Ashley K. Wheeler

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Summary

Math Ph. D. who loves problem-solving, writing/learning code, and presenting hard topics in an attractive, down-to-earth way to a diverse audience.

Languages

LaTeX, Python (pandas, BeautifulSoup/selenium, json), HTML/CSS, JavaScript (d3.js).

Experience

Research Mentor, Research Experience for Undergraduates (REU)

- *Georgia Institute of Technology (Georgia Tech), Summer 2022.* Toric structure of prinicpal 2-minor ideals. Applications in integer programming, mirror symmetry, coding theory, algebraic statistics, and geometric modeling. Presented at the Joint Math Meetings in January 2023.
- *Mathematical Sciences Research Institute (MSRI), Summer 2016.* REU created to attract students from underrepresented backgrounds. Published a paper on sandpile groups: Arixv version.
- *MSRI, Summer 2009.* Coding theory. Produced 6 new error-correcting codes.

Coach, William Lowell Putnam Math Competition

- Prestigious math competition. Average national score 0/120.
- *Mount Holyoke College (MHC), 2018-2019.* Top score 10/120.
- *University of Arkansas, 2016.* Top score: 26/120.

Visiting Assistant Professor

- *Georgia Tech, Fall 2021-Present.* Taught linear algebra and intro to commutative algebra (grad level course).
- *MHC, Summer 2018-Summer 2021.* Women's college. Taught calc I-III, group theory, ring theory, and discrete math, on-site and remotely.
- *James Madison University, Fall 2017-Spring 2018.* Taught calc I-II and linear algebra with differential equations. Used Sage in assignments.
- *University of Arkansas, Fall 2014-Spring 2017.* Taught calc I and III, survey of calculus, and discrete math.

Projects

Coding Blog (Summer 2017-present). Reflections and progress on learning code (C, Python, JavaScript).

Fitbit Stats (Spring 2023). Final project for the Erdös Institute data visualization minicourse. Dashboard displaying some of my Fitibit data from the past year. Primarily made using JavaScript.

Calculus Videos (Spring 2022). Youtube videos featuring topics in a first semester calculus course.

Virtual Inspiring Talk: Defining Equations for Matroid Varieties (Fall 2020). Published project on matroid varieties using linear algebra (Arxiv version). Youtube playlist targeted at undergraduates. Features advice for members of underrepresented groups who wish to pursue a Ph. D. in mathematics.

Honors and Awards

- Honoree, Mathematically Gifted and Black, 2022. Network of Minorities in Mathematical Sciences.
- 1st Place Individual, Kansas Collegiate Mathematics Competition. Hosted by Mathematical Association of America (MAA), 2008.
- 19/120. Putnam competition, 2007. Fung's Achievement Award for highest score at my university.
- Successful, Mathematical Contest in Modeling (MCM), Consortium for Mathematics and Its Applications (COMAP), 2007.
- 2nd Place, S. Thomas Parker Mathematical Competition, Kansas State University, 2006.

Education

University of Michigan — Ann Arbor, MI
Ph. D. in Mathematics — *2014*

- Thesis: *Ideals Generated by Principal Minors*, under Mel Hochster. Solving systems of polynomial equations. Published in two parts: Arxiv version of part 1 and part 2.

Kansas State University — Manhattan, KS
Bachelor's in Mathematics — *2008*

- McNair Scholar
- Nominee, Barry Goldwater Scholarship