

DR. LUKE OEDING

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<http://webhome.auburn.edu/~lao0004/>

EMPLOYMENT

Auburn University

Associate Professor	2018-(present)
Associate Chair and Undergraduate Program Officer	2019-2020
Assistant Professor	2013-2018

University of California, Berkeley

NSF RTG Postdoctoral Fellow (<i>mentor: Bernd Sturmfels</i>)	2011-2013
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Università degli Studi di Firenze

NSF International Research Fellowship Program (<i>mentor: Giorgio Ottaviani</i>)	2009-2011
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VISITING POSITIONS

CNRS, ICB Laboratory "Laboratoire Interdisciplinaire Carnot de Bourgogne," University of Burgundy	Summer 2023
Institute of Pure and Applied Mathematics (IPAM), UCLA	Spring 2021
Institute of Mathematics, Polish Academy of Sciences (IMPAN), Warsaw, Poland	Fall 2018
University of Belfort-Montbéliard, France	Summer 2018
Simons Institute for the Theory of Computing, Berkeley, CA,	Fall 2014
National Institute for the Mathematical Sciences (NIMS), Daejeon, S. Korea	Summer 2014
Mittag-Leffler Institute, Stockholm, Sweden	April 2011

EDUCATION

Texas A&M University

Ph.D. in Mathematics (<i>advisor: J. M. Landsberg</i>)	May 2009
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Franklin & Marshall College

B.A. in Mathematics and Physics with honors; Magna Cum Laude, Phi Beta Kappa	May 2003
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RESEARCH INTERESTS

Applications of Algebraic Geometry and Representation Theory to Computer Vision, Quantum Information Theory, Signal Processing, Algebraic Statistics, and Foundations of Machine Learning.

PUBLICATIONS

PUBLISHED/ACCEPTED ARTICLES

1. F. Holweck, L. Oeding, *A hyperdeterminant on Fermionic Fock Space*, (accepted, *Annales de l'Institut Henri Poincaré D: Combinatorics, Physics and their Interactions*), arXiv:2301.10660.
2. Petr Hruby, Viktor Korotynskiy, Timothy Duff, Luke Oeding, Marc Pollefeys, Tomas Pajdla, Viktor Larsson, *Four-view geometry with unknown radial distortion*, *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023, pp. 8990-9000.
3. D. Bidleman, L. Oeding, *Restricted Secant Varieties of Grassmannians*, *Collectanea Mathematica (2023)*, <https://doi.org/10.1007/s13348-023-00399-4>, arXiv:2211.01469.
4. L. Oeding, *A Translation of "Classification of four-vectors of an 8-dimensional space," by Antonyan, L. V., with an appendix by the translator*, accepted for publication in volume 83(2022) of "Trudy Moskovskogo matematicheskogo obshchestva" (Transactions of the Moscow mathematical society), arXiv:2205.09741.
5. F. Holweck, L. Oeding, *Hyperdeterminants from the E_8 Discriminant*, *Journal of Algebra* **593** (2022), Pages 622-650, arXiv:1810:05857.
6. Michael C. Hamilton, Ran Cheng, Uday S Goteti, Harrison Walker, Keith M Krause, and Luke Oeding, *Towards Learning in Neuromorphic Circuits Based on Quantum Phase Slip Junctions*, *Frontiers in Neuroscience - Neural Technology* **15**, (2021).

