

Maria Angelica Cueto

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Education:

- 2011 Ph.D Mathematics (expected), University of California, Berkeley
(advisor: Bernd Sturmfels)
- 2006 M.Sc. Mathematics, University of Buenos Aires, Buenos Aires, Argentina.
(advisor: Alicia Dickenstein)

Research Interests:

Algebraic Geometry and Commutative Algebra with special focus on Tropical Geometry. Applications of Mathematics to Phylogenetics.

Publications:

1. M.A. Cueto, E.A. Tobis, J. Yu, “An Implicitization Challenge in Factor Analysis.” Submitted to MEGA 09 - Journal of Symbolic Computations Special Issue. Extended Abstract accepted for Oral Communication at MEGA 2009.
2. M.A. Cueto, J. Morton, B. Sturmfels, “Geometry of the Restricted Boltzmann Machine”. Submitted to Algebraic Methods in Statistics and Probability, (eds. M. Viana and H. Wynn), American Mathematical Society, Contemporary Mathematics (2010). Eprint: [arXiv:0908.4425v1](https://arxiv.org/abs/0908.4425v1).
3. M.A. Cueto, “Tropical Mixtures of Star Tree Metrics”. Submitted. Eprint: [arXiv:0907.2053](https://arxiv.org/abs/0907.2053).
4. D.A. Cartwright, M.A. Cueto, E.A. Tobis, “A characterization of maximum independent sets in De Bruijn graphs”. Submitted. Eprint: [arXiv:0905.3820](https://arxiv.org/abs/0905.3820).
5. M.A. Cueto, A. Dickenstein, “Some results on inhomogeneous discriminants.” Proceeding of the XVI Coloquio Latinoamericano de Algebra (Colonia del Sacramento, Uruguay, August 2005), Walter Ferrer Santos, Gerardo González Sprinberg, Álvaro Rittatore, Andrea Solotar (editors), Biblioteca de la Revista Matemática Iberoamericana, 42–61, 2007. ISBN: 978-84-611-7907-7.

Selected Talks:

1. “Geometry of Restricted Boltzmann Machines”. Seminar on Applications of Tropical Geometry. UC Berkeley, 740 Evans Hall, August 20, 2009.
2. “Implicitization of Statistical models via Tropical Geometry”. Universidad Complutense de Madrid (UCM), Seminar room 238. July 3, 2009.
3. “An Implicitization Challenge in Factor Analysis.” Contribution, MEGA’09. University of Barcelona, Spain. June 15, 2009.
4. “Tropical Mixtures of tree metrics.” Discrete Math Seminar, UC Berkeley, 939 Evans. Oct. 1, 2008.

5. “Tropical mixtures of phylogenetic trees with the same topology.” Algebraic Geometry and its applications. University of Buenos Aires, June 10, 2008.
6. “Some results on inhomogeneous discriminants.” Commutative Algebra and Algebraic Geometry Seminar, UC Berkeley, 939 Evans. Feb. 19, 2008.
7. “Inhomogeneous Discriminants”, Tercer Encuentro Nacional de Algebra (elENA III.) Vaquerías, Argentina. Aug. 5, 2006.
8. “Multiplicities and Discriminantal Varieties”. Thesis defense, University of Buenos Aires, Aug. Aug. 25, 2006.

Conference Refereed:

1. International Conference on Symbolic and Algebraic Computation (ISSAC).

Honors and Awards:

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| 2007-2009 | University of California, Berkeley Chancellor’s Fellowship. |
| 2005 | “Beca Estímulo” (fellowship for undergraduate research), University of Buenos Aires. UBACYT Programación Científica 2004-2007. Proyecto X042- “Geometría Algebraica y Aplicaciones”. |
| 2006 | Full financial support to attend the Abdus Salam ICTP - Summer School on Resolution of Singularities. Trieste, Italy. |
| 2004 | Full financial support to attend the Abdus Salam ICTP - Summer School and Conference on Commutative Algebra and Interaction with Algebraic Geometry and Combinatorics . Trieste, Italy. |
| 2002-2005 | Competencia Matemática E. Paenza (math contest for teams of two members for several universities in Argentina and Uruguay): 2nd Prize (2005), 4th Prize (2004), 5th Prize (2003, 2002). |
| 2002 | 5th Iberoamerican Mathematical Olympiad: Honor Prize. |

