

# Bhawesh Mishra

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## EDUCATION

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- PhD in Mathematics (Expected May, 2023) - The Ohio State University  
GPA: 3.87; Advisor: Dr. Vitaly Bergelson.
- B.A. in Mathematics (Obtained August 2017) - Berea College, KY  
GPA: 3.9, Summa Cum Laude
- Visiting Student (Jan 2016 - July 2016) - University of Wisconsin-Madison  
GPA: 4.0

## PUBLICATIONS AND PREPRINTS

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1. Intersective Polynomials Arising from Sums of Powers. *Comm. Algebra*. 2021. 49(6). 2633-2644. [Journal Link](#).
2. Polynomials Consisting of Quadratic Factors with Roots Modulo Any Positive Integer. *Amer. Math. Monthly*. 2022, 129(2). 178-182. [Journal Link](#).
3. Minimally Intersective Polynomials with Arbitrarily Many Quadratic Factors. *Integers*. 2022. 22. [Journal Link](#).
4. Polynomials over Ring of Integers of Global Fields that have Roots Modulo Every Finite Indexed Subgroup. *J. Algebra*. 2022. 608. 239-258. [Journal Link](#). [Preprint Link](#).
5.  $q^{\text{th}}$  Power Residue and Linear Coverings of Vector Space over  $\mathbb{F}_q$ . Submitted to *Finite Fields Appl.* [Preprint Link](#).
6. Intersective Polynomials with Factors of the form  $(x^q - a)$ . Submitted to *Comm. Algebra*. [Preprint Link](#).
7. Quadratic Transforms of Regular Local Rings and Limits of Multi-dimensional Continued Fractions. (Joint Work with Alan Loper). *In Preparation*.

## SERVICE AND INVOLVEMENT.

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JULY 2020 to SEPTEMBER 2022	Treasurer – Mathematics Graduate Student Association (MGSA), The Ohio State University Handling the funding for graduate student activities in the department such as MGSA seminar, happy hours; Representing graduate student interests following the COVID-19 pandemic
SPRING 2022	Graduate Student Representative - Departmental Committee on graduate student health and well-being Responsible for communicating graduate student perspective during designing of a survey to assess graduate student well-being.
FALL 2018 to SUMMER 2019	Graduate Student Representative - Departmental Committee on Diversity and Inclusivity Share graduate student perspectives for a report suggesting the departmental leadership potential steps to enhance inclusivity in the department.

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## UNDERGRADUATE MENTORING

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Mentoring an undergraduate student through a semester long reading project on research mathematics; culminating in a final write-up and presentation. List of students and topics:

- **Gao Yang (Fall, 2021)** - *Local Solvability of Diophantine Equations*.
- **Kabir Belgikar (Spring, 2022)** - *Uniform Distribution Modulo 1 and Diophantine Approximation*.
- **Aaron Yoder (Fall, 2022)** - *Applications of Number Theory to Cryptography*.

## NOTABLE AWARDS

MAY 2022 to MAY 2023	<b>The Presidential Fellowship</b> Most prestigious award for a graduate student, awarded in recognition of research and scholarship (Nominated by the mathematics department and awarded through university wide competition)
APRIL 2022	<b>AMS Catalyzing Advocacy in Science and Engineering (CASE) Fellowship</b> One of two fellows chosen by the American Mathematical Society to attend a 3.5 day long workshop in DC about STEM policy in Washington DC
SUMMER 2020	<b>NSF Mathematical Sciences Graduate Internship (MSGI)</b> Did not attend due to delay in passport renewal affected by COVID-19.
MAY 2019 to AUG 2019	<b>Student Research Assistant</b> The Ohio State University, Department of Mathematics Stipend with no teaching responsibilities along with full tuition and health insurance subsidy
JAN 2019 to MAY 2019	<b>Tibor Radó Research Associateship (\$2,325 per month)</b> The Ohio State University, Department of Mathematics
AUG 2017 to AUG 2018	<b>University Fellowship,</b> The Ohio State University, Graduate School Awarded through university-wide competition amongst entering graduate students
JUN 2014 to MAY 2017	<b>Ballard-McConnell-Willis Scholarship</b> Largest Scholarship at Berea College, KY; awarded to a student "for demonstrating excellent scholarship, an ability to instill appreciation for mathematics in others and potential for accomplishment"
AUGUST 2013 to JULY 2017	<b>Full Scholarship, Berea College, KY</b> Full tuition, room and board scholarship for entire college career

## TALKS

- *What is a Multidimensional Continued Fraction? WHAT*
- *Elementary Equivalences to the Classical Prime Number Theorem.* The Sarnak Conjecture Learning Seminar. The Ohio State University. Spring 2022.
- *A Derivation of  $\pi = \sum_{i=0}^{\infty} \frac{(-1)^i}{2i+1}$  from 14<sup>th</sup> Century India.* The Reading Classics Seminar. The Ohio State University. Fall, 2021.
- *What is Collatz Conjecture? WHAT IS ...?* Seminar. The Ohio State University. Summer, 2021.
- *Intersective Polynomials and the Polynomial Szemerédi's Theorem.* Student Ergodic Theory and Combinatorial Number Theory Seminar. The Ohio State University. Spring, 2020.
- *Intersective Polynomials and Van der Corput's Sets in  $\mathbb{Z}^d$ .* Student Ergodic Theory and Combinatorial Number Theory Seminar. The Ohio State University. Fall, 2019.