7. H. Jaffali, L. Oeding, *Learning Algebraic Models of Entanglement*, Quantum Information Processing **19**, 279 (2020), arXiv:1908.10247.
8. L. Oeding, C. Raicu, S. V Sam, *On the (non-)vanishing of syzygies of Segre embeddings*, Algebraic Geometry 6 (5) (2019) 571--591, doi:10.14231/AG-2019-026, arXiv: 1708.03803.
9. G. Deshpande, D Rangaprakash, L. Oeding, A. Cichocki, X. Hu, *A New Generation of Brain-Computer Interfaces Driven by Discovery of Latent EEG-fMRI Linkages using Tensor Decomposition*, Frontiers in Neuroscience, section Neural Technology 11:246, 2017.
10. L. Oeding and H. Huang, *Symmetrization of principal minors*, Linear and Multilinear Algebra, (2016), 26 pages, arXiv:1510.02515.
11. L. Oeding, *The Quadrifocal Variety*, Linear Algebra and its Applications, Volume 512, 1 January 2017, Pages 306-330, arXiv:1501.01266.
12. J. Hauenstein, L. Oeding, G. Ottaviani and A. Sommese, *Homotopy techniques for tensor decomposition and perfect Identifiability*, J. Reine Angew. Math. (Crelle's Journal), Volume 2019, Issue 753, pages 1-22, arXiv:1501.00090
13. L. Oeding, E. Robeva, and B. Sturmfels, *Decomposing Tensors into Frames*, Advances in Applied Mathematics **73** (2016) 125-153, arXiv:1504.08049.
14. N. Daleo, J. Hauenstein and L. Oeding, *Computations and equations for Segre-Grassmann hypersurfaces*, Portugaliae Mathematica, Vol. 73, Fasc. 1, 2016, 71-90, arXiv:1408.2105.
15. L. Oeding and S. Sam, *Equations for the fifth secant variety of Segre products of projective spaces*, Experimental Mathematics, Volume 25, Issue 1, 2016, pages 94-99, arXiv:1502.00203.
16. M. Bremner, J. Hu, and L. Oeding, *The $3 \times 3 \times 3$ hyperdeterminant as a polynomial in the fundamental invariants for $SL_3(\mathbf{C}) \times SL_3(\mathbf{C}) \times SL_3(\mathbf{C})$* , Mathematics in Computer Science (Special Issue on Computational Algebraic Geometry) (2014), arXiv:1310.3257.
17. M. Michalek, L. Oeding and P. Zwiernik, *Secant cumulants and toric geometry*, International Mathematics Research Notices (2015) **12**: 4019-4063, arXiv:1212.1515.
18. L. Oeding and C. Raicu, *Tangential varieties of Segre-Veronese varieties*, Collectanea Mathematica (2014), arXiv:1111.6202.
19. E. Carlini, N. Grieve and L. Oeding, *Four lectures on secant varieties*, Workshop on Connections Between Algebra and Geometry, Summer 2012, in PROMS (Springer Proceedings in Mathematics & Statistics), Springer/Birkhauser (2014), arXiv:1309.4145.
20. C. Aholt and L. Oeding, *The ideal of the trifocal variety*, Mathematics of Computation (2014), arXiv:1205.3776
21. L. Oeding and G. Ottaviani, *Eigenvectors of tensors and algorithms for Waring decomposition*, Journal of Symbolic Computation 54 (2013), 9-35, arXiv:1103.0203. [On JSC most cited list]
22. L. Oeding, *Hyperdeterminants of polynomials*, Advances in Mathematics 231 (2012), no. 3-4, 1308-1326, arXiv:1107.4659.
23. D. Cartwright, D. Erman, and L. Oeding, *Secant varieties of $P^2 \times P^n$ embedded by $O(1,2)$* , Journal of the London Mathematical Society 85 (2012), no. 1, 121-141, arXiv:1009.1199.
24. D. J. Bates and L. Oeding, *Toward a salmon conjecture*, Experimental Mathematics 20 (2011), no. 3, 358-370, arXiv:1009.6181.
25. L. Oeding, *Set-theoretic defining equations of the tangential variety of the Segre variety*, Journal of Pure and Applied Algebra 215 (2011), no. 6, 1516-1527, arXiv:0911.5276. [On JPAA most cited list]
26. L. Oeding, *Set theoretic defining equations of the variety of principal minors of symmetric matrices*, Algebra and Number Theory 5 (2011), no. 1, 75-109, arXiv:0809.4236.
27. P. Macias Marques and L. Oeding, *Splitting criteria for vector bundles on the symplectic isotropic Grassmannian*, Le Matematiche Vol. LXIV (2009) Fasc. Ii, 155-176, arXiv:1003.2873.

PREPRINTS

28. H. Jaffali, F. Holweck, L. Oeding, *Maximally entangled real states and SLOCC invariants: the 3-qutrit case*, arXiv: 2307.00970.
29. F. Holweck, L. Oeding, *Jordan Decompositions of Tensors*, arXiv:2206.13662
30. Y. Cao, S. Das, L. Oeding, H.-W. Van Wyk, *Analysis of the Stochastic Alternating Least Squares Method for the Decomposition of Random Tensors*, arXiv:2004.12530
31. L. Oeding, *Border Ranks of Monomials*, arXiv:1608.02530
32. L. Oeding, *Are all secant varieties to Segre products arithmetically Cohen-Macaulay?* arXiv:1603.08980

THESIS

33. L. Oeding, *G-varieties and the principal minors of symmetric matrices*, Ph.D. thesis, Texas A&M University, (2009)
34. L. Oeding, *Phase Space Quantum Mechanics*, Undergraduate Honors Thesis, Franklin & Marshall College, (2003)

BOOK CHAPTERS

35. Boralevi and L. Oeding, Weyman's method for subspace varieties of skew-symmetric tensors, In J.M. Landsberg, *Tensors: Geometry and Applications*, (p405-407), AMS GSM, vol. 128, (2012)

EXPOSITORY REPORTS

36. L. Oeding, "Tensor Calculus and Applications," Lecture notes for a 20-hour course taught at U. Siena 2022.
37. L. Oeding, "GCT Lectures: Representations in Coordinate Rings, GL_n Representations," October 2021, Lecture notes for a preparatory course for the ``gct2022: School and Conference on Geometric Complexity Theory," 17-28 Jan 2022 Chennai (India).
38. L. Oeding, *Tensor Decomposition*, (Notes for Simons Institute Boot Camp Lectures, 2014)
39. L. Oeding and R. Bardeli, *Audio signal processing and algebraic geometry*, (Bardeli is a signal processing engineer at Fraunhofer IAIS, Sankt Augustin Germany).
http://www.auburn.edu/~lao0004/TAGS_Pattern_Recog_Talk.pdf
40. S. Lin, L. Oeding, and B. Sturmfels, *Electric network synthesis*, preprint, (2011), <http://math.berkeley.edu/critch/bass/electric-network-synthesis.pdf>
41. L. Oeding, *Report on "Geometry and representation theory of tensors for computer science, statistics and other areas,"* (2008), arXiv:0810.3940

