Anton Dochtermann

Texas State University Department of Mathematics San Marcos, TX http://dochtermann.wp.txstate.edu/

EDUCATION

- **Ph.D. in mathematics**, University of Washington (2007). ADVISORS: Professors Eric Babson and Isabella Novik.
- B.A. in mathematics, minor in art practice, UC Berkeley (2001).

EMPLOYMENT

- August 2022 : Associate Professor, Dept. of Mathematics, Texas State University.
- August 2016 August 2022: Assistant Professor, Dept. of Mathematics, Texas State University.
- August 2014 August 2016: Lecturer, Dept. of Mathematics, University of Texas.
- August 2012 July 2014: Visiting Assistant Professor, University of Miami.
- August 2010 June 2011: NSF funded MSRI postdoc position at Stanford University.
- October 2007 June 2010: Postdoc at Technische Universität Berlin (under Günter M. Ziegler), supported by DAAD and Alexander von Humboldt postdoctoral research fellowship.

TEACHING (at Texas State University, unless otherwise indicated)

- Fall 2023, Math 3377 (Linear Algebra) and Math 2471 (Calculus I)
- Spring 2023, Math 3377 (Linear Algebra)
- Fall 2022, Math 2471 (Calculus I), Math 4307 (Modern Algebra)
- Spring 2022, Math 3377 (Linear Algebra)
- Fall 2021, Math 3377 (Linear Algebra)
- Spring 2021, Math 3377 and 4390B (Honors thesis)
- Fall 2020, Math 3377 and 4336 (Independent Study)
- Spring 2020, Math 3377, 5313/7317 (Grad Algebra II), and 4336
- Fall 2019, Math 2321 (Calculus for Life Sciences) and Math 5/7307 (Grad Algebra)
- Spring 2019, Math 3377 (Linear Algebra)
- Fall 2018, Math 3377 and Math 3330 (Intro to Advanced Math).
- Spring 2018, Math 3377, 5309/7309 (Grad Topology), and 4336 (Independent Study)
- Fall 2017, Math 3377 and Math 4330 (General Topology).
- Spring 2017, Math 3377 (Linear Algebra)
- Fall 2016, Math 2472 (Calculus II).
- 2014 2016 (at U Texas) Algebraic Structures, Calculus, Linear Algebra, Vector Calculus.
- 2011 2014 (at U Miami) Abstract Algebra, Intro to Linear Algebra, Calculus I, Calculus II, Intro to Differential Equations, Applied Calculus.

PUBLICATIONS AND PREPRINTS

Journal articles

(1) Cycle systems, coparking functions, and h-vectors of matroids, with Scott Cory and Dave Perkinson, work in progress.

