

Melody A.H. Molander

CONTACT INFORMATION

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melodymolander.com

EDUCATION

University of California, Santa Barbara
Ph.D. in Mathematics (pursuing)

September 2019 - present

University of Oklahoma
M.A. in Mathematics

August 2014 - May 2017

University of California, Davis
B.S. in Mathematics

September 2010 - June 2014

PAPER

1. “Skein Theory of Index 4 Subfactor Planar Algebras” (in preparation)

RESEARCH INTERESTS

Low-dimensional Topology, Quantum Algebra, Subfactors, Operator Algebras, Planar Algebras, Quantum Groups, Category Theory, Knot Theory

AWARDS

National Science Foundation Travel Grant

2023

Decolvenaere Research Accelerator Award - UC Santa Barbara Graduate Division

2023

Awarded to a top-ranked student with substantial research expenses in recognition of their outstanding research and academic work.

Individualized Professional Skills (IPS) Grant - UC Santa Barbara

2023

Awarded to graduate students to take greater agency in their own career path by funding exploration of a range of professional development opportunities across a variety of career and skill interests. The grant program also includes increased awareness of valuable experiences, career readiness, post-event follow through, and peer-to-peer networking.

Department of Mathematics Graduate Fellowship - University of Oklahoma

2015

Awarded to graduate students who make exceptional contributions to the mathematics department

Richard V. Andree Memorial Scholarship - University of Oklahoma

2015

Awarded to graduate students who have shown academic excellence, department and university citizenship, and activity in support of Pi Mu Epsilon

Yueh-Jing Lin Fund - UC Davis

2013

Awarded to high-achieving graduate or undergraduate students.

INVITED TALKS

TBD

January 2024

Joint Mathematics Meetings, “Knots, Skein Modules, and Categorification” Special Session

Skein Theory for Affine ADE Subfactor Planar Algebras

March 2022

QGS: Quantum Groups Seminar (Zoom), Université de Lille & University of Oslo

CONFERENCE TALKS

Skein Theory for Index 4 Subfactor Planar Algebras

May 2023

Great Plains Operator Theory Symposium, The Ohio State University

Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4

May 2023

AMS Spring Western Sectional, “Algebra Structures in Knot Theory” Session, Fresno State

Skein Theory for Affine ADE Subfactor Planar Algebras

May 2023

Moab Topology Conference, Utah State University - Moab

<i>Skein Theory of Affine Type A Subfactor Planar Algebras</i> Redbud Topology Conference, University of Oklahoma	March 2023
<i>Diagrammatic Presentations of Index 4 Planar Algebras</i> Underrepresented Students in Topology and Algebra Symposium, University of Washington	March 2023
<i>Diagrammatic Presentations of Index 4 Subfactor Planar Algebras</i> Tech Topology Conference, Georgia Tech	December 2022
<i>Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4</i> Topology Students Workshop, Georgia Tech	July 2022
<i>Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4</i> BRIDGES Conference, Poster Session, University of Utah	June 2022
<i>Comparing Voting Systems Using Kemeny Rankings</i> Undergraduate Research Conference, Student Poster Session - UC Davis	April 2014
<i>Comparing Voting Systems Using Kemeny Rankings</i> MAA Golden Section Meeting, Student Poster Session - Sonoma State University	February 2014

TEACHING EXPERIENCE

Teaching Assistant - UC Santa Barbara MATH 108AB - Introduction to Linear Algebra MATH 8 - Transition to Higher Mathematics MATH 6A - Vector Calculus I MATH 6B - Vector Calculus II MATH 34B - Calculus for Social and Life Sciences	Fall 2019 - Present
Associate Instructor - UC Santa Barbara MATH 6A - Vector Calculus I MATH 4A - Linear Algebra with Applications	Summer 2020, Summer 2021
Adjunct Mathematics Professor - Cosumnes River College MATH 30 - Pre-Algebra STAT 300 - Introduction to Statistics and Probability MATH 20 - Arithmetic	Spring 2018 - Spring 2019
Teaching Assistant - University of Oklahoma MATH 1743 - Business Calculus I MATH 1914 - Calculus 1 (Fast Track) MATH 2924 - Calculus 2 (Fast Track) MATH 1823 - Calculus 1	Fall 2015 - Spring 2017
Instructor of Record - University of Oklahoma MATH 1823 - Calculus 1 MATH 1503 - College Algebra	Fall 2014 - Summer 2015, Summer 2016