OPINION

42. L. Oeding, *Decisions are Happening Over Dinner*, SIAM News, Vol 56/ Issue 8, October 2023.

GRANT SUPPORT

Name of PI/CoPI	Source	Project title	Amount	Award Period	Person-Months
Luke Oeding (PI) Frederic Holweck (PI)	FACE	Machine Learning, Invariants of Tensors and Quantum Information	\$20k	9/20-8/22	0
Dave Bevly (PI) Luke Oeding (CoPI) Scott Martin (CoPI)	STTR IS4S	A17A-T017: Dismounted Soldier Positioning, Navigation and Timing (PNT) System Initialization Phase II	\$350K	11/18-10/20	2
Scott Martin (PI) Dave Bevly (CoPI) Luke Oeding (CoPI)	SBIR IS4S	A17-056: Paratrooper Operations in GPS-Degraded Environments – Phase II	\$300K	9/17-9/20	2
Dave Bevly (PI) Luke Oeding (CoPI) Scott Martin (CoPI)	STTR IS4S	A17A-T017: Dismounted Soldier Positioning, Navigation and Timing (PNT) System Initialization Phase I	\$75K	11/18-10/20	1
Scott Martin (PI) Dave Bevly (CoPI) Luke Oeding (CoPI)	SBIR IS4S	A17-056: Paratrooper Operations in GPS-Degraded Environments – Phase I	\$45K	9/17-9/19	0.25
Scott Martin (PI) Dave Bevly (CoPI) Luke Oeding (CoPI)	SBIR IS4S	US Army-CERDEC: Fused Positioning Using Imaging Cameras & Digital Elevation Data	\$30K	9/17-9/19	0
Luke Oeding (PI)	NSF	CBMS Conference: Tensors and their uses in approximation theory, quantum information theory and geometry	\$35K	4/17-3/18	0.5
Luke Oeding (PI)	NSF	NSF International Research Fellowship Program (IRFP): <i>Secant Varieties and Applications to Signal Processing</i>	\$167k	7/09-7/11	24

ADDITIONAL SUPPORT

Luke Oeding	AU	Provost's External Residential Fellowship (<i>Participate in Semester-long program at IMPAN</i>)	\$20K	9/18-12/18	3
Luke Oeding	IMPAN	Participant in Simon's semester at IMPAN, Warsaw Poland on <i>Varieties, Arithmetic and Transformations</i>	\$9K	9/18-12/18	3

RECENT TRAVEL GRANTS

Luke Oeding	AMS	AMS Travel Award: International Congress of Mathematicians, Rio Di Janeiro, Brazil	\$3.3k	Sum 2018	
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HONORS AND AWARDS (SELECTED)

Vivian Ballenger Memorial Award for Teaching Excellence	2023
AMS Travel Award: International Congress of Mathematicians, Rio Di Janeiro, Brazil,	Aug 2018
Provost External Residential Fellowship Award	Fall 2018
SEC Faculty Travel Award	Fall 2015
AMS Travel Award: International Congress of Mathematicians, Seoul, S. Korea	Aug 2014
AMS Travel Award: Congress of the Americas, Guanajuato Mexico	Aug 2013
Graduate Studies: GAANN Award, NSF VIGRE Fellowship, NCAA Post-Graduate Scholarship	2003-2009
NCAA CoSIDA Verizon Academic All-America Team, Track and Field	2003

TEACHING EXPERIENCE**DEPARTMENT OF MATHEMATICS AND STATISTICS, AUBURN UNIVERSITY**

Calculus I (MATH 1610GL, MATH 1610)	Fall 2015, Spring 2020
Calculus II (MATH 1620)	Fall 2022
Honors Calculus II (MATH 1627)	Fall 2013
Honors Calculus III (MATH 2637)	Fall 2016
Topics in Linear Algebra (MATH 2660EA)[<i>engaged active learning</i>]	Fall 2017, Spring 2018
Topics in Linear Algebra (MATH 2660)	Fall 2013, Spring 2015, Spring 2016, (2x) Spring 2017, Fall 2021
Honors Topics in Linear Algebra (MATH 2667)	Fall 2019, Spring 2023
Introduction to Algebra I (MATH 5310/6310)	Fall 2015, Spring 2018, Fall 2021, Spring 2022, Fall 2023
Introduction to Algebra II (MATH 5320/6320)	Spring 2016, Fall 2016, Spring 2022
Linear Algebra (MATH 5370/6370)	Spring 2014
Algebra I (MATH 7310)	Fall 2017, Fall 2020, Fall 2022
Algebra II (MATH 7320)	Spring 2015, Spring 2019, Spring 2021
Tensors, Geometry and Applications (MATH 7970)	Spring 2014
Lie Groups (MATH 8330)	Fall 2023

DEPARTMENT OF MATHEMATICS, UNIVERSITY OF SIENA

Ph.D. course on Tensor Calculus and Applications	Summer 2022
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DEPARTMENT OF MATHEMATICS, UNIVERSITY OF CALIFORNIA, BERKELEY

Introduction to Analysis	Fall 2011, Spring 2013
Introduction to Abstract Algebra	Spring 2013
Introduction to Complex Analysis	Spring 2012
CMS Summer School: Secant Varieties (Teaching Assistant)	Summer, 2012

DEPARTMENT OF MATHEMATICS, TEXAS A&M UNIVERSITY

Business Math II	Summer 2005
Engineering Calculus (Recitation Teaching Assistant)	Fall 2004, Fall 2005

STUDENTS AND POSTDOCS SUPERVISED**POSTDOCS / VISITING ASSISTANT PROFESSORS**

Dalton Bidleman (2023-2024)
 William Trok (2020-2021)
 Xavier Martinez-Rivera (2017-2019) – Now at Bates College
 Dinh Hoa Trung (Joint with TY Tam) (2016-2017) -- Now at Troy University
 Hwangrae Lee (2016-2017) – Now at Samsung Research.

