AGNIVA ROY

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EMPLOYMENT

Louisiana State University   *Fall 2023 onwards*
Postdoctoral Researcher

EDUCATION

Georgia Institute of Technology   *Aug 2017 - Aug 2023*
PhD
Department of Mathematics
College of Sciences

Indian Statistical Institute   *July 2015 - May 2017*
M. Math

Indian Statistical Institute   *July 2012 - May 2015*
B. Math (*Hons*)

RESEARCH

My current interests are in contact and symplectic geometry, and applications to smooth low dimensional topology. My advisor is John Etnyre. I am also interested in general higher dimensional contact topology, particularly in constructions and invariants of high-dimensional Legendrian submanifolds, and exploring their connections to various fields.

PAPERS AND PREPRINTS

1. Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, joint with John Etnyre, Hyunki Min, Lisa Piccirillo `https://arxiv.org/abs/2305.16207`

2. Constructions and Isotopies of Higher Dimensional Legendrian Spheres `https://arxiv.org/abs/2211.00773`

3. Symplectic Fillings and Cobordisms of Lens Spaces, joint work with J. Etnyre
   accepted to Transactions of the AMS, `https://arxiv.org/abs/2006.16687`

SEMINARS AND TALKS GIVEN AND UPCOMING

Symplectic Constructions using contact Lens Spaces, Cornell Topology Seminar, November 2023

Lagrangian Fillings and Demazure Weaves, Arbitsgemeinschaft 2341 on Cluster Algebras, Oberwolfach, October 2023

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, Trisectors' Workshop, UC Davis, June 2023

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, SEC Workshop, University of Alabama, June 2023

Constructions and Invariants of High Dimensional Legendrians, Moab Topology Conference, May 2023

Constructions and Invariants of High Dimensional Legendrians, Geometry Topology seminar, Georgia Tech, April 2023

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, AMS Special Session Spring 2023 Southeastern Sectional

Open Books, Contact Structures, and Legendrian submanifolds, Indian Statistical Institute, Kolkata, January 2023

Isotopies and Invariants of High Dimensional Legendrians, Topology Seminar, LSU, Fall 2022

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, Topology Seminar, University of Iowa, Fall 2022

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, Symplectic Theory and Gauge Theory Seminar, Columbia University, Fall 2022

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, Topology Seminar, IU Bloomington, Fall 2022

Embeddings of Lens Spaces and Rational Homology Balls in Complex Projective Space, AMS Special Session Fall 2022 Southeastern Sectional

Constructions and Isotopies of Higher Dimensional Legendrian Spheres, Symplectic Zoominar

Symplectic Fillings and Cobordisms of Lens Spaces, AMS Special Session Fall 2021 Southeastern Sectional (virtual)

Legendrian Contact Homology and Morse Flow Trees, GT GAPS Online Seminar

Lightning talk, *Constructions and Invariants of Higher Dimensional Legendrian Spheres*, Tech Topology Summer School 2021 (Research talk)

Symplectic Fillings and Cobordisms of Lens Spaces, NCNGT 2021 (Research talk)

Symplectic Geometry and Contact Topology, Graduate Student Seminar, WashU St Louis.

Symplectic Fillings and Cobordisms of Lens Spaces, GSTGC 2021, IU Bloomington (Research talk)

Legendrian Contact Homology and applications, Online Geometry Topology Seminar organised by IISER Mohali group

Lightning talk, *Symplectic Fillings and Cobordisms of Lens Spaces*, Tech Topology Conference (Research talk)

Regular speaker at Geometry Topology Student seminar at Georgia Tech

CONFERENCES AND WORKSHOPS ATTENDED

- Trisectors' Workshop, Summer 2023
- SEC Workshop, Summer 2023
- Moab Topology Conference, Spring 2023
- Tech Topology, December 2022
- SYNC, UC Davis, Summer 2022
- MSRI Summer School on Floer Homotopy Theory, Summer 2022
- Kylerec 2022
- Tech Topology Summer School 2021
- NCNGT 2021
- GSTGC 2021, IU Bloomington

- Tech Topology 2020
- UCLA Conference on Heegaard Floer and Contact Topology, Jan 2020
- Tech Topology 2019
- Graduate Students Conference in Algebra, Geometry and Topology, Temple University, 2019
- Tech Topology 2018
- Bob Gompf Birthday Conference on low dimensional manifolds, UT Austin, July 2018
- Topology Students' Workshop, Georgia Tech, June 2018
- Bloomington Geometry Workshop, June 2018
- Tech Topology 2017
- K Theory and Characteristic Classes, ISI Bangalore, 2016
- Zeroes and related topics in Number Theory, IISc Bangalore, 2016

TEACHING AND MENTORING

Lead Instructor   *Louisiana State University*
- Math 1530 (Differential Calculus) - Fall 2023
- Math 1540 (Integral Calculus) - Spring 2024

Lead Instructor   *Georgia Tech*
- Math 1552 (Calculus II) - Summer 2019
- Math 3406 (Second Course in Linear Algebra) - Spring 2020
- Math 2603 (Discrete Mathematics) - Summer 2020, Spring 2021

TA   *Georgia Tech*
- Math 1552 (Calculus II)
- Math 1553 (Linear Algebra)
- Math 1554 (Linear Algebra)

Head TA   *Georgia Tech*
- Math 1553 (Linear Algebra)

DRP Mentor   *Georgia Tech*
- Mentored Joshua Abraham, undergraduate student at IISER Mohali, on a directed project on Group Actions on Trees, based on Chapters 1- 3 of Office Hours with a Geometric Group Theorist, Spring 2023
- Mentored Songming Liu on a project reading through Chapters 1 and 2 of Differential Topology by Guillemin and Pollack, Spring 2019
- Mentored Songming Liu, undergraduate student at Georgia Tech, on a project reading through Topology by Munkres, Chapters 2 and 3, Fall 2018

REU   *Georgia Tech*
- Mentor, along with Austin Christian, for REU on Legendrian Contact Homology, Summer 2022
- TA for REU on Complex Dynamics, Summer 2018

AWARDS RECEIVED   *Georgia Tech*

- Outstanding GTA for the Year 2020-21
- Outstanding Online TA for Fall 2020
- Outstanding Online Graduate Student Instructor