Employment:

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| 2003-2007 | Teaching Assistant, Department of Mathematics, University of Buenos Aires, Buenos Aires, Argentina. |
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Teaching:

1. Teaching Assistant, “Complex Analysis”, University of Buenos Aires, Buenos Aires, Argentina. Spring 2007.
2. Teaching Assistant, “Algebra II” (Groups, Rings, Modules), University of Buenos Aires, Buenos Aires, Argentina. Spring 2005, Fall 2006.
3. Teaching Assistant, “Linear Algebra for Biologists”, University of Buenos Aires, Buenos Aires, Argentina. Spring 2003, Fall 2005, Spring 2006.
4. Teaching Assistant, “Advanced Calculus”, University of Buenos Aires, Buenos Aires, Argentina. Fall 2004.

5. Teaching Assistant, “Projective Geometry”, University of Buenos Aires, Buenos Aires, Argentina. Spring 2004.
6. Teaching Assistant, “Calculus I for Biologists”, University of Buenos Aires, Buenos Aires, Argentina. Fall 2003.

Outreach Activities:

- 2009 Member of Panel. Topic: career issues of female mathematicians. “Connections for Women” Workshop. Parental program: Tropical Geometry. MSRI, Berkeley. Aug 22.
- 2009 Member of Graduate Student Panel for MUSA (Mathematics Undergraduate Student Association). University of California, Berkeley, Feb. 19.
- 2009 Member of Judging Panel, Physical Sciences. Northern California Western Nevada Jr. Science and Humanities Symposium. Lawrence Hall of Science University of California, Berkeley, Feb. 12.
- 2005 Collaborator in the organization of “The 2005 ACM-ICPC South American Programming Contest”, Buenos Aires, Argentina, Nov. 12.
- 2004 Meeting “Buenos Aires piensa”: reception, docent for student groups, discussion sections, puzzle games. Exhibition: “Math throughout times.”
- 2004 Organizing Committee member for the National Symposium “Los Mateclubes”. Lujan, Buenos Aires, Argentina, Feb. 27-29.
- 2003 Organizing Committee member for the National Symposium “Los Mateclubes”. Lujan, Buenos Aires, Argentina, Feb. 21-23.
- 2002 Meeting “Second Elementary Math Exhibition”: reception, docent for student groups, discussion sections, puzzle games. College of Natural Sciences, University of Buenos Aires, July 12–14.
- 2002 “Los Mateclubes” (Math team competition for Primary School students): San Nicolás de los Arroyos, Buenos Aires, Argentina, Aug 13–14, 2002, Activities coordinator: discussion section, puzzle games.
- 2001-2002 Activities coordinator, X and XI Olimpiada Rioplatense (Math competition for High School students from South America), Victoria, Buenos Aires, Argentina.
- 2000-2005 Collaborator during the “Math Week” event for High School students. College of Natural Sciences, University of Buenos Aires, Buenos Aires, Argentina.

Service:

1. Member, Noetherian Ring (organization of women mathematicians at UC Berkeley).
2. Student Representative for the Departmental Council (CoDep), Department of Mathematics, University of Buenos Aires, 2005–2006.

Languages:

Fluent English and Spanish, reading knowledge of French.

References:

1. Prof. Bernd Sturmfels, UC Berkeley. bernd@math.berkeley.edu
2. Prof. Alicia Dickenstein, University of Buenos Aires, Argentina. alidick@dm.uba.ar