GRADUATE STUDENTS

Ph.D. Students:

Dalton Bidleman (2018-2023). Ph.D. dissertation: *Intersection Structures on Secants of Grassmannians* (2023)
 Matthew Speck, (2019-present). Research: On the Marcus de Oliveira Conjecture regarding the determinants of sums of normal matrices.

Yee Ern Tan, (2022-present). Research: Orbit classifications for quantum information.

Served on Ph.D. committee:

- Somak Das (2019-2021)
- Javier Santalan (2016–2018)
- Bradley McQuaig (2016–2017)
- Zachary Sarver (2014–2016)
- Prakash Ghimire (2014–2016)

Ph.D. External Reviewer:

- Emanuele Ventura, Aalto University, Helsinki, Finland 2016
- Masoud Gharahi, University Of Camerino School Of Science And Technology, Camerino Italy, 2022

Masters Students:

- Benjamin Reames, 2014–2016 (left MS program for personal reasons).

Served as Ph.D. University reader

- Ran Chen (AU EECS) 2021
- Monika Kodrycka (AU Chemistry) 2019
- Matt Boler (AU Mechanical Engineering) 2023

Served on MS Committee

- Noah Heckenlively (2022-2023)
- Robert Dixon 2021-2022 (Now Ph.D. Student at Purdue)
- Archit Thopay (AU Mechanical Engineering) (2019-2020)
- Michael Sprunk (AU Mechanical Engineering) (2019-2023)

UNDERGRADUATE STUDENTS

<i>Undergraduate Program Officer</i>	2019-2020
Work with Taylor Moss in assisting her advising of all undergraduate math majors. Work with Will Blakeley on scholarship decisions and recruiting. Oversee the Math Club and organize outside speakers. Oversee the Math Drop-in Tutoring Center (hire and supervise approximately 25-30 students).	
<i>Academic advisor: approximately 8 students</i>	2017–2018
<i>Undergraduate Students mentored:</i>	
Leann Kopp (Auburn), Undergraduate Research (<i>Fraud Analyst: E-Trade</i>)	2018–2020
Doyon Kim (Auburn), Undergraduate Research, (<i>Graduate School: Rutgers</i>)	Summer 2016–Spring 2017
Publication: Doyon Kim, <i>On the Largest Integer that is not a Sum of Distinct Positive n^{th} Powers</i> , Journal of Integer Sequences, Vol. 20 (2017), Article 17.7.5.	
Anthony Nguyen (UC Berkeley), Honors Thesis: <i>The Grassmannian and its secant varieties</i>	2013

CONFERENCES, MINISYMPOSIA AND SEMINARS ORGANIZED

SIAM/ag23, Minisymposium: <i>Quantum Information</i> , University of Eindhoven (with B. Lovitz, [Northeastern, Boston, MA] and Eliana Gelvez [U. Porto, Portugal])	Jul 2023
SIAM/ag21, Minisymposium: <i>Quantum Information and Algebraic Geometry</i> , [virtual] Texas A&M University (with F. Holweck [UTBM, France])	Aug 2021
Spring 2019 Southeastern Sectional Meeting of the AMS at Auburn University (local organizer). <i>Approximately 550 attendees from all over the Southeast and more broadly around the country, with some international visitors.</i>	Mar 2019
Spring 2018 Southeastern Sectional Meeting of the AMS, Invited Special Session: <i>Tensors and Representation Theory</i> , Vanderbilt University. (with JM Landsberg [Texas A&M] and S. Kumar [North Carolina])	Apr 2018
AMS/MAA Joint Meetings SIAM, Invited Special Session: <i>Tensors! Mathematical Challenges and Opportunities</i> (with T. Kolda [Sandia National Lab] and D. Gleich [Purdue])	Jan 2018

SIAM/ag17, Minisymposium: <i>Applications of Algebra to Signal Processing and Digital Imaging</i> , Georgia Institute of Technology (with C. Bocci [Sienna, Italy] and C. Farnsworth [Yonsei, Seoul, S. Korea])	Aug 2017
NSF CBMS Conference: <i>Tensors and their uses in approximation theory, quantum information theory and geometry</i> , Auburn University	July 2017
Linear and Non-Linear Algebra Seminar, Auburn University	2014-2021
SIAM/ag15, Minisymposium: <i>Tensor Decomposition: Ideals meet Applications</i> , Daejeon, S. Korea (with J. Draisma [Eindhoven] and K. Han [KIAS])	Aug 2015
Macaulay 2 Conference: <i>Workshop on Symbolic and Numerical Methods for Tensors and Representation Theory</i> , Simons Institute, Berkeley, CA	Nov 2014
SIAM/ag13, Minisymposium: <i>Algebraic-geometric approaches to tensor spaces, tensor decomposition, and identifiability</i> , Colorado State University (with H. Abo [Idaho], G. Ottaviani [Firenze, Italy], C. Peterson [Colorado State])	Aug 2013
RTG Workshop: <i>Tensors and their geometry in high dimensions</i> , UC Berkeley, (with B. Sturmfels [UC Berkeley] and N. Giansiracusa [UC Berkeley])	Sept 2012
Representation Theory, Geometry and Combinatorics seminar, UC Berkeley	2012-2013

