

Siddhi S. Pathak

Employment

- Jan. 2022 - **Assistant Professor**, *Chennai Mathematical Institute*.
Present
- Aug. 2021 - **INSPIRE Faculty Fellow**, *Chennai Mathematical Institute*.
Dec. 2021
- Aug. 2019 - **S. Chowla Assistant Research Professor**, *Pennsylvania State University*.
Jun. 2021

Education

- 2015–2019 **Ph.D.**, *Queen's University*, Kingston.
Advisor: M. Ram Murty
Special values of L -series, periodic coefficients and related themes
- 2014–2015 **M.Sc.**, *Queen's University*, Kingston.
Advisor: M. Ram Murty
Thesis: The Chowla problem and its generalizations.
- 2011–2014 **B.Sc. (Hons.)**, *Chennai Mathematical Institute (CMI)*, Chennai, India.
Mathematics and Computer Science.

Research Interests

Transcendental and analytic number theory, Modular forms and elliptic functions,
Number theory in function fields

Publications

- A simple proof of Burnside's criterion for all groups of order n to be cyclic, *The Mathematics Student*, Vol. 85, No.s 1-2, January-June (2016), 97-102.
- On a conjecture of Livingston, *Canadian Mathematics Bulletin*, Vol. 60 - 1 (2017), 184-195.
- Evaluation of the Quadratic Gauss sum (with M. Ram Murty), *The Mathematics Student*, Vol. 86, No.s 1-2, January-June (2017), 139-150.
- A vanishing criterion for Dirichlet series with periodic coefficients (with T. Chatterjee and M. Ram Murty), *Contemporary Mathematics*, Vol. 701 (2018), 69-80.
- Special values of derivatives of L -series and generalized Stieltjes constants (with M. Ram Murty), *Acta Arithmetica*, Vol. 184, Issue 2 (2018) 127-138.

- Distribution and Non-vanishing of special values of L -series attached to Erdős functions, *International Journal of Number Theory*, Vol. 15, No. 7 (2019) 1449-1462.
- Relations between certain power series and functions involving zeros of zeta functions (with M. Ram Murty), *Proceedings of Number Theory: Arithmetic, Diophantine and Transcendence*, IIT Ropar, *RMS Lecture Notes Series*, Vol. 26 (2020) 203-222.
- Convolution of values of the Lerch zeta-function (with M. Ram Murty), *Journal of Number Theory*, Vol. 217 (2020) 1-22.
- A note on values of Dedekind zeta-function at odd positive integers (with M. Ram Murty), *International Journal of Number Theory*, Vol. 17 No. 8 (2021) 1753-1764.
- Transcendence of infinite series over lattices, *The Ramanujan Journal*, Vol. 56 (2021) 971-992.
- The Okada space and vanishing of $L(1, f)$ (with M. Ram Murty), *Functiones et Approximatio*, Vol. 66 No. 1 (2022) 35-57.
- On special values of Dirichlet series with periodic coefficients (with Abhishek Bharadwaj), *Journal of Number Theory*, Vol. 238 (2022) 978-1011.
- Linear independence of values of the q -exponential and related functions (with Anup Dixit and Veekesh Kumar), *Bulletin of the Australian Math. Society*, Vol. 109, No. 3 (2024) 453-463.
- A function related to the Mordell-Weil rank of elliptic curves (with Anup Dixit and Ram Murty), *International Journal of Number Theory*, Vol. 20, No. 9 (2024) 2267-2275.
- A note on transcendence of special values of functions related to modularity (with Tapas Bhowmik), *to appear in Acta Arithmetica*.
- Rank stability of elliptic curves in certain metabelian extensions (with Anwesh Ray), *to appear in Math. Nach.*
- On zeros of variants of Ramanujan polynomials (with Mrityunjay Charan and Jaban Meher), *submitted*.
- On values of the digamma function at rational arguments (with Abhishek Bharadwaj and M. Ram Murty), *submitted*.
- Dirichlet series with periodic coefficients and a conjecture of Erdős (with Abhishek Bharadwaj and M. Ram Murty), *submitted*.

