

Manami Roy

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Research Interests

Number theory and arithmetic geometry within the Langlands Program. Focus: automorphic forms, local-global representation theory, elliptic curves, L-functions, classical modular forms, and computational number theory.

Employment

Assistant Professor

July 2023 - present

Department of Mathematical Sciences, Lafayette College

Peter M. Curran Visiting Assistant Professor

August 2019 - June 2023









Department of Mathematics, Fordham University

Education



PhD.	University of Oklahoma , Norman, OK, USA Advisor: Dr. Ralf Schmidt GPA: 4.0/4.0	2014-2019
M.Sc.	IISER Kolkata , Mohanpur, Nadia, West Bengal, India MS Thesis Advisor: Dr. Saugata Bandyopadhyay and Dr. Kaneenika Sinha GPA: 9.54/10.0 (3.8/4.0)	2011-2014
B.Sc.	Bethune College, University of Calcutta , Kolkata, India	2009-2011

Publications




1. **Prime isogenous discriminant twins over number fields** 🔗, Alexander J. Barrios, Alyson Deines, Maila Hallare, Piper Harris, and **Manami Roy**, to appear in Journal of Number theory (2026).
2. **Towards a classification of p^2 -discriminant ideal twins over number fields** 🔗, Alyson Deines, Asimina S. Hamakiotes, Andreea Iorga, Changningphaabi Namoiyam, **Manami Roy**, and Lori D. Watson, to appear in Research Directions in Number Theory: Women in Numbers VI (2026).
3. **Creating a dynamic database of finite groups** 🔗, Lewis Combes, John W. Jones, Jennifer Paulhus, David Roe, **Manami Roy**, and Sam Schiavone, to appear in LuCaNT (LMFDB, Computation, and Number Theory) Proceedings, Contemp. Math. (2026).
4. **Supercongruences arising from Ramanujan-Sato Series** 🔗, Angelica Babei, **Manami Roy**, Holly Swisher, Bella Tobin, and Fang-Ting Tu, Results Math **80**, 184 (2025).
5. **Local data of elliptic curves under quadratic twist** 🔗, Alexander J. Barrios, **Manami Roy**, Nandita Sahajpal, Darwin Tallana, Bella Tobin, and Hanneke Wiersema, Res. Number Theory **11**, 75 (2025).
6. **Classical and adelic Eisenstein series** 🔗, **Manami Roy**, Ralf Schmidt, and Shaoyun Yi, to appear in Rocky Mountain J. Math. (2024).
7. **Generalized Ramanujan-Sato Series Arising from Modular Forms** 🔗, Angelica Babei, Lea Beneish, **Manami Roy**, Holly Swisher, Bella Tobin, and Fang-Ting Tu, In: Bucur, A., Ho, W., Scheidler, R. (eds) Research Directions in Number Theory. Association for Women in Mathematics Series, vol **33**. Springer (2024).
8. **Dimension formulas for Siegel modular forms of level 4** 🔗, **Manami Roy**, Ralf Schmidt, and Shaoyun Yi, and an appendix by Cris Poor and David S. Yuen, Mathematika **69** (2023), no. 3, 795-840.

9. [The completed standard L-function of modular forms on \$G_2\$](#) , Fatma Çiçek, Giuliana Davidoff, Sarah Dijols, Trajan Hammonds, Aaron Pollack, and **Manami Roy**, Math. Z., **302** (2022), 483-517.
10. [Representations attached to elliptic curves with a non-trivial odd torsion point](#) , Alexander J. Barrios and **Manami Roy**, Bull. London Math. Soc. **54** (2022), 1846-1861.
11. [Local Data of Rational Elliptic Curves with non-Trivial Torsion](#) , Alexander J. Barrios and **Manami Roy**, Pacific J. Math. **318** (2022), no.1, 1-42.
12. [Congruences for dimensions of spaces of Siegel cusp forms and 4-core partitions](#) , Chiranjit Ray, **Manami Roy**, and Shaoyun Yi, Ramanujan J **58**, 1011-1023 (2022).
13. [Paramodular forms coming from elliptic curves](#) , **Manami Roy**, J. Number Theory **233** (2022), 126-157.
14. [On counting cuspidal automorphic representations for \$GSp\(4\)\$](#) , **Manami Roy**, Ralf Schmidt, and Shaoyun Yi, Forum Math. **33** (2021), no. 3, 821-843.
15. [Level of Siegel modular forms constructed via \$sym^3\$ lifting](#) , **Manami Roy**, Automorphic forms and related topics, 225–227, Contemp. Math., **732** (2019), 225-227, Amer. Math. Soc.
16. [Elliptic curves and paramodular forms](#) , University of Oklahoma doctoral dissertation, 2019.

