

Kim Klinger-Logan

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Education

University of Minnesota

PhD in Mathematics

expected: May 2019

MS in Mathematics

November 2016

Thesis: Self-adjoint operators and zeros of L -functions

Advisor: Paul Garrett

Non-degree Graduate Student in Philosophy

2010-2012

Emphases: Logic and Philosophy of Mathematics, Advisor: Roy Cook

Eastern Washington University

MS in Mathematics

June 2010

Thesis: Graph Colorings and Chromatic Polynomials, Advisor: Dale Garraway

Gonzaga University

BS in Mathematics, BA in Visual Art, *magna cum laude*

May 2008

Research Interests

Spectral theory of automorphic forms; Zeros of L -functions; Applications of number theory to physics

Publications

K. Klinger-Logan, *Differential equations in automorphic forms*, Comm. in Number Theory and Physics, Vol. 12.4: Dec 2018 (arXiv 1801.00838).

K. Klinger-Logan, *A spectral interpretation of zeros of certain functions* (under revision: Journal of Number Theory; arXiv 1706.08552).

Fellowships, Grants and Awards

2018 - 2019 Lousie T. Dosdall Fellowship \$25,000

UMN fellowship for women who show promise for a successful career in research in STEM

2017 University of Nebraska "Watch Us" Grant (PI) \$2,300

Grant to fund a workshop for new undergraduate women math majors at Minnesota

2014 - 2015 Outstanding TA Award, Department of Mathematics, *University of Minnesota*

2011 DRPP Summer Fellowship, *University of Minnesota*

2004 - 08 Gonzaga Merit Scholarship

2004 - 08 MG James Ursano Scholarship

Invited Talks

- Differential equations in automorphic forms and their applications*
AMS Sectional Meeting at the University of Hawaii, Honolulu, HI, *March 2019*
- Differential equations in mathematical physics and automorphic forms*
Kansas State University Colloquium, Manhattan, KS, *February 2019*
- The Hilbert-Pólya Conjecture and one failed attempt at proving RH*
Hamline University, St. Paul, MN, *November 2018*
- The Riemann Hypothesis and periods of Eisenstein series*
University of Sheffield, Sheffield, UK, *October 2018*
- Zeros of L-functions and unbounded operators*
University of Warwick, Warwick, UK, *October 2018*
- Differential equations in automorphic forms arising from particle physics*
University of Exeter, Exeter, UK, *October 2018*
- The Riemann Hypothesis, unbounded operators and a tie to physics*
University of Bristol, Bristol, UK, *October 2018*
- Periods of Eisenstein series as linear functionals*
Queen Mary University, London, UK, *October 2018*
- Supercomputers, Snail mail and the Riemann Hypothesis*
St. Olaf College Research Seminar, Northfield, MN, *September 2018*
- How not to prove the Riemann Hypothesis*
Carleton College Colloquium, Northfield, MN, *September 2018*
- Spectral solution to a perturbed automorphic eigenvalue problem*
Québec-Maine Number Theory Conference, Orno, ME, *October 2017*

Selected Other Talks

- Differential equations in automorphic forms*
Strength in Numbers, Queens University, Kingston, ON, *May 2018*
- Meromorphic continuations of solutions to differential equations in automorphic forms*
32nd Automorphic Forms Workshop, Tufts University, Boston, MA, *March 2018*
- A spectral interpretation of zeros of certain functions*
Joint Math Meetings, San Diego, CA, *January 2018*
- 31st Automorphic Forms Workshop, Eastern Tenn. University, Johnson City, TN, *March 2017*
- Self-Adjoint Operators and Zeros of L-functions*
Southern New England Conference on Quadratic Forms and Modular Forms, Wesleyen University, CN *July 2016*
- 30th Automorphic Forms Workshop, Wake Forest University, Winston-Salem, NC, *March 2016*
- An Introduction to Modular Forms*
Mathematical Sciences Research Institute Summer School, Berkley, CA, *July 2015*

