Clauss*, Master’s thesis in Mathematics (University of Barcelona) “Effective computation of rational parameterization of rational plane curves”, 2011

- *Gil Puig i Surroca*, final undergraduate project “El problema de les distàncies diferents”, University of Barcelona, 2018–2019
- *Nil Garcés de Marcilla Escubedo*, final undergraduate project “Theorem of Quillen-Suslin”, University of Barcelona, 2017–2018
- *Joan Duran Prats*, final undergraduate project “Ehrhart polynomials”, University of Barcelona, 2013–2014
- *Eva Martínez*, co-direction of an undergraduate grant of collaboration at the Department of Algebra and Geometry, University of Barcelona, 2012

## 2.7 Postdocs

- *Hamid Rahkooy*, CRM, 2013

## 2.8 Research articles under review

1. D’Andrea, Carlos; Jeronimo Gabriela, Sombra Martín. *The Canny-Emiris conjecture for the sparse resultant*. [arXiv:2004.14622](#)

## 2.9 Research articles published or to be published in peer reviewed international journals

1. Cortadellas Benítez, Teresa; Cox, David; D’Andrea, Carlos. *The Rees Algebra of Parametric Curves via liftings*. *J. Pure Appl. Algebra* 224 (2020) 869–893
2. Cortadellas Benítez, Teresa; D’Andrea, Carlos; Montoro, Eulàlia. *Minimal solutions of the rational interpolation problem*. To appear in *Rev. Un. Mat. Argentina*. [arXiv:1808.02575](#)
3. Busé, Laurent; Cid Ruiz, Yairon; D’Andrea, Carlos. *Degree and birationality of multi-graded rational maps*. *Proc. Lond. Math. Soc.* (3) 121 (2020) 743–787
4. Busé, Laurent; D’Andrea, Carlos; Sombra, Martín; Weimann, Martin. *The geometry of the flex locus of a hypersurface*. *Pacific J. Math.* 304 (2020), no. 2, 419–437
5. Cortadellas Benítez, Teresa; D’Andrea, Carlos; Montoro, Eulàlia. *The set of unattainable points for the rational Hermite interpolation problem*. *Linear Algebra Appl.* Vol. 538, 116–142 (2018)
6. Chang, Mei-Chu; D’Andrea, Carlos; Ostafe, Alina; Shparlinski, Igor; Sombra, Martín. *Orbits of polynomial dynamical systems modulo primes*. *Proc. Amer. Math. Soc.* 146 (2018), no. 5, 2015–2025.

7. D’Andrea, Carlos; Krick, Teresa; Szanto, Agnes; Valdetaro, Marcelo. *Closed formula for univariate subresultants in multiple roots*. Linear Algebra Appl. Vol. 565, 123–155 (2019)
8. Cortadellas Benítez, Teresa; D’Andrea, Carlos; Enescu, Florian. *On the resolution of fan algebras of principal ideals over a Noetherian ring*. J. Algebra 541 (2020), 61–97
9. Bostan, Alin; D’Andrea, Carlos; Krick, Teresa; Szanto, Agnes; Valdetaro, Marcelo. *Subresultants in multiple roots: an extremal case*. Linear Algebra Appl. Vol. 529, 185–198 (2017)
10. D’Andrea, Carlos; Narváez-Clauss, Marta; Sombra, Martín. *Quantitative equidistribution of Galois orbits of small points in the  $N$ -dimensional torus*. Algebra & Number Theory 11 (2017), no. 7, 1627–1655
11. D’Andrea, Carlos; Ostafe, Alina; Shparlinski, Igor; Sombra, Martín. *Reductions modulo primes of systems polynomial equations and algebraic dynamical systems*. Trans. Amer. Math. Soc. 371 (2019), no. 2, 1169–1198
12. D’Andrea, Carlos; Gómez, Emiliano. *Equidistribution in sharing games*. Open Journal of Discrete Mathematics (OJDM), Vol.4 No.1 2014
13. D’Andrea, Carlos. *Moving curve ideals of rational plane parametrizations*. Lecture Notes in Computer Science, Vol 8942 “Computer Algebra and Polynomial” (ISBN: 978-3-319-15080-2), 30–49 (2015)
14. Cortadellas Benítez, Teresa; D’Andrea, Carlos. *The Rees Algebra of a monomial plane parametrization*. J. Symbolic Comput. 70 (2015) 71–105
15. D’Andrea, Carlos; Sombra, Martín. *A Poisson formula for the sparse resultant*. Proc. Lond. Math. Soc. (4) 110 (2015), 932–964
16. Cortadellas Benítez, Teresa; D’Andrea, Carlos. *Minimal generators of the defining ideal of the Rees Algebra associated to a rational plane parameterization with  $\mu = 2$* . Canad. J. Math. 66 (2014), no. 6, 1225–1249
17. D’Andrea, Carlos; Krick, Teresa; Szanto, Agnes. *Subresultants, Sylvester sums and the rational interpolation problem*. J. Symbolic Comput. 68 (2015) 72–83
18. D’Andrea, Carlos; Galligo, André; Sombra, Martín. *Quantitative equidistribution for the solutions of a system of sparse polynomial equations*. Amer. J. Math. 136 (2014), no. 6, 1543–1579
19. Cortadellas Benítez, Teresa; D’Andrea, Carlos. *Rational plane curves parameterizable by conics*. J. Algebra 373 (2013) 453–480
20. D’Andrea, Carlos; Krick, Teresa; Sombra, Martín. *Heights of varieties in multiprojective spaces and arithmetic Nullstellensätze*. Ann. Sci. Éc. Norm. Supér. (4) 46 (2013), no. 4, 549–627



21. D'Andrea, Carlos; Krick, Teresa; Szanto, Agnes. *Subresultants in multiple roots*. Linear Algebra Appl. 438 (2013), no. 5, 1969–1989
22. Busé, Laurent; D'Andrea, Carlos. *Singular factors of rational plane curves*. J. Algebra 357 (2012), 322–346
23. Cortadellas Benitez, Teresa; D'Andrea, Carlos. *Minimal generators of the defining ideal of the Rees Algebra associated to monoid parametrizations*. Comput. Aided Geom. Design 27 (2010), no. 6, 461–473
24. D'Andrea, Carlos; Tabera, Luis Felipe. *On the irreducibility of generalized Vandermonde determinants*. Proc. Amer. Math. Soc. 137 (2009), no. 11, 3647–3656
25. D'Andrea, Carlos; Sombra, Martín. *The Newton polygon of a plane rational curve*. Math. Comput. Sci. (2010) 4:3–24
26. D'Andrea, Carlos; Sombra, Martín. *Rational parametrizations, intersection theory and Newton polytopes*. *The IMA Volumes in Mathematics and its Applications*, Volume 151: Nonlinear Computational Geometry, 35–50, 2009
27. D'Andrea, Carlos; Hong, Hoon; Krick, Teresa; Szanto, Agnes. *Sylvester's Double Sums: the general case*. J. Symbolic Comput. 44 (2009) 1164–1175
28. D'Andrea, Carlos; Chipalkatti, Jaydeep (with an Appendix of Abdesselam, Abdelmalek). *On the jacobian ideal of the binary discriminant*. Collect. Math. 58,2 (2007), 155-180
29. D'Andrea, Carlos; Hong, Hoon; Krick, Teresa; Szanto, Agnes. *A simple proof of Sylvester's double sums for subresultants*. J. Symbolic Comput. 42 (2007), 290-297
30. D'Andrea, Carlos; Lalin, Matilde. *On the Mahler measure of resultants in small dimension*. J. Pure Appl. Algebra 209 (2007) no. 2, 393–410
31. D'Andrea, Carlos; Jeronimo, Gabriela. *Rational formulas for traces in zero-dimensional algebras*. Appl. Algebra Engrg. Comm. Comput. 19 (2008), no. 6, 495–508
32. D'Andrea, Carlos; Krick, Teresa; Szanto, Agnes. *Multivariate subresultants in roots*. J. Algebra 302 (1) 16–36, 2006
33. Busé, Laurent; D'Andrea, Carlos. *Properness and inversion problems for parameterized algebraic space surfaces by means of matrices*. Appl. Algebra Engrg. Comm. Comput. 17 (2006), no. 6, 393–407
34. D'Andrea, Carlos; Khetan, Amit. *Implicitization of rational surfaces using toric varieties*. J. Algebra 303 (2006) 543–565
35. D'Andrea, Carlos. *On the irreducibility of the determinant of the matrix of moving planes*. Comm. Algebra 33 (2005), no. 4, 1065–1072