Preprints

17. [The integral Hasse principle for stacky curves associated to a family of generalized Fermat equations](#) , Juanita Duque-Rosero, Christopher Keyes, Andrew Kobin, **Manami Roy**, Soumya Sankar, and Yidi Wang, arXiv preprint, (2025, Submitted).
18. [The quaternionic Maass Spezialschar on split \$SO\(8\)\$](#) , Jennifer Johnson-Leung, Finn McGlade, Isabella Negrini, Aaron Pollack, and **Manami Roy**, arXiv preprint, (2024, Submitted).

Computational Projects

- [Database for Groups](#)  in the L-functions and Modular Forms Database (LMFDB). <https://www.lmfdb.org> 
- [Siegel modular forms](#)  in the L-functions and Modular Forms Database (LMFDB).

Projects Leadership

Women in Number Theory 6, 2023

WIN6 

- Project: Isogenous Discriminant Twins over Number Fields

Rethinking Number Theory 2, 2021

RNT2 

- Project: Elliptic curves with non-trivial isogeny

Teaching Experience

National Institute of Technology (NIT) Calicut, India

Dec, 2025

- During this week-long workshop on Elliptic Curves and Cryptography for undergraduate students, graduate students, postdocs, and early-career faculty, I delivered a lecture series on elliptic curves consisting of five 90-minute lectures.

Lafayette College

2023 - present

- Independent Study: Arithmetic of elliptic curves (Math 391)– Fall 2025
- Abstract Algebra II (Math 352) – Spring 2026
- Abstract Algebra I (Math 351) – Fall 2024, 2025
- Number Theory (Math 328) – Spring 2024
- Discrete Structures (Math 182) – Spring 2023–2025
- Calculus II (Math 162) – Fall 2025 and Spring 2026

- Calculus I (Math 161) – Fall 2023, 2024

Fordham University

2019–2023

- Abstract Algebra I, Linear Algebra I, Multivariable Calculus, Calculus I–II,
- Math for Business (Finite Mathematics), Finite Mathematics

University of Oklahoma

2014–2019

- Primary Instructor: Trigonometry & Precalculus, College Algebra
- TA: Calculus I–II, Discrete Mathematics, Capstone on Unsolved Problems

Grants

- **AMS-Simons Research Enhancement Grant for PUIs**, 2025–2028 (\$10,800)
- **ICMS Research-in-Groups Grant**, 2025 (£11,500 GBP / \$14,459)
- **BIRS Focussed Research Group Grant**, 2025
- **AIM SQuaRE Grants**, 2022–2026 (multiple projects)
- **AMS-Simons Travel Grant**, 2022–2024 (\$6,000)
- Selected for the **INSPIRE (Indian National Science Academy) Faculty Fellowship**, 2022 (\$38,500)

Honors & Awards

- **MAA Project NExT Fellowship (Azure '24)** (2024–25)
- **Best Poster Award**, TORA X (2019)
- **Association for Women in Mathematics travel grant** (2019)
- **MGSA Good Mentor Award**, University of Oklahoma (2019)
- **Department of Mathematics Graduate Fellowship**, University of Oklahoma (2015 - 2019)
- **Harold Huneke Graduate Scholarship**, University of Oklahoma (2016)
- **Richard V. Andree Memorial Scholarship**, University of Oklahoma (2015)
- **Multiple research fellowships in India** (CSIR NET for JRF, GATE, Inspire Fellowship)
- Ranked **First** in M.Sc. (IISER Kolkata, 2014) and **Third** in B.Sc. across University of Calcutta (2011)

Training & Certification

- **The Mathematical Association of America's (MAA) Project NeXT fellowship** [↗](#) (2024-25)
- **The Departmental Teaching Certificate**, Department of Mathematics, University of Oklahoma (2018)
- **Teach College Mathematics** [↗](#), a mandatory course for teaching assistants in the Department of Mathematics, University of Oklahoma (2015)
- **Advanced Tutor Training Programs for Business and Advanced Calculus**, Department of Mathematics, University of Oklahoma (2015)
- **Professional Ethics Training course in Responsible Conduct of Research** [↗](#), conducted by the National Institute of Health [NIH] and National Science Foundation [NSF], University of Oklahoma (2015)
- **Development for International Teaching Assistants** [↗](#), University of Oklahoma (2014)

Invited Talks (Selected)

- **National Institute of Technology (NIT) Calicut, India**, Workshop on Elliptic Curves and Cryptography (2025)
- **Howard University**, Number Theory Seminar (2025)
- **Student Number Theory Seminar**, University of Oklahoma (2025)
- **AWM Research Symposium**, Special Session on Number Theory at PUIs (2025)
- **Texas-Oklahoma Representations and Automorphic forms (TORA) XIV Graduate Student Session**, (2025)
- **AMS Special Session on Rethinking Number Theory**, JMM (2025)
- **Special Session on Recent Developments in Automorphic Forms** (2024)

