



University of Kentucky
College of Arts & Sciences
Mathematics

Kaitlin Bruegge

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Dear members of the search committee,

My name is Kaitlin Bruegge, and I am currently a graduate student at the University of Kentucky working in geometric combinatorics. I will receive my Ph.D. in May 2023 under the direction of my advisor, Dr. Benjamin Braun. I am writing to apply for the position of **POSITION TITLE** at **SCHOOL NAME**. I am particularly excited about **a thing from their website**. I am also interested in learning more about **another thing from their website**.

Below are some highlights of my file:

- 1) **I am passionate about teaching and have a wide breadth of experience.** I have had the opportunity to work with students having a wide range of backgrounds and interests in a variety of courses, in-person and virtual (in both synchronous and asynchronous formats). I have been fortunate to be involved in the development and teaching of co-requisite instruction for both college algebra and general education math courses. These co-requisites are designed to offer additional support with content and study skills to students who may not succeed otherwise in these courses. Additionally, I have had the opportunity to be primary instructor for a two-course sequence of math for pre-service elementary teachers and will be serving as assistant coordinator for these courses in Spring 2023. Also, I have facilitated recitations for precalculus, calculus, and a finite math course for business students that included introductory matrix algebra with business applications. In Spring 2022, I received the Carl Lee Excellence in Teaching Award, which recognizes graduate teaching assistants in the department of mathematics who demonstrate outstanding performance in teaching.
- 2) **I have an active research program in topics that are accessible to advanced undergraduates.** I broadly work in algebraic and geometric combinatorics and have interests in graph theory. Much of my current work focuses on studying geometric properties of lattice polytopes, employing theoretical, computational, and probabilistic methods. My participation in both in-person and online research workshops has introduced me to other topics in algebraic and topological combinatorics and provided collaborative opportunities. I have four papers currently under review and one other project with a manuscript in preparation. I also have ideas for extending some of these projects in ways that would welcome the contributions of undergraduate students in mathematics and computer science.
- 3) **I am active in service in my department and the wider mathematical community.** I've had the honor of serving as Co-chair of my department's Graduate Student Council, advocating for the needs of graduate students and representing their voices in matters of

hiring, promotion, and recruitment. I have also served as an officer in the UK chapter of the Association for Women in Mathematics. This year, I am also an organizer of the Graduate Online Combinatorics Colloquium, which provides opportunities for graduate students all over the world to give talks about their research and connect with each other.

With my application, I have included a curriculum vitae, undergraduate and graduate transcripts, and statements concerning teaching philosophy, current and future research, and commitments to diversity, equity, and inclusion. You should also receive five letters of recommendation on my behalf. These will include letters from Benjamin Braun (benjamin.braun@uky.edu), Robert Davis (rdavis@colgate.edu), Khrystyna Serhiyenko (khrystyna.serhiyenko@uky.edu), and Martha Yip (mpyi222@uky.edu), as well as a letter specifically addressing teaching from Chloe Urbanski Wawrzyniak (ChloeUWawrzyniak@uky.edu).

Please let me know if I can supply any additional information. I am happy to provide further evidence of teaching effectiveness, such as student evaluations or other materials upon request. You can contact me via email at kaitlin_bruegge@uky.edu or by phone at (859) 609-8220.

Thank you in advance for your time and consideration. I look forward to hearing from you.

Sincerely,
Kaitlin Bruegge



University of Kentucky