36. D'Andrea, Carlos; Khetan, Amit. *Macaulay style formulas for toric residues*. *Compositio Math.* 141 (2005) 713–728
37. D'Andrea, Carlos; Jeronimo, Gabriela. *Subresultants and Generic Monomial Bases*. *J. Symbolic Comput.* 39 (2005), no. 3-4, 259–277
38. D'Andrea, Carlos; Sombra, Martín. *The Cayley-Menger determinant is irreducible for  $n \geq 3$* . *Siberian Math. J.* 46 (2005), no. 1, 71–76
39. D'Andrea, Carlos; Hare, Kevin G. *On the height of the Sylvester resultant*. *Experiment. Math.* 13 (2004), no. 3, 331–341
40. Busé, Laurent; D'Andrea, Carlos. *On the irreducibility of multivariate subresultants*. *C. R. Acad. Sci. Paris Sér. I Math.* 338 (2004), 287–290
41. Busé, Laurent; Cox, David; D'Andrea, Carlos. *Implicitization of surfaces in  $\mathbf{P}^3$  in the presence of base points*. *J. Algebra Appl.* 2 (2003), 189–214
42. D'Andrea, Carlos. *On the structure of  $\mu$ -classes*. *Comm. Algebra* 32 (2004), no. 1, 159–165
43. D'Andrea, Carlos; Emiris, Ioannis Z. *Sparse resultant perturbations*. In *Algebra, Geometry, and Software Systems* (edited by Michael Joswig and Nobuki Takayama), Springer Verlag 2002, 93–107
44. D'Andrea, Carlos; Emiris, Ioannis Z. *Hybrid sparse resultant matrices for bivariate polynomials*. *Computer algebra (London, ON, 2001)*. *J. Symbolic Comput.* 33 (2002), no. 5, 587–608
45. D'Andrea, Carlos. *Macaulay style formulas for sparse resultants*. *Trans. Amer. Math. Soc.* 354 (2002), no. 7, 2595–2629
46. D'Andrea, Carlos; Emiris, Ioannis Z. *Computing sparse projection operators*. *Symbolic computation: solving equations in algebra, geometry, and engineering (South Hadley, MA, 2000)*, 121–139, *Contemp. Math.*, 286, Amer. Math. Soc., Providence, RI, 2001
47. D'Andrea, Carlos; Dickenstein, Alicia. *Explicit formulas for the multivariate resultant*. *Effective methods in algebraic geometry (Bath, 2000)*. *J. Pure Appl. Algebra* 164 (2001), no. 1-2, 59–86
48. D'Andrea, Carlos. *Resultants and moving surfaces*. *J. Symbolic Comput.* 31 (2001), no. 5, 585–602
49. Cattani, Eduardo; D'Andrea, Carlos; Dickenstein, Alicia. *The  $\mathcal{A}$ -hypergeometric system associated with a monomial curve*. *Duke Math. J.* 99 (1999), no. 2, 179–207

## 2.10 Research articles published in proceedings of conferences

1. Cortadellas, Teresa; D'Andrea, Carlos; Montoro, Eulàlia. *Bounds for Degrees of Minimal  $\mu$ -bases of Parametric Surfaces*. Proc. ACM Intern. Symp. on Symbolic and Algebraic Computation (2020), 107–113. ISBN: 978-1-4503-7100-1
2. Busé, Laurent; D'Andrea, Carlos; Sombra, Martín, Weimann, Martin. *Equations for the flex locus of a hypersurface*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2018. Monografías de la Real Academia de Ciencias. Zaragoza. 43: 63–65 (2018). ISSN: 1132-6360
3. Cortadellas, Teresa; D'Andrea, Carlos; Montoro, Eulàlia. *Rational interpolation and the Euler-Jacobi formula*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2018. Monografías de la Real Academia de Ciencias. Zaragoza. 43: 75–78 (2018). ISSN: 1132-6360
4. Cortadellas, Teresa; D'Andrea, Carlos; Montoro, Eulàlia. *The minimal solutions of the rational interpolation problem*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2018. Monografías de la Real Academia de Ciencias. Zaragoza. 43: 79–82 (2018). ISSN: 1132-6360
5. Cortadellas, Teresa; D'Andrea, Carlos; Montoro, Eulàlia. *The formalism of rational interpolation*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2016, 79–82
6. Cortadellas, Teresa; D'Andrea, Carlos; Enescu, Florian. *On the resolution of fan algebras of principal ideals over Noetherian rings*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2016, 75–78
7. D'Andrea, Carlos; Ostafe, Alina; Shparlinski, Igor; Sombra, Martin. *Hilbert's Nullstellensatz and polynomial dynamical systems*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2014, 45–48
8. Cortadellas, Teresa; D'Andrea, Carlos. *The Rees Algebra of a monomial plane parametrization*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2014, 93–96
9. Cortadellas, Teresa; D'Andrea, Carlos. *Computing minimal generators of the Rees Algebra associated to some rational parametrizations*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2010
10. D'Andrea, Carlos; Krick, Teresa; Sombra, Martín. *Height of varieties and arithmetic Nullstellensatz*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2010
11. D'Andrea, Carlos; Tabera, Luis F. *An Ostrowski-like irreducibility test using tropical geometry*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2008, 61–64

12. D'Andrea, Carlos; San Segundo, Fernando; Sendra, Juan R.; Sombra, Martín. *Tropical implicitization of algebraic plane curves*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2008, 159–162
13. Busé Laurent; D'Andrea, Carlos. *Inversion of parameterized hypersurfaces by means of subresultants*. Proceedings of the 2004 International Symposium on Symbolic and Algebraic Computation, 65–71
14. D'Andrea, Carlos; Jeronimo, Gabriela. *Rational formulas for traces in zero-dimensional algebras*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2004, 101–105
15. Busé Laurent; D'Andrea, Carlos. *Inversion of a parameterized surface by means of matrices*. Actas de los Encuentros de Álgebra Computacional y Aplicaciones 2004, 71–76
16. D'Andrea, Carlos. *Explicit Formulas for the Computation of Resultants*. Actas del VII Encuentro de Álgebra Computacional y Aplicaciones EACA 2001, 129–133
17. D'Andrea, Carlos; Emiris, Ioannis Z. *Hybrid Sparse Resultant Matrices for Bivariate Systems*. Proc. ACM Intern. Symp. on Symbolic and Algebraic Computation (2001), 24–31
18. D'Andrea, Carlos; Dickenstein, Alicia. *Bezoutian Formulas à la Macaulay for the Multivariate Resultant*. Actas del Quinto Encuentro de Álgebra Computacional y Aplicaciones EACA 99, 133–137

## 2.11 Other publications

1. D'Andrea, Carlos. *Elimination Theory in the 21st Century*. In *Applications of Polynomial Systems*, David Cox, CBMS Regional Conference Series in Mathematics, vol 134, 2020
2. D'Andrea, Carlos. *El álgebra lineal detrás de los buscadores de internet*. Revista de Educación Matemática de la Unión Matemática Argentina, Vol. 35, (1), 23–38, 2020.
3. D'Andrea, Carlos; Paenza, Adrián. *Sobre cartas, descartes, y un problema de Josephus*. Revista de Educación Matemática de la Unión Matemática Argentina, Vol. 33 (2), 7–21, 2018
4. D'Andrea, Carlos; Paenza, Adrián. *Sobre cartas, descartes, y un problema de Josephus*. Revista de Educación Matemática de la Unión Matemática Argentina, Vol. 33 (2), 7–21, 2018
5. D'Andrea, Carlos; Paenza, Adrián. *Sobre cartas, descartes, y un problema de Josephus*. Revista de Educación Matemática de la Unión Matemática Argentina, Vol. 33 (2), 7–21, 2018

