214 Harker Hall, 1305 W. Green Street, University of Illinois Urbana–Champaign, Urbana, IL 61801, USA

Email: nawapan2@illinois.edu · 🌐 Webpage: https://ploynawapan.github.io/

Nawapan (Ploy) Wattanawanichkul

EDUCATION

2021–present	**University of Illinois Urbana–Champaign (UIUC)** Ph.D. in mathematics, expected 2026 Advisor: Prof. Jesse Thorner Overall GPA: 4.00/4.00	IL, USA
2017–2021	**Bowdoin College** B.A., Mathematics major, Japanese minor, completed with honors in mathematics Advisor: Prof. Naomi Tanabe Overall GPA: 3.93/4.00, Magna Cum Laude	ME, USA
	Semester abroad (Spring 2020) Budapest Semesters in Mathematics (BSM), completed with honors	Budapest, Hungary

RESEARCH INTEREST

Analytic number theory, Distribution of primes, Theory of L–functions, Automorphic forms.

PUBLICATIONS/PREPRINTS

1. *Decorrelation of Hecke–Maaß cusp forms.* In preparation (2025).
   (With Jesse Thorner, draft available on request)

2. *Zeros of Polynomials in Derivatives of Automorphic L-functions.* In preparation (2025).
   (With Anji Dong and Alexandru Zaharescu, draft available on request)

3. *A metric approach to zero-free regions for L-functions.* (arXiv)
   (Submitted 2025)

4. *Effective correlation and decorrelation for newforms, and weak subconvexity for L-functions.* (arXiv)
   (With an appendix by Jesse Thorner, under revision at Mathematische Zeitschrift)

5. *Walking to infinity along some number theory sequences.* (arXiv, DOI)
   Integers, 24 (2024), 29 pp.
   (With Steven J. Miller, Fei Peng, Tudor Popescu, and the Polymath REU program)

6. *An Alternative approach to computing $\beta(2k+1)$.* (arXiv, DOI)
   Integers, 23 (2023), 13 pp. (With Naomi Tanabe)

7. *Modeling random walks to infinity on primes in $\mathbb{Z}[\sqrt{2}]$.* (arXiv, DOI)
   J. Integer Seq. 25 (2022), 21 pp.
   (With Bencheng Li, Steven J. Miller, Tudor Popescu, and Daniel Sarnecki)

8. *Walking to infinity on the Fibonacci sequence.* (arXiv, DOI)
   Fibonacci Quart. 60 (2022), no. 5, 293–299.
   (With Bencheng Li, Steven J. Miller, Tudor Popescu, and Daniel Sarnecki)

TALKS († = upcoming talks)

Invited Talks

Jan 2026	Joint Mathematics Meetings (JMM) 2026:† AMS Special Session on *Recent Trends in Analytic Number Theory*	Washington, DC
Dec 2025	PAlmetto Number Theory Series (PANTS) 2025† *Invited graduate student speaker*	Clemson, SC
Jan 2025	Joint Mathematics Meetings (JMM) 2025: AMS Special Session on *Current Directions in Modular Forms*	Seattle, WA
Sep 2024	Kansas State University Student Number Theory Seminar	Remote
Jun 2024	Shandong University Number Theory Seminar	Remote
Apr 2024	Stanford University Student Analytic Number Theory Seminar	Remote
Mar 2024	UIUC Number Theory Seminar	Urbana, IL

Contributed Talks

Jun	2025	Annual Pure and Applied Mathematics Conference (APAM)	Bangkok, Thailand
Jun	2025	Conference in Number Theory and Applications (CNA)	Bangkok, Thailand
Apr	2025	Automorphic Forms Workshop (AFW)	Denton, TX
Apr	2025	UIUC Graduate Number Theory Seminar (Also in Oct 2024, Mar 2024, and Nov 2023)	Urbana, IL
Jul	2022	The 20$^{\text{th}}$ International Conference on Fibonacci Numbers and Their Applications, University of Sarajevo, Bosnia and Herzegovina.	Remote
May	2021	Honors Thesis, Department of Mathematics, Bowdoin College	Remote
Sep	2020	The PAlmetto Joint Arithmetic, Modularity, and Analysis Series	Remote
Oct	2019	President's Summer Research Symposium, Bowdoin College	Brunswick, ME

WORKSHOPS & CONFERENCES ATTENDED († = upcoming workshops/conferences)

