

# Sarasij Maitra

## Curriculum Vitae

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### Research Interests

My area of research is Commutative Algebra. Most of my current research effort is directed towards :

- Berger's Conjecture dealing with the torsion of the Module of Kähler Differentials
- Multiplicity of flat couples of local rings, Hilbert-Kunz Multiplicity
- Homological methods, specifically support of local cohomology
- Studying Classes of reflexive modules over a one-dimensional local ring
- Rees valuations and local quadratic transforms
- Weak and strong  $F$ -regularities

### Education

2016–present **PhD in Mathematics**, *University of Virginia*.

Advisor: Craig Huneke

2014–2016 **M.Math**, *Indian Statistical Institute*, Kolkata.

Completed in May, 2016

2011–2014 **B.Math**, *Indian Statistical Institute*, Bangalore.

Completed in May, 2014

### Experience

#### Papers and Preprints

- Partial Trace Ideals and Berger's Conjecture (submitted)

#### Projects Undertaken

August, 2018–  
current Working on my PhD Theses under the guidance of Prof. Craig Huneke at University of Virginia.

January, 2016  
– May, 2016 Project on Bargaining Games with Time-Independent and Time-Dependent Preferences under Prof. Souvik Roy of Indian Statistical Institute, Kolkata. [ [Project Report Link](#) ]

December,  
2014 Reading Project on Hopf Algebra under Prof. Jyotishman Bhowmick of Indian Statistical Institute, Kolkata.

May, 2013 –  
July, 2013 Indian Academy of Sciences Summer Project on Algebraic Geometry under Prof. Kapil Hari Paranjape at Indian Institute of Science Education and Research, Mohali. [ [Project Report Link](#) ]

## Awards and Achievements

- All-University Graduate Teaching Award, University of Virginia, 2019-2020
- Graduate Research Assistantship supported by Department of Mathematics, University of Virginia for Spring 2020
- Nominated by the Department of Mathematics, University of Virginia to attend MSRI Graduate Summer School and Macaulay2 Workshop, 2019 at Notre Dame
- Graduate Research Assistant supported by Prof. Craig Huneke's NSF grant in Fall 2018
- Awarded 1<sup>st</sup> Division with Distinction in M. Math
- Awarded 1<sup>st</sup> Division with Distinction in B. Math.

## Invited Talks and Poster Presentations

- June 2020 **Poster: An Approach to Berger's Conjecture.**  
Early Commutative Algebra Researchers (eCARs)  
Organizers: Alessandra Constantini, Kyle Maddox, Takumi Murayama
- June, 2020 **A Simple Study of Colength.**  
Graduate Student Seminar, New Mexico State University
- March, 2020 **"Berger's Conjecture from the Viewpoint of an Invariant of the Module of Differentials" –An Approach to Berger's Conjecture.**  
A Zoom Session on Commutative Algebra  
Organizers: Eloísa Grifo, Sean Sather-Wagstaff

## Teaching

- Fall 2020 **Graduate Teaching Instructor, University of Virginia.**  
MATH 1320-200 Calculus II (Online Flipped Model)
- Fall 2019 **Graduate Teaching Instructor, University of Virginia.**  
MATH 1310-001 Calculus I (Flipped Model)
- Spring 2019 **Graduate Teaching Instructor, University of Virginia.**  
MATH 1220-009 A Survey of Calculus II
- Spring 2018 **Graduate Teaching Instructor, University of Virginia.**  
MATH 1210-008 A Survey of Calculus I
- Fall 2017 **Graduate Teaching Instructor, University of Virginia.**  
MATH 1210-007 A Survey of Calculus I
- Spring 2017 **Graduate Teaching Assistant, University of Virginia.**  
MATH 1310-100 Calculus I, MATH 3250-300 Ordinary Differential Equations
- Fall 2016 **Graduate Teaching Assistant, University of Virginia.**  
MATH 1310-500, MATH 1310-700 Calculus I

## Conferences Attended

- June, 2020 **eCARs, Early Commutative Algebra Researchers.**  
Organizers: Alessandra Constantini, Kyle Maddox, Takumi Murayama

- April, 2020 **CAZoom - Virtually bringing together commutative algebra and related fields.**  
Organizers: Juliette Bruce, Sean Sather-Wagstaff
- March, 2020 **A Zoom Special Session On Commutative Algebra.**  
Organizers: Eloísa Grifo, Sean Sather-Wagstaff
- June, 2019 **Conference on Commutative Algebra and its Interaction with Algebraic Geometry In Honor of Bernd Ulrich.**  
University of Notre Dame, Indiana
- Apr, 2019 **Morgantown Algebra Days.**  
West Virginia University, Morgantown, West Virginia
- Oct, 2018 **Fall Central Sectional Meeting.**  
University of Michigan, Ann Arbor, Ann Arbor, MI
- Mar, 2018 **Mini Workshop.**  
University of Virginia
- Nov, 2017 **Workshop on Topics in Algebraic Geometry.**  
University of North Carolina, Chapel Hill

## Skills

- Language English, Bengali, Hindi
- Skills
- Technologies Workable knowledge in Macaulay 2,  $\text{\LaTeX}$ , Python, R, HTML