- (2) Simplicial complexes with many facets are vertex decomposable, with Ritika Nair, Jay Schweig, Adam Van Tuyl, and Russ Woodroofe, 11 pages, submitted (2024), https://arxiv.org/abs/2403.07316
- (3) Simple homotopy for flag simplicial complexes and contractible transformations on graphs, with Takahiro Matsushita, 6 pages, submitted (2023), arxiv.org/abs/2312.10976
- (4) Chip-firing and parking functions on hypergraphs, with Timothy Blanton, Isabelle Hong, Suho Oh, and Jenny Zhu.
- (5) Shellability of the poset of lattice path matroid quotients, with Carolina Benedetti, Kolja Knauer, and Yupeng Li.
- (6) Chip-firing and critical groups of signed graphs, with Matthew Cho, Ryota Inagaki, Suho Oh, Dylan Snustad, and Bailee Zacovic, 31 pages, submitted (2023), arxiv.org/abs/2306.09315.
- (7) Root polytopes, tropical types, and toric edge ideals, with Ayah Almousa and Ben Smith, 45 pages, submitted (2022), arxiv.org/abs/2209.0985.
- (8) Homomorphism complexes, reconfiguration, and homotopy for directed graphs, with Anurag Singh, European J. Combin. **110** (2023).
- (9) Minimal graphs for contractible and dismantlable properties, with Jesús F. Espinoza, Martín E. Frías-Armenta, and Héctor A. Hernández, 19 pages, Discrete Math. 346, Iss. 10 (2023).
- (10) Random subcomplexes and Betti numbers of random edge ideals, with Andrew Newman, Int. Math. Res. Not. 2023, Iss. 10, (2023), pp. 8832–8871.
- (11) Completing and extending shellings of vertex decomposable complexes, with Michaela Coleman, Nathan Geist, and Suho Oh, SIAM J. Discrete Math. **36**, Iss. 2 (2022).
- (12) Integral flow and cycle chip-firing on graphs, with Eli Meyers, Raghav Samavedam, and Alex Yi, 18 pages, Ann. Comb. 25, Iss. 3, pp. 595–616, 2021.
- (13) Extendable shellability of d-dimensional complexes on d+3 vertices, with Jared Culbertson, Dan Guralnik, and Peter Stiller, Electron. J. Combin. 27, Iss. 3, 2020.
- (14) Biconed graphs, weighted forests, and h-vectors of matroid complexes, with Preston Cranford, Evan Haithcock, Joshua Marsh, Suho Oh, Anna Truman, Electron. J. Combin. 28, Iss.4, 2021.
- (15) Exposed circuits, linear quotients, and chordal clutters, J. Combin. Theory Ser. A, 177, 2021.
- (16) Trees, parking functions, and standard monomials of skeleton ideals, with Westin King, Australas.
 J. Comb. 81, Iss. 1, pp. 126–151, 2021.
- (17) Skeleta of G-parking function ideals, multipermutohedra, and cellular resolutions, 22 pages, submitted, preprint available at arxiv.org/abs/1708.04712.
- (18) Warmth and connectivity of neighborhood complexes of graphs, with Ragnar Freij, Adv. Appl. Math. 96, pp. 176–194, 2018.
- (19) Face rings of cycles, associahedra, and standard Young tableaux, Electron. J. Combin. 23, Iss. 3, 2016.
- (20) Cellular resolutions via mapping cones, with Fatemeh Mohammadi, J. Combin. Theory Ser. A, 128, pp. 80–206, 2014.
- (21) Laplacian ideals, arrangements, and resolutions, with Raman Sanyal, J. Algebraic Combin. 40, Iss. 3, pp. 805 – 822, 2014.
- (22) Coarse tropical type decompositions and associated cellular resolutions, with Michael Joswig and Raman Sanyal, J. Algebra **356**, pp. 304–324, 2012.
- (23) Cellular resolutions of cointerval ideals, with Alexander Engström, Math. Z. 270, Iss. 1, pp. 145–163, 2012.
- (24) Topology of Hom complexes and test graphs for bounding chromatic number, with Carsten Schultz, Israel J. Math, 187, Issue 1, pp. 371–417, 2012.

- (25) Algebraic properties of edge ideals via combinatorial topology, with Alexander Engström, Electron.
 J. Combin., 6, Issue 2 (Björner Festschrift Volume), 23 pages, 2009.
- (26) Homotopy groups of Hom complexes of graphs, J. Combin. Theory Ser. A, 116, Iss. 1, pp. 180–194, 2009.
- (27) The universality of Hom complexes of graphs, Combinatorica, 29, Iss. 4, pp. 433–448, 2009.
- (28) Hom complexes and homotopy in the category of graphs, European J. Combin., 30 Iss. 2, pp. 490–509, 2009,
- (29) Graphs with disjoint links in every spatial embedding, with Stephen Chan, et al., J. Knot Theory Ramifications, **13** No. 6, pp. 737–748, 2004.

Conference proceedings

- (30) Homomorphism complexes, reconfiguration, and homotopy for directed graphs, with Anurag Singh, Formal Power Series and Algebraic Combinatorics (FPSAC) - DMTCS Proceedings (2022).
- (31) Extending and completing shellings of vertex decomposable complexes, with Michaela Coleman, Nathan Geist, and Suho Oh, Formal Power Series and Algebraic Combinatorics (FPSAC) -DMTCS Proceedings (2021).
- (32) Hom complexes and homotopy in the category of graphs, Electron. Notes Discrete Math., 31 (2008) pp. 131–136, The International Conference on Topological and Geometric Graph Theory.

