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Manami Roy

Department of Mathematical Sciences, Lafayette College, 730 High St, Easton, PA 18042

manamiroy.m@gmail.com manamiroy.github.io

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 2014-2019
Advisor: Dr. Ralf Schmidt

M.Sc. **IISER Kolkata**, Mohanpur, Nadia, West Bengal, India 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 Namoijam, **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 (Math 351) – Fall 2024, 2025
- Number Theory (Math 328) – Spring 2024
- Discrete Structures (Math 182) – Spring 2023–2025
- 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 ($9,000)
- **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)

Honors & Awards

- **MAA Project NExT Fellowship (Azure '24)** (2024–25)
- **MGSA Good Mentor Award**, University of Oklahoma (2019)
- **Best Poster Award**, TORA X (2019)
- **Multiple travel and research fellowships** (AMS, AWM, Inspire Fellowship India, etc.)
- Ranked **First** in M.Sc. (IISER Kolkata, 2014) and **Third** in B.Sc. across University of Calcutta (2011)

Invited Talks (Selected)

- **National Institute of Technology (NIT) Calicut, India**, Workshop on Elliptic Curves and Cryptography (2025)
- **Howard University**, Number Theory Seminar (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)
- **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)
- **Columbia-CUNY-NYU Joint Number Theory Seminar** (2022)
- **University of British Columbia (UBC)**, Number Theory Seminar (2022)
- **Johns Hopkins Number Theory Seminar** (2021)
- Numerous AMS sectional and international conferences (2019–2025)

Professional Service & Outreach

- **Invited speaker:** Beyond the Lecture Hall: Perspectives from Academia, Student Chapter Seminar Series.
- **Co-organizer:** Special Session on Explicit Methods in Arithmetic Geometry in 2024 AMS Fall Eastern Sectional Meeting, AMS Special Session on Women in Automorphic Forms and Panel on Fostering Good Collaborations (JMM 2023), seminars at Lafayette College, Project NExT panel (JMM 2025), New Developments in Number Theory Seminar, POINT (2020-2022), Lunch discussion series: Lunch in the Time of Covid (2020-2022)
- **Reviewer:** Pacific J. Math., J. Number Theory, Research in Number Theory, Notices of the AMS, Math Reviews
- **Mentor & Tutor:** Undergraduate research programs, Math Center and Directed Reading Program at OU, Talk at Beyond the Lecture Hall: Perspectives from Academia in Student Chapter Seminar Series

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)