TALKS FOR STUDENTS

<i>Katherine Johnson: The Pioneer Whose Research Got Us to Outer Space!</i> Hypatian Seminar, UC Santa Barbara	November 2021
<i>The Total Beginner's Guide to Creating Your Graduate Student Webpage</i> Hypatian Seminar, UC Santa Barbara	January 2021
<i>Pascal's Triangle</i> AWM, UC Santa Barbara	February 2020
<i>Ada Lovelace: Victorian Computer Programming Visionary</i> Hypatian Seminar - University of California, Santa Barbara	November 2019

<i>My Career In Web Development (and Teaching!)</i> Mathematics Career Day - University of California, Davis	May 2018
<i>Fractals and the World Around Us</i> (with Dr. Jeffrey Meyer) Math Day Fun Session - University of Oklahoma	November 2015
<i>Barbers, Painters, and Berry: Famous Paradoxes and Their Relation to Mathematics</i> Math Club at UC Davis	October 2013

WORK EXPERIENCE

Graduate Teaching Assistant Mathematics Department, UC Santa Barbara	September 2019-present
Adjunct Faculty Professor Cosumnes River College, Los Rios Community College District	January 2018 - August 2019
Internet Data Exchange Director iHOUSEweb Inc.	July 2017 - August 2019
Lead Mathematics Academic Tutor Kingsfield Tutors	July 2017 - February 2018
Graduate Teaching Assistant Mathematics Department, University of Oklahoma	August 2014 - May 2017
Tutor Math Center, Mathematics Department, University of Oklahoma	August 2014 - May 2017
Grader Mathematics Department, University of California - Davis	August 2013 - June 2014
Tutor Student Academic Success Center, University of California - Davis	August 2013 - June 2014

ACADEMIC SERVICE

AWM Chapter at UCSB Founder and President	August 2022 - present
REU Graduate Mentor, UCSB	June 2022 - present
Directed Reading Program Co-Organizer and Mentor, UCSB	Winter 2020 - present
Women in STEM Mentor, UCSB	September 2019 - present
Quantum Algebra and Topology Seminar Co-Organizer, UCSB	September 2021 - present
Graduate Quantum Algebra and Topology Seminar Co-Organizer, UCSB	September 2021 - present
UC Santa Barbara Math Circle Aide	September 2020 - September 2021
Mathematics Career Day Panelist, UC Davis	May 2018
Mathematics Graduate Student Association Vice President, OU	August 2016 - May 2017
Math Day Fun Session Coordinator, OU	November 2015, November 2016
Volunteer - Women in STEM Conference by OK-EPSCOR	October 2016
Directed Reading Program Graduate Mentor, OU	January 2016 - May 2016
Math Teacher's Circle in OKC, Graduate Coordinator and Co-Founder	August 2015 - May 2017
TORAS Conference, Co-Organizer	March 2015
Undergraduate Mathematics Committee, Graduate Representative, OU	August 2014 - May 2015
Math Club Event Coordinator, UC Davis	August 2013 - June 2014
Undergraduate Volunteer, Davis Math Circle	December 2012 - April 2013
Coach, SF Bay Area/NorCal American Regions Mathematics League	December 2012 - June 2014
Math Club President, Math Club at UC Davis	August 2012 - June 2013

PROGRAMMING

Excel, MATLAB, C, HTML, CSS, Python, Mathematica, Sage, and LaTeX