LAURA FELICIA MATUSEVICH

Curriculum Vitæ

Education

UNIVERSITY OF CALIFORNIA AT BERKELEY	Ph.D. in Mathematics	2002
UNIVERSIDAD NACIONAL DE CÓRDOBA, ARGENTINA	Licenciada en Matemática	1997

Employment

TEXAS A&M UNIVERSITY	Professor	2017 –
	Associate Professor (with tenure)	2009 – 2017
	Assistant Professor (tenure-track)	2005 – 2009
UNIVERSITY OF PENNSYLVANIA	Assistant Professor (tenure-track)	2004 – 2006
HARVARD UNIVERSITY	Benjamin Peirce Assistant Professor	2003 – 2004
MSRI	Postdoctoral Fellow	Fall 2002

Awards and Honors

AMS INVITED ADDRESS	Spring Central Sectional Meeting	April 2016
ALFRED P. SLOAN RESEARCH FELLOW	Sloan Foundation	2008 – 2012
NSF POSTDOCTORAL FELLOW	National Science Foundation	2003 – 2007
LIFTOFF FELLOW	Clay Mathematics Institute	Summer 2002
SARAH M. HALLAM FELLOW	UC Berkeley Mathematics	Spring 2002
JULIA B. ROBINSON FELLOW	UC Berkeley Mathematics	Spring 2001
PREMIO UNIVERSIDAD	Univ. Nac. Córdoba (highest graduating GPA)	1997
ANTORCHAS FELLOW	Antorchas Foundation (twenty five awarded nationwide)	1995–1997

External Research Funding

AIM	SQuaRE	2021
NSF	DMS 1500832, Individual Grant	2015 – 2018
	DMS 1001763, Individual Grant	2010 – 2015
	DMS 0703866, Individual Grant	2007 – 2010
	DMS 0303232, Postdoctoral Research Fellowship	2003 – 2007
SLOAN FOUNDATION	Sloan Research Fellowship	2008 – 2012

External Conference Funding

NSF	DMS 1937317, Texas Women in Mathematics Symposium	PI	2020
	DMS 1901444, CombinaTexas 2019	PI	2019
	DMS 1743183, CombinaTexas 2018	CoPI	2017
	DMS 1633874, South-Central Combinatorics Conference	PI	2016
	DMS 1450510, Texas Algebraic Geometry Symposium	CoPI	2015
	DMS 1203175, Texas Algebraic Geometry Symposium	PI	2012
	DMS 0915235, Texas Algebraic Geometry Symposium	CoPI	2009
	DMS 0704355, Summer School in Applicable Algebraic Geometry	CoPI	2007
NSA	H98230–14–1–0105, Southwest Local Algebra Meeting	CoPI	2014
IMA	Funding for CombinaTexas 2018	CoPI	2017
	Funding for IMA Summer School on Applicable Algebraic Geometry	CoPI	2007
MAA	Tensor Women and Mathematics Grant: Texas Women in Mathematics Symposium	PI	2020

Research articles

34. COMPUTING SPARSE POLYNOMIALS VIA WITNESS SETS (with Jonathan D. Hauenstein, Chris Peterson and Samantha N. Sherman). Preprint (2020).

33. NEURAL CODES AND THE FACTOR COMPLEX (with Alexander Ruys de Perez* and Anne Shiu), ***Advances in Applied Mathematics***, *114* (2020).

32. TOWARD FREE RESOLUTIONS OVER SCROLLS (with Aleksandra Sobieska*), `arXiv:1903.03687` (2019).

31. SPARSE VERSIONS OF THE CAYLEY–BACHARACH THEOREM (with Bruce Reznick), `arXiv:1903.00075` (2019).

30. ON NORMALIZED HORN SYSTEMS (with Christine Berkesch and Uli Walther), ***Collectanea Mathematica***, to appear.

29. COUNTEREXAMPLES FOR COHEN-MACAULAYNESS OF LATTICE IDEALS (with Aleksandra Sobieska*), ***Communications in Algebra***, *47* (2019), no.6, 2494–2502.

