

# Yulia Alexandr

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**Research interests**      combinatorics, algebraic geometry, applied algebra

**Education**      **University of California, Berkeley**      2019–present  
PhD in Mathematics  
Advisor: Bernd Sturmfels

**Wesleyan University**      Class of 2019  
BA in Mathematics with High Honors  
Advisor: Karen Collins  
Thesis: *Combinatorial Nullstellensatz: Various Proofs, Extensions & Applications*

**Awards and fellowships**      NSF Graduate Research Fellowship      2020  
Chancellor’s Graduate Fellowship (UC Berkeley)      2019  
Phi Beta Kappa (Connecticut Gamma Chapter)      2019  
Rice Prize (Wesleyan University)      2019  
*awarded to a senior for excellence in mathematics*  
Rae Shortt Prize (Wesleyan University)      2018  
*awarded to a junior for excellence in mathematics*

**Publications**      **Logarithmic Voronoi cells**  
with Alexander Heaton.  
To appear in *Algebraic Statistics*, 2020.

**Computing a logarithmic Voronoi cell**  
with Alexander Heaton and Sascha Timme.  
Published online at *HomotopyContinuation.jl*, 2019.

**Recovering Conductances of Resistor Networks in a Punctured Disk**  
with Brian Burks, Sunita Chepuri, and Patricia Commins.  
Submitted, but available on *arXiv*, 2019.

**Deformations of the Weyl Character Formula for  $SO(2n + 1, \mathbb{C})$  via Ice Models**  
with P. Commins, A. Embry, S. Frank, Y. Li, and A. Vetter.  
Available on *arXiv*, 2018.

**Growth of Meandric Numbers**  
with Kayla Cummings and Edgar Jaramillo Rodriguez.  
Transcription in *DIMACS-DIMATIA REU booklet (pp. 33-36)*, 2017.

Teaching	<b>Teaching assistant (Wesleyan University)</b> MATH 231: Probability Theory Instructor: Han Li	Fall 2018
	<b>Teaching assistant (Wesleyan University)</b> MATH 274: Graph Theory Instructor: Karen Collins	Spring 2018
	<b>Teaching assistant (Wesleyan University)</b> MATH 231: Probability Theory Instructor: Felipe Ramírez	Fall 2017
Talks	<i>Logarithmic Voronoi Cells</i> Nonlinear Algebra Seminar Online	April 2020
	<i>Ice Models for Types A and B</i> (two talks) Berkeley Combinatorics Reading Seminar	October 2019
	<i>Linear Spaces and Grassmannians</i> Max Planck Institute for Mathematics in the Sciences (Leipzig, Germany)	June 2019
	<i>Combinatorial Nullstellensatz</i> Wesleyan University Thesis Defense	January 2019
	<i>Visibility Graphs of Staircase Polygons</i> Berkeley Undergraduate Number Theory Conference	April 2018
Skills	<b>Programming</b> Macaulay2, SAGE, C, C++, $\text{\LaTeX}$ , OCaml, SML, HTML, Python.	
	<b>Languages</b> English (fluent), Russian (native), Hebrew (intermediate)	
Service and outreach	Noetherian Ring, member, <i>UC Berkeley</i>	2019–present
	Math Club graduate school panel, panelist, <i>Wesleyan University</i>	2020
	Directed reading program (DRP), mentor, <i>UC Berkeley</i>	2020
	Unbounded Representation (URep), officer, <i>UC Berkeley</i>	2019–2020