Ling Long

Curriculum Vitae

Department of Mathematics
Louisiana State University
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✉ *llong@lsu.edu*

EDUCATION

2002	**Ph.D. in Mathematics**, *Pennsylvania State University*
	Thesis: The modularity of elliptic surfaces. Advisors: Wen-Ching Winnie Li and Noriko Yui. (Queen's University).
1997	**B.S. Major in Mathematics & Minor in Computer Science**, *Tsinghua University*, China.

EMPLOYMENT HISTORY

2023-present	Micheal F. and Roberta Nesbit McDonal Professor, Louisiana State University.
2015-present	Professor, Louisiana State University.
2013–2015	Associate Professor, Louisiana State University.
2012–2013	Michler Visiting Associate Professor, Cornell University.
2009–2014	Associate Professor, Iowa State University
2003–2009	Assistant Professor, Iowa State University.
2002–2003	Postdoctoral Associate, Institute for Advanced Study.

HONORS AND AWARDS

2023	Fellow of American Mathematical Society
2023-	Micheal F. and Roberta Nesbit McDonald Professorship, LSU
2023	Maryam Mirzakhani Lecture at Joint Mathematics Meeting, Boston
2023	Undergraduate Teaching Award, College of Science, LSU
2012-2013	Association for Women in Mathematics Michler Memorial Prize
2002	Clay Mathematics Institute Liftoff Research Fellowship
2002	Pritchard Dissertation Fellowship, Pennsylvania State University

PUBLISHED PUBLICATIONS

1. The arithmetic of hypergeometric Galois representations in low dimensions, (with Wen-Ching Winnie Li and Tong Liu), in preparation.
2. Atkin and Swinnerton-Dyer congruences for meromorphic modular forms (with Michael Allen and Hasan Saad), arXiv:2511.05718, (2025).
3. Traces of Hecke Operators via Hypergeometric Character Sums, with (Jerome W. Hoffman, Wen-Ching Winnie Li, and Fang-Ting Tu), arXiv:2408.02918 submitted (2024).
4. Hodge numbers of hypergeometric data, (with Yifan Yang), arxiv:2404.02834 (2024).
5. Explicit modularity results via hypergeometric methods II, (with Michael Allen, Brian Grove, and Fang-Ting Tu), Research in the Mathematical Sciences, Volume 12, article number 84, (2025).
6. Explicit modularity results via hypergeometric methods I, (with Michael Allen, Brian Grove, and Fang-Ting Tu), Adv. in Math. 478, No. 110411, (2025)
7. Hypergeometric functions over finite fields, (with Jenny G. Fuselier, Ravi Ramakrishna, Holly Swisher, and Fang-Ting Tu), Memoirs of the Amer. Math. Soc. 280 (1382), (2022).
8. A Whipple $_7F_6(1)$ formula revisited, (with Wen-Ching Winnie Li and Fang-Ting Tu), La Mathematica, 1(2):480–530, (2022).
9. Supercongruences for rigid hypergeometric Calabi–Yau threefolds, (with Fang-Ting Tu, Noriko Yui, Wadim Zudilin), Advances in Math. 393 No.108058, 49, (2021).
10. Some Numeric Hypergeometric Supercongruences, Proceedings of the Conference onVertex operator algebras, number theory and related topics, 139–156, Contemp. Math., 753, Amer. Math. Soc.,

Providence, RI, (2020).

11. Computing Special L-values of Certain Modular Forms with Complex Multiplication, (with Wen-Ching Winnie Li and Fang-Ting Tu), SIGMA 14 (2018), 090, 32 pages.

12. Potentially GL_2-type Galois representations associated to noncongruence modular forms, (with Wen-Ching Winnie Li and Tong Liu), Transactions of the AMS. 371 (2019), no. 8, 5341–5377.

13. Characterization of intersecting families of maximum size in $PSL(2, q)$, (with Rafael Plaza, Peter Sin, and Qing Xiang), Journal of Combinatorial Theory, Series A, 157 (2018), 461–499.

14. Some supercongruences occurring in truncated hypergeometric series, (with Ravi Ramakrishna), Advances in Math. 290 (2016), 773–808.

15. On a conjecture of Kimoto and Wakayama, (with Robert Osburn, Holly Swisher), Proceedings of the AMS, 144 (2016), No. 10, 4319–4327.

16. Supercongruences and Complex Multiplication, (with Jonas Kibelbek, Kenvin Moss, Benjamin Sheller, Hao Yuan), Journal of Number Theory, 164 (2016), 166–178.

17. Preface, (with Jerome Hoffman, Karl Mahlburg, Jorge Morales, Bogdan Oporowski, Robert Perlis, Holly Swisher, Journal of Number Theory, 161 (2016), 1–16.