Awards & Fellowships

INSPIRE Faculty Fellowship, *Government of India*, 2021-2026.

Early Career Invited Lecture Award, *University of British Columbia, Canada*, March 2020.

US Junior Oberwolfach Fellow, *Mathematisches Forschungsinstitut Oberwolfach*, November 2019.

Ontario Graduate Scholarship, 2018-19.

Duncan and Urella Carmichael Fellowship, *Queen's University*, 2016-17, 2017-18.

Winner - 3 minute thesis competition, *Department of Mathematics and Statistics, Queen's University, 2017.*

INSPIRE Scholarship, *Government of India, 2011-2014.*

Refereeing for Journals

- The Ramanujan Journal
- IMRN - International Mathematics Research Notices
- Proceedings of the Royal Society of Edinburgh: Section A
- International Journal of Number Theory
- Canadian Math Bulletin
- Journal of the Ramanujan Mathematical Society
- Proceedings of Mathematical Sciences
- Mathematical methods in Applied Sciences
- Czechoslovak Mathematical Journal
- The Mathematics Student, Indian Mathematical Society

Teaching Experience at CMI

PNT, *Probabilistic Number Theory*, Spring 2025.

ALG-3, *Algebra - 3*, Fall 2024.

ANT, *Analytic Number Theory*, Spring 2024.

CPAN, *Graduate Complex Analysis*, Fall 2023.

DEQN, *Differential Equations*, Spring 2023.

MIT, *Methods in Irrationality and Transcendence*, Fall 2022.

MODF, *Introduction to Modular Forms*, Spring 2022.

Talks

- Invited speaker for the departmental colloquium, IISER Tirupati, India (February 2025)
- Invited speaker at **Women in Numbers Symposium**, IISER Pune, India (January 2025)
- Invited speaker at **TRADE - International conference on Transcendence, Arithmetic and Diophantine Explorations**, KSOM Kozhikode, India (January 2025)
- Invited speaker at **TRADE - International conference on Transcendence, Arithmetic and Diophantine Explorations**, KSOM Kozhikode, India (January 2025)
- Invited speaker at **Celebrating Number Theory in India** - A conference in honour of Prof. Ram Murty's 70th birthday, IISER Pune, India (December 2024)
- Speaker at **RIMS Workshop 2024**, Analytic Number Theory and related topics, Kyoto, Japan (October 2024)

- Invited speaker in **SCHOLAR-II** conference honoring the 70th birthday of Prof. M. Ram Murty, Toronto ON, Canada (May 2024)
- Invited speaker in **AMS Southeastern Sectional Meeting**, Mobile AL, USA (October 2023)
- Invited speaker in AOWM (Asian-Oceanic Women in Mathematics Inaugural Conference, **ICTS** Bangalore, India (April 2023)
- Invited speaker in Workshop and Conference in Number Theory, **NISER** Bhubaneswar, India (February 2023)
- Invited speaker in The Ramanujan Math Society Symposium, Chennai, India (December 2022)
- Speaker in Leuca - 2022, Conference celebrating birthdays of C. Levesque, D. Roy and M. Waldschmidt, **San Gregorio**, Patú, Italy.
- Invited speaker in the Number Theory Seminar, **University of Rochester**, USA (March 2022)
- Invited speaker in the Number Theory Seminar, **University of British Columbia**, Canada (March 2022)
- Invited speaker in SFB-Higher Invariants Seminar, **University of Regensburg**, Germany (January 2022)
- Invited speaker in Special functions and Number Theory seminar, online (May 2021)
- Invited speaker in GAUSS, **University of Iowa**, Iowa City IA USA (March 2021)
- Invited speaker in Number Theory Seminar, **University of Wisconsin-Madison**, Madison WI USA (March 2021)
- Invited speaker in Number Theory Seminar, **University of Mississippi**, Oxford MI USA (March 2021)
- Invited speaker in the Number Theory Seminar, **IMSc**, Chennai, India (January 2021)
- Invited speaker in the **Fields Online Number Theory Seminar**, Fields Institute, Toronto (January 2021)
- Invited speaker in Students' Seminar, **TIFR**, Mumbai, India (December 2020)
- Invited speaker in Number Theory Seminar, **Queen's University**, Canada (November 2020)
- Invited speaker in Number Theory Seminar, **Towson University**, Towson, Maryland USA (November 2020)
- Speaker in **Algebra and Number Theory Seminar**, Penn State, State College, USA (November 2020)
- Invited speaker in Number Theory Seminar, **University of British Columbia**, Vancouver BC Canada (March 2020)
- The Early Career Award Lecture in **Colloquium**, UBC, Vancouver BC Canada (March 2020)
- Invited speaker in Number Theory Seminar, **University of Waterloo**, Waterloo ON Canada (March 2020)