CONFERENCE, SEMINAR, AND COLLOQUIUM TALKS (selected)

2024

AMS Special Session on 'Commutative algebra and its connections to combinatorics', AMS Sectional Meeting UTSA, San Antonio, TX (Sept 14-15)

Tulane Department of Mathematics Colloquium (April)

Brown University Combinatorics Seminar (April)

CombinaTexas (March)

AMS Special Session on 'Bridging Applied and Quantitative Topology', JMM San Francisco (Jan 4-6)

2023

FU Berlin Discrete Geometry and Topological Combinatorics seminar (July 13)

Reed College Department of Mathematics and Statistics Colloquium (April 27)

AIM workshop on 'Discrete and combinatorial homotopy theory', San Jose, CA (March 14)

BIRS workshop on 'Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra', Banff, Canada (April 2-7)

2022

AMS Special Session on 'Algebraic, Geometric, and Topological Combinatorics' and 'Interactions between Combinatorics and Commutative Algebra' (two talks), UTEP, El Paso, TX (Sept 17-18)

'Matroids, Ordered Structures, Arrangements in Combinatorics', plenary talk, U Manchester (July 25-26)

TU Berlin Mittagsseminar (July 22)

FU Berlin Discrete Geometry and Topological Combinatorics seminar (July 21)

TU Berlin Discrete Geometry seminar (July 20)

'Talks in combinatorics' University of Barcelona, Spain (July 13)

AMS Special Session on 'Commutative Algebra', Spring Western Sectional Meeting, online (May 14-15)

XXXII Semana Nacional de Investigación y Docencia en Matemáticas, U. Sonora, online (Mar 31)

CombinaTexas, plenary talk, Texas A&M, College Station, TX (Mar 5)

2021

University of Minnesota Commutative Algebra seminar (Dec 2)

AMS Special Session on 'Current Trends in Combinatorial and Homological Commutative Algebra', Mobile, AL (Nov 20-21)

AMS Special Session on 'Geometric and Topological Combinatorics and Their Applications', Omaha, NE (Oct 9-10)

XXXI Semana Nacional de Investigación y Docencia en Matemáticas, U. Sonora, online (May 27)

Texas A&M Algebra and Combinatorics seminar (April 19)

AMS Special Session on 'Current Trends in Combinatorial Commutative Algebra', Brown University (Mar 20-21) (moved online)

2020 (limited travel due to COVID-19)

BIRS (Banff International Research station) workshop on 'Interactions Between Topological Combinatorics and Combinatorial Commutative Algebra' (11/29 - 12/04) (POSTPONED due to COVID-19)

'Combinatorics in Algebra, Topology and Graph Theory' (CATGT) Webinar Series (Oct 21)

AMS Special Session on 'Algebraic, Geometric & Topological Combinatorics', El Paso, TX (Sept 12-13) (moved online)

AMS Special Session on 'Current Trends in Combinatorial Commutative Algebra', Tufts University, Medford, MA (Mar 21-22) (CANCELLED due to COVID-19)

2019

AMS Special Session on 'Algebraic and Geometric Combinatorics', Gainesville, FL (Nov 2-3, 2019)

Tenth Conference on Discrete Geometry and Algebraic Combinatorics, UTRGV (Sept 23-26, 2019)

AMS Special Session on 'Algebraic and Geometric Combinatorics', Madison, WI (Sept 14-15, 2019)

University of Washington Combinatorics seminar (May 29, 2019)

Texas A&M Algebra and Combinatorics seminar (April 19, 2019)

University of Texas Random Structures seminar (Mar 27, 2019)

AMS Special Session on 'Algebraic and Geometric Combinatorics', Honolulu, HI (Mar 22-24, 2019)

XXIX Semana Nacional de Investigación y Docencia en Matemáticas, University of Sonora, two talks including plenary address (Mar 4-8, 2019)

Southwest Local Algebra Meeting (SLAM), University of Texas at El Paso (Feb 23-24, 2019)

2018

International Workshop on Combinatorial and Computational Aspects of Optimization, Topology and Algebra (ACCOTA), Mérida, Yucatan, Mexico (Dec 2-7, 2018)

Texas State Discrete Math seminar (April 20, 2018)

AMS Special Session 'Commutative and Combinatorial Algebra', Columbus, OH (Mar 17-18, 2018)