18. Hypergeometric series, truncated hypergeometric series, and Gaussian hypergeometric functions, (with Alyson Deines, Jenny G. Fuselier, Holly Swisher, and Fang-Ting Tu), Directions in Number Theory, Springer, (2016), 125–160.

19. Generalized Legendre curves and Quaternionic Multiplication, (with Alyson Deines, Jenny G. Fuselier, Holly Swisher, and Fang-Ting Tu), Journal of Number Theory, 161 (2016), 175–203.

20. Atkin and Swinnerton-Dyer congruences and noncongruence modular forms, (with Wen-Ching Winnie Li), RIMS Kokyuroku Bessatsu, B51 (2014), 269–299.

21. Galois representations with quaternion multiplications associated to noncongruence modular forms, (with A.O.L. Atkin, Wen-Ching Winnie Li, and Tong Liu), Transactions of the AMS 365 (2013), 6217–6242.

22. p-adic analogues of Ramanujan type formulas for 1 over Pi, (with Sarah Chisholm, Alyson Deines, Gabriele Nebe, and Holly Swisher), Mathematics, vol 1, (2013), 9–31.

23. On l-adic representations for a space of noncongruence cuspforms, (with Jerome William Hoffman and Helena Verrill), Proceedings of the AMS, 140 (2012), 1569–1584.

24. Fourier coefficients of noncongruence cuspforms, (with Wen-Ching Winnie Li), Bull. London Math. Soc. (2012), 591–598.

25. Hypergeometric evaluation identities and supercongruences, Pacific Journal of Math., 249-2 (2011), 405–418.

26. Jacobsthal identity for $\mathbb{Q}(\sqrt{-2})$, (with Ki-Ichiro Hashimoto and Yifan Yang), Forum Mathematicum, Volume 24, Issue 6, (2012), 1225–1238.

27. Zeros of classical Eisenstein series and recent developments, (with Sharon Garthwaite, Holly Swisher, Stephanie Treneer), Fields Communications Volume 60, WIN - Women In Numbers, Proceedings of the WIN Workshop, (2011), 251–263.

28. A cubic analogue of the Jacobsthal identity, (with Heng-Huat Chang and Yifan Yang), Math. Monthly, 118:4 (2010), 316–326.

29. A supercongruence motivated by the Legendre family of elliptic curves, (with Heng-Huat Chang and Wadim Zudilin) Mathematical Notes, Vol. 88, No. 4, (2010), 599–602.

30. Catalan loops, (with Jonathan D. H. Smith), Mathematical Proceedings of Cambridge Philosophical Society, Vol. 149, (2010), 445–453.

31. Zeros of some level 2 Eisenstein series, (with Sharon Garthwaite, Holly Swisher, Stephanie Treneer), Proceedings of the AMS, 138 (2010), 467–480.

32. On modular forms for some noncongruence subgroups of the modular group II, (with Chris Kurth), Bull. London Math. Soc. Vol. 41 (2009), 589–598.

33. On Atkin and Swinnerton-Dyer congruence relations (3), Journal of Number Theory, Vol. 128 No. 8, (2008), 2413–2429.

34. Computations with finite index subgroups of PSL2(Z) using Farey Symbols, (with Chris Kurth), Advances in Algebra and Combinatorics, Proceedings of the Second International Congress in Algebra and Combinatorics, World Scientific, (2008), 225–242.

35. On modular forms for some noncongruence subgroups of the modular group, (with Chris Kurth), Journal of Number Theory, Vol. 128 No. 7 (2008), 1989–2009.

36. Finite index subgroups of the modular group and their modular forms, Modular Forms and String Duality, Fields Institute Communications, Vol. 54, (2008), 83–102

37. On Atkin and Swinnerton-Dyer congruence relations (2), (with A.O.L. Atkin and Wenching Winnie Li),

Mathematische Annalen, Vol. 340, No.2 (2008), 335–358.

38. Reciprocity for Stirling and multi-restricted numbers, (with Ji Young Choi, Siu-Hung Ng and Jonathan Smith), Journal of Comb. Theory, Series A, Vol.113 (2006), 1050–1060.

39. A short proof of Milne's formulae for sums of integer squares, (with Yifan Yang), International Journal of Number Theory, Vol. 1 No. 4 (2005), 533–551.

40. On Atkin and Swinnerton-Dyer congruence relations, (with Wen-Ching W.Li and Zifeng Yang), Journal of Number Theory, Vol. 113, No.1 (2005), 117–148.