Jan	2026	Joint Mathematics Meetings (JMM) 2026†	Washington, DC
Dec	2025	PAlmetto Number Theory Series (PANTS) 2025†	Clemson, SC
Jun	2025	Annual Pure and Applied Mathematics Conference (APAM)	Bangkok, Thailand
Jun	2025	Conference in Number Theory and Applications (CNA)	Bangkok, Thailand
Apr	2025	Automorphic Forms Workshop (AFW)	Denton, TX
Mar	2025	Midwest Arithmetic Geometry and Number Theory (MAGNTS)	Columbus, OH
Jan	2025	Joint Mathematics Meeting (JMM) 2025	Seattle, WA
May	2024	Shanks Conference, International Conference on L-Functions and Automorphic Forms	Nashville, TN
Oct	2023	Midwest Arithmetic Geometry and Number Theory (MAGNTS)	Ann Arbor, MI
Jan	2023	Spring Opportunities, IAS	Princeton, NJ
Jun	2022	The Connecticut Summer School in Number Theory (CTNT)	Storrs, CT
Jul	2019	Park City Mathematics Institute (PCMI)	Park City, UT

TEACHING EXPERIENCE

2021–2025	**Teaching Assistant**, Department of Mathematics, UIUC Urbana, IL

Fall 2025	**MATH 231** Integral Calculus (Currently teaching)
Summer 2024	**MATH 257** Linear Algebra (NetMath)
Spring 2024	**MATH 220** Differential Calculus (Head TA)*
Fall 2023	**MATH 221** Differential Calculus*
Spring 2023	**MATH 220** Differential Calculus (Head TA)*
Fall 2022	**MATH 220** Differential Calculus*
Spring 2022	**MATH 220** Differential Calculus*
Fall 2021	**MATH 231** Integral Calculus*

* = Ranked as an excellent teacher by students (there is no evaluation for NetMath).

Grader, Department of Mathematics, UIUC   Urbana, IL

Summer 2023	**MATH 347** Fundamental Mathematics

2018–2019	**Quantitative Reasoning Tutor**, Bowdoin College Brunswick, ME Supported students in courses such as mathematical reasoning, linear algebra, and calculus at dedicated study nights for students from underrepresented backgrounds.
2018–2019	**Grader**, Bowdoin College Brunswick, ME

Fall 2019	**MATH 2303** Functions of Complex Variables
Fall 2019	**MATH 2602** Introduction to Group Theory
Fall 2018–Spring 2019	**MATH 2020** Mathematical Reasoning

RESEARCH AND MENTORING EXPERIENCE

Fall 2024 –Spring 2025	**Research Assistant** Urbana, IL Supported by a Simons Foundation grant awarded to Prof. Thorner.

Summer 2020	**Research Mentor for the Polymath Jr. REU**	Remote

Guided undergraduate students through research projects and organized weekly activities under the supervision of Prof. Steven Miller (Williams College).

Summer 2018	**Academic Program Assistant**, Brewster Academy	Wolfeboro, NH

Instructed Thai Government scholarship recipients in SAT test preparation.

Winter 2018 & 2019	**Academic Program Assistant**, SIT Graduate institution	Brattleboro, VA

Guided Thai Government scholarship recipients through U.S. college applications.

OUTREACH

Fall 2024	**Math Circle Instructor**, University of Illinois Urbana-Champaign	Urbana, IL

Offered a free weekly extracurricular math program for middle school students, fostering enthusiasm and supporting younger learners in the Champaign–Urbana area.

Summer 2022, 2017, & 2016	**Mathematical Outreach Speaker**, Benchama Maharat Highschool	Thailand

Prepared over 200 middle and high school students for national math competitions.

Summer 2017	**Community Teaching Volunteer**, The Mirror Foundation	Chiangrai, Thailand

Provided lectures on various topics for students from underrepresented ethnic groups.

AWARDS

2025	**Bateman Prize in Number Theory**, UIUC	Urbana, IL

Awarded to a graduate student in recognition of outstanding research in number theory.

2025	**Paul T. Bateman Fellowship**, UIUC	Urbana, IL

Awarded to a student actively working on research and writing thesis in number theory.

2025	**Departmental TA Instructional Award**, UIUC	Urbana, IL

Awarded to graduate teaching assistants for exemplary teaching.

2021	**Edward S. Hammond Mathematics Prize**, Bowdoin College	Brunswick, ME

Awarded to a senior who is completing mathematics major with distinction.

2021	**Phi Beta Kappha**, Alpha of Maine Chapter	ME

2019–2021	**Smyth Mathematics Prize**, Bowdoin College	Brunswick, ME

Awarded to a student with highest mathematics grades during the first two years.

2019	**Kibbe Science Fellowship**, Bowdoin College	Brunswick, ME

Fellowship for summer research in STEM in summer 2019.

2017–2019	**Sarah and James Bowdoin Scholar**, Bowdoin College	Brunswick, ME

Given to the top 20 percent of students, as calculated by grade point average.

2016–2021	**King's Scholarship**, Royal Thai Government	Thailand

A full-ride scholarship for overseas undergraduate studies.

PROFESSIONAL SERVICES

Referee : International Mathematics Research Notices, Revue Roumaine des Sciences Techniques Mathematical reports.

SKILLS

Coursework in programming: Introduction to Computer Science (Python), Data Structures (Python, Java), Algorithms (Python), Foundations of Computer Systems (C).