6. D'Andrea, Carlos; Paenza, Adrián. *Un cuadrado, cuatro números*. Revista Pensamiento Matemático. Volumen VIII, Número 1, pp. 071–082, 2018. ISSN 2174-0410
7. D'Andrea, Carlos. *Ideals de corbes mòbils i la seva interacció amb el disseny assistit per ordinador*. Butlletí de la Societat Catalana de Matemàtiques, vol. 31 (2016), num. 2, 121–141
8. D'Andrea, Carlos. *L'àlgebra lineal és darrere dels cercadors d'internet*. Lliçó inaugural del curs acadèmic 2012–2013, Facultat de Matemàtiques. Publicacions i Edicions de la Universitat de Barcelona, Dipòsit legal: B-31.213-2012
9. D'Andrea, Carlos. *Juegos matemáticos y análisis de estrategias ganadoras*. Trabajos de Matemática – Serie “B”, Universidad Nacional de Córdoba, Facultad de Matemática, Astronomía y Física, 2012/61, pags. 1–18
10. D'Andrea, Carlos; Sombra, Martín. *Sobre corbes paramètriques i polígons de Newton*. Butlletí de la Societat Catalana de Matemàtiques, Vol. 23, num. 2 (2009), 201–219
11. D'Andrea, Carlos; Sombra, Martín. *Sobre curvas paramétricas y polígonos de Newton*. “La Gaceta de la Real Sociedad Matemática Española”, vol. 11 (2008), num. 2, 317–336
12. Translation to Spanish of the article “What is the role of Algebra in Applied Mathematics?” by David Cox, for the “Gaceta de la Real Sociedad Matemática Española”, Vol. 10.1 (2007), 2–13
13. D'Andrea, Carlos. *Cálculo de Raíces Reales de Polinomios (Spanish)*. Notes of a course given at Universidad Nacional del Nordeste, Argentina, 2006
14. D'Andrea, Carlos. *Sucesiones Linealmente Recursivas (Spanish)*. Notes of a course given at Universidad Nacional del Nordeste, 2006
15. D'Andrea, Carlos; Gómez, Emiliano. *The broken spaghetti noodle*. The American Mathematical Monthly, Vol. 113, 6, 555–556, 2006
16. D'Andrea, Carlos. *Cómo triangular ecuaciones (Spanish)*. “Primer Semana de la Matemática” Ciclo Básico Común, Universidad de Buenos Aires, 2000
17. Bonomo, Flavia; D'Andrea, Carlos; Laplagne, Santiago; Szew, Martin. *Explorando la geometría en los clubes Cabri (Spanish)*. Book edited by Red Olimpica, Argentina, 1997

## 2.12 Posters

1. *When numerical methods fail...* The Miller Institute's 9th Annual Interdisciplinary Symposium, June 2005
2. *Heron's formula in several variables.* The Miller Institute's 8th Annual Interdisciplinary Symposium, June 2004
3. *Inversion of parametrizations by means of subresultants.* The Miller Institute's 7th Annual Interdisciplinary Symposium, June 2003

## 2.13 Invited talks

1. *Sparse resultants: combinatorial properties and Macaulay style formulas*, Algebra Meets Combinatorics, Neuchatel, Switzerland, July 2019
2. *Algorithmic aspects of the rational interpolation problem*, Minisymposia on Symbolic-numeric methods for non-linear equations: Algorithms and applications at the 2019 SIAM Conference on Applications of Algebraic Geometry, Bern, Switzerland, July 2019
3. *Moving lines, Soccer, and Rees Algebras*, Ideals, Varieties, and Applications, Amherst MA, USA, June 2019
4. *El problema de interpolación racional y el algoritmo de Euclides*, Math Department Colloquium of the University of Buenos Aires, Buenos Aires, Argentina, April 2019
5. *Números "al azar"*, Semana de la Matemática 2019, Buenos Aires, Argentina, April 2019
6. *The Rees Algebra of parametric curves via liftings*, Advances in Applied Algebraic Geometry, Bristol, United Kingdom, December 2018
7. *Elimination Theory in the 21st century*, CBMS Regional Conference on Applications of Polynomial Systems, Fort Worth, Texas, USA, June 2018
8. *Órbitas de sistemas de ecuaciones polinomiales módulo primos*, 66 Reunión de Comunicaciones Científicas, Congreso RSME-UMA 17, Buenos Aires, December 2017
9. *Solving the rational Hermite interpolation problem*, XXII Coloquio Latinoamericano de Álgebra, Quito, Ecuador, August 2017
10. *Resultants modulo  $p$* , Minisymposium on Resultants, Subresultants, and Applications at the SIAM Meeting on Applications of Algebraic Geometry, Atlanta, USA, August 2017
11. *A talk on how to give talks?!?* Barcelona's Doctoral Day, Bellaterra, July 2017

12. *Solving the rational interpolation problem*, Foundations of Computational Mathematics 2017, Barcelona, July 2017
13. *The use of higher order syzygies in the implicitization of rational parametrizations*, Conference on Geometry Theory and Applications, Plzeň, Czech Republic, June 2017
14.  *$\mu$ -bases of  $\mu$ -bases and ideals of moving curves following rational parametrizations*, Congreso de la Real Sociedad Matemática Española, Zaragoza, Spain, February 2017
15. *Introduction to Computer Algebra*, 1st Doctoral School ARCADES, Oslo, Norway, December 2016
16. *Ill-posed points for the Rational Interpolation Problem*, 6th Iberian Mathematical Meeting, Santiago de Compostela, Spain, October 2016
17. *On minimal generators of the ideal of moving curves following a rational plane parametrization*, Computational Algebra and Geometric Modeling workshop, Oaxaca, Mexico, August 2016
18. *Resultants modulo  $p$* , XXI Coloquio Latinoamericano de Álgebra, Buenos Aires, Argentina, July 2016
19. *Resultants modulo  $p$* , 20th Conference of the International Linear Algebra Society, Leuven, Belgium, July 2016
20. *Elimination theory in positive characteristic*, Encuentros de Álgebra Computacional y Aplicaciones EACA 2016, Logroño, Spain, June 2016
21. *Relating geometric singularities of parametric curves and surfaces with algebraic moving ideals*, ARCADES Workshop: Kickoff and Recruitment Event, Vienna, Austria, April 2016
22. *Sparse Resultants vs Sparse Eliminants*, Workshop on Algebra, Geometry and Proofs in Symbolic Computation, Toronto, Canada, December 2015
23. *Sparse Resultants*, Math & Stats Colloquium, Georgia State University, Atlanta, December 2015
24. *Ideales de curvas móviles y su interacción con el diseño asistido por computadoras*, Math Department Colloquium, University of Buenos Aires, September 2015
25. *Moving curve ideals of rational plane parametrizations*, 8th ICIAM Conference Beijing, China, August 2015
26. *Sparse resultants of toric cycles*, SIAM Algebraic Geometry 2015, Daejeon, South Korea, August 2015
27. *Quantitative equidistribution of algebraic points in the  $N$ -dimensional torus*, Congreso de la RSME 2015, Granada, Spain, February 2015