41. Modular forms for noncongruence subgroups, (with Wen-Ching W. Li and Zifeng Yang), Quarterly Journal of Pure and Applied Mathematics, Vol. 1, No.1, (2005), 205–221.

42. On Shioda-Inose structures of one parameter families of K3 surfaces, Journal of Number Theory, 2004, Vol.109, No.2 (2004), 299–318.

43. *L*-series of certain elliptic surfaces, Canadian Math. Bulletin, Vol. 46, No.4 (2003), 546–558.

44. On a Shioda-Inose structure of a family of K3 surfaces, Calabi-Yau Varieties and Mirror Symmetry, Fields Institute Communications 38, AMS Providence RI (2003), 201–207.

CITATIONS (as of October 20, 2025)

MathSciNet	506 in 317 publications (Unique Citing Authors 247)
Google Scholar	1006

EDITORIAL SERVICES

2025-	Editor, The Ramanujan Journal
2024-	Editor, International Journal of Number Theory
2022-	Proceedings of American Mathematical Society
2022-	Editorial board member of the proceedings for the Third Trimester of "Triangle Groups, Belyi Uniformization, and Modularity" at BP Pune, India
2018	Co-Editor of "Special Issue on Modular Forms and String Theory in Honor of Noriko Yui" by Symmetry, Integrability and Geometry: Methods and Applications
2016	Co-Editor of "Automorphic forms and its applications in number theory and combinatorics", a special issue of Journal of Number Theory dedicated to Wen-Ching Li.
2016	Co-Editor of "Directions in Number Theory", Proceedings of the 2014 WIN3 Workshop, ISBN 978-3-319-30976-7.

RESEARCH SUPPORT

NSF	DMS 2548387, **PI**, Conference: Southern Regional Number Theory Conference, (pending)
Simons Foundation	MP-TSM-00002492, **PI**, Travel Support for Mathematicians, 2023-2028.
NSF	DMS 1951773, **co-PI**, 2020-2023. *Southern Regional Number Theory Conference Series*
NSA	#H89230-21-1-0005, **co-PI**, 2020-2023, *Southern Regional Number Theory Conference Series*
NSF	DMS 1602047, **PI**, 2016-2021. *The arithmetic of hypergeometric varieties and noncongruence modular forms*
NSF	DMS 1642598, **PI**, 2016-2017. *Hypergeometric motives and Calabi-Yau differential equations Conference*
NSF	DMS 1363265, **PI**, 2014-2015. *Applications of Automorphic Forms in Number Theory and Combinatorics Conference*
NSF	DMS 1303292, **PI**, 2013-2016. *Noncongruence Modular Forms and Supercongruences*
NSF	DMS 1001332, **PI**, 2010-2014 *Modular Forms for Noncongruence Subgroups*
NSA	**PI**, 2008-2010, *The Arithmetic of Noncongruence Modular Forms*
AWM-NSF	Mentoring Travel Grant, 2005-2006.
NSF	DMS 97-29992, **Postdoc Support**. 2002-2003.

PROFESSIONAL MEMBERSHIPS

AMS	American Mathematical Society
AWM	Association for Women in Mathematics
SIAM	Society for Industrial and Applied Mathematics

PH.D. STUDENTS

2025-	Archisman Bhattacharjee, (co-major, Ph.D. Candidate. Louisiana State University)
2026 (expected)	Paresh Arora, (Ph.D. Louisiana State University)
2026 (expected)	Esme Rosen, (co-major, Ph.D. Louisiana State University)
2025	Brian Grove, Mathematics, (co-major, Ph.D., Louisiana State University)
2024	Emma Lien, Mathematics, (Ph.D., Louisiana State University)
2021	Liem Nguyen, Mathematics, (Ph.D., Louisiana State University)
2021	Bao Pham, Mathematics, (co-major, PH.D., Louisiana State University)
2009	Chris Kurth, Mathematics, (Ph.D. 2009, Iowa State University)
2005	Joohyung Kim, Mathematics, (co-major, Ph.D., Iowa State University)

POSTDOCS

2024-	Hasan Saad, Louisiana State University
2022-2025	Michael Allen, Postdoc Fellow, Wesleyan University
2014 -2017	Luca Candelori, Associate Professor, Wayne State University (before leaving academia)
2011-2012	Jonas Kibelbek, Applied Research Mathematician, National Security Agency
2007-2009	Tim Huber, Professor and Director, University of Texas Rio Grande Valley

WOMEN IN NUMBER THEORY (WIN)

Member	Steering committee for WIN since 2015
Co-Organizer	WIN3, BIRS 2014 workshop.
Group leader	WIN2, BIRS 2011 workshop; WIN1, BIRS 2008 workshop; WIN3, BIRS 2014 workshop.

