## Melody A.H. Molander

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>B.S. in Mathematics</b>	September 2010 - June 2014
PAPERS	<ol> <li>"Skein Theory of Affine ADE Subfactor Planar Algebras" (in preparation)</li> <li>"A Determinant Formula of the Jones Polynomial for a Family of Braids" with D. Asaner, S. Kumar, A. Pease, and A. Poudel (in preparation)</li> </ol>	
RESEARCH INTERESTS	Quantum algebra, low-dimensional topology, operator algebras, tensor categories, diagrammatic algebras, subfactors, structure and classification of C*-algebras, knot theory, quantum groups	
CURRENT RESEARCH PROJECT	"Nuclear Dimension of Crossed Products by Hilbert Bimodules over Commutative C*-algebras", Project leaders: Marzieh Forough and Karen Strung, Members: Ja A Jeong, Preeti Luthra, Melody Molander, and Zahra Hasanpour-Yakhdani	
AWARDS	National Science Foundation Travel Grant -\$ 1350	2023
	Operator Algebra Mentor Network Grant - \$ 500	2023
	Decolvenaere Research Accelerator Award - UCSB Graduate Division - \$8000	2023
	Individualized Professional Skills (IPS) Grant - UC Santa Barbara - \$1000	2023
	Department of Mathematics Graduate Fellowship - University of Oklahoma - \$3000	2015
	Richard V. Andree Memorial Scholarship - University of Oklahoma - \$2000	2015
	Yueh-Jing Lin Fund - UC Davis - \$2500	2013
TALKS	14. "Skein Theory for Index 4 Subfactor Planar Algebras"	March 2024
	Southeastern Lie Theory Workshop: Quantum Structures in Lie Theory, University of Virginia	
	13. "Using Diagrams to Describe Quantum Symmetries of Subfactors"	February 2024
	Women in Mathematics in Southern California Symposium, Pomona College	
	12. "Skein Theory of Index 4 Subfactor Planar Algebras" Joint Mathematics Meetings, "Knots, Skein Modules, and Categorification" Special Session	January 2024
	11. "Skein Theory for Affine ADE Subfactor Planar Algebras" Claremont Topology Seminar, Claremont McKenna College	November 2023
	10. "Skein Theory for Affine ADE Subfactor Planar Algebras" Twinned Conference on C*-Algebras and Tensor Categories, Fields Institute (in person) and ICMS (streamed live)	November 2023
	9. "Skein Theory of Subfactor Planar Algebras"	August 2023
	Young Mathematicians in C*-Algebras, KU Leuven	
	8. "Skein Theory for Index 4 Subfactor Planar Algebras"	May 2023
	Great Plains Operator Theory Symposium, The Ohio State University	
	7. "Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4"	May 2023

**POSTERS** 

**TEACHING** 

AMS Spring Western Sectional, "Algebraic Structures in Knot Theory" Session, Fresno State 6. "Skein Theory for Affine ADE Subfactor Planar Algebras" May 2023 Moab Topology Conference, Utah State University - Moab 5. "Skein Theory of Affine Type A Subfactor Planar Algebras" March 2023 Redbud Topology Conference, University of Oklahoma 4. "Diagrammatic Presentations of Index 4 Planar Algebras" March 2023 Underrepresented Students in Topology and Algebra Symposium, University of Washington 3. "Skein Theory for Affine ADE Subfactor Planar Algebras" Quantum Groups Seminar March 2023 (Zoom), Université de Lille & University of Oslo December 2022 2. "Diagrammatic Presentations of Index 4 Subfactor Planar Algebras" Tech Topology Conference, Georgia Tech 1. "Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4" July 2022 Topology Students Workshop, Georgia Tech 3. "Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4" June 2022 BRIDGES Conference, Poster Session, University of Utah 2. "Comparing Voting Systems Using Kemeny Rankings" April 2014 Undergraduate Research Conference, Student Poster Session - UC Davis 1. "Comparing Voting Systems