Kaitlyn Loyd

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EDUCATION

Ph.D. in Mathematics, Northwestern University, Evanston, IL   Expected Jun 2024
Advisor: Bryna Kra

B.S. in Mathematics, UCLA, Los Angeles, CA   Jun 2018
Summa Cum Laude

RESEARCH INTERESTS

Ergodic Theory, Symbolic Dynamics, Combinatorial Number Theory

PUBLICATIONS

[1] K. Loyd, A dynamical approach to the asymptotic behavior of the sequence $\Omega(n)$. *Ergodic Theory and Dynamical Systems*, 43(11), 3685-3706, 2023. doi:10.1017/etds.2022.81.

[2] K. Loyd. New points in the Heinis Spectrum. In preparation, 2023+

[3] K. Loyd and S. Mondal. Ergodic averaging along the sequence $\Omega(n)$. In preparation, 2023+.

RESEARCH TALKS

Analysis Seminar, Virginia Tech	Oct 2023
Low Complexity Dynamical Systems Conference, University of Maryland	Oct 2023
Ergodic Theory and Analysis Seminar, Rutgers University	Sep 2023
Chicago Action Now Conference, University of Illinois Chicago (UIC)	Apr 2023
IAS Special Year Seminar, Institute for Advanced Study	Feb 2023
Midwest Dynamical Systems Conference, IUPUI	Nov 2022
AMS Sectional Meeting, University of Denver	May 2022
Midwest Dynamical Systems Early Career Conference, University of Notre Dame	May 2022
Dynamical Systems Seminar, Northwestern University	Nov 2021
Young Mathematician's Conference, The Ohio State University	Aug 2017

EXPOSITORY TALKS

Dynamical Systems REU Colloquium, Northwestern University   Aug 2023
Title: Interactions between Ergodic Theory and Number Theory

Undergraduate Math Society, Northwestern University   Apr 2022
Title: Dynamical Systems via Cats (and Ghosts?)

Teaching Experience

Instructor, Northwestern University, School of Professional Studies   Jun 2022 - Aug 2022

Summer 2022	Linear Algebra (MATH 240-0)

Graduate Teaching Assistant, Northwestern University   Sep 2019 - Present

Fall 2021	Multivariable Integral Calculus (MATH 230-2)
Winter 2021	Multivariable Differential Calculus (MATH 230-1), 2 Sections
Fall 2020	Chaotic Dynamical Systems (MATH 354-0)
	Single Variable Integral Calculus (MATH 220-2)
Winter 2020	Multivariable Differential Calculus (MATH 230-1), 2 Sections
Fall 2019	Single Variable Integral Calculus (MATH 220-2), 2 Sections

Research Group Assistant, REU, Northwestern University   Jun 2023 - Aug 2023

The Dynamical Systems REU Program is an 8-week research program for undergraduates. I coordinated with faculty leaders to run three undergraduate research projects and assist in the development of the students' end-of-program presentations.

Teaching Assistant, Bridge Program, Northwestern University   Aug 2021

The aim of Northwestern's Bridge Program is to help incoming undergraduate students from disadvantaged or underrepresented backgrounds acclimate to the rigor and expectations of college academics. As a teaching assistant, I organized and led daily discussion sessions, held office hours, and advised students on their final projects.

Graduate Grader, Northwestern University   Sep 2018 - Aug 2021

Summer 2021	Multivariable Differential Calculus (MATH 230-1)
Spring 2019	Linear Algebra: Second Course (MATH 334-0)
Winter 2019	Single Variable Integral Calculus (MATH 220-2)
Fall 2018	Single Variable Integral Calculus (MATH 220-2)

Undergraduate Grader, UCLA   Sep 2016 - Dec 2017

Fall 2017	Linear Algebra (MATH 33A)
Spring 2017	Honors Proof-based Linear Algebra (MATH 115AH)
Winter 2017	Proof-based Linear Algebra (MATH 115A)
Fall 2016	Honors Proof-based Linear Algebra (MATH 115AH)

Teaching Development

Reflective & Effective Teaching Participant, Northwestern University   Sep 2022 - Jun 2023

I was selected to participate in a year-long program consisting of interactive seminars and workshops centered on the creation of individual teaching documents. These included a teaching statement, lesson and assessment plans, inclusive course design strategies, and a SoTL research proposal.

Chicago Teaching Symposium, Northwestern University   May 2022

I attended talks and workshops tackling topics such as overcoming the difficulties of online mathematics instruction and fostering the growth mindset in the STEM classroom

Mentoring Up & Down Workshop Series, Searle Center, Northwestern University   Jul 2021

This series of three interactive workshops furthered my professional development in managing communication, enacting equity and inclusion, and building self-efficacy.

Service

Causeway Post-baccalaureate Program, Mentor   Sep 2021 - Present

I have served as a mentor since the inaugural class of the Causeway Program, a post-baccalaureate program at Northwestern University designed for students in mathematics. This program aims to increase the number of students in doctoral programs from groups historically underrepresented in the mathematical sciences.

Climate Committee, Department of Mathematics, Representative   Sep 2021 - Jun 2022

I served as a graduate student representative on my department's climate committee, a group committed to addressing the concerns of faculty and students in order to improve the overall climate of the department.

Northwestern Association for Women in Mathematics, Mentor   Mar 2021 - Jun 2021

I mentored undergraduate students majoring in mathematics, providing support around their experience in the mathematics department and future career goals.

Northwestern Prison Education Program, Volunteer   Jan 2020 - Mar 2020

The Northwestern Prison Education Program is a degree-awarding education program held at the Stateville Correctional Center, a maximum security prison for men in Chicago. I volunteered as a teaching assistant for an introductory mathematics class, for which I ran group work, presented guest lectures, and graded student work.

Awards

Outstanding Graduate Student Teacher Award Nominee, Northwestern University   2023

Each year, one nominee from each academic department is put forward for this competitive university-wide teaching award. I was nominated by the Department of Mathematics for the 2023 award.

Graduate Teaching Assistant Award Recipient, Northwestern Department of Mathematics   2021

I received this award from the Department of Mathematics based on both faculty recommendations and student evaluation of teaching assistant performance.

Grant Support

Graduate Fellowship, Northwestern University   2022 - 2023

NSF RTG: Analysis on Manifolds Recipient, National Science Foundation   2020 - 2021

Graduate Fellowship, Northwestern University   2018 - 2019

Conferences Attended

Low Complexity Dynamical Systems (Speaker), University of Maryland   Oct 2023

Nilpotent Structures in Ergodic Theory, IMPAN, Poland   Jun 2023

Chicago Action Now (Speaker), University of Illinois Chicago (UIC)   Apr 2023

Combinatorial and Geometric Approaches on Dynamics, University of Chile   Nov 2022

Midwest Dynamical Systems (Speaker), IUPUI   Nov 2022

Midwest Dynamical Systems: Early Career, Notre Dame   May 2022

Ergodic Theory and its Connections: Michael Boshernitzan, Rice University   May 2022

AMS Special Sessions (Speaker), University of Denver   May 2022

Expanding Dynamics Conference Series, Online, University of Chile   2020-2021

Ergodic Theory With Applications to Continued Fractions, Online, UNCG   May 2020