28. SOME ALGEBRAIC ASPECTS OF MESOPRIMARY DECOMPOSITION (with Christopher O'Neill), ***Journal of Pure and Applied Algebra***, *223* (2019), no. 1, 380-394.

27. ON TRANSFORMATIONS OF A-HYPERGEOMETRIC FUNCTIONS (with Jens Forsgård and Aleksandra Sobieska*), ***Funkcialaj Ekvacioj***, *62* (2019) 319336.

26. LOPSIDED APPROXIMATION OF AMOEBAS (with Jens Forsgård, Nathan Mehlhop[‡] and Timo de Wolff), ***Mathematics of Computation***, *88* (2019) 485–500.

25. BERNSTEIN–SATO POLYNOMIALS ON NORMAL TORIC VARIETIES (with Jen-Chieh Hsiao), ***Michigan Mathematical Journal***, *67* (2018) 117–132.

24. ON THE PARAMETRIC BEHAVIOR OF A-HYPERGEOMETRIC SERIES (with Christine Berkesch and Jens Forsgård), ***Transactions of the AMS***, *370* (2018) 4089–4109.

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* indicates my PhD student, [†] indicates a graduate student coauthor, [‡] indicates an undergraduate student supervised by me.

23. HYPERGEOMETRIC FUNCTIONS FOR PROJECTIVE TORIC CURVES (with Christine Berkesch and Jens Forsgård[†]),
Advances in Mathematics, *300* (2016) pp 835-867.

22. CELLULAR BINOMIAL IDEALS (with Zekiye Eser[∗]),
Journal of the London Mathematical Society, *94* (2016) pp 409–426. Corrigendum *100 (2019) pp 717-719.*
▶ Extended abstract accepted for **MEGA 2015**, Effective Methods in Algebraic Geometry.

21. PRIMARY COMPONENTS OF CODIMENSION TWO LATTICE BASIS IDEALS *(with Zekiye Eser[∗]),*
Annals of Combinatorics, *21 (2017) pp 353–373.*

20. TORUS EQUIVARIANT D-MODULES AND HYPERGEOMETRIC SYSTEMS *(with Christine Berkesch and Uli Walther),*
Advances in Mathematics, ***350** pp 1226–1266.*

19. SINGULARITIES AND HOLONOMICITY OF BINOMIAL D-MODULES *(with Christine Berkesch and Uli Walther),*
Journal of Algebra, *439 (2015) pp 360–372.*

18. NILSSON SOLUTIONS FOR IRREGULAR A-HYPERGEOMETRIC SYSTEMS *(with Alicia Dickenstein and Federico Martínez[†]),*
Revista Matemática Iberoamericana, *28 (2012), pp 723–758.*

17. BINOMIAL D-MODULES *(with Alicia Dickenstein and Ezra Miller),*
Duke Mathematical Journal, *151 (2010), pp. 385–429.*

16. COMBINATORICS OF BINOMIAL PRIMARY DECOMPOSITION *(with Alicia Dickenstein and Ezra Miller),*
Mathematische Zeitschrift, *264 (2010) pp. 745–763.*

15. A-GRADED METHODS FOR MONOMIAL IDEALS *(with Christine Berkesch[†]),*
Journal of Algebra, *322 (2009), pp. 2886–2904.*

14. WEYL CLOSURE OF HYPERGEOMETRIC SYSTEMS,
Collectanea Mathematica, *60 (2009), pp. 147–158.*

13. ARBITRARY RANK JUMPS FOR A-HYPERGEOMETRIC SYSTEMS THROUGH LAURENT POLYNOMIALS *(with Uli Walther),*
***Journal of the London Mathematical Society (2)** 75 (2007), pp. 213–224.*

12. AN IDENTIFICATION PROBLEM FOR MULTITERMINAL NETWORKS: SOLVING FOR THE TRAFFIC MATRIX FROM INPUT-OUTPUT MEASUREMENTS *(with F. Alberto Grünbaum),*
***Internet Mathematics** 3 (2006), pp. 233–252.*