CombinaTexas, College Station, TX (Feb 10-11, 2018)

Texas A&M Algebra and Combinatorics seminar (Jan 19, 2018)

2017

Canadian Math Society Winter Meeting, Session on 'Applications of Combinatorial Topology in Commutative Algebra', Waterloo (December 8-10, 2017)

Texas State Discrete Math Seminar (September 22, 2017)

SIAM Conference on Applied Algebraic Geometry, Session on 'Symmetric Simplicial Complexes and Polytopes', Georgia Tech, Atlanta, GA (August 2, 2017)

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Mathematical Congress of the Americas, Sessions on 'Combinatorial Commutative Algebra' and 'Geometry and Combinatorics of Cell Complexes' (two talks), Montreal (7/27-28/17)

UC Davis Combinatorics seminar (April 10, 2017)

NotSoMath Austin, 'The mathematics of gerrymandering' (April 5, 2017)

Texas State Discrete Math Seminar (March 24, 2017)

Texas State Topology Seminar (March 3, 2017)

Texas State Math Education Seminar (March 3, 2017)

2016

AMS Special Session on 'Chip-firing and Divisors on Graphs and Complexes', Minneapolis (10/29/16)

FU Berlin Discrete Geometry seminar (July 7, 2016)

Eighth Conference on Discrete Geometry and Algebraic Combinatorics, UTRGV (5/4/16)

AMS Special Session on 'Commutative algebra', Salt Lake City (4/10/16)

Texas A&M Algebra Seminar (March 25, 2016)

AMS Special Session on 'Combinatorial/computational commutative algebra', Athens (3/5/16)

Sam Houston State University Colloquium (February 24, 2016).

Joint Math Meeting AMS Special Session on 'Algebraic and Topological Methods in Combinatorics', Seattle (1/8/16).

2015

CMO-BIRS workshop on Sandpile Groups, Oaxaca, Mexico (November 15-19, 2015)

Texas Algebraic Geometry Symposium, Texas A & M (October 24, 2015).

AMS Special Session on 'Topological Combinatorics', Memphis (10/17/15)

FU Berlin Discrete Math seminar (June 11, 2015)

U Texas Algebra Seminar (May 7, 2015)

AMS Special Session on 'Algebro-geometric Methods in Graph Theory', Las Vegas (4/18/15)

U Texas Random Structures seminar (April 10, 2015)

Texas State Discrete Math Seminar (April 3, 2015)

2014 and earlier (selected)

AMS and CMS Special Sessions: 'Topological Combinatorics', San Diego (1/12/13); 'Combinatorics and Algebraic Geometry', San Francisco (10/24/14); 'Combinatorial Commutative Algebra', Louisville (10/5/13); 'Algebraic and Topological Combinatorics', New Orleans (10/13/12); CMS Special Session on 'Commutative Algebra and Combinatorics', Vancouver (12/4/10); 'Matroids in Algebra and Geometry', San Francisco (4/25/09);

Seminars: U Miami Combinatorics (4/22/14, 10/2/13, 1/29/13, 9/11/12, 4/3/12, 10/4/10); UC Davis Combinatorics (2/4/11); UC Berkeley Combinatorics (11/10/10; 10/23/06); TU Berlin Discrete Geometry (6/17/10, 5/11/10, 4/9/09, 3/18/09, 10/9/08, 2/6/08); U Washington Combinatorics (10/13/10, 4/29/09, 1/17/07); New Mexico State Algebra (2/3/10); New Mexico State Topology (2/3/10); Dartmouth Combinatorics (11/9/09, 10/5/09); SFSU Algebra-Geometry-Combinatorics (10/27/06); U Montpellier Algebra and Combinatorics (6/27/13); U Kentucky Algebra (3/22/13); Ohio State U Combinatorics (3/1/13)

Workshops: AIM Workshop on 'Generalizations of chip-firing and the critical group' (July 10, 2013); CIEM Workshop on Monomial Ideals (MONICA), Castro Urdiales, Spain (July 12, 2011); Graph limits, Homomorphisms, and Structures Workshop held at Hranicni Zamecek, Czech Republic (Jan 27, 2009); Midsummer Combinatorial Workshop, Charles University, Prague (July 29, 2008). 11th Nordic Combinatorial Conference (NORCOM) at KTH Stockholm (June 17, 2013).
Bay Area Discrete (BAD) Math Day, SF State University (April 30, 2011).
New Mexico State U Math Department Colloquium (February 4, 2010).
Topological and Geometric Graph Theory Conference, Paris (May 21, 2008).
MDS Graduiertenkolleg colloquium, Berlin (May 5, 2008).