- **Wesleyan University**, Algebra & Number Theory Seminar (2024)
- **International Conference on Lie Algebras and Number Theory**, NIT Calicut (2024)
- **Oregon State University**, Algebra and Number Theory Seminar (2023)
- **Special Session on Automorphic Forms and L-Functions, AMS Sectional** (2023)
- **Columbia-CUNY-NYU Joint Number Theory Seminar** (2022)
- **University of British Columbia (UBC)**, Number Theory Seminar (2022)
- **Mathematics Colloquium**, Ashoka University, India (2022)
- **Stat-Math Unit Seminar**, ISI Delhi, India (2022)
- **AMS Special Session on Recent Advances on the Langlands Program** (2022)
- **Explicit Methods for Modularity Session** (2022)
- **AMS Special Session on A Showcase of Number Theory at Undergrad Institute** (2022)
- **International Seminar on Automorphic Forms** (2022)
- **Johns Hopkins Number Theory Seminar** (2021)
- **Oregon State University Number Theory Seminar** (2021)
- **PRiME (Pomona Research in Mathematics Experience)** (2021)
- **Queen Mary University of London Algebra and Number Theory Seminar** (2021)
- **Number Theory, Cryptography, and Coding Theory Seminar**, Clemson University (2021)
- **Number Theory Seminar**, Queen's University (2021)
- **VaNTAGe Math** [🔗](#) (2020)
- **Algebra and Number Theory Seminar**, Louisiana State University (2020)
- **Algebra Seminar**, University of North Texas (2020)
- **Workshop on Arithmetic Geometry, Number theory and Computation**, ICERM (2020)
- **Study group in number theory**, the Graduate Center, CUNY (2019)
- **RTG - Coding, Cryptography and Number Theory (CCNT) Seminar**, Clemson University (2017)
- **Algebra Symposium**, University of North Texas (2016)
- **Numerous national and international conference talks**(2016-2024)

Research Workshops/Conferences Participation ---

- **Workshop on Elliptic Curves and Cryptography**, NIT Calicut, India (2025)
- **International Conference on Lie Algebras and Number Theory**, NIT Calicut, India (2024)
- **Arizona Winter School 2024: Abelian Varieties** (2024)
- **AIM Workshop on Analytic, arithmetic, and geometric aspects of automorphic forms** (2024)
- **Siegel modular forms in LMFDB**, ICERM (2023)
- **AIM SQuaRE: Quaternionic modular forms** (2023)
- **LMFDB, Computation, and Number Theory (LuCaNT)** (2023)
- **MSRI/SLMath's Summer Research in Mathematics program** (2023)
- **MRC 2023: Explicit Computations with Stacks** (2023)
- **AIM SQuaRE: Weight three paramodular forms** (2023)
- **Women in Number Theory 5 and 6** (2020 and 2023)
- **Rethinking Number Theory I and II** (2020 and 2021)

Professional Service & Outreach ---

- **Co-organizer:**
 - **Two different seminars of Department of Mathematical Sciences**, Lafayette College (2024-2026)
 - **ProjectNExT panel discussion on Integrating into a new institution**, JMM (2025)
 - **Special Session on Explicit Methods in Arithmetic Geometry**, Fall Eastern Sectional Meeting (2024)

- **AMS Special Session on Women in Automorphic Forms**, JMM (2023)
- **Panel on Fostering Good Collaborations**, AMS Special Session on Rethinking Number Theory, JMM (2023)
- **New Developments in Number Theory Seminar**, POINT (2020-2022)
- **Lunch discussion series: Lunch in the Time of Covid** (2020-2022)
- **TORA IX**, University of Oklahoma (2018)
- **Graduate Student Seminar**, University of Oklahoma (2018)
- **Student Algebra Seminar**, University of Oklahoma (2017)

- **Mentor & Tutor:**

- Talk at Beyond the Lecture Hall: Perspectives from Academia in Student Chapter Seminar Series (2024)
- Undergraduate Directed Reading Program, University of Oklahoma (2016-2018)
- Tutor at Math Center, University of Oklahoma (2014-2019)
- Volunteer for Math Day (math-themed competitions for high schoolers), University of Oklahoma (2014-2019)

- **Department/College Service:**

- Served as an external member of the Economics Department Search Committee (2025)
- Participated in the *Leopard for a Day Program* through Lafayette College Admissions (2024–2025)
- Co-organized Teaching Lunches in the Department of Mathematical Sciences at Lafayette College (2024–2025)
- Conducted teaching observations and provided feedback for adjunct instructors at Fordham University (2020)
- Contributed to the reform of the Math for Business: Finite course at Fordham University (2020)

- **Reviewer:** Pacific J. Math., J. Number Theory, Research in Number Theory, Notices of the AMS, Math Reviews

Computing Skills

Languages: Python, C, Sage, Magma, Mathematica, LaTeX, LMFDB

Memberships

- American Mathematical Society (AMS)
- Mathematical Association of America (MAA)
- Association for Women in Mathematics (AWM)
- Women in Number Theory (WIN)
- POINT (People Online in Number Theory)