

LAURA FELICIA MATUSEVICH

Curriculum Vitae

Contact information:

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Citizenship:

- US permanent resident.
- Argentinian citizen.

Research interests:

Hypergeometric functions, combinatorial algebraic geometry, optical tomography, symbolic computation.

Employment:

- ASSISTANT PROFESSOR OF MATHEMATICS, **University of Pennsylvania**, July 2004 – present.
- BENJAMIN PEIRCE ASSISTANT PROFESSOR OF MATHEMATICS, **Harvard University**, January 2003 – June 2004.
- POSTDOCTORAL FELLOW, **Mathematical Sciences Research Institute**, Fall 2002.

Research Fellowships:

- POSTDOCTORAL RESEARCH FELLOW, **National Science Foundation** July 2003 – present.
- LIFTOFF MATHEMATICIAN, **Clay Mathematics Institute**, Summer 2002.

Education:

- PH.D. Mathematics, **University of California at Berkeley**, May 2002.
Thesis: COMBINATORIAL ASPECTS OF HYPERGEOMETRIC FUNCTIONS.
Advisor: Bernd Sturmfels.
- LICENCIATURA EN MATEMÁTICA, **Universidad Nacional de Córdoba**, Argentina, 1997.
Undergraduate thesis: POLINOMIOS ORTOGONALES Y TRANSFORMACIÓN DE DARBOUX (*Orthogonal polynomials and the Darboux transformation*).
Advisor: Fernando Levstein.

Research articles:

16. MULTITERMINAL NETWORK TOMOGRAPHY (with F. Alberto Grünbaum), in preparation.
15. HOLONOMIC HORN D -MODULES (with Alicia Dickenstein), in preparation.
14. HYPERDISCRIMINANTS (with Amit Khetan), in preparation.
13. AN IDENTIFICATION PROBLEM FOR MULTITERMINAL NETWORKS: SOLVING FOR THE TRAFFIC MATRIX FROM INPUT-OUTPUT MEASUREMENTS (with F. Alberto Grünbaum), submitted.
12. HOMOLOGICAL METHODS FOR HYPERGEOMETRIC FAMILIES (with Ezra Miller and Uli Walther), [arXiv:mathAG/0406386](https://arxiv.org/abs/mathAG/0406386), submitted.

11. ARBITRARY RANK JUMPS FOR A -HYPERGEOMETRIC SYSTEMS THROUGH LAURENT POLYNOMIALS (with Uli Walther), [arXiv:mathCO/0404183](https://arxiv.org/abs/mathCO/0404183), submitted.
10. COMBINATORICS OF RANK JUMPS IN SIMPLICIAL HYPERGEOMETRIC SYSTEMS (with Ezra Miller), to appear in *Proceedings of the AMS*.
9. BIVARIATE HYPERGEOMETRIC D -MODULES (with Alicia Dickenstein and Timur Sadykov), to appear in *Advances in Mathematics*.
8. A NETWORK TOMOGRAPHY PROBLEM RELATED TO THE HYPERCUBE (with F. Alberto Grünbaum), *Contemporary Mathematics*, 362 (2004), pp. 189–197.
7. TRANSFORM METHODS FOR THE HYPERGEOMETRIC DISTRIBUTION (with Ian H. Dinwoodie and Ed Mosteig), *Statistics and Computing*, 14 (2004) pp. 287–297.
6. EXCEPTIONAL PARAMETERS FOR GENERIC A -HYPERGEOMETRIC SYSTEMS, *International Mathematics Research Notices*, 22 (2003) pp. 1225–1248.
5. A NONLINEAR INVERSE PROBLEM INSPIRED BY THREE-DIMENSIONAL DIFFUSE TOMOGRAPHY: EXPLICIT FORMULAS (with F. Alberto Grünbaum), *International Journal of Imaging Systems & Technology*, 12 (2002) pp. 198–203.
4. EXPLICIT INVERSION FORMULAS FOR A MODEL IN DIFFUSE TOMOGRAPHY (with F. Alberto Grünbaum), *Advances in Applied Mathematics*, 29 (2002) pp. 172–183.
3. RANK JUMPS IN CODIMENSION 2 A -HYPERGEOMETRIC SYSTEMS, *J. Symbolic Computation*, Special Issue on Effective Methods in Rings of Differential Operators, 32 (2001) pp. 619–641.
2. RATIONAL SUMMATION OF RATIONAL FUNCTIONS, *Beiträge zur Algebra und Geometrie*, 41 (2000) pp. 531–536.
1. THE DISCRETE VERSION OF THE BISPECTRAL PROBLEM (with Fernando Levstein), *CRM Proceedings and Lecture Notes*, 14 (1998) pp. 93–104.