GRANTS AND AWARDS

- NSF Combinatorics standard grant 'Algebra, topology, and dynamics of graphs and matroids ', submitted September 2023 (\$158,791), under review.
- Simons Collaboration Grant for Mathematicians, 'Topics in algebraic and geometric combinatorics' (\$42,000), September 2022 - August 2027.
- Outstanding Research Award, Texas State University Dept of Math, Fall 2022.
- University Lecturers Award, funding to bring Mohamed Omar (Harvey Mudd) to Texas State (\$2000), Fall 2022.
- Alexander von Humboldt Foundation Renewed Research stay, FU/TU Berlin, July 2022.
- NSF REU Site: Algebra, Combinatorics, and Statistics (Supporting Personnel) #1757233, \$305,417, PI Yong Yang, CoPI Thomas Keller, 3/1/22-2/28/25.
- Outstanding Teaching Award, Texas State University Dept of Math, Fall 2020.
- Texas State University Common Experience Event Grant, 'Graphs, Geometry, and Gerrymandering: Mathematics of Political Districting' (\$1000) Fall 2020
- Outstanding Service Award, Texas State University Dept of Math, Fall 2019.
- Texas State University Alpha Chi Honor Society 'Favorite Professor', Spring 2019.
- University Lecturers Award, funding to bring Jesus DeLoera (UC Davis) to Texas State (\$1000), Spring 2018.
- NSF REU Site: Algebra, Combinatorics, and Statistics (Supporting Personnel) #1757233, \$269,696, PI Yong Yang, CoPI Thomas Keller, 9/1/18-8/31/21.
- Texas State Program for Excellence in Teaching & Learning Travel Grant (\$800), 2017.
- Texas State University Library New Faculty Startup (\$900), 2017.
- Alexander von Humboldt Foundation Renewed Research stay, FU Berlin, July 2016.
- National Science Foundation Institutes Postdoc, 2010-11.
- Alexander von Humboldt Foundation postdoctoral fellowship, TU Berlin, 2008-9.
- National Science Foundation VIGRE fellowship, 2003 and 2006.

OTHER ACTIVITIES

Research visits

- July 1 July 31, 2022 One month visit to FU Berlin and TU Berlin Discrete Geometry groups, funded as 'renewed research stay' by Alexander von Humboldt Foundation.
- June 20 July 20, 2016 One month visit to FU Berlin Discrete Geometry group, funded as 'renewed research stay' by Alexander von Humboldt Foundation.
- June 2015 Three week visit to FU Berlin Discrete Geometry group (Berlin, Germany)
- June 2013 One month visit to A. Engström's group at U Aalto (Helsinki, Finland)
- September 2009 May 2010: Research Scholar, Dartmouth College (Hanover, NH).

Professional development, curriculum development

- Participant in Structuring Equitable Participation in Undergraduate Mathematics Proof Classes (STEPUP) workshop (PIs Melhuish, Ellis, Strickland), Texas State U, May 2023.
- Participant in Texas State University 'Program for Excellence in Teaching and Learning', Fall 2016-Spring 2017.
- Participant in Flipped Calculus Instruction Training at U Texas, August 19-20, 2015.
- Participant in TIDES workshop at U Texas, April 30, 2015.
- Part of U Texas Flipped Calculus semester long workshop (duties included workshopping ideas for fipped instruction, developing official training documents), Fall 2014.