11. COMBINATORICS OF RANK JUMPS IN SIMPLICIAL HYPERGEOMETRIC SYSTEMS *(with Ezra Miller),*
Proceedings of the AMS, *134 (2006), pp. 1375–1381.*

10. HOMOLOGICAL METHODS FOR HYPERGEOMETRIC FAMILIES *(with Ezra Miller and Uli Walther),*
Journal of the AMS, *18 (2005), pp. 919–941.*

9. BIVARIATE HYPERGEOMETRIC D-MODULES *(with Alicia Dickenstein and Timur Sadykov),*
Advances in Mathematics, *196 (2005), pp. 78–123.*

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 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.*

Conference or Expository Publications (peer reviewed and/or invited)

5. BINOMIAL IDEALS AND CONGRUENCES ON $\mathbb{N}^n$ (with Ignacio Ojeda),
   Singularities, Algebraic Geometry, Commutative Algebra, and Related Topics, G. M. Greuel, L. Narvez Macarro, S. Xamb-Descamps (eds). Springer, Cham, 2018.

4. BINOMIAL IDEALS,
   Notices of the AMS, April 2016.

3. EXTENDED ABSTRACT: HYPERGEOMETRIC SYSTEMS AND THE COHEN–MACAULAY PROPERTY, (with E. Miller and U. Walther)
   Oberwolfach Reports, 2008.

2. EXTENDED ABSTRACT: BINOMIAL D-MODULES, (with A. Dickenstein and E. Miller), in
   Proceedings MEGA, 2007.

1. EXTENDED ABSTRACT: HOMOLOGICAL METHODS FOR HYPERGEOMETRIC FAMILIES, (with E. Miller and U. Walther)
   Oberwolfach Reports, 2006.

Recent invited conference talks

25 MIN. TALK	*XXIII Coloquio Latinoamericano de Algebra* Session on Computational Algebra and Applications of Algebra, Ciudad de Mexico, Mexico	08/2019
PLENARY TALK	*Great Plains Combinatorics Conference* Kansas State University	04/2018
20 MIN. TALK	*AMS Fall Central Sectional Meeting*, Session on Commutative Algebra University of North Texas	09/2017
40 MIN. TALK	*Computational Algebra, Algebraic Geometry and Applications*, Buenos Aires, Argentina	08/2016
30 MIN. TALK	XXI Coloquio Latinoamericano de Algebra Session on Commutative Algebra and Algebraic Geometry, Buenos Aires, Argentina	07/2016
25 MIN. TALK	XXI Coloquio Latinoamericano de Algebra Session on Algebraic Combinatorics Buenos Aires, Argentina	07/2016
30 MIN. TALK	XXI Coloquio Latinoamericano de Algebra *Session on Homological Methods* Buenos Aires, Argentina	07/2016
INVITED ADDRESS	*AMS Spring Central Sectional Meeting* North Dakota State University	04/2016
PLENARY TALK	*Texas Algebraic Geometry Symposium* UT Austin	04/2016
50 MIN. TALK	*Conference on D-modules in Commutative Algebra* CIMAT, Guanajuato, Mexico	08/2015
20 MIN. TALK	*AMS Spring Central Sectional Meeting*, Michigan State Session on Combinatorics, Geometry, and Representation Theory of Homogeneous Spaces	03/2015
PLENARY TALK	*Southwest Local Algebra Meeting* Oklahoma State University	02/2015
PLENARY TALK	*Texas Geometry and Topology Conference*	02/2015

Recent external seminar talks

○ *Commutative Algebra Seminar*, University of Minnesota, January 2020.

○ *Algebra and Combinatorics Seminar*, Tulane University, October 2016.

○ *Algebra Seminar*, Georgia Tech, April 2015.

○ *Commutative Algebra Seminar*, University of Minnesota, September 2014.

Recent conferences organized

○ *Combinatexas 2020*,
　　Texas A&M University, April 10-11, 2020.
　　Co-organizers: Catherine Yan, Jacob White.