Other Workshop and Conference Participation

Automorphic Structures in String Theory, Simons Center for Geom. and Phys., *March 2019*
Sixth Abel Conference: A Math. Celebration of Robert P. Langlands, Inst. of Math. and its App., *November 2018*
L-functions: Open Problems and Current Methods, Hausdorff Center for Mathematics, *June 2018*
Perspectives on the Riemann Hypothesis, Heilbronn Inst. for Math. Research, *June 2018*
Re:boot Number Theory, Duke University, *June 2017*
Gaps between Primes and Analytic Number Theory, Mathematical Sciences Research Institute, *July 2015*
Women in Analysis Workshop, Institute for Mathematics and its Applications, *May 2015*
Summer School in Computational Number Theory 2015, University of North Carolina Greensboro, *May 2015*
Philosophy of Mathematical Practice Workshop, University of Pittsburgh, *Summer 2011*

Service

2017 - present Co-founder and Organizer, Mathematics Project at Minnesota (MPM)
MPM is an annual, four day workshop for new UMN women math majors.
2016 - present Referee, Minnesota Journal of Undergraduate Mathematics
2014 - present Co-organizer, UMN Student Number Theory Seminar
2016 - 2018 Graduate Student Coordinator, Assoc. for Women in Mathematics (WiM), UMN Student Chapter
2015 - 2018 Co-founder and Organizer, UMN Prelim Bee
Prelim Bee is an annual jeopardy-style game to help graduate students study for prelim exams.
2016 - 2017 Vice President, American Math. Society, UMN Student Chapter
2015 - 2016 Undergraduate Mentor, Women in Science and Engineering (WISE) UMN
2015 - 2016 Secretary, American Math. Society, UMN Student Chapter
2014 - 2016 First Year Peer Mentor, UMN Mathematics Department

Professional Affiliations

Society for Industrial and Applied Mathematics (SIAM).
Association for Women in Math (AWM)
American Mathematical Society (AMS)

Technical Skills

Python, Sage, R, HTML

Research Supervised

Undergraduate Research Opportunities Program (UROP) Projects, University of Minnesota
Critical zeros of the Riemann ζ -function
Yu Zhang, Spring 2018 - Present
An investigation of zero-free regions of the Riemann ζ -function and other L-functions
Bernardo Bianco Prado, Spring 2018 - Present
North Star STEM Alliance Project, University of Minnesota
Mentored one undergraduate in number theory a research project funded by North Star, Fall 2018 - Present

Teaching Experience

University of Minnesota

Math 4991: Directed Reading [Spring 2018]
Math 4281: Modern Algebra [Summer 2017]
Math 1272***: Calculus II *Online* [Spring 2017, Fall 2017, Spring 2018]
Math 1272: Calculus II [Spring 2017, Fall 2017, Spring 2018]
Math 1142: Short Calculus [Summer 2015, Summer 2016]
Math 2283*: Sequences, Series and Foundations [Fall 2015]
Math 2574H*: Linear Algebra and Differential Equations Honors [Spring 2015]
Math 2573H*: Vector Calculus Honors [Fall 2014, Fall 2016]
Math 1271*: Calculus I [Fall 2013, Spring 2014, Spring 2016]
Phil 3001*: History of Ancient Philosophy [Fall 2010]
Phil 1001*: Symbolic Logic [Spring 2011]
Phil 5201*: Symbolic Logic I [Fall 2011]
Phil 5211*: Modal Logic [Spring 2012]

Metropolitan State University

Math 110: Math for Liberal Arts [Spring 2015]
Math 120: Precalculus [Summer 2013, Fall 2013, Summer 2014]

Hamline University

Math 1271: Calculus I [Spring 2013]
Math 1130: Fundamental Concepts of Mathematics [Fall 2012]

Eastern Washington University

Math 114: College Algebra [Fall 2009, Winter 2010, Spring 2010]
Math 104: College Algebra [Spring 2009, Winter 2009]
Math 103*: College Algebra [Fall 2008]

* Teaching Assistant

** Online Course Developer and Instructor

References

Paul Garrett

Advisor
University of Minnesota
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Bryan Mosher

Teaching Reference
University of Minnesota
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Stephen D. Miller

Rutgers University
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Ben Brubaker

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Adrian Diaconu

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Henryk Iwaniec

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