Bryce Frederickson | Curriculum Vitae

Department of Mathematics – Emory University
400 Dowman Drive, Atlanta, GA 30322

✉ bryce.frederickson@emory.edu • Updated October 1, 2025

Education

Emory University   **2020–Present**
Ph.D. Student in Mathematics

Utah State University   **2020**
B.S. in Mathematics with University Honors

Awards and Honors

NSF Graduate Research Fellowship Program   **2020–2025**
National Science Foundation

Goldwater Scholarship   **2019–2020**
Barry Goldwater Scholarship & Excellence in Education Foundation

Undergraduate Research Fellowship   **2014–2015, 2017–2020**
Utah State University

Peak Prize Undergraduate Researcher of the Year   **2019**
Utah State University

Publications

- Frederickson, B., Kamčev, N., Liebenau, A., Van de Voorde, G. "A new family of Sidorenko linear configurations." Book chapter in *2023 Matrix Annals* (2025), pp. 711–716.

- Frederickson, B., Yepremyan, L. "Vector space Ramsey numbers and weakly Sidorenko affine configurations." *Quarterly Journal of Mathematics* (2025), haae060.

- Frederickson, B., Rödl, V., Sales, M. "A note on the induced Ramsey theorem for spaces." *Combinatorial Theory*, 4(2) (2024).

- Araujo, I., Frederickson B., Krueger R., Lidický B., McAllister T., Pfender F., Spiro S., and Stucky E. "Triangle percolation on the grid." *Discrete & Computational Geometry* (2024), pp. 1-25.

- Frederickson B., Michel L. "Circuit decompositions of binary matroids." *SIAM Journal on Discrete Mathematics*, 38 (2) (2024), pp. 1193-1201.

- Coskey S., Frederickson B., Mathers S., and Yan H. "On splitting and splittable families." *Australasian Journal of Combinatorics*, 82 (3) (2022), pp. 268-296.

- Brown D., Culver E., Frederickson B., Tate S., Thomas B. "Entropy of tournament digraphs." *Linear Algebra and its Applications*, 584 (2020), pp. 371-393.

- Brown D., Frederickson B. "Rényi Ordering of Tournaments." *Journal of Combinatorial Mathematics and Combinatorial Computing*, 114 (2020), pp. 59-76.

Preprints

- Borgwardt, S., Dvořák, Z., Frederickson, B., Nix, A., Yoo, Y. "Improved Decomposition Bounds for Partition Polytopes and Odd-Covers." Submitted. arXiv:2507.12748.

- Bucić M., Frederickson B., Müyesser A., Pokrovskiy A., Yepremyan L. "Towards Graham's rearrangement conjecture via rainbow paths." Submitted. (arXiv:2503.01825)

- Campbell R., Davies J., Distel M., Frederickson B., Gollin P., Hendrey K., Hickingbotham R., Wiederrecht S.,

Wood D., Yepremyan L. "Treewidth, Hadwiger Number, and Induced Minors." Submitted. (arXiv:2410.19295)
- Ferber A., Frederickson B., Mao D., Yepremyan L., Zhu Y. "Regular bipartite decompositions of pseudorandom graphs." Submitted. (arXiv:2410.12981)
- Borgwardt S., Buchanan C., Culver E., Frederickson B., Rombach P., Yoo Y. "Path odd-covers of graphs." Submitted. (arXiv:2306.06487)

Presentations

- "Turán and Ramsey problems in vector spaces over finite fields." Invited talk, Banff International Research Station (BIRS), Canada, September 9, 2025.
- "Turán and Ramsey problems in vector spaces over finite fields." LSU Combinatorics Seminar (virtual), Louisiana State University, September 20, 2024.
- "Turán and Ramsey problems in vector spaces over finite fields." Graduate Student Combinatorics Conference, Pittsburgh, PA, March 17, 2024.
- "Turán and Ramsey problems in vector spaces over finite fields." Georgia Tech Graph Theory Seminar, Atlanta, GA, November 28, 2023.
- "Upper bounds on Ramsey numbers for vector spaces over finite fields." European Conference on Combinatorics, Graph Theory and Applications, Prague, Czech Republic, August 28, 2023.
- "Turán and Ramsey-type Problems for Affine Structures." Canadian Discrete and Algorithmic Mathematics Conference, Winnipeg, Canada, June 5, 2023.
- "Path odd-covers of graphs." Monash Discrete Mathematics Research Group Seminar, Clayton, Australia, April 24, 2023.
- "A new proof of the induced Ramsey theorem for projective hypergraphs." Brigham Young University Discrete Math Seminar, Provo, UT, November 10, 2022.
- "The combinatorics of splitting and splittable families." Poster session, Utah State University Student Research Symposium, Logan, UT, April 11, 2019.
- "The combinatorics of splitting and splittable families." Poster session, Joint Mathematics Meetings, Baltimore, MD, January 16–19, 2019.
- "The combinatorics of splitting and splittable families." Poster session, Mathematical Biosciences Institute Summer Undergraduate Capstone Conference, Columbus, OH, August 12, 2018.
- "The combinatorics of splitting and splittable families." Poster session, Idaho Conference on Undergraduate Research, Boise, ID, July 25, 2018.
- "Rényi ordering of tournaments." Utah State University Student Research Symposium, Logan, UT, April 12, 2018.
- "Rényi ordering of tournaments." Intermountain Section, Mathematical Association of America, Logan, UT, March 23–24, 2018.
- "Linear algebra in the land where 1+1=1." Utah Regional Undergraduate Mathematics Conference, Orem, UT, November 1, 2014.

Teaching

Emory University: Main Instructor

Linear Algebra (MATH 221)	Summer 2023
Calculus I (MATH 111),	Fall 2022, Spring 2023

Emory University: Teaching Assistant

Real Analysis II (MATH 412)	Spring 2022
Real Analysis I (MATH 411)	Fall 2021

Emory University: Grader

Graduate Combinatorics I (MATH 535)	Fall 2024
Abstract Vector Spaces (MATH 321)	Spring 2021
Numerical Analysis (MATH 315)	Fall 2020

Park City Mathematics Institute: Teaching Assistant

- ○ Undergraduate Summer School on Extremal Combinatorics — Summer 2025

Utah State University: Recitation Leader

- ○ Linear Algebra (MATH 2270) — Fall 2019, Spring 2020
- ○ Calculus II (MATH 1220) — Fall 2017

Utah State University: Math/Stat Teaching Fellow

- ○ Analysis I (MATH 5210) — Fall 2018

Utah State University: Grader

- ○ Complex Variables (MATH 5270) — Spring 2019
- ○ Algebraic Structures (MATH 4310) — Spring 2018

Other Roles:

- ○ Mentor for the Emory University Undergraduate Directed Reading Program — Fall 2023
- ○ Math tutor for the Utah State University Honors Program — 2018-2020
- ○ Math tutor for the Utah Valley University Math Lab — 2013-2014

Service

Refereed for: *Journal of Combinatorial Theory, Series B*; *Electronic Journal of Combinatorics*; *MATRIX Annals*.