COMMITTEES AND SERVICE

PROFESSIONAL SOCIETY SERVICE

American Mathematical Society (AMS) Southeastern Section Program Committee 2017-2019

UNIVERSITY SERVICE

Auburn University AAUP Chapter President 2023-(present)
Auburn University AAUP Chapter President Elect 2021-2022
Auburn University AAUP Executive Committee 2020-(present)
University Teaching Effectiveness Committee 2020-(present)
Tiger Cage Business Idea Competition (judge) 2019-(present)
Hiring Committee: *Managing Director of the Lowder Center for Family Business and Entrepreneurship* 2020-2021
COSAM/DMS Inclusion, Equity and Diversity Task Force 2020-2021
COSAM Champions 2019-2021
Auburn Roosevelt Building Development Committee 2017-2019

DEPARTMENTAL SERVICE

HIRING COMMITTEES

Geometry Tenure Track Faculty 2021-2022
Topological Data Analysis Tenure Track Faculty (chair) 2020-2021
Algebra Tenure Track Faculty (chair) 2019-2020
Lecturers 2019-2020
Office Manager 2019
Data Science Tenure Track Faculty 2017-2018

OTHER DEPARTMENTAL SERVICE

DMS Advisory Committee 2019-2020
DMS Academic Program Review (chair) 2020-2021
Undergraduate Studies Committee (ex officio) 2019-2020
Online Instruction Committee (ex officio) 2019-2020
Bulletin Committee (ex officio) 2019-2020
DMS Colloquium Committee 2015-2018
DMS Department Chair Executive Review Committee 2015-2016
DMS Building Committee 2015-2019
DMS Postdoc Committee 2014-2016
DMS International Programs committee 2014-2018

OUTREACH ACTIVITIES AND LECTURES

U. Ghana, Accra, Math, Machine Learning and Art	2019
AIMS, Ghana, Math, Machine Learning and Art	2019
SPARKS Prison Arts Lecture “Math, Machine Learning and Art”	2019
Organized (with COSAM’s STEM Done Different and the Auburn Chapter of the Association for Women in Mathematics) <i>Encouraging Future Leaders in Math Speaker Series: Ria Persad</i>	2019
First Year Experiences – “Ace that Class” Panelist	2019
Society for Women in Science and Mathematics (SWSM) Luncheon	2017
Diversity & Inclusion Best Practices Conference	2016
Workshop: Infusing Data-Enabled Active Learning in Math and Stats Courses (Alabama State)	2015, 2016
Designed and implemented #ThisIsSymmetry #ThisIsAuburnMath: A class project exploring symmetry on the AU Campus, posting the results to public social media,	2015
TALON: Outreach program to meet talented high school students admitted to Auburn,	2013-2014
Symmetry at Cal: a class project aimed at discovering and explaining Symmetry at UC Berkeley	2012
Helped organize Pi Day activities for the California Academy of Sciences nightlife,	Mar 2013
Speaker at Berkeley Postdoc Association: <i>All Talks Considered, Tensor decomposition and applications</i>	Feb 2013

PROFESSIONAL CONTINUING EDUCATION

Biggio Center Course Redesign (Facilitator)	Summer 2021
Biggio Center Course Redesign for Engaged Active Learning	Summer 2017

PROFESSIONAL MEMBERSHIPS

American Mathematical Society (AMS)
 Society of Industrial and Applied Mathematics (SIAM)
 American Association of University Professors (AAUP)

EDITORIAL BOARDS

AIMS Numerical Algebra, Control & Optimization	2020-present
Frontiers in Quantum Science and Technology	2023-present

JOURNALS REFEREED

Frequent referee for more than 30 different international mathematical journals

INVITED TALKS AND COLLOQUIA

Over 145 mathematical seminars and colloquia given in the USA and 13 other countries, including expositions for non-mathematical audiences at several Engineering departments and national laboratories (see attached).