28. *The Rees Algebra of some monomial parametrizations*, 20th Conference on Applications of Computer Algebra ACA 2014, New York, July 2014
29. *Equidistribution of algebraic points*, Computer Algebra and Effective Methods in Algebraic and Arithmetic Geometry, Tatihou, France, July 2014
30. *Moving surfaces ideals of rational parametrizations*, Computer Algebra and Polynomials, Linz, Austria, November 2013
31. *Sparse resultants*, Gröbner bases, Resultants and Linear Algebra, Linz, Austria, September 2013
32. *Sparse resultants via multiprojective elimination*, Gröbner bases, Resultants and Linear Algebra, Linz, Austria, September 2013
33. *Sparse resultants via multiprojective elimination*, Etna Triangulations & Algebra Meeting, Catania, Italy, February 2013
34. *Rational plane curves with  $\mu = 2$* , Algebraic Geometry and Geometric Modeling, Banff, Canada, January 2013
35. *Quantitative equidistribution for the solutions of systems of sparse polynomial equations*, IV Iberian Mathematical Meeting, Valladolid, October 2012
36. *El álgebra lineal detrás de los buscadores de internet*, Opening Lecture for the Academic year 2012–2013, Facultat de Matemàtiques, Universitat de Barcelona, September 2012
37. *El álgebra lineal detrás de Google*, Primer Encuentro Nacional de Estudiantes de Matemática, Corrientes, Argentina, July 2012
38. *Quantitative equidistribution for the solutions of systems of sparse polynomial equations*, SIAM Conference on Applied Algebraic Geometry, Raleigh, USA, October 2011
39. *Rational Plane Curves Parameterizable by Conics*, Congreso Centenario de la RSME, Ávila, Spain, February 2011
40. *On the distribution of the roots of sparse systems of polynomial equations*, Toric Geometry Seminar, Jarandilla de la Vera, Spain, November 2010
41. *Computing singularities of parametric plane curves*, 3rd Iberian Mathematical Meeting, Braga, Portugal, October 2010
42. *Computing singularities of rational plane curves*, 10th ALGA Meeting on Commutative Algebra and Algebraic Geometry, IMPA, Rio de Janeiro, Brazil, July 2010
43. *Singular factors of rational plane curves*, “Tomás Recio 60”, Castro Urdiales, Spain, May 2010



44. *Effective Hilbert's Nullstellensatz*, Math Department Colloquium, Georgia State University, Atlanta, USA, December 2009
45. *Sobre la distribución de raíces de sistemas de ecuaciones polinomiales*, Math Department Colloquium, University of Buenos Aires, Argentina, December 2008
46. *Computing the Newton polygon of offsets to plane algebraic curves*, Foundations of Computational Mathematics 08, City University of Hong Kong, June 2008
47. *Tropical Implicitization of Algebraic Plane Curves*, Genova-Barcelona Workshop on Commutative Algebra and Applications, Genoa, Italy, May 2008
48. *El polígono de Newton de una curva racional en el plano*, Workshop on Computer Algebra in Geometric Modeling and Industry, Castro Urdiales, Spain, December 2007
49. *The Newton polygon of a plane rational curve*, Journées 2007, de l'ANR GECKO, Sophia Antipolis, France, November 2007
50. *Bézout's theorem and implicitization*, Non-Linear Computational Geometry, Minneapolis, June 2007
51. *Subresultantes a la Sylvester*, III Encuentro Nacional de Algebra, Córdoba, Argentina, August 2006
52. *Resultants and subresultants: univariate vs. multivariate case*, Winter School on Commutative Algebra and Applications, Barcelona, February 2006
53. *On arithmetic aspects of sparse resultants*, Foundations of Computational Mathematics 05, Santander, Spain, July 2005
54. *What can you compute with Symbolic Computation?* The Miller Institute Lunch, UC Berkeley, January 2005
55. *Applications of subresultants in elimination theory*, the 10th International Conference on Applications of Computer Algebra, Beaumont, Texas, July 2004
56. *The implicitization of parametric rational surfaces*, Computer Algebra in Geometric Computing, Lorentz Center, Leiden, The Netherlands, October 2001
57. *Computing resultants à la Macaulay*, XIV Coloquio Latinoamericano de Algebra, Córdoba, Argentina, August 2001
58. *Resultantes y determinantes*, I Simposio de Matemática MateBaires 2000, Universidad de Buenos Aires, December 2000
59. *Parametrización de superficies racionales*, Segundo Encuentro de Algebra UBA, Universidad de Buenos Aires, March 2000
60. *Resultantes ralas y aplicaciones*, Primer Encuentro de Algebra UBA, Universidad de Buenos Aires, March 1999

## 2.14 Conference talks

1. *Bounds for Degrees of Minimal  $\mu$ -bases of Parametric Surfaces*, ISSAC 2020, Kalamata, Greece, July 2020
2. *The Rees Algebra of Parametric Curves via Liftings*, Effective Methods in Algebraic Geometry MEGA 2019, Madrid, Spain, June 2019
3. *Grado y biracionalidad de aplicaciones racionales multigraduadas*, Reunión Anual de la Unión Matemática Argentina, La Plata, Argentina, September 2018
4. *Equations for the flex locus of a hypersurface*, XVI Encuentro de Álgebra Computacional y Aplicaciones, Zaragoza, Spain, July 2018
5. *On the resolution of fan algebras of principal ideals over a Noetherian ring*, Effective Methods in Algebraic Geometry MEGA 2017, Nice, France, June 2017
6. *Resultantes, flexes, y una generalización de una fórmula de Salmon*, Reunión de la Unión Matemática Argentina, Santa Fe, Argentina, September 2015
7. *Sparse resultants: initial forms, vanishing coefficients, homogeneities and generalized Macaulay formulas*, MEGA 2015, Trento, Italy, June 2015
8. *Hilbert's Nullstellensatz and polynomial dynamical systems*, XIV Encuentro de Álgebra Computacional y Aplicaciones, Barcelona, June 2014
9. *Formulas in Interpolation*, SIAM Algebraic Geometry Meeting, Fort Collins, CO, USA, August 2013
10. *Minimal generators of the defining ideal of the Rees Algebra associated to a rational plane parametrization with  $\mu = 2$* , MEGA 2013, Frankfurt, Germany, June 2013
11. *Quantitative equidistribution for the solutions of systems of sparse polynomial equations*, IV Congreso Latinoamericano de Matemáticos (CLAM), Córdoba, Argentina, August 2012
12. *Computing minimal generators of the Rees Algebra associated to some rational parametrizations*, XI Encuentro de Algebra Computacional y Aplicaciones EACA 2010, Santiago de Compostela, Spain, July 2010
13. *Height of varieties and arithmetic Nullstellensatz*, XI Encuentro de Algebra Computacional y Aplicaciones EACA 2010, Santiago de Compostela, Spain, July 2010
14. *Sylvester's double sums: the general case*, Effective Methods in Algebraic Geometry (MEGA), Strobl, Austria, June 2007
15. *Multivariate subresultants in roots*, Effective Methods in Algebraic Geometry (MEGA), Alghero, Italy, May 2005
16. *The Cayley-Menger determinant and its application in metric geometry*, Algebraic Geometry and Geometric Modelling, Nice, France, September 2004

17. *Inversion of parameterized hypersurfaces by means of subresultants*, 2004 International Symposium on Symbolic and Algebraic Computation, Santander, Spain, July 2004
18. *Rational formulas for traces in zero-dimensional algebras*, IX Encuentro de Algebra Computacional y Aplicaciones EACA 2004, Santander, Spain, July 2004
19. *Subresultants and generic monomial bases*, Effective Methods in Algebraic Geometry (MEGA) 2003, Kaiserslautern, Germany, June 2003
20. *Explicit formulas for the computation of resultants*, VII Encuentro de Algebra Computacional y Aplicaciones EACA 2001, Ezcaray, Spain, September 2001
21. *Resultantes y superficies móviles*, L Reunión Anual de Comunicaciones Científicas de la UMA, Rosario, Argentina, September 2000
22. *Fórmulas de tipo Bézout-Macaulay para la resultante multivariada*, XLIX Reunión Anual de Comunicaciones Científicas de la UMA, La Plata, Argentina, September 1999
23. *Bezoutian formulas à la Macaulay for the multivariate resultant*, V Encuentro de Algebra Computacional y Aplicaciones EACA 99, Tenerife, Spain, September 1999
24. *Soluciones racionales del sistema  $\mathcal{A}$ -hipergeométrico unidimensional*, XLVII Reunión Anual de Comunicaciones Científicas de la UMA, Córdoba, Argentina, September 1997

