

# Max Hlavacek

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## Curriculum Vitæ

Current as of July 8, 2022

1061 Evans Hall  
mhlava@math.berkeley.edu

## Education

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

2017            **Harvey Mudd College**  
B.S., Mathematics

## Research Interests

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Geometric combinatorics, including lattice point enumeration problems for polyhedra.

## Publications and Preprints

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### 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

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### 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
- 2021            **Signed Poset Polytopes**  
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**

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- 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**

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#### **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

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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

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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