LIST OF INVITED TALKS AND COLLOQUIA

145	SIAM/ag23 Eindhoven, NL, <i>Jordan Decompositions of Tensors</i>	23-Jul
144	Saarland University, <i>Introduction to Computing Hyperdeterminants</i>	23-Jun
143	Institut de Mathématiques de Bourgogne, <i>Introduction to Computing Hyperdeterminants</i>	23-May
142	Wolfram Institute, <i>Hyperdeterminants for Quantum Information</i>	23-Apr
141	Georgia Tech, <i>Twisted Permutahedra and Sums of Normal Matrices</i>	23-Jan
140	Joint Mathematics Meetings Special Session, <i>Restricted Secants of Grassmannians</i>	23-Jan
139	Joint Mathematics Meetings Special Session, <i>Jordan Decompositions of Tensors</i>	23-Jan
138	IPAM Lake Arrowhead Reunion Conference, <i>Jordan Decompositions of Tensors</i>	22-Dec
137	Cleveland State University, <i>Jordan Decompositions of Tensors</i>	22-Oct
136	Emory University, <i>Jordan Decompositions of Tensors</i>	22-Sep
135	University of Florence (Italy), <i>Jordan Decompositions of Tensors</i>	22-May
134	University of Siena (Italy), <i>Course on Tensor Calculus and Applications (20 hours)</i>	22-May
133	Toulouse Mathematics Institute (France), <i>Jordan Decompositions of Tensors</i>	22-Apr
132	Vodafone (UK) Quantum Seminar, <i>Measuring Entanglement using Algebraic Geometry</i>	21-Nov
131	Chennai Math Institute (India), <i>Coordinate Rings and Representations of $SL(V)$ part II</i>	21-Nov
130	Chennai Math Institute (India), <i>Coordinate Rings and Representations of $SL(V)$ part I</i>	21-Oct
129	SIAM/ag 2021, <i>Tensor Invariants for Principal Minors</i>	21-Aug
128	Vodafone (Germany) GigaMaths, <i>Hyperdeterminants from $E8$</i>	21-Mar
127	Boise State, <i>Stochastic Alternating Least Squares for Tensor Decomposition</i>	21-Feb
126	Texas A&M, <i>Stochastic Alternating Least Squares for Tensor Decomposition</i>	20-May
125	U. Ghana, Accra, <i>Math, Machine Learning and Art</i>	19-Oct
124	AIMS, Ghana, <i>Math, Machine Learning and Art</i>	19-Oct
123	SIAM/ag 2019, <i>Hyperdeterminants from $E8$</i>	19-Jul
122	Virtual Colloquium, IIT Bombay, <i>Tensors and Syzygies</i>	19-Apr
121	Colloquium at U. Regina, Canada, <i>Hyperdeterminants from $E8$</i>	19-Jan
120	Colloquium at U. Saskatchewan, Canada, <i>Hyperdeterminants from $E8$</i>	19-Jan
119	Seminar at IMPAN Krakow, Poland, <i>Hyperdeterminants from $E8$</i>	18-Nov
118	Seminar at The Arctic University of Norway, Tromsø, Norway: <i>Hyperdeterminants from $E8$</i>	18-Oct
117	VAT Seminar at MIMUW, Warsaw, Poland: <i>Hyperdeterminants from $E8$</i>	18-Oct
116	EPFL, Geneva, Switzerland: <i>Higher Order Partial Least Squares and an Application to Neuroscience</i>	18-Jun
115	Bern, Switzerland: <i>Higher Order Partial Least Squares and an Application to Neuroscience</i>	18-Jun
114	Colloquium: UTBM: <i>Images, mathematics, machine vision and neural networks</i>	18-Jun
113	MPI Leipzig, Conference Talk: <i>Higher Order Partial Least Squares and an Application to Neuroscience</i>	18-Feb
112	Colloquium: University of Georgia Southern, <i>Phylogenetics and Nonlinear Algebra</i>	17-Apr
111	Algebra Seminar: University of Georgia, <i>Computer Vision and Representation Theory</i>	17-Nov
110	SIAM/ag2017, Atlanta, GA, <i>Border Ranks of Monomials.</i>	17-Aug
109	SIAM/ag2017, Atlanta, GA, <i>A New Generation of Brain-Computer Interfaces Driven by Discovery of Latent EEG-fMRI Linkages using Tensor Decomposition.</i>	17-Aug

