Max Hlavacek

Curriculum Vitæ
Current as of July 8, 2022

1061 Evans Hall
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Education

In Process  University of California, Berkeley
Ph.D., Mathematics (expected)
Advisor: Matthias Beck

2017  Harvey Mudd College
B.S., Mathematics

Research Interests

Geometric combinatorics, including lattice point enumeration problems for polyhedra.

Publications and Preprints

Articles
2020  Subdivisions of Shellable Complexes
M. Hlavacek, L. Solus. Journal of Combinatorial Theory, Series A Vol. 186, Feb. 2022

2018  Random matrix ensembles with split limiting behavior
P. Burkhardt-Guim, P. Cohen, J. Dewitt, M. Hlavacek, S.J. Miller, C. Sprunger, Y. N. Truong Vu, R. Van Peski, K. Yang, and an appendix joint with M. Fernandez and N. Sieger. Random Matrices: Theory and Applications Vol. 7 No. 3., 2018

2018  Summand minimality and asymptotic convergence of generalized Zeckendorf decompositions
K. Cordwell, M. Hlavacek, C. Huynh, S.J. Miller, C. Peterson, Y. N. Truong Vu. Research in number theory, Vol. 4, No. 43, 2018.

2016  A decomposition of parking functions by undesired spaces
M. Dougherty, M. Bruce, M. Hlavacek, R. Kudo, and I. Nicolas. Electronic journal of combinatorics, Vol. 23, Iss. 3, 2018.

Conference Proceedings
2019  Cubical Dehn-Sommerville equations and self-reciprocal cubical complexes
Proceedings of the 2018 Summer Workshop on Lattice Polytopes, World Scientific, 2019.

Presentations

Contributed Talks
2018  Cubical Dehn-Sommerville equations
Summer Workshop on Lattice Polytopes, Osaka

2018  Poster presentation at Einstein Workshop on Geometric and Topological Combinatorics, Berlin

Signed Poset Polytopes
2021  Queer and Trans Mathematicians in Combinatorics Conference, Fields Institute
Subdivisions of Shellable Complexes
2022 Poster presentation at Formal Power Series and Algebraic Combinatorics, online
2021 Poster presentation at an Algebraic Combinatorics Virtual Expedition, online

Invited Talks

Cubical Dehn-Sommerville equations
2019 Lattice polytopes, with a view towards Geometry and Applications, Edinburgh
2019 UC Berkeley Combinatorics Seminar
2019 San Francisco State University AGC Seminar

Signed Poset Polytopes
2022 Algebra, Combinatorics, and Geometry Seminar SFSU
2022 JMM, AMS Session: Geom. and Top. Combinatorics
2021 Gems of Combinatorics
2021 Graduate Online Combinatorics Colloquium, Online
2020 Combinatorics Seminar, Otto von Guericke University Magdeburg
2019 Commutative Algebra and Lattice Polytopes, RIMS, Kyoto University

Subdivisions of Shellable Complexes
2023 Characteristic Polynomials of Hyperplane Arrangements and Ehrhart Polynomials of Convex Polytopes, RIMS, Kyoto University (upcoming)
2022 Online Combinatorics Seminar, Washington University
2021 AMS Session: Geom. and Top. Comb. and their Applications, Online
2020 Combinatorics Seminar, Freie Universität Berlin
2019 Commutative Algebra and Lattice Polytopes, RIMS, Kyoto University

Awards and Certificates

2020 Certificate of Remote Instruction, UC Berkeley GRI Fellows Program
2019 Outstanding GSI Award, UC Berkeley
2017 Chancellor’s Fellowship, UC Berkeley
2017 Greever Mathematical Research Prize, Harvey Mudd College Mathematics Department

Teaching

UC Berkeley
2022 GSI for Math 10B: Methods of Mathematics: Calculus, Statistics and Combinatorics
2021 GSI for Math 74: Transition to Upper Division Mathematics
2021 GSI for Math 10B: Methods of Mathematics: Calculus, Statistics and Combinatorics
2020 GSI for Math 10A: Methods of Mathematics: Calculus, Statistics and Combinatorics
2019 Instructor for Math 55: Discrete Mathematics
2019 GSI for Math 54: Linear Algebra and Differential Equations
2018 GSI for Math 54: Linear Algebra and Differential Equations

Harvey Mudd College
2014-2016 Grader for courses including Discrete Math, Linear Algebra, Multivariable Calculus, and Analysis II
2015-2017 Math Tutor for the Academic Excellence program
Other
2018 Counselor at Summer MAthematics Research Training, Texas AM University
2017 Counselor at PROMYS, Boston University

Workshops and Professional Development

2022 Summer @ ICERM (summer research TA)
2022 Ehrhart polynomials: inequalities and extremal constructions at AIM, San Jose
2021 Combinatorial Polynomials at REACT Online Conference (teaching assistant)

Service

2021- Core Member of Lavender Phoenix
2021 Co-Organizer of 41st Bay Area Discrete Math Day, UC Berkeley/Online
2021 Co-Organizer of Talking about Combinatorial Objects Student Seminar, UC Berkeley
2020 Committee member of the Dragonfruit Network at Asian Pacific Islander Equality
2020 Directed Reading Program Mentor at UC Berkeley
2019 - 2020 Equity and Inclusion Committee member at UC Berkeley Math Department
2018- Unbounded Representation (URep) Member at UC Berkeley
2017-2018 Volunteer with Youth Support Program at Willard Middle School
2017- Volunteer with Asian Pacific Islander Equality