- Invited speaker in **CMS Winter Meeting**, Toronto, Canada (December 2019)
- Invited speaker in **Palmetto Number Theory Series 32**, University of North Carolina, Charlotte NC (September 2019).
- Speaker in **Algebra and Number Theory Seminar**, Penn State, State College PA (September 2019).
- Invited speaker in Session on Experimental Mathematics in Number Theory, Analysis and Combinatorics, **AMS Spring Southeastern Sectional Meeting**, Auburn AL. (March 2019)

Participation in Workshops/Conferences

- BIRS-CMI Workshop "New Directions in Rational Points", Chennai Mathematical Institute, India (January 2024)
- La grandezza dei punti piccoli, A conference celebrating F. Amoroso's 60th birthday, University of Pisa, Italy (May 2022)
- Hausdorff Center for Mathematics, Workshop on The Circle Method, Bonn-Germany (2021)
- Oberwolfach Workshop on Analytic Number Theory, Oberwolfach, Germany. (November 2019)
- Advanced Instructional School on Class Field Theory, Chennai Mathematical Institute, Chennai, India. (May 2017)
- 2016 Fields Medal Symposium, in honour of Manjul Bhargava, Fields Institute, Toronto, Canada. (November 2016)
- AARMS (Atlantic Association for Research in Mathematical Sciences) Summer School 2016, attended a month long courses on Stable polynomials: applications to graphs, matrices and probability and Introduction to special functions, Dalhousie University, Halifax, Canada. (July-August 2016)
- Conference on Geometry, Algebra, Number theory and their Information Technology Applications (GANITA), in honour of V. Kumar Murty, Fields Institute, Toronto, Canada. (June 2016)
- A conference in number theory, in honour of R. Balasubramanian, Institute of Mathematical Sciences, Chennai, India. (December 2015)
- Advanced Instructional School on Analytic Number Theory, KIIT, Bhubaneswar, India. (June 2015)
- A conference on analytic theory of automorphic forms, in honour of M. Ram Murty, Institute of Mathematical Sciences, Chennai, India. (December 2013)

Organization & Leadership

CMI-IMSc **Co-organizer**, *Since Aug. 2023.*
Number
Theory
Seminar

BIRS-CMI **Local co-organizer**, *New Directions in Rational Points*, Chennai Mathematical
Workshop Institute, January 8-12, 2024.

Chennai- **Co-organizer**, *An intercity number theory conference*, Chennai Mathematical Insti-
Tirupati N. T. tute, February 11-12, 2023.
Conference

AMS Special **Co-organizer**, *Special Session on "Analytic Number Theory"*, AMS Fall Eastern
Session Sectional Meeting, October 3-4, 2020.

Strength in **Co-organizer**, *A graduate workshop in number theory and related areas*, Queen's
Numbers University, May 11-12, 2018.

Queen's **President**, *Graduate Mathematics Society*, 2017-18.
University

Organizer, *Number Theory Seminar*, Summer 2018.

Outreach & Community service

- Coordinator for the AOWM - Asian Oceanian Women in Mathematics
- Invited interactive session under the Wonder Girls initiative with school girls about pursuing career in Mathematics.(2021)
- Helped create and maintain the online database for the graduate student library at Queen's university. (2016-17)
- Tutor at Math Quest: Queen's Math Camp for high school girls. (2015)