108	MEGA 2017, Nice, France, <i>Border Ranks of Monomials</i> .	17-Jun
107	U. Warsaw, Poland, <i>Border Ranks of Monomials</i> .	17-Jun
106	AMS Contributed Paper Session, <i>Symmetrization of principal minors and cycle sums</i> .	17-Jan
105	AMS Southeastern Sectional Meeting, (NC State) <i>Border Ranks of Monomials</i> .	16-Nov
104	University of Wisconsin: <i>Border Ranks of Monomials</i> .	16-Oct
103	Georgia Institute of Technology, <i>An Algebraic Introduction to Multiview Geometry and Tenors</i> .	16-Jun
102	EACA Conference, Universidad de la Rioja, <i>Are all secant varieties of Segre products aCM?</i>	16-Jun
101	Universidad Complutense de Madrid, <i>Homotopy techniques for tensor decomposition and perfect identifiability</i> .	16-Jun
100	University of Chicago: <i>Algebraic Vision: The Quadrifocal Variety</i> .	16-Mar
99	George Mason University: <i>Algebraic Vision: The Quadrifocal Variety</i> .	16-Mar
98	AMS Southeastern Sectional Meeting (Univ. Georgia): <i>Symmetrization of Principal Minors and Cycle Sums</i> .	16-Mar
97	AMS Southeastern Sectional Meeting (Univ. Georgia): <i>Are all secant varieties of Segre products arithmetically Cohen-Macaulay?</i>	16-Mar
96	Simons Institute Reunion Conference, <i>Equations for the Fifth Secant Variety of Segre Products of Projective Spaces</i> .	15-Dec
95	Texas A&M Univ. Geometry Seminar: <i>Decomposing Tensors into Frames</i> .	15-Nov
94	SIAM/ag2015, Daejeon, S. Korea, <i>Symmetrization of principal minors and cycle sums</i> .	15-Aug
93	SIAM/ag2015, Daejeon, S. Korea, <i>Staircase flattenings and the border rank of monomials</i> .	15-Aug
92	SIAM/ag2015, Daejeon, S. Korea, <i>Decomposing tensors into frames</i> .	15-Aug
91	SIAM/ag2015, Daejeon, S. Korea, <i>The quadrifocal variety</i> .	15-Aug
90	Frames and Algebraic & Combinatorial Geometry, Bremen, Germany, <i>Decomposing tensors into frames</i> .	15-Jul
89	MEGA, Trento, Italy, <i>Symmetry and large-scale computations for the quadrifocal variety</i> .	15-Jun
88	KTH, Stockholm, <i>Algebraic Vision: The Quadrifocal Variety</i> .	15-Jun
87	Berkeley Computational Algebraic Geometry Seminar, <i>Decomposing tensors into frames</i> .	15-Apr
86	ICRCTA, U. Connecticut, <i>Are all secant varieties to Segre products arithmetically Cohen-Macaulay?</i>	15-Apr
85	MAGA, GA Tech, <i>Homotopy techniques for tensor decomposition and perfect identifiability</i> .	15-Apr
84	Notre Dame, <i>Are all secant varieties to Segre products arithmetically Cohen-Macaulay?</i>	15-Mar
83	Univ. Alabama Birmingham Colloquium, <i>Homotopy techniques for tensor decomposition and perfect identifiability</i> .	15-Mar
82	SIAM SIAS, Univ. Alabama, Birmingham, <i>Equations for the Fifth Secant Variety of Segre Products of Projective Spaces</i> .	15-Mar
81	Berkeley Computational Algebraic Geometry Seminar, <i>Are all secant varieties of Segre products aCM?</i>	14-Dec
80	Berkeley Plant and Cell Biology Postdoc Seminar, <i>How do Phylogenetic Trees Grow?</i>	14-Dec
79	Berkeley Combinatorics Seminar, <i>Staircase Flattenings and the Border Rank of Monomials</i> .	14-Nov
78	Simons Institute Algebraic Geometry Boot Camp: Tensor Decomposition I & II (2 hours).	14-Sep

77	NIMS, Daejeon, S. Korea, <i>On Frank Uhlig's Matrix Symmetrizer problem.</i>	14-Jun
76	KIAS, Seoul, S. Korea, <i>The trifocal and quadrifocal variety.</i>	14-Jun
75	KIAS, Seoul, S. Korea, <i>Hyperdeterminants of polynomials.</i>	14-Jun
74	KAIST, Daejeon, S. Korea, <i>Equations of Abo-Wan Hypersurfaces.</i>	14-Jun
73	SIAM OP14 San Diego, <i>Eigenvectors of Tensors and Waring Decomposition.</i>	14-May
72	Texas A&M University, <i>Algebraic Geometry and Computer Vision.</i>	14-Apr
71	Georgia Tech, <i>Algebraic Geometry and Computer Vision.</i>	14-Feb
70	Queens University, <i>Algebraic Geometry and Computer Vision.</i>	14-Feb
69	University of Alabama, Birmingham, <i>Tensor decomposition and applications.</i>	14-Feb
68	University of Utah, <i>Secant Cumulants and Toric Geometry.</i>	14-Jan
67	ICM Short Communications in Algebraic Geometry, <i>The quadrifocal variety.</i>	14-Aug
66	ILAS, Seoul, Korea, <i>Relations among principal minors.</i>	14-Aug
65	Tulane University, <i>Hyperdeterminants of Polynomials.</i>	13-Sep
64	SIAM/ag 13, <i>Hyperdeterminants of Polynomials.</i>	13-Aug
63	SIAM/ag 13, <i>The Ideal of the Trifocal Variety.</i>	13-Aug
62	SIAM/ag 13, <i>Eigenvectors of Tensors and Waring Decomposition.</i>	13-Aug
61	University of Florence, Italy, <i>Secant Cumulants.</i>	13-Jun
60	Levico, Italy, <i>Hyperdeterminants of Polynomials.</i>	13-Jun
59	UC Berkeley Math/EECS, <i>Algebra and Geometry of Tensor Decomposition.</i>	13-Mar
58	University of Central Florida, <i>Computer vision and the trifocal ideal.</i>	13-Feb
57	University of Idaho, <i>Computer vision and the trifocal ideal.</i>	13-Feb
56	Auburn University, <i>Tensor decomposition and applications.</i>	13-Feb
55	Drexel University, <i>Relations among principal minors.</i>	13-Jan
54	Penn State, <i>Eigenvectors of tensors and Waring decomposition.</i>	13-Jan
53	Penn State, <i>Hyperdeterminants of polynomials.</i>	13-Jan
52	Franklin & Marshall College, <i>Computer vision and the trifocal ideal.</i>	13-Jan
51	AMS Special Session on GCT. <i>Eigenvectors of tensors and Waring decomposition.</i>	13-Jan
50	Bay Area Discrete Math Day, <i>Hyperdeterminants of polynomials.</i>	12-Nov
49	Stanford University, <i>Hyperdeterminants of polynomials.</i>	12-Nov
48	MSRI, <i>Hyperdeterminants of polynomials.</i>	12-Nov
47	University of California, Berkeley, <i>Eigenvectors of tensors and Waring decomposition.</i>	12-Nov
46	University of California, San Diego CCoM, <i>Eigenvectors of tensors and Waring decomposition.</i>	12-Nov
45	San Jose State University, <i>Tensor decompositions and applications.</i>	12-Oct
44	University of Illinois Urbana-Champaign, <i>Hyperdeterminants of polynomials.</i>	12-Oct
43	University of Wisconsin, <i>The trifocal variety.</i>	12-Oct
42	University of Chicago, <i>Hyperdeterminants of polynomials.</i>	12-Oct
41	UC Berkeley EECS seminar, <i>The trifocal variety.</i>	12-Aug
40	Università degli Studi di Milano, <i>Multiview geometry and the trifocal variety.</i>	12-Jul
39	Università degli Studi di Firenze, <i>The trifocal ideal.</i>	12-Jul

