

Melissa Sherman-Bennett

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EDUCATION

- 2021 **University of California at Berkeley**
Ph.D., Mathematics (expected in May)
Advisor: Lauren Williams
Attended Harvard University as an Exchange Scholar 2018-present.
- 2016 **Bard College at Simon's Rock**
B.A., Mathematics, *summa cum laude*.
Attended Budapest Semesters in Mathematics for the 2014-2015 academic year

PUBLICATIONS

Preprints

- 2020 [Positroid cluster structures from relabeled plabic graphs](#)
C. Fraser, M. Sherman-Bennett. arXiv:2006.10247 (submitted)
- 2020 [1324- and 2143-avoiding Kazhdan-Lusztig immanants and k-positivity](#)
S. Chepuri, M. Sherman-Bennett. arXiv:2002.7851 (submitted)

Journal articles

- 2019 [Cluster structures in Schubert varieties in the Grassmannian](#)
K. Serhiyenko, M. Sherman-Bennett, L. Williams. *Proc. Lond. Math. Soc.* (3), 119 (2019) 1694-1744.
- 2019 [Combinatorics of X-variables in finite type cluster algebras](#)
M. Sherman-Bennett. *J. Combin. Theory Ser. A*, 165 (2019), 273-298.
- 2017 [Large induced acyclic and outerplanar subgraphs of 2-outerplanar graphs](#)
G. Borradaile, H. V. Le, M. Sherman-Bennett. *Graphs Combin.* 33, no. 6, 1621-1634, 2017.
- 2017 [Chromatic Ramsey number of acyclic hypergraphs](#)
A. Gyárfás, A.W. N. Riasanovsky, M. Sherman-Bennett. *Discrete Mathematics*, 340:373-378, 2017.

HONORS AND AWARDS:

- 2018 NSF Graduate Research Fellowship
2018 Outstanding Graduate Student Instructor Award, UC Berkeley
2016 Academic Prize for Outstanding Achievement in the Division of Sciences
2015 Martin Neumann Scholarship (Division of Sciences merit award)
2014 Highest Honors (at Budapest Semesters in Mathematics, 2 semesters)

PRESENTATIONS

Many cluster structures in Schubert varieties

- 2020 UC Berkeley Combinatorics Seminar (planned)
- 2020 Online Cluster Algebra Seminar (planned)
- 2020 AMS Fall Sectional Meeting (planned)
- 2020 Cluster Algebras 2020 (virtual)
- 2020 LACIM Combinatorics Seminar, UQAM
- 2020 Mini-Workshop: Superpotentials in Algebra and Geometry, Oberwolfach

Kazhdan-Lustig immanants and k -positive matrices

- 2020 Washington University at St. Louis Combinatorics Seminar (planned)
- 2020 Formal Power Series and Algebraic Combinatorics 2020, virtual (poster)
- 2020 UC Berkeley Combinatorics Seminar
- 2019 Discrete Math Seminar, University of Massachusetts, Amherst

Metric properties of the affine building for $SL(n)$

- 2019 Buildings, Varieties, and Applications, MPI Leipzig

Combinatorics of cluster structures in Schubert varieties

- 2019 SIAM Conference on Applied Algebraic Geometry, University of Bern
- 2019 Formal Power Series and Algebraic Combinatorics 2019, University of Ljubljana
- 2019 AMS Spring Eastern Sectional Meeting, University of Connecticut, Hartford
- 2019 University of Minnesota Combinatorics Seminar
- 2019 Northeastern University GASC Seminar
- 2019 University of Michigan Combinatorics Seminar
- 2018 MIT Combinatorics Seminar
- 2018 Ohio State University Geometry, Combinatorics and Integrable Systems Seminar

Combinatorics of X -variables in finite type cluster algebras

- 2018 Brandeis Combinatorics Seminar
- 2018 AMS Fall Central Sectional Meeting, University of Michigan, Ann Arbor
- 2018 Formal Power Series and Algebraic Combinatorics 2018, Dartmouth College (poster)
- 2018 Encuentro Colombiano de Combinatoria conference, Universidad del Norte (poster)
- 2018 IRIF Enumerative and Analytic Combinatorics Seminar, Universite Paris Diderot
- 2018 Berkeley Combinatorics Seminar

Large induced outerplanar and acyclic subgraphs of planar graphs

- 2016 Joint Math Meetings (poster)
- 2015 Council on Undergraduate Research REU symposium (poster)
- 2015 Women in Mathematics in New England conference, Smith College

TEACHING

2018 Graduate Assistant at Encuentro Colombiano de Combinatoria (ECCO)
2016-2018 Graduate Student Instructor, UC Berkeley
2012-2016 Peer mathematics tutor, Bard College at Simon's Rock

SERVICE

2020-present Harvard-MIT student combinatorics reading group organizer
2020 Mentored undergraduate research in Herchel-Smith program, Harvard University
2018-2020 Directed Reading Program mentor, Harvard University
2018-present Research group mentor, Girl's Angle (Cambridge girl's math club)
2017-2018 Student combinatorics seminar organizer, UC Berkeley

REFEREEING

Journal of Combinatorial Theory Series A
Electronic Journal of Combinatorics