## 2.15 Seminar talks

1. *Flex locus of varieties*, Algebraic Geometry Seminar, Universitat de Barcelona, June 2018
2. *El conjunto de puntos malos para el Problema de Interpolación de Lagrange*, Computational Algebra Seminar, Universidad de Buenos Aires, December 2016
3. *Resultants modulo  $p$* , Algebraic Geometry Seminary, Universitat de Barcelona, November 2016
4. *Moving curve ideals of rational plane parametrizations*, Commutative Algebra Seminar, Georgia State University, Atlanta, December 2015
5. *Ideales de curvas móviles y su interacción con el diseño asistido por computadoras*, Seminario de Análisis Numérico y Computación, Universidad de Córdoba, Argentina, September 2015
6. *Aspectos aritméticos y geométricos del teorema de los ceros de Hilbert*, Seminario de Álgebra, Universidad de Sevilla, November 2014
7. *Resultantes normalizadas*, Algebraic Geometry Seminar, Universitat de Barcelona, May 2012

8. *Sobre la distribución de soluciones de sistemas de ecuaciones polinomiales*, Algebraic Geometry Seminar, Universitat de Barcelona, March 2009
9. *Tropicalization and irreducibility of generalized Vandermonde determinants*, INRIA Sophia Antipolis, France, February 2009
10. *Tropicalization and irreducibility of generalized Vandermonde determinants*, University of Bordeaux, France, February 2009
11. *Implicitación a la Newton-Puiseux*, University of Alcalá de Henares, Spain, April 2008
12. *Sumas dobles de Sylvester*, Algebraic Geometry Seminar, Universitat de Barcelona, March 2007
13. *Las fórmulas de Herón y Ptolomeo en varias variables*, University of Buenos Aires, November 2004
14. *The jacobian scheme of the discriminant*, Symbolic Computation Seminar, North Carolina State University, October 2004
15. *The jacobian scheme of the discriminant*, Algebra Seminar, Universidad de Valladolid, Spain, September 2004
16. *Implicitization of rational surfaces using toric varieties*, INRIA Sophia Antipolis, France, March 2004
17. *Multivariate subresultants*, Commutative Algebra and Algebraic Geometry Seminar, University of California at Berkeley, October 2003
18. *Height of resultants*, Number Theory Seminar, University of Texas at Austin, October 2003
19. *Multivariate subresultants*, Computational Algebraic Geometry Seminar, University of Rice, Houston, October 2003
20. *Inversion of birational Maps*, Valley Geometry Seminar, University of Massachusetts at Amherst, April 2003
21. *Multivariate resultants and subresultants*, Commutative Algebra Seminar, University of Utah, Salt Lake City, March 2003
22. *Moving surfaces in elimination theory*, Commutative Algebra Seminar, MSRI, August 2002
23. *Equations of parametric curves and surfaces*, Seminaire sur les singularités, Institut de Mathématique de Jussieu, Paris, France, November 2001
24. *Resultants creux*, Seminaire de Algebre et Geometrie, IRMA, University of Strasbourg, France, October 2001

25. *Implicitization of parametric algebraic curves and surfaces*, INRIA Sophia- Antipolis, France, July 2000
26. *Generalized Macaulay formulas for the multivariate resultant*, INRIA Sophia- Antipolis, France, September 1999
27. *Rational solutions of differential equations*, Summer Graduate Program in Algorithmic Algebra and Geometry, MSRI, Berkeley, July 1998

## 2.16 Courses and mini courses

- “Théorie de l’élimination, systèmes creux et applications”, Journées Nationales de Calcul Formel, Luminy, France, March 2020
- “Elimination Theory”, Fourth EACA International School on Computer Algebra and its Applications, Santiago de Compostela, Spain, March 2018
- “Resultantes y Eliminantes”, VIII Escuela Santaló, Buenos Aires, Argentina, July 2016
- “Geometric Toric Varieties”, International Summer School on Mathematics Mechanization organizada por the Key Laboratory of Mathematics Mechanization, Chinese Academy of Science, August 2015

## 2.17 Participation in workshops and conferences

1. International Symposium on Symbolic and Algebraic Computation, ISSAC 2020, Kalamata, Greece, July 2020 (online)
2. Journées Nationales de Calcul Formel, Luminy, France, March 2020
3. ARCADES Final Open Workshop, Vienna, Austria, November 2019
4. Algebra Meets Combinatorics, Neuchatel, Switzerland, July 2019
5. 2019 SIAM Conference on Applications of Algebraic Geometry, Bern, Switzerland, July 2019
6. Effective Methods in Algebraic Geometry MEGA 2019, Madrid, Spain, June 2019
7. Ideals, Varieties, Applications, Amherst MA, USA, June 2019
8. Aplicaciones Industriales del Álgebra Computacional AICA 2019, Santander, Spain, February 2019
9. Second ARCADES Software & Industrial Workshop, Cambridge, UK, January 2019

10. Advances in Applied Algebraic Geometry, Bristol, United Kingdom, December 2018
11. Reunión Anual de la Unión Matemática Argentina, La Plata, Argentina, September 2018
12. ARCADES Doctoral School II and ESR Days in Barcelona, Barcelona, Spain, September 2018
13. XVI Encuentro de Álgebra Computacional y Aplicaciones, Zaragoza, Spain, July 2018
14. CBMS Regional Conference on Applications of Polynomial Systems, Fort Worth, Texas, USA, June 2018
15. Fourth EACA International School on Computer Algebra and its Applications, Santiago de Compostela, Spain, March 2018
16. Congreso RSME-UMA 17, Buenos Aires, December 2017
17. XXII Coloquio Latinoamericano de Álgebra, Quito, Ecuador, August 2017
18. SIAM Meeting on Applications of Algebraic Geometry, Atlanta, USA, August 2017
19. Foundations in Computational Mathematics 2017, Barcelona, Spain, July 2017
20. Conference on Geometry Theory and Applications, Plzeň, Czech Republic, June 2017
21. Effective Methods in Algebraic Geometry MEGA 2017, Nice, France, June 2017
22. Congreso de la Real Sociedad Matemática Española, Zaragoza, Spain, February 2017
23. 1st Doctoral School ARCADES, Oslo, Norway, December 2016
24. 6th Iberian Mathematical Meeting, Santiago de Compostela, Spain, October 2016
25. Computational Algebra and Geometric Modeling workshop, Oaxaca, Mexico, August 2016
26. Conference on Computational Algebra, Algebraic Geometry and Applications, Buenos Aires, Argentina, August 2016
27. VIII Escuela Santaló, Buenos Aires, Argentina, July 2016
28. XXI Coloquio Latinoamericano de Álgebra, Buenos Aires, Argentina, July 2016
29. 20th Conference of the International Linear Algebra Society, Leuven, Belgium, July 2016

30. Encuentros de Álgebra Computacional y Aplicaciones EACA 2016, Logroño, Spain, June 2016
31. ARCADES Workshop: Kickoff and Recruitment Event, Vienna, Austria, April 2016
32. Primer Encuentro de la Red de Geometría Algebraica y Singularidades RGAS2016, Barcelona, Spain, January 2016
33. Workshop on Algebra, Geometry and Proofs in Symbolic Computation, Toronto, Canada, December 2015
34. Reunión de la Unión Matemática Argentina, Santa Fe, Argentina, September 2015
35. 8th ICIAM, Beijing, China, August 2015
36. SIAM Algebraic Geometry 2015, Daejeon, South Korea, August 2015
37. MEGA 2015, Trento, Italy, June 2015
38. Homological bonds between commutative algebra and representation theory, Barcelona, Spain, February 2015
39. Congreso de la RSME 2015, Granada, Spain, February 2015
40. Foundations of Computational Mathematics, Montevideo, Uruguay, December 2014
41. International Congress of Mathematicians, Seoul, South Korea, August 2014
42. 20th Conference on Applications of Computer Algebra ACA 2014, New York, July 2014
43. Computer Algebra and Effective Methods in Algebraic and Arithmetic Geometry, Tatihou, France, July 2014
44. XIV Encuentro de Álgebra Computacional y Aplicaciones, Barcelona, Spain, June 2014
45. Workshop on polynomials over finite fields, CRM, Barcelona, Spain, May 2014
46. Computer Algebra and Polynomials, Linz, Austria, November 2013
47. Aplicaciones industriales del álgebra computacional, AICA 2013, Madrid, November 2013
48. Gröbner bases, Resultants and Linear Algebra, Linz, Austria, September 2013
49. SIAM Algebraic Geometry Meeting, Fort Collins, CO, USA, August 2013
50. MEGA 2013, Frankfurt, Germany, June 2013