AMS COMMITTEES

2024-2026	Award for Impact on Teaching and Learning of Mathematics Selection Committee, committee chair (2025-2026)
2024-2025	Mathematical Congress of the Americas (MCA) Travel Grants Selection Committee
2024-2025	JMM Program Committee
2020-2022	Fan Fund committee, committee chair (2021-2022)

LECTURE SERIES

2026	A team teacher for BUILDING BRIDGES: 7th EU/US Research school on Automorphic Forms and Related Topics, Bedlewo Conference Center in Poland, August 2026
2021	A Lecture Series on Hypergeometric Functions, University of Connecticut

INVITED TALKS SINCE 2021

Mar 2026	Invited Speaker, the 2026 Gainesville International Number Theory Conference.
Oct 2025	45m talk, "Algebraic cycles, Hodge theory, and arithmetic", AMS Sectional Meeting at Saint Louis University, St. Louis, Missouri.
Sep 2025	Analysis Seminar, University of Lafayette.
July 2025	Invited speaker, The Third Joint SIAM/CAIMS Annual Meetings (AN25), Montreal, Canada.

Mar 2025	Plenary speaker, BARD Days 4 Xavier University, New Orleans.
Mar 2025	Colloquium Speaker, Purdue University
Jan 2025	Invited Speaker, special session on Modular Forms, Hypergeometric Functions, and Related Topics, AMS Joint Meeting, Seattle WA.
Dec 2024	Keynote Speaker, Special Session on Special Functions, q-series and Beyond, Keynote Speaker, AMS-AuMS-NZMS joint meeting.
Dec 2024	Special Session on Arithmetic Geometry and Number Theory, AMS-AuMS-NZMS Joint meeting.
Oct 2024	Colloquium Speaker, Washington University, St Louis.
Apr 2024	Number theory student seminar, University of British Columbia, Canada.
Feb 2024	Invited Speaker, Clifford Lectures Series, Tulane.
Jul 2023	Invited Speaker, HKU Number Theory Days 2023, Hong Kong University
Jun 2023	Invited Speaker, Number Theory Day, Institute of Mathematics, Academia Sinica, Taiwan
Jan 2023	Maryam Mirzakhani Lecture at Joint Mathematics Meeting, Boston
Dec 2021	Invited Speaker, the year-long program on "Triangle Groups, Belyi Uniformization, and Modularity" at Bhaskaracharya Pratishthana Pune, India, 2021-2022.
Oct 2021	Invited Speaker, BIRS Lattices and Cohomology of Arithmetic Groups.
June 2021	Invited Speaker, Number theory, strings, and quantum physics, IPUM, Japan
March 2021	Seminar Speaker, Vanderbilt University

CONFERENCES ORGANIZED

Co-Organizer	AMS special sessions: ○ JMM 2023 at Boston, JMM 2015 at San Antonio, JMM 2008 at San Diego ○ AMS Sectional Meeting at Iowa City in 2011
Co-Orangizer	Southern Regional Number Theory Conferences, 2025, 2024, 2023, 2022, 2019, 2017
Chief Organizer	BIRS 16w5009, *Modular Forms in String Theory,* September, 2016.
Co-Orangizer	*Hypergeometric motives and Calabi-Yau differential equations*, a 3-week program, the MATRIX Institute, Melbourne Australia, January 2017.
Chief Organizer	*Applications of Automorphic Forms in Number Theory and Combinatorics in Honor of Professor Wen-Ching Li*, LSU, April, 2014, with more than 100 participants.
Co-Organizer	BIRS 14w5009, *WIN 3*, April, 2014.
Chief Organizer	*Noncongruence modular forms and modularity*, American Institute for Mathematics Workshop, August 2009.

SELECTED OTHER ACTIVITIES

Thesis reviewer	Indian Institute of Technology Guwahati, 2020,2025
Reviewer	MathScinet and Math Review since 2002
Panelist	National Science Foundation 2011, 2014, and 2018, 2022
Reviewer	Funding Agencies: ○ National Science Foundation ○ National Security Agency ○ Natural Sciences and Engineering Research Council of Canada ○ Research Grants Council, Hong Kong SAR, China. ○ Simons Foundation, New York, NY
Outreach	○ Summer mini course at the Sun Yat-Sen University China 2017 ○ Girls Talk Math Podcasts 2018, https://girlstalkmath.com/podcasts2018/

Selected Departmental Committees

Member   Internal Review Committee, 2025-

Member   Hiring Committee, 2015-2017, 2017-2018, Spring 2021, 2025-2026

Member   Graduate Committee, 2016-2020