Graduate level Advising

- Supervisor for Master's Thesis of James Dylan Douthitt, Texas State U, 2018-2019.
- Committee Member for Master's Theses at Texas State University:
 - Holly Tidwell (advised by Prof. Yong Yang, 2023-current)
 - Jina Park (advised by Prof. Suho Oh, 2019-2020)
 - Megan Fairchild (advised by Prof. David Snyder, 2018-2019)
 - Nathan Jones (advised by Prof. Thomas Keller, 2017- March 30, 2018)
 - Ellen Robinson (advised by Prof. Lucas Rusnak, 2016 April 3, 2017),
- Examiner for PhD thesis of Gargi Lather *Skeleton ideals of graphs and their associated invariants* (supervised by Prof. Chanchal Kumar), Indian Institute of Science Education and Research (IISER) Mohali, 2022.
- Pre-examiner for PhD thesis of Laura Jakobsson *Representation stability for cellular resolutions* (supervised by Prof. Alex Engström), Aalto University, 2020.
- Member of Board of Examiners for PhD thesis of Anurag Singh Neighborhood and Independence Complexes of some Kneser Graphs and Stable Kneser Graphs (supervised by Prof. Nandini Nilakantan), IIT Kanpur, 2019.
- Member of Board of Examiners for PhD thesis of Samir Shukla *Homotopy Type and Connectedness* of Certain Graph Complexes (supervised by Prof. Nandini Nilakantan), IIT Kanpur, 2017.
- Member of Graduate Faculty, Texas State University, 2017 current.

Undergraduate and high school research supervised

• Co-mentor (with Suho Oh) for NSF sponsored REU project *Parking functions on hypergraphs*, Texas State University (Summer 2023)

Students presented at AMS - PME Poster Session at JMM in San Francisco, CA (Jan 5, 2023)

• Co-mentor (with Suho Oh) for NSF sponsored REU project *Chip-firing on signed graphs*, Texas State University (Summer 2022)

Students presented at AMS - PME Poster Session at JMM Boston, MA (January 6, 2022)

• Mentor for Shreev Goyal and Anant Asthana, Colorful stars and Rota's conjecture for graphic matroids, Texas State University (Fall 2022)

Students gave a talk at Texas State Discrete Math Seminar (Sept 29, 2023)

- Co-mentor (with Suho Oh) for NSF sponsored REU project Simon's conjecture for 1-decomposable complexes, Texas State University (Summer 2021)
- Mentor for Honors Thesis of Ram Moore, Texas State U, Spring 2021.
- Co-mentor (with Suho Oh) for NSF sponsored REU project *Extending and completing shellings* of simplicial complexes, Texas State University (Summer 2020)
- Honors Course with Ram Moore, 'Topics in Chip-Firing', Texas State U, Spring-Fall 2020.

- Mentor for Mathworks Honors Camp project *Circuit chip firing*, Texas State University (Summer 2019, June 23 Aug 2). 'Best talk' by Eli Meyers at Texas State Math Expo 'Rapid Fire Research' competition, Fall 2019.
- Co-mentor (with Suho Oh) for NSF sponsored REU project h-vectors of biconed graphs, Texas State University (Summer 2019, June 10 - Aug 2)
 Bi-coned graphs, edge rooted forests, and Stanley's h-vector conjecture awarded 'Outstanding

Poster' at Joint Mathematics Meeting in Boulder, CO (January 17, 2020),

- Independent study with Rebekah Murrell, 'Topics in Algebraic Topology', Texas State University, Spring 2018.
- Mentor for U Texas Directed Reading Program (DRP) with undergrad student Jason Lin, 'Matrix Tree Theorem and Algebraic Methods in Graph Theory' (Fall 2015).
- U Texas DRP with Sergey Sambros, 'Fundamental Groups & Algebraic Topology' (Spring 2016).

Refereeing (selected)

Advances in Mathematics; Proceedings of the AMS; Israel Journal of Mathematics; Journal of Combinatorial Theory, Series A; European Journal of Combinatorics; Electronic Journal of Combinatorics; Linear Algebra and its Applications; Topology and Its Applications; Homology, Homotopy and Applications; Discrete Mathematics; Journal of Algebraic Combinatorics; Mathematica Scandinavica; Pacific Journal of Math; Journal of Combinatorics; Journal of Combinatorical Theory, Series B; Combinatorica; Nagoya Math Journal; Arkiv foer Matematik; Discrete and Computational Geometry; Communications in Algebra; Advances in Geometry; Annals of Combinatorics; Algebraic and Geometric Topology; Order.

