Thomas Morrill

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Education

Ph.D. in Mathematics, Oregon State University, 2017

Thesis: Overpartition Ranks, Cranks, and Frobenius Representations.

M.S. in Mathematics, Oregon State University, 2013

B.A. in Mathematics, Earlham College, 2011

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Work

August 2020 - Present: Assistant Professor of Mathematics, Trine University

- Discrete Mathematics

- Trigonometry

- Differenetial Calculus

- Integral Calculus

- Differential Equations

- Linear Algebra

- Historical Aspects of Mathematics

April 2018 - June 2020: Postdoctoral Fellow in Analytic Number Theory, UNSW Canberra

Fall 2017: Instructor, Oregon State University

Summer 2012, 2014, and 2016: Instructor, Oregon State University

September 2011 - June 2017: Graduate Teaching Assistant, Oregon State University

Research

Papers

- *A Stanley–Elder theorem on Cranks and Frobenius symbols* George Andrews, Manosij Dastidar, Thomas Morrill, Research in Number Theory 7, 56 (2021) https://doi.org/10.1007/s40993-021-00285-7

- *Sign changes in the prime number theorem*, Thomas Morrill, David Platt, Tim Trudgian, The Ramanujan Journal (2021) https://doi.org/10.1007/s11139-021-00398-8

- *Quasimodularity of the kth residual cranks*, Thomas Morrill, Aleksander Simonic, International Journal of Number Theory (2021) https://doi.org/10.1142/S1793042121500019

- *Robin's inequality for* 20-*free integers*, Thomas Morrill, David Platt, INTEGERS: Electronic Journal of Combinatorial Number Theory 21 (2021) http://math.colgate.edu/~integers/v28/v28.pdf

- *Look, Knave*, Thomas Morrill, Bulletin of the Australian Mathematical Society (2020) https://doi.org/10.1017/S0004972720000659

- *Inequalities for the d-th Residual Crank Moments of Overpartitions*, Ali Al-Saedi, Thomas Morrill, Holly Swisher, International Journal of Number Theory (2020) https://doi.org/10.1142/S1793042120500840

- *Difference Tones in "Non-Pythagorean" Scales Based on Logarithms*, Thomas Morrill, Journal of Mathematics and Music (2020) https://doi.org/10.1080/17459737.2019.1704084

- *An elementary bound on Siegel zeroes*, Thomas Morrill, Tim Trudgian, Journal of Number Theory (2019) https://doi.org/10.1016/j.jnt.2019.10.024

- *Two Families of Buffered Frobenius Representations of Overpartitions*, Thomas Morrill, Ann. Comb. (2019) 23:103-141 https://www.doi.org/10.1007/s00026-019-00419-w

Conference Talks (Recent Five Years)

- *A Stanley-Elder Type Relationship for Overpartitions*, Joint Mathematics Meetings 2022, Conference held online, April 9, 2022

- *Quasimodularity of the k-th Residual Cranks*, Joint Mathematics Meetings 2022, Conference held online, April 7, 2022

- *Further Study of the Knave Map*, Number Theory Down Under 8, Conference held online, October 8, 2020

- *Look, Knave*, Number Theory Online Conference 2020, Conference held online, June 3, 2020

- *A Combinatorial Proof of Jackson's Summation*, 63rd Meeting of the Australian Mathematical Society, Melbourne Australia, December 5 2019

- *Overpartition Crank Moments and Quasimodularity*, Number Theory Down Under 7, Sydney Australia, October 3 2019

- *Overpartitions*, 62nd Meeting of the Australian Mathematical Society, Adelaide Australia, December 5 2018

- *An elementary bound on Siegel zeroes*, Number Theory Down Under 6, UNSW Canberra, September 26, 2018

- *Improving the t-free results on Robin's inequality*, CNTA XV, Université Laval, July 12, 2018

Conferences Attended (Recent Five Years)

- Joint Mathematics Meetings 2022, Conference held online, April 2022

- Number Theory Down Under 8, Conference held online, October 2020

- Number Theory Online Conference 2020, Conference held online, June 2020

- 63rd Meeting of the Australian Mathematical Society, Monash University, Melbourne Australia, December 2019

- Number Theory Down Under 7, University of Sydney, October 2019

- Joint Mathematics Meetings 2019, Baltimore MD, January 2019

- 62nd Meeting of the Australian Mathematical Society, Adelaide Australia, December 2018

- Number Theory Down Under 6, UNSW Canberra, September 2018

- Algorithmic Number Theory Symposium, University of Wisconsin-Madison, July 2018

- Canadian Number Theory Association XV, Université Laval, July 2018

Seminar Talks (Recent Five Years)

- *Rook Polynomials: A Straight-Forward Problem*, Trine Mathematics Colloquium, February 10, 2022

- *The Theory of Integer Partitions, II*, Trine Mathematics Colloquium September 23, 2021

- *The Theory of Integer Partitions, I*, Trine Mathematics Colloquium, September 9, 2021

- *Moment Inequalities of Overpartition Cranks*, Amherst REU Seminar, July 19, 2021

- *Sign Changes in the Prime Number Theorem*, Binghamton Arithmetic Semianr, March 9, 2021

- *Look, Knave*, Oregon State University REU Seminar, October 2, 2020

- *A Moment to Count*, UNSW Canberra Number Theory Seminar, UNSW Canberra, March 9, 2020

- *Relaxing Modular Forms*, Canberra Number Theory Day, ANU, January 24, 2020

- *Overpartitions and q-Hypergeometric Series*, UNSW Number Theory Seminar, UNSW, October 31, 2019