38	Università degli Studi di Genova, <i>Hyperdeterminants of polynomials.</i>	12-Jul
37	GTM conference Torino, <i>The trifocal ideal.</i>	12-Jun
36	University of Saskatchewan, <i>The hyperdeterminant of a polynomial.</i>	12-Jun
35	CMS Summer meeting, <i>The trifocal variety.</i>	12-Jun
34	PSU Algebraic Statistics in the Alleghenies, <i>The trifocal variety.</i>	12-Jun
33	TAGS Workshop: <i>Geometric and algebraic structures in pattern recognition.</i>	12-Apr
32	UC Davis: <i>The hyperdeterminant of a polynomial.</i>	12-Apr
31	CMS Winter: <i>The hyperdeterminant of a polynomial.</i>	12-Dec
30	Sandia National Lab: <i>Eigenvectors of tensors and algorithms for Waring decomposition.</i>	12-Nov
29	AMS Salt Lake City, <i>Toward a salmon conjecture.</i>	12-Oct
28	SIAM/ag11, <i>Toward a salmon conjecture.</i>	12-Oct
27	SIAM/ag11, <i>Defining equations of secant varieties to Segre-Veronese varieties.</i>	12-Oct
26	University of Washington, <i>The hyperdeterminant of a polynomial.</i>	12-Aug
25	Computational Algebraic Geometry @ FoCM'11, <i>Toward a salmon conjecture.</i>	11-Jul
24	Max Planck Institute for Mathematics in the Sciences, <i>The hyperdeterminant of a polynomial.</i>	11-Jul
23	Institut Mittag-Leffler, Stockholm Sweden, <i>Principal and exclusive minors.</i>	11-Apr
22	TU Eindhoven, <i>Eigenvectors of tensors and algorithms for Waring decomposition.</i>	11-Mar
21	Utah State University, <i>Defining equations for secant varieties of Segre-Veronese varieties.</i>	11-Feb
20	AMS Session on Algebraic Geometry: <i>Toward a salmon conjecture.</i>	11-Jan
19	Algebraic Geometry in the Sciences, Oslo, Norway: <i>Toward a salmon conjecture.</i>	11-Jan
18	Università degli Studi di Roma Tor Vergata, <i>Toward a salmon conjecture.</i>	10-Nov
17	North Carolina State University, <i>Defining equations of secant varieties of Segre-Veronese varieties.</i>	10-Oct
16	Colorado State University, <i>Toward a salmon conjecture.</i>	10-Oct
15	University of Idaho, <i>Defining equations of secant varieties of Segre-Veronese varieties.</i>	10-Oct
14	University of Minnesota, <i>Defining equations of orbit closures in skew symmetric tensors.</i>	10-Oct
13	University of Illinois at Chicago, <i>Toward a salmon conjecture.</i>	10-Oct
12	University of Michigan, <i>Defining equations of secant varieties of Segre-Veronese varieties.</i>	10-Oct
11	TDA 2010 Conference, Monopoli, Italy: <i>Determining border ranks of (partially symmetric) tensors via polynomial equations.</i>	10-Sep
10	GAeL (Coimbra): <i>Defining equations of orbit closures in skew symmetric tensors.</i>	10-Jun
9	Politecnico di Torino, <i>Principal minors of symmetric matrices and applications.</i>	10-Apr
8	Università degli Studi di Genova, <i>On the set-theoretic versions of conjectures of Holtz-Sturmfels and Landsberg-Weyman.</i>	10-Mar
7	UC Berkeley, <i>On the set-theoretic versions of conjectures of Holtz-Sturmfels and Landsberg-Weyman.</i>	10-Jan
6	Texas A&M University, <i>On the split variety and its dual.</i>	9-Oct
5	Colorado State University, <i>Set theoretic defining equations of the variety of principal minors of symmetric matrices.</i>	9-Oct
4	Univ. Barcelona, CoCoA Conference: <i>Geometric approaches to equations of secant varieties.</i>	9-Jun
3	MSRI Workshop on Algebraic Statistics, <i>Towards the salmon conjecture.</i>	8-Dec

2	MSRI Graduate Student Workshop, "Geometry and Representation Theory of Tensors for Computer Science, Statistics, and other areas, <i>The variety of principal minors of symmetric matrices.</i>	8-Jul
1	2008 Spring Southeastern Meeting of the AMS Baton Rouge, LA: Meeting #1037: <i>The geometry of relations among principal minors of symmetric matrices.</i>	8-Mar