○ *Special Session in Combinatorial Algebra and Geometry*,
　　AMS Spring Central Sectional Meeting, Purdue University, April 4-5, 2020.
　　Co-organizers: Christine Berkesch, Aleksandra Sobieska.

○ *Texas Women in Mathematics Symposium (TWIMS) 2020*,
　　Texas A&M University, February 1-2, 2020.
　　Co-organizers: Priyanga Ganesan, Nida Obatake, Aleksandra Sobieska, Elise Walker.

○ *Special Session on Combinatorial Algebra*,
　　AWM Research Symposium, Rice University, April 6-7, 2019.
　　Co-organizer: Christine Berkesch.

○ *CombinaTexas 2019*,
　　Texas A&M University, March 23-24, 2019.
　　Co-organizers: Yue Cai, Catherine Yan.

○ *CombinaTexas 2018*,
　　Texas A&M University, February 10-11, 2018.
　　Co-organizers: Yue Cai, Jacob White, Catherine Yan.

○ *CombinaTexas 2016*,
　　Texas A&M University, May 7–8, 2016.
　　Co-organizers: Catherine Yan, Christopher O'Neill.

○ *Special Session on Combinatorial Ideals and Applications*,
　　AMS Spring Central Sectional Meeting, North Dakota State University, April 16–17, 2016.
　　Co-organizer: Christopher O'Neill.

○ *Texas Algebraic Geometry Symposium*,
　　Texas A&M University, April 10–12, 2015.
　　Co-organizers: J. M. Landsberg, P. Lima-Filho, G. Pearlstein, M. Rojas, A. Shiu and F. Sottile.

○ *CombinaTexas 2014*,
　　Texas A&M University, April 19–20, 2014.
　　Co-organizers: C. Yan, J. White, L. García Puente.

○ *Southwest Local Algebra Meeting 2014*,
　　Texas A&M University, March 1–2, 2014.
　　Co-organizers: S. Witherspoon, L. Christensen, L. Fouli, D. Jorgensen.

○ *Texas Algebraic Geometry Symposium*,
　　Texas A&M University, April 27–29, 2012.
　　Co-organizers: J. M. Landsberg, P. Lima-Filho, M. Rojas, and F. Sottile.

○ *Special Session on Hypergeometric Functions and Differential Equations*,
　　AMS Spring Central Section Meeting, University of Utah, October 22–23 2011.
　　Co-organizer: Christine Berkesch.

Teaching

Texas A&M	Math 662	Commutative Algebra	Spring 2020
	Math 304	Linear Algebra	Fall 2019
	Math 662	Toric Varieties	Spring 2019
	Math 304	Linear Algebra	Fall 2018
	Math 662	Representations of Finite Groups	Spring 2018
	Math 648	Computational Algebraic Geometry	Spring 2017
	Math 171	Analytic Geometry and Calculus	Fall 2016
	Math 689	Combinatorics of Monomial Ideals	Spring 2016
	Math 423	Linear Algebra II	Spring 2015
	Math 415H	Honors Modern Algebra I	Fall 2014
	Math 416	Modern Algebra II	Spring 2014
	Math 662	Commutative and Homological Algebra	Fall 2013
	Math 689	Commutative and Homological Algebra	Fall 2011
	Math 152	Honors Engineering Calculus	Fall 2011
	Math 630	Combinatorics	Fall 2010
	Math 220	Foundations of Mathematics	Spring 2010
	Math 152	Engineering Calculus II	Fall 2009, Fall 2010
	Math 151	Engineering Calculus I	Fall 2008
	Math 689	Algebraic Geometry I	Spring 2008
	Math 662	Commutative Algebra	Fall 2007
	Math 222H	Honors Linear Algebra	Spring 2006
	Math 302	Discrete Mathematics	Fall 2005, Spring 2007, Spring 2015, Fall 2015
Penn	Math 678	Topics in Combinatorics	Fall 2004
Harvard	Math 137	Algebraic Geometry	Spring 2004
	Math 192r	Algebraic Combinatorics	Fall 2003
	Math 112	Real Analysis	Spring 2003