- *Overpartition Cranks and Quasimodularity: Encore*, UNSW Canberra Number Theory Seminar, UNSW Canberra, October 15, 2019

- *Partition Zeta Functions*, UNSW Canberra Number Theory Seminar, UNSW Canberra, August 6, 2019

- *Introduction to Partition Theory II*, UNSW Canberra Number Theory Seminar, UNSW Canberra, May 21, 2019

- *Oscillations in the Prime Number Theorem Error Term*, Pure Maths Seminar, University of Queensland, May 14, 2019

- *Counting Sign Changes in the Prime Number Theorem*, ANU Algebra and Topology Seminar, ANU, March 26, 2019

- *Introduction to Partition Theory I*, UNSW Canberra Number Theory Seminar, UNSW Canberra, March 19, 2019

- *Buffered Frobenius representations of overpartitions*, UNSW Number Theory Seminar, UNSW, August 23, 2018

- *On Robin's Inequality*, REU Seminar, Oregon State University, August 6, 2018

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Service (Recent Five Years)

- Director, Math Tutoring Center and Math Competition, Trine University, 2022-

- Faculty Advisor, Gender and Sexualities Alliance Network, Trine University, 2021-

- Chair, Honors Calculus Committee, Trine University, 2021-

- General Education Assessment Committee, Trine University, 2021-
  Data Literacy Subcommittee

- Director, Math Tutoring Center, Trine University, 2021-2022

- Mathematics Department Assessment Committee, Trine University, 2021-

- Math Competition Committee, Trine University, 2021-2022

- General Education Assessment Workshop, Trine University, 2021

- Mathematics Department Curriculum Committee, Trine University, 2020-2021

- Mathematics Department Hiring Committee, Trine University, 2020-2021

- Curriculum Committee, Trine Department of Mathematics and Physics, 2020-2021

- Co-organizer, Number Theory Online Conference 2020, June 2020

- QueersInScience Inaugral Committee for ACT, 2020

- UNSW Canberra LGBTIQ Diversity Champion and Working Group, 2019-2020

- UNSW Canberra Equity Diversity & Inclusion Committee, 2019-2020

- ACT Division Organiser Hiring Panel, NTEU, 2019

- UNSW ALLY Network, 2019-2020

- Mentor, Women in STEM Mentoring Program, UNSW Canberra, 2019, 2020

- Honours Defense Committee, UNSW Canberra, November 2018

- ACT Division Acting President, NTEU National Council, October 4-6 2018

- Session Chair, Number Theory Down Under 6, September 27, 2018

- ACT Division Councillor, National Tertiary Education Union, 2018-2019

- UNSW Canberra Branch Secretary, National Tertiary Education Union, 2018

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Outreach (Recent Five Years)

OSU Mathematics Alumni Panel

Oregon State University Graduate Orientation Seminar, May 25, 2022

"Rook Polynomials: A Straight-Forward Problem"

American Mathematical Society Feature Column, January 1, 2022
https://mathvoices.ams.org/featurecolumn/2022/01/01/rook-polynomials/

"Diagonal Zeal," April 2021

A song about the difficulties of technical language in mathematics. Full audio and notes may be found at
https://jocko-homomorphism.bandcamp.com/track/diagonal-zeal

QueersInScience Wear It Purple Day Campaign, 2020

Online campaign promoting Wear It Purple Day, an annual LGBTIQA+ awareness day in Australia.

QueersInScience National Science Week Campaign, 2020

Online campaign promoting National Science Week in Australia.

"A Game of Broken Telephone," 2020

An accessible exposition of the Look, Knave problem (see above) published in the *Midnight Missives* zine.
https://wtbc.bandcamp.com/merch/midnight-missives

QueersInScience Prime Minister's Prizes for Science Campaign, 2020

Online campaign promoting diversity in nominations for the Prime Minister's Prizes for Science.

"Discretion," February 2020

A song about RSA encryption. Full audio and notes may be found at jocko-homomorphism.bandcamp.com/track/discretion

"This is What a Scientist Looks Like" Australian Mathematical Sciences Institute Panel Discussion, University of New South Wales, January 23, 2019

Discussion of marginalized people's experiences in STEM fields.

"A New Ideal," November 2018

A song written in honor of number theorist Emmy Noether. Full audio and notes may be found at jocko-homomorphism.bandcamp.com/album/a-new-ideal

Science in ACTion Fair, Canberra, Australia, August 10-11, 2018

Stall Coordinator for UNSW Canberra

"Number Theory Down Under" Presentation, Madison Rotary Club, Madison IN, August 2, 2018

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Training

- Standard Mental Health First Aider, Mental Health First Aid Australia, June 12, 2019

- UNSW Ally Training, UNSW Canberra, June 7, 2019

- Foundations of University Learning and Teaching, UNSW Canberra, February-April 2019

- Early Career Workshop, 62nd Meeting of the Australian Mathematical Society, Adelaide Australia, December 2019

- UNSW Essentials of Supervision, October 24, 2018

- NTEU Financial Governance Training, October 5, 2018

- OSU Office of Equity and Inclusion Implicit Bias Training, 2016

- OSU Online FERPA Training, Oregon State University, 2011

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Ms. Marissa Nichols	Assistant Professor	nicholsm1@trine.edu	(260) 665-4302
Dr. Dan Rockwell	Senior Instructor	rockweld@math.oregonstate.edu	
Dr. Thomas Schmidt	Professor	toms@math.oregonstate.edu	
Dr. Holly Swisher	Professor	swisherh@math.oregonstate.edu	
Dr. Tim Trudgian	Associate Professor	t.trudgian@adfa.edu.au	+61 2 6268 8021