Reviewer for Mathematical Reviews

Conference/seminar organizing

- Co-organizer (with Suho Oh) of Algebraic Combinatorics Reading Seminar, Fall 2023 current, Texas State University.
- Member of the Program Committee, 36th International Conference on Formal Power Series and Algebraic (FPSAC), Bochum, Germany, July 22–26, 2024.
- Co-organizer (with Chris Kapulkin and Antonio Rieser) of special session on *Discrete homotopy theory* at JMM meeting, January 2024, San Francisco.
- Organizer of Minisymposium on *Combinatorial Commutative Algebra* at SIAM Texas-Louisiana Section (TXLA23), University of Louisiana at Lafayette, November 3-5, 2023.
- Co-organizer (with Bennet Goeckner, Steve Klee, and Gaku Liu) of special session on *Geometric* and topological combinatorics at JMM meeting, April 2022 (online).
- Co-organizer of conference on *Mathematics, Data, and Disease* at Texas State University (online), April 30, 2021.
- Co-organizer of conference on *Graphs, Geometry, and Gerrymandering* at Texas State University (moved online due to COVID), October 2, 2020.
- Co-organizer (with Sean Sather-Wagstaff) of special session on *Free Resolutions, combinatorics, and geometry* at the AMS sectional meeting at UTEP (moved online due to COVID), September 12-13, 2020.
- Co-organizer (with Suho Oh) of special session on *Geometric combinatorics and combinatorial commutative algebra* at the AMS sectional meeting at U North Texas, September 9-10, 2017.
- Co-organizer (with Suho Oh) of Algebraic Combinatorics Reading Seminar, Fall 2016 2020, Texas State University.
- Co-organizer (with Alex Engström and Tina O'Keefe) of special session on *Topological combinatorics and combinatorial commutative algebra* at the AMS sectional meeting at SFSU, October 25-26, 2014.

- Co-organizer (with Alex Engström) of *Topological Combinatorics Seminar*, Fall 2010 and Spring 2011, UC Berkeley.
- Organizer of weekly Algebraic Combinatorics Seminar, TU Berlin, Summer 2008.
- Co-organizer (with Brant Jones, Matt Kahle, and Beth Morris) of the 2007 Graduate Student Combinatorics Conference (GSCC), held at the University of Washington, April 21-22, 2007.

Other Service

- Member of Hiring Committee, Dept of Math, Texas State, Fall 2023.
- Member of Tenure & Promotion Committee (W. Hindes), Dept of Math, TSU, 2023 present.
- Member of Strategic Planning Committee, Dept of Math, Texas State U, Dec 2022 present.
- Member of Lecturer Review Committee, Dept of Math, Texas State U, Fall 2022 present.
- Chair of Colloquium Committee, Dept of Math, Texas State U, Fall 2019-Spring 2022.
- Chair of Math 3377 Teaching Forum, Dept of Math, Texas State U, Spring 2020 present.
- Member of Policy Review Committee, Dept of Math, Texas State U, Fall 2019.
- Member of Listening Committee, Dept of Math, Texas State U, Fall 2021-present.
- Member of Graduate Expo Committee, Dept of Math, Texas State U, Fall 2018 and Fall 2019.
- Mentor for entering Assistant Professor Christine Lee, Dept of Math, Fall 2022-present.
- Mentor for Graduate Instructional Assistants Hari Priya Gadhiraju (Fall 2022-current), Stephanie Dille (Spring 2022), Taylor Solis (Fall 2021-2023), Emory Cuzze (Fall 2020), Anthony Tucci (2019-2021), Kamal Bastola (2017-2019) and Zeliha Bicak (2018-2020), Texas State U
- Member of Colloquium Committee, Dept of Math, Texas State, Sept 2016 -present.
- Speaker at Math Department Symposium and Recruitment Fair, Texas State, Nov 18, 2016.
- Topology Qualifying Exam, Dept of Math, Texas State, Fall 2017 -present.
- Algebra Qualifying Exam, Dept of Math, Texas State, Fall 2019 present.
- Member of American Mathematical Society
- Speaker at NotSoMath, Austin (series of math-related talks/events aimed at the general public, organized by Pedro Morales from UT Austin), April 5, 2017.

January 2024