Mentoring

PostDoctoral Mentor	Jens Forsgård	Fall 2015 – Spring 2017
	Christopher O'Neill	Fall 2014 – Spring 2016
PhD Advisor	Byeongsu Yu	Current
	Aleksandra Sobieska	Current
	Alexander Ruys de Perez	Current
	Roberto Barrera	PhD 2017
	Zekiye Sahin Eser	PhD 2014
	Jean Yeh	Switched areas
Undergraduate Research	Nathan Mehlhop	Fall 2015 - Spring 2016
	Emma Crawford	Spring 2020
Committee Member	Lauren Snider	Advisor: Catherine Yan
	Michael McPhail	MS (Statistics) 2019
	Elise Walker	Advisor: Frank Sottile
	Ayomikun C. Adeniran	Advisor: Catherine Yan, PhD 2020
	Taylor Brysiewicz	Advisor: Frank Sottile, PhD 2020
	Dustin McPhate	Advisor: Sarah Witherspoon
	Weronika Buczynska	Advisor: Frank Sottile, PhD 2010
	Austin Conner	Advisor: JM Landsberg, PhD 2020
	Kaitlyn Hellenbrand Phillipson	Advisor: Maurice Rojas, PhD 2016
	Ning Kang	Advisor: Sean Keel, PhD 2013, UT Austin
	Abraham Martín del Campo	Advisor: Frank Sottile, PhD 2012
	Ata Firat Pir	Advisor: Frank Sottile, PhD 2018
	Korben Rusek	Advisor: Maurice Rojas, PhD 2013
	Cort Warner Spellman	Advisor: Paulo Lima-Filho, MS 2011
	Jared Neal Teslow	Advisor: Marcelo Aguiar
	Robert L. Williams	Advisor: Frank Sottile, PhD 2017
	Li Ying	Advisor: Frank Sottile, PhD 2019

Recent professional service

○ Referee for

Journal of Combinatorial Theory A, *Journal of Symbolic Computation*, *Journal of Algebraic Combinatorics*, *International Mathematics Research Notices*, *Duke Mathematical Journal*, *Journal of Pure and Applied Algebra*, *Compositio Mathematica*, *Annals of the Institute of Statistical Mathematics*, *American Journal of Mathematics*, *Contemporary Mathematics*, *CIRM Proceedings*, *Journal of Algebra*, *Revista de la Unión Matemática Argentina*, *Proceedings of the American Mathematical Society*, *Algebra and Number Theory Journal*, *Journal of the London Mathematical Society*, *Revista Matemática Iberoamericana*, *Transactions of the American Mathematical Society*, *Communications in Algebra*, *Advances in Mathematics*, *Ramanujan Journal*, *Comptes rendus Mathématique*, *Annals of Combinatorics*, *Collectanea Mathematica*.

○ Served on NSF panels in 2014, 2015, 2016 and 2017.

○ External reviewer for an NSF grant proposal.

Recent Departmental/University service

○ Member

College of Science Diversity Committee	Fall 2019 – present
Department Head Search Committee	Spring 2019
Executive Committee	Fall 2018 – present
Subcommittee P&T	Spring 2018 – Fall 2018
Subcommittee P&T	Spring 2015 – Spring 2017
Maxson Lectures Committee	Fall 2014 – Spring 2019
PostDoc Search Committee	Fall 2013 – Fall 2014
Subcommittee L	Spring 2013 – Fall 2014
Graduate Committee	Spring 2010 – Fall 2012

○ *Math Mentoring Lunches for Women Graduate Students*, Moderator and Faculty Co-Organizer. Fall 2015 – present.

○ *AWM Student Chapter*, Faculty Advisor. Includes planning, co-organizing and moderating events. Fall 2015 – present.

○ *Trained Facilitator*, Entering Mentoring CIMER Curriculum, 16 hours of training in Fall 2019, sponsored by the Office of the Dean of Faculties.

Memberships

○ AMS.
○ AWM.