Recent invited conference talks:

- *Special Session on D-Modules*, Joint Mathematics Meeting, Atlanta GA, January 2005.
- *Special Session on Multivariate Hypergeometric Functions: Combinatorial and Algebraic Aspects*, AMS Fall Eastern Sectional Meeting, Pittsburgh PA, November 2004.
- *IAS/Park City Mathematics Institute Summer Session*, Park City, July 2004.
- *AMS-IMS-SIAM Summer Research Conference, Commutative Algebra: Presentations by Young Researchers*, Snowbird, July 2003.
- *Special Session on Computational Methods in Algebra and Analysis*, Joint AMS - RSME International Meeting, Sevilla, Spain, June 2003.
- *Special Session on Algebraic and Enumerative Combinatorics*, AMS Fall Southeastern Sectional Meeting, Orlando FL, November 2002.
- *Workshop on Computational Algebraic Geometry*, Foundations of Computational Mathematics 2002, University of Minnesota, August 2002.
- *Special Session on Algebraic Geometry and Combinatorics*, AMS Spring Western Sectional Meeting, Portland OR, June 2002.
- *Multidimensional tables: Statistics, Combinatorial Optimization and Gröbner bases*, University of California at Davis, February 2002.

- *Special Session on Computational Commutative Algebra and Algebraic Geometry*, Joint Mathematics Meeting, San Diego CA, January 2002.

Colloquia:

- University of California at Berkeley, MATHEMATICS DEPARTMENT COLLOQUIUM, September 2004.
- University of California at Los Angeles, APPLIED MATHEMATICS COLLOQUIUM, November 2003.
- University of California at Riverside, MATHEMATICS DEPARTMENT COLLOQUIUM, May 2003.

Recent seminar talks:

- Rutgers University, *Computational and Commutative Algebra Seminar*, November 2004.
- University of Pennsylvania, *Algebra Seminar*, November 2004.
- University of California at Berkeley, *Commutative Algebra and Algebraic Geometry Seminar*, October 2004.
- Harvard University, *Algebraic Geometry Seminar*, April 2004.
- Hebrew University of Jerusalem, *Combinatorics Seminar*, March 2004.
- University of Minnesota, *Combinatorics Seminar*, December 2003.
- Universidad de Sevilla, *Algebra Seminar*, Spain, June 2003.
- University of Massachusetts at Amherst, *Valley Geometry Seminar*, May 2003.
- Northeastern University, *Geometry, Algebra, Singularities, Combinatorics Seminar*, April 2003.
- MIT, *Combinatorics Seminar*, April 2003
- Texas A & M University, *Algebra and Combinatorics Seminar*, March 2003.
- Brandeis University, *Fellowship of the Ring Seminar*, February 2003.
- University of Pennsylvania, *Combinatorics Seminar*, January 2003.

Teaching experience:

- Taught the following courses at the University of Pennsylvania:
 - Math 678, Topics in Combinatorics, Fall 2004.
- Taught the following courses at Harvard University:
 - Math 112, Real Analysis, Spring 2003.
 - Math 192r, Algebraic Combinatorics, Fall 2003.
 - Math 137, Algebraic Geometry, Spring 2004.

Conferences organized:

- *Special Session on Hypergeometric Functions: Combinatorial and Algebro-Geometric Aspects*, AMS 2004 Fall Eastern Section Meeting, Pittsburgh, November 2004. Co-organizers: Alicia Dickenstein and Eduardo Cattani.
- *Bay Area Discrete Mathematics Day*, MSRI, October 2002.

Professional service:

- Served in Departmental Committees at Harvard University and the University of Pennsylvania.
- Referee for *Journal of Combinatorial Theory A*, *Journal of Symbolic Computation*, *Journal of Algebraic Combinatorics*, *International Mathematics Research Notices*.

- Organizer of the Combinatorics Seminar at the University of Pennsylvania for the academic year 2004-2005.
- Organizer of the Gröbner bases and convex polytopes seminar at UC Berkeley (jointly with Jed Mihalisin) in the Spring 2002.
- Organizer of the UC Berkeley Combinatorics Seminar (jointly with Christian Haase) for the Spring 2001.

Memberships:

- AMS.

References:

Available upon request.