Asilata Bapat | Curriculum Vitae

Mathematical Sciences Institute, The Australian National University
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Education

The University of Chicago — **Chicago, IL**
PhD in Mathematics. — *2010–2016*
Advisor: Victor Ginzburg.

The University of Chicago — **Chicago, IL**
MS in Mathematics. — *2010–2012*

Massachusetts Institute of Technology — **Cambridge, MA**
SB (Bachelor of Science) in Mathematics with Computer Science. — *2006–2010*
GPA 4.9 out of 5.

Employment

Australian National University (ANU) — **Canberra**
Senior Lecturer (Level C), Mathematical Sciences Institute — *2024–*

Australian National University (ANU) — **Canberra**
Lecturer (Level B), Mathematical Sciences Institute — *2018–2023*

University of Georgia (UGA) — **Athens, GA**
Assistant Professor (Limited Term), Department of Mathematics — *2016–2017*

Papers and preprints

- q-deformed rational numbers and the 2-Calabi–Yau category of type A_2 (with Louis Becker, Anthony Licata)
  Forum of Mathematics, Sigma, 11, e47 (2023).
- Spherical objects and stability conditions on 2-Calabi–Yau quiver categories (with Anand Deopurkar, Anthony Licata)
  Mathematische Zeitschrift 303, 13 (2023).
- Computing the matching distance of 2-parameter persistence modules from critical values (with Robyn Brooks, Claudia Landi, Celia Hacker, Barbara Mahler, Elisabeth Stephenson)
  Preprint.
- Morse-based fibering of the persistence rank invariant (with Robyn Brooks, Claudia Landi, Celia Hacker, Barbara Mahler)
  Research in Computational Topology 2 (2022), pp. 27–62
- A Thurston compactification of the space of stability conditions (with Anand Deopurkar, Anthony Licata)
  Submitted.
- Recollement for perverse sheaves on real hyperplane arrangements
  Journal of Algebra, 568 (2021), pp. 61–90
- The strong topological monodromy conjecture for Coxeter hyperplane arrangements (with Robin Walters)
  Mathematical Research Letters 24 (2017), no. 4, 947–954
- Torus actions and tensor products of intersection cohomology
  Pacific Journal of Mathematics 276 (2015), pp. 19–34
- Lower central series of free algebras in symmetric tensor categories (with David Jordan)
  Journal of Algebra, 373 (2013), pp. 299–311

Academic awards

- Dean's Commendation for Excellence in Education (for Teaching Excellence), ANU, 2021.
- Nadine Kowalsky Fellowship, University of Chicago, 2016.
- Jerry Rao Fellowship, University of Chicago, 2014–2015.

- Young Researcher at the 2nd Heidelberg Laureate Forum, Heidelberg, Germany, 2014.
- Lawrence and Josephine Graves Teaching Prize, University of Chicago, 2014.
- Amick Fellowship, University of Chicago, 2010–2012.
- Phi Beta Kappa, MIT, 2010.
- Rogers Prize for best paper, Summer Program in Undergraduate Research, MIT, 2009.
- Indian National Mathematical Olympiad (INMO) scholarship, 2005.
- International Astronomy Olympiad, Silver medal (2005) and Gold medal (2003).

Teaching

Australian National University

- **2023 Semester 2**: Games, Graphs, and Machines (MATH2301)
- **2022 Semester 2**: Games, Graphs, and Machines (MATH2301)
- **2021 Spring Semester**: Mathematics and Applications 2 (MATH1014)
- **2021 Semester 2**: Games, Graphs, and Machines (MATH2301)
- **2021 Summer Session**: Representation theory (IBL reading course)
- **2020 Spring Semester**: Mathematics and Applications 2 (MATH1014)
- **2020 Semester 1**: Perverse Sheaves (half of a special topics course on Perverse Sheaves and Deligne–Lusztig theory)
- **2020 Semester 2**: Games, Graphs, and Machines (MATH2301)
- **2019 Semester 1**: Advanced Studies Extension for Analysis I (MATH2320).
- **2018–2019 Summer Session**: Introduction to the theory of Computation (reading course)
- **2018 Semester 2**: Mathematical Foundations for Actuarial Studies (MATH 1113), Linear Algebra.
- **2018 Semester 1**: Advanced Studies Extension for Analysis I (MATH2320).

University of Georgia

- **Fall 2017**: Precalculus (Math 1113).
- **Fall 2017**: Graduate Algebra (Math 8000).
- **Spring 2017**: Calculus II for Science and Engineering (Math 2260).
- **Fall 2016**: Calculus I for Science and Engineering (Math 2250).

