

JONATHAN SCHNEIDER

312-805-0370

jschneider.math@gmail.com

I. RESEARCH

Focus

Knot theory, focusing on diagrammatic theories in dimensions 1 and 2 and their models. Ongoing joint work with Louis Kauffman (University of Illinois Chicago) and Eiji Ogasa (Meijigakuin University).

Publications

2021: *A spinning construction for virtual 1-knots and 2-knots, and the fiberwise and welded equivalence of virtual 1-knots* (with L.H. Kauffman and E. Ogasa)

Proceedings of 6th Russian-Chinese Conference on Knot Theory and Related Topics
Special Issue of Journal of knot theory (to appear)

ArXiv Preprints

2020: *Toward a Combinatorial Theory of SET and Related Card Games*

In preparation

What is a Rotweldid 1-Knot?

Virtual 2-Knots and 'Classical 2-Knots In Stabilized 3-Manifolds (with E. Ogasa & L.H. Kauffman)

Doctoral dissertation

2016: *Diagrammatic Theories of 1- and 2-Dimensional Knots*, accepted

Conference presentations

2019: "Three Variants on Welded Knot Theory." SIU Pure Mathematics Conference, IL

2017: "Fiberwise isotopy of toral surfaces." Knots In Washington XLV, GWU

2016: "Weak models for Virtual & Rotweldid surface knot theories." Knots In Washington XLIII, GWU

2015: "Sato & Rourke's Welded knots." Knots In Washington XL, GWU.

2015: "Welded knots in dimensions 1 and 2." AMS Sectional Meeting, Loyola University.

2012: "Virtual 2-knots." AMS Sectional Meeting, University of Kansas.

2007: "Symmetries of knots." MAA MathFest, San Jose, CA

2005: "Flat-Foldability of origami crease patterns." St. Joseph's University poster session, PA

Public seminars

2021–2022: Colby College Mathematics Colloquium

2006–present: Quantum Topology and Hopf Algebras Seminar, UIC

Peer review

2018: 7th International Meeting of Origami in Science, Mathematics, and Engineering (7OSME)

Other public appearance

2008: *Between The Folds* (documentary film). Interview about the mathematics of origami.

II. EDUCATION

History:

- 2016: PhD in Mathematics. University of Illinois Chicago.
2008: M.S. in Mathematics. University of Illinois Chicago.
2005: B.A. in Mathematics. Swarthmore College.

Fellowships:

- 2006–2016: Full tuition waiver and stipend. University of Illinois Chicago.

III. TEACHING & MENTORSHIP

Teaching Employment

- 2022–present: Visiting assistant professor, Trinity College, CT
2021–2022: Visiting assistant professor, Colby College, IL
2019–2020: Visiting assistant professor, Augustana College, IL
2018–2019: Full-time instructor, University of Illinois Chicago
2017–2018: Adjunct faculty, Saint Xavier University, IL.
2013–2017: Adjunct faculty, College of Dupage, IL.
2015: Visiting lecturer, University of Illinois Chicago.
2013: Adjunct faculty, Elgin Community College, IL.
2012: Adjunct faculty, Moraine Valley Community College, IL.
2008: Teacher, Center For Talented Youth Summer Program, Skidmore College, NY.
2006–2015: Graduate teaching assistant, University of Illinois Chicago.

Courses taught

- Applied Linear Algebra • Mathematical Writing • Mathematical Modeling
- Business Calculus • Calculus I–III • Statistics • Basic Algebra • Trigonometry
- College Algebra • Quantitative Literacy • Senior inquiry (capstone)

Undergraduate Student Engagement

- 2022: Founder, Origami club (Colby College)
2020: Founder, Origami club (Augustana College)
2019: Putnam Competition, coach/administrator
2019: Mentor, Impact and Research Day, student project (Jeremy Stymacks), UIC
2017–2018: Mentor, SIRS program, Illinois Mathematics and Science Academy
2017: Invited talk on smooth manifolds, Saint Xavier U., undergraduate math club.
2015–2017: Tutor, Stack Tutoring
2011: Invited talk on origami math, College of DuPage, IL.
2010–2011: Instructor, Summer Enrichment Workshop, University of Illinois Chicago.
2006–2016: UIC Undergraduate Math Club invited speaker

IV. EXTRA-MATHEMATICAL ENDEAVORS

- Origami. Regular participant of Centerfold Origami Convention (Columbus, OH) and the OrigamiUSA Convention (New York City, NY).
Lectured on origami mathematics at College of Dupage and UIC.
Started weekly origami club at Augustana College and Colby College.
- Literature. Hosts regular “storyreading” literary events.
Often performs at local poetry events.
- Music. Former participant in UIC Chamber Choir.
Special interest in contemporary classical composers.

V. REFERENCES

Scott Taylor	sataylor@colby.edu	Math department chair, Colby College
Louis H. Kauffman	kauffman@uic.edu	Graduate adviser, UIC.
Stacey Rodman	staceyrodman@augustana.edu	Math department chair, Augustana College
Andrew Sward	andrewsward@augustana.edu	Beling chair of Mathematics, Augustana College
Eiji Ogasa	pqr100pqr100@yahoo.co.jp	Research co-author, Meijigakuin University.
Dave Radford	radford@uic.edu	Doctoral committee member, UIC