51. Etna Triangulations & Algebra Meeting, Catania, Italy, February 2013
52. Algebraic Geometry and Geometric Modeling, Banff, Canada, January 2013.
53. Combinatorial Commutative Algebra and Applications, MSRI, Berkeley, USA, December 2012
54. IV Iberian Mathematical Meeting, Valladolid, Spain, October 2012
55. 12th ALGA Meeting on Commutative Algebra and Algebraic Geometry, Rio de Janeiro, Brazil, August 2012
56. IV Congreso Latinoamericano de Matemáticos (CLAM), Córdoba, Argentina, August 2012
57. XXXV Reunión de Educación Matemática (REM), Córdoba, Argentina, August 2012
58. VI Encuentro Nacional de Álgebra (eENA), Córdoba, Argentina, August 2012
59. I Encuentro Nacional de Estudiantes de Matemática, Corrientes, Argentina, July 2012
60. Complex and p-adic dynamics, Providence, USA, February 2012
61. SIAM Conference on Applied Algebraic Geometry, Raleigh, USA, October 2011
62. Foundations of Computational Mathematics 11, Budapest, July 2011
63. The Millenium Problems, Barcelona, Spain, June 2011
64. Heights in Diophantine and Arakelov Geometry, Dynamical Systems and Computer Algebra, Tossa de Mar, Spain, April 2011
65. Conferencia Centenario de la RSME, Ávila, Spain, February 2011
66. Toric Geometry Seminar, Jarandilla de la Vera, Spain, November 2010
67. 3rd Iberian Mathematical Meeting, Braga, Portugal, October 2010
68. X Encuentro de Algebra Computacional y Aplicaciones, Santiago de Compostela, Spain, July 2010
69. 10th ALGA Meeting on Commutative Algebra and Algebraic Geometry, Rio de Janeiro, Brazil, July 2010
70. “Tomás Recio 60”, Castro Urdiales, Spain, May 2010
71. Workshop on Complexity of Numerical Computation, Toronto, October 2009
72. Effective Methods in Algebraic Geometry, Barcelona, Spain, June 2009
73. XI Encuentro de Algebra Computacional y Aplicaciones, Granada, Spain, September 2008



74. Foundations of Computational Mathematics 08, City University of Hong Kong, June 2008
75. The Miller Institute's 12th Annual Interdisciplinary Symposium, Tomales Bay, USA, June 2008
76. Genova-Barcelona Workshop on Commutative Algebra and Applications, Genoa, Italy, May 2008
77. Workshop on Computer Algebra in Geometric Modeling and Industry, Castro Urdiales, Spain, December 2007
78. Mini-Workshop: Surface modelling and syzygies, Mathematisches Forschungsinstitut Oberwolfach, November 2007
79. Journées de l'ANR GECKO, Sophia Antipolis, France, November 2007
80. International Symposium on Symbolic and Algebraic Computation, Waterloo, Canada, July 2007
81. Effective Methods in Algebraic Geometry, Strobl, Austria, June 2007
82. Non-Linear Computational Geometry, Minneapolis, USA, May 2007
83. Algebraic Geometry and Geometric Modelling, Barcelona, Spain, September 2006
84. III Encuentro Nacional de Algebra (EIENA), Córdoba, Argentina, August 2006
85. The Miller Institute's 10th Annual Interdisciplinary Symposium, Tomales Bay, USA, June 2006
86. Théorie de l'élimination et applications, Luminy, France, May 2006
87. Winter School on Commutative Algebra and Applications, Barcelona, Spain, February 2006
88. Foundations of Computational Mathematics 05, Santander, Spain, July 2005
89. The Miller Institute's 9th Annual Interdisciplinary Symposium, Tomales Bay, USA, June 2005
90. Effective Methods in Algebraic Geometry (MEGA 2005), Alghero, Italy, May 2005
91. Algebraic Geometry and Geometric Modelling, Nice, France, September 2004
92. The 2004 International Symposium on Symbolic and Algebraic Computation, Santander, Spain, July 2004
93. IX Encuentro de Álgebra Computacional y Aplicaciones EACA, Santander, Spain, July 2004

94. The Miller Institute's 8th Annual Interdisciplinary Symposium, Tomales Bay, USA, June 2004
95. Algorithmic, Combinatorial and Applicable Real Algebraic Geometry, MSRI, Berkeley, April 2004
96. Real Algebraic Geometry and Geometric Modeling, MSRI, Berkeley, April 2004
97. Topology and Geometry of Real Algebraic Varieties, MSRI, Berkeley, February 2004
98. Introductory Workshop in Topological Aspects of Real Algebraic Geometry, MSRI, Berkeley, January 2004
99. Mathematical Foundations of Geometric Algorithms, MSRI, Berkeley, October 2003
100. Introductory Workshop in Discrete and Computational Geometry, MSRI, Berkeley, August 2003
101. Effective Methods in Algebraic Geometry (MEGA 2003), Kaiserslautern, Germany, June 2003
102. The Miller Institute's 7th Annual Interdisciplinary Symposium, Tomales Bay, USA, June 2003
103. Computational Commutative Algebra, MSRI, Berkeley, March 2003
104. Commutative Algebra: Interactions with Homological Algebra and Representation Theory, MSRI, Berkeley, February 2003
105. Commutative Algebra: Local and Birational Theory, MSRI, Berkeley, December 2002
106. Introductory Workshop in Commutative Algebra, MSRI, Berkeley, September 2002
107. Workshop in Computer Algebra in Geometric Computing, Leiden, The Netherlands, October 2001
108. VII Encuentro de Álgebra Computacional y Aplicaciones EACA, La Rioja, Spain, September 2001
109. XIV Coloquio Latinoamericano de Algebra, Córdoba, Argentina, August 2001
110. I Simposio de Matemática MateBaires 2000, Buenos Aires, Argentina, December 2000
111. L Reunión Anual de Comunicaciones Científicas de la Unión Matemática Argentina, Rosario, Argentina, September 2000
112. First Latin American Congress of Mathematicians, Rio de Janeiro, Brazil, August 2000

- 113. Summer School in Toric Varieties, Grenoble, France, July 2000
- 114. Segundo Encuentro Rioplatense de Algebra y Geometría, Montevideo, Uruguay, June 2000
- 115. Algebra-UBA II, Buenos Aires, Argentina, March 1999
- 116. XLIX Reunión Anual de Comunicaciones Científicas de la Unión Matemática Argentina, La Plata, Argentina, September 1999
- 117. V Encuentro de Algebra Computacional y Aplicaciones EACA, Tenerife, Spain, September 1999
- 118. Algebra-UBA I, Buenos Aires, Argentina, March 1999
- 119. Complexity of Continuous and Algebraic Mathematics, MSRI, Berkeley, November 1998
- 120. Symbolic Computation in Geometry and Analysis, MSRI, Berkeley, October 1998
- 121. Solving Systems of Equations, MSRI, Berkeley, September 1998
- 122. Joint Introductory Workshop on Foundations of Computational Mathematics and Symbolic Computation in Geometry and Analysis, MSRI, Berkeley, August 1998
- 123. Summer Graduate Program in Algorithmic Algebra and Geometry, MSRI, Berkeley, July 1998.
- 124. XLVII Reunión Anual de Comunicaciones Científicas de la Unión Matemática Argentina, Córdoba, Argentina, September 1997
- 125. Second International Workshop on Semi-numerical Techniques in Polynomial Equation Solving (TERA-97), Córdoba, Argentina, September 1997
- 126. Foundations on Computational Mathematics, Rio de Janeiro, Brazil, January 1997
- 127. XLIV Reunión Anual de Comunicaciones Científicas de la Unión Matemática Argentina, Buenos Aires, Argentina, September 1994