University of Chicago

- **2015–2016**: IBL Honors Calculus I and II (Math 161 and 162).
- **2014–2015**: Studies in Mathematics I and II (Math 112 and 113).
- **Summer 2014**: Linear Algebra (Math 196).
- **2013–2014**: Calculus I, II, and III (Math 151, 152, and 153).
- **2012–2013**: Calculus I, II, and III (Math 151, 152, and 153).
- **2011–2012**: College fellow for Honors Algebra I, II, and III (Math 257, 258, and 259).

Canada/USA Mathcamp

- **Summer 2015**: Academic coordinator and mentor. Coordinated the academic schedule, invited visiting speakers, and taught several undergraduate-level courses.
- **Summer 2013**: Mentor. Taught several undergraduate-level courses.
- **Summer 2012**: Mentor. Taught several undergraduate-level courses.

Talks and presentations

- **Feb 2024**: Winterbraids, Montpellier (mini-course)
- **Jan 2024**: Applied and computational algebraic geometry, Isaac Newton Institute, University of Cambridge
- **Nov 2022**: Tensor categories in Sydney, University of Sydney
- **Nov 2022**: Lie groups seminar, Massachusetts Institute of Technology, online
- **Aug 2022**: QUACKS II, The University of Oregon
- **Jun 2022**: AMSI winter school 2022, The University of Queensland
- **May 2022**: Algebra & discrete mathematics seminar, UC Davis, online
- **Apr 2022**: FD Seminar, online
- **Mar 2022**: LAGOON webinar, online

- **Mar 2022**: Paris algebra seminar, online
- **Feb 2022**: Geometry, physics, and representation theory seminar, Northeastern University
- **Feb 2022**: Braids in representation theory and algebraic combinatorics, ICERM, Brown University
- **Dec 2021**: Special session on Topology, AustMS 2021, online
- **Nov 2021**: EmacsConf 2021, online
- **Jun 2021**: Dynamical Systems in Triangulated Categories and Surfaces (DiTS), online
- **May 2021**: AMS special session on geometric and categorical methods in representation theory, online
- **Jan 2021**: RepNet Virtual seminar, online
- **Nov 2020**: Algebra Seminar, University of Georgia
- **Feb 2020**: New Connections in Representation Theory, Mooloolaba, Queensland
- **Jan 2020**: Derived Days workshop 2020, University of Sydney
- **Jun 2019**: Triangulated Categories in Geometry and Representation Theory, University of Sydney
- **Feb 2019**: Women of Mathematics: a one-day meeting at the ANU, Australian National University
- **Feb 2019**: Pure Mathematics Seminar, University of Queensland
- **Dec 2018**: Special session in Representation Theory, AustMS 2018, University of Adelaide
- **May 2018**: Pure mathematics seminar, University of Melbourne
- **Dec 2017**: Future Directions in Representation Theory, University of Sydney (poster)
- **Nov 2017**: Workshop on Topics in Algebraic Geometry, University of North Carolina at Chapel Hill
- **Jul 2017**: Canada/USA Mathcamp 2017, University of Puget Sound
- **Mar 2017**: Geometric representation theory seminar, University of Toronto
- **Mar 2017**: Algebraic Geometry, Arithmetic Geometry, and Commutative Algebra Seminar, University of South Carolina
- **Mar 2017**: Special session on Geometric Methods in Representation Theory, AMS Southeastern Spring Sectional Meeting, Charleston
- **Jan 2017**: Special session on New Developments in Noncommutative Algebra and Representation Theory, AMS Joint Mathematical Meeting, Atlanta
- **Dec 2016**: Mathematics Seminar, Indian Institute of Science Education and Research, Pune
- **Nov 2016**: Algebra Seminar, University of Georgia
- **Sep 2016**: Algebra Seminar, University of Georgia
- **Jun 2016**: Young Women in Representation Theory, University of Bonn
- **Feb 2016**: Algebraic Geometry Seminar, Ohio State University
- **Jan 2016**: Algebra Seminar, University of Alberta
- **Oct 2015**: AlGeCom 12, University of Michigan (poster)
- **Oct 2015**: AMS Central Fall Sectional Meeting, Loyola University (poster)
- **Sep 2015**: Algebraic Geometry/Commutative Algebra Seminar, University of Notre Dame
- **May 2015**: Oberseminar Representation Theory, University of Bonn
- **May 2015**: Number Theory and Algebraic Geometry Seminar, Katholieke Universiteit Leuven
- **May 2015**: Oberseminar Algebra, Mathematisches Institut, University of Cologne
- **Jul 2014**: Mathematics Seminar, Indian Institute of Science Education and Research, Pune
- **Jun 2014**: Summer school on quiver Hecke algebras, IESC Cargèse (expository)
- **May 2014**: Workshop on Yangians and quantum loop algebras, Austin (expository)