## 2.18 Organization of scientific events

1. Member of the Organizing Committee of the minisymposia “ Syzygies and applications to Geometry”, 2019 SIAM Conference on Applied Algebraic Geometry, Bern, Switzerland, July 2019
2. Chair of the European Conference on Effective Methods in Algebraic Geometry MEGA 2021, Tromso, Norway, June 2021

3. member of the Scientific and Local Committee of the European Conference on Effective Methods in Algebraic Geometry MEGA 2019, Madrid, Spain, June 2019
4. Member of the Scientific Committee of the AICA workshop on Industrial Applications of Computational Algebra, Santander, Spain, February 2019
5. Local organizer of the ARCADES Doctoral School II and ESR Days in Barcelona, Spain, September 2018
6. Member of the Coordination Committee of the Computational and Commutative Algebra session of the RSME-UMA 2017 Conference, Buenos Aires, Argentina, December 2017
7. Member of the Organizing Committee “Free resolutions governed by geometric and/or combinatorial data”, at the 2017 SIAM Conference on Applied Algebraic Geometry, Georgia, Atlanta, USA, August 2017
8. Member of the Organizing Committee of the Conference “Computational Algebra, Algebraic Geometry and Applications (CoAlAGA)”, Buenos Aires, Argentina, July 2016
9. Member of the Local Organizing Committee of the Conference “Foundations in Computational Mathematics (FoCM)”, Barcelona, Spain, July 2017
10. Organizer of the workshop on “Computational Algebraic Geometry” of the Foundations of Computational Mathematics (FoCM) Conference, Montevideo, Uruguay, December 2014
11. Chair of the Local Committee on the conference EACA 2014, Barcelona, Spain
12. Member of the Organizing Committee of the minisymposia “Formulas in interpolation”, at the 2013 SIAM Conference on Applied Algebraic Geometry, Fort Collins, CO, USA, August 2013
13. Local organizer of the mini-course “Rational Plane Curves via Commutative Algebra: Three Case Studies” given by David Cox, University of Barcelona, Spain June 2012
14. Member of the Organizing Committee of the Conference “Heights”, Tossa del Mar, Spain, April 2011
15. Organizer of the workshop on “Computational Algebraic Geometry” of the Foundations of Computational Mathematics (FoCM) Conference, Budapest, Hungary, July 2011
16. Member of the Organizing Committee of the Conference “Effective Methods in Algebraic Geometry” MEGA 2009, Barcelona, Spain, 2009
17. Co-organizer of “Seminari Geometria Algebraica” Universitat de Barcelona-Universitat Politècnica de Catalunya, 2007–2010 and 2012–2014

18. Member of the Program Committee of the International Symposium in Symbolic and Algebraic Computation, Waterloo, Ontario, Canada, July 2007; Kobe, Japan, July 2014 & Waterloo, Ontario, Canada, July 2016
19. Member of the organizing Committee of the Workshop Algebraic Geometry and Geometric Modelling, Barcelona, Spain, September 2006
20. Member of the organizing Committee of the 2004 & 2005 Miller Institute's Annual Interdisciplinary Symposium, Berkeley, CA
21. Organizer of "Software on Real Algebra Seminar" (jointly with Bernd Sturmfels), UC Berkeley, Spring 2004
22. Organizer of "Combinatorial Commutative Algebra Study Seminar", UC Berkeley, August 2003
23. Organizer of the Special Session on "Elimination Theory", International Conference on Applications of Computer Algebra ACA 2003 (jointly with Amit Khetan), Raleigh NC, July 2003
24. Organizer of the "Resultant Seminar", Mathematical Sciences Research Institute (jointly with Laurent Busé), Spring 2003
25. Organizer of the "Computational Algebra Seminar", UC Berkeley (jointly with Amit Khetan), Spring 2003
26. Organizer of "Semana de la Matemática", Departamento de Matemática, Universidad de Buenos Aires, August 2001
27. Organizer of the "Algebra and Geometry Graduate Seminar", Universidad de Buenos Aires, Fall 1999 and Spring 2000
28. Organizer of "Segundo Encuentro de Algebra UBA" (jointly with Matías Graña), Universidad de Buenos Aires, March 2000

## 2.19 Evaluation of research activities

### 2.19.1 Ph.D. theses committees

- Mariana Pérez, Universidad de Buenos Aires, December 2016
- Eulàlia Montoro, Universitat Politècnica de Catalunya, March 2015
- Isabel Berna, Universitat Politècnica de Catalunya, February 2012
- Thang Luu Ba, University of Nice Sophia-Antipolis, July 2011
- María Cruz Fernandez-Fernandez, University of Sevilla, April 2010
- Marc Dohm, University of Nice Sophia-Antipolis, July 2008
- Carlos Villarino Cabellos, University of Alcalá (Spain), May 2007

## 2.20 Editorial committees

- Member of the Editorial Board of Revista de Educación Matemática de la Unión Matemática Argentina, since 2019
- Member of the Editorial Board of the Journal of Symbolic Computation, since 2015
- Guest Editor (jointly with Alessandra Bernardi and Thorsten Theobald) of the special issue of the Journal of Symbolic Computation on the occasion of the MEGA 2019 conference
- Guest Editor (jointly with Marc Giusti, Luis Miguel Pardo and Ragni Piene) of the special issue of the Journal of Symbolic Computation on the occasion of the MEGA 2009 conference
- Guest Editor (jointly with Bernard Mourrain) of the special issue of the Journal of Symbolic Computation featuring revised versions of ISSAC 2007 papers, 2007–2008

## 2.21 Scientific committees

- Head of the Educational Committee (EduCom) of the GRAPES' ITN Network 2019–2022
- Member of the Emmy Noether 2019 Award Committee of the Catalan Society of Mathematics to distinguish outstanding Final Undergraduate Projects.
- Member of the Plenary Speakers Committee of the conference “Foundations of Computational Mathematics” 2017
- Member of the Advisory Board of the Spanish Red EACA network on Computational Algebra, since 2012
- Member of the Advisory Board of the series of conferences “Effective Methods in Algebraic Geometry” MEGA, since 2007

## 2.22 Reviewing of scientific articles

- Reviewer of papers for the MathSciNet and Zentralblatt
- Referee reporter of papers submitted to: *American Mathematical Monthly*, *Applicable Algebra in Engineering*, *Bulletin of the Brazilian Mathematical Society*, *Communication and Computing*, *Collectanea Mathematica*, *Communications in Algebra*, *Computer Aided Geometric Design*, *Contemporary Mathematics*, *Discrete Mathematics*, *Effective Methods in Algebraic Geometry (MEGA)*, *International Symposium on Symbolic and Algebraic Computation (ISSAC)*, *Journal of Algebra*, *Journal of Algebra and its Applications*, *Journal of Commutative Algebra*, *Journal of Foundations of Computational Mathematics*, *Journal of the*

*London Mathematical Society, Journal of Pure and Applied Algebra, Journal of Symbolic Computation, Mathematica Slovaca, Mathematics of Computation, Mathematics Magazine, Moscow Mathematical Journal, Proceedings of the Algebraic Geometry and Geometric Modeling Conference (Nice, 2004), Proceedings of the Seminar on Differential Equations with Symbolic Computation (Beijing, 2004), Revista de la Unión Matemática Argentina, Theoretical Computer Science, Transactions of the American Mathematical Society, Transactions on Graphics, Tsukuba Journal of Mathematics, Turkish Journal of Mathematics*

### 3 TEACHING EXPERIENCE

- 2020 – . . . Full Professor (Catedràtic)  
Departament de Matemàtiques i Informàtica  
Facultat de Matemàtiques i Informàtica  
Universitat de Barcelona, Spain
- 2009–2019 Agregated Professor  
Departament de Matemàtiques i Informàtica  
Facultat de Matemàtiques i Informàtica  
Universitat de Barcelona, Spain
- 2006–2009 Researcher-Professor Ramón y Cajal  
Departament d'Àlgebra i Geometria  
Facultat de Matemàtiques  
Universitat de Barcelona, Spain
- 2004–2005 Visiting Professor  
Departamento de Matemática  
Facultad de Ciencias Exactas y Naturales y Agrimensura  
Universidad Nacional del Nordeste, Argentina
- Spring 2001 Teaching Assistant  
Departamento de Matemática y Ciencias  
Universidad de San Andrés, Argentina
- 1997 – 2001 Teaching Assistant  
Departamento de Matemática  
Facultad de Ciencias Exactas y Naturales  
Universidad de Buenos Aires, Argentina
- 1994 – 1996 Teaching Assistant  
Departamento de Matemática  
Ciclo Básico Común  
Universidad de Buenos Aires, Argentina
- 1992 – 1994 Teaching Assistant  
Departamento de Matemática  
Facultad de Ciencias Exactas y Naturales  
Universidad Nacional del Nordeste, Argentina



### Periods of Teaching experience acquired:

- 2005–2010 and 2010–2015 (Spanish system)
- 2008–2012 and 2013–2017 (Catalan system)

### 3.1 Math courses (magistral classes)

- ALGEBRAIC STRUCTURES, Undergraduate Course, Universitat de Barcelona, Fall 2018 & 2019
- LINEAR GEOMETRY, Undergraduate Course, Universitat de Barcelona, Fall 2018 & 2019
- LINEAR ALGEBRA, Undergraduate Course, Universitat de Barcelona, Spring 2016, 2018 & 2020
- ADVANCED METHODOLOGY IN MATHEMATICS, Master in Mathematics, Universitat de Barcelona, 2012–2018
- RINGS OF POLYNOMIALS IN SEVERAL VARIABLES, Undergraduate Course, Universitat de Barcelona, 2013 & 2015
- ALGEBRA, Undergraduate Course, Universitat de Barcelona, 2011–2012
- COMPUTATIONAL ALGEBRA, Master in Mathematics, Universitat de Barcelona, 2007–2018
- CÁLCULO DE RAÍCES REALES DE POLINOMIOS, Undergraduate Course, Universidad Nacional del Nordeste, August 2006
- SUCESIONES LINEALMENTE RECURSIVAS, Undergraduate Course, Universidad Nacional del Nordeste, November 2005
- RESOLUCIÓN DE ECUACIONES POLINOMIALES, Undergraduate Course, Universidad Nacional del Nordeste, 2004–2005

### 3.2 Activities with high school students

- Workshop *Problemes de viatjants*, International Day of Women and Girls in Science, Barcelona, Spain, February 2019
- Talk & Workshop *El camí més curt i estratègies per a trobar-lo*, VII Dissabte Transfronterer de les Matemàtiques a l'Alt Empordà, Figueres, Spain, February 2018
- Talk & Workshop *Problemes de Viatjants*, Facultat de Matemàtiques, Universitat de Barcelona. Organized by ESCOLAB 2016, October 2015
- Main lecturer of *Problemes de Viatjants*, Talk & Workshop organized by the Facultat de Matemàtiques, Universitat de Barcelona, addressed to high school students. November 2014

### 3.3 Activities with teachers

- Instructor of the mini-course “Introducció a la teoria de jocs”, Facultat de Matemàtiques, Universitat de Barcelona, activity organized by XTEC, Telematic Network of Education in Catalonia, February-March 2017
- Instructor of the mini-course “Teoria de Jocs Matemàtics”, Facultat de Matemàtiques, Universitat de Barcelona, activity organized by XTEC, Telematic Network of Education in Catalonia, November 2015
- Instructor of the mini course “Juegos Matemáticos y análisis de estrategias ganadoras”, XXXV Reunión de Educación Matemática, Córdoba, Argentina, August 2012
- Invited conference “Algoritmos en Matemática Elemental”, Sexto Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, August 2006
- Instructor of the mini course “Evaluación, División y Expansión de Polinomios”, Sexto Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, August 2006
- Invited conference “Raíces de Polinomios”, Quinto Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, June 2004
- Instructor of the mini course “Número Complejos y Geometría Analítica”, Quinto Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, June 2004
- Invited talk “Cómo triangular ecuaciones”, Primer Encuentro de Matemática Elemental, Universidad de Buenos Aires, Argentina, October 2000
- Instructor of the mini course “Análisis Combinatorio” Tercer Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, May 2000
- Invited conference “Construcciones con Regla y Compás”, Tercer Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, May 2000
- Instructor of the mini course “Juegos Matemáticos y Estrategias Ganadoras”, Primer Encuentro Regional de Docentes de Matemática, Universidad Nacional del Nordeste, Argentina, October 1997

## 4 MANAGEMENT

- Coordinator of the Master in Advanced Mathematics of the University of Barcelona 2016–2018
- Member of the Studies’ Council of the Facultat de Matemàtiques, Universitat de Barcelona, since 2016
- Member of the Permanent Committee of the Department of Mathematics and Informatics at the University of Barcelona since 2016
- Member of the Committee for drafting the Foundational Rules of the new Department of Mathematics and Informatics, Facultat de Matemàtiques, Universitat de Barcelona, 2016
- Member of the Consultive and Research Committees of the Department of Algebra and Geometry, Facultat de Matemàtiques, Universitat de Barcelona, 2014–2016
- Representative of the Department of Algebra and Geometry in the Research Committee of the School of Mathematics at the University of Barcelona, since 2013
- Head of the International Relations Office of the Faculty of Mathematics at the University of Barcelona, 2013–2016
- Member of the “Comisión de seguimiento de los doctorandos”, Department of Àlgebra and Geometry, Facultat de Matemàtiques, Universitat de Barcelona, 2010–2013
- Elected Graduate representative in the Math Department Council (CoDep), Universidad de Buenos Aires, 1999–2001

## 5 OTHER ACTIVITIES

### 5.1 Activities related to Math contests

- Responsible (jointly with J.C. Naranjo) of the activities related to Math contests at University level, Facultat de Matemàtiques, Universitat de Barcelona since 2013
- Instructor of Math Problem Solving sessions organized by the University of Barcelona for participants of the Spanish Mathematical Olympiad, 2010–2013
- *Math Camps and Cabri Clubs in Argentina*, short communication presented in the 8th International Congress on Mathematical Education, Seville, Spain, July 1996
- Coordination:
  - LIII International Mathematical Olympiad, Mar del Plata, Argentina, July 2012
  - LII International Mathematical Olympiad, Amsterdam, Netherlands, July 2011
  - XLIX International Mathematical Olympiad, Madrid, Spain, July 2008
  - XVIII Olimpiada Iberoamericana de Matemáticas, Argentina, September 2003
  - Olimpiada Iberoamericana Universitaria de Matemáticas, Argentina, 1999–2000
  - X Olimpiada Matemática de los países del Cono Sur, Argentina, May 1999
  - International Tournament of Towns, Argentina, 1999-2001
  - Asian Pacific Mathematic Olympiads, Argentina 1999–2000
- Member of the organizing committee of the undergraduate Math Contest “Ernesto Paenza”, Argentina, 1997–2010
- Instructor of the Solving Math Problems Seminar, Argentina, 1995–1998
- Instructor of the Solving Geometry Problems with the software CABRI Seminar, Argentina, 1995–1998
- Instructor of Summer and Winter Math Camps, Argentina, 1994–1999
- Member of the organizing committee of the National Computer and Mathematics Tournament for Secondary Schools, Argentina, 1997–1999
- Member of the organizing committee of the National Tournament of Cabri Clubs, Argentina, 1995–1997

## 5.2 Math popularization

- Supervision of the Math content of the series of books written by Adrian Paenza, since 2005
- Collaboration with Alex Bellos' Math blog in the newspaper The Guardian
- Moderator of the “Jornada de Visibilización de la Matemática para todo Público” at the 9no Festival de Matemática within the Conference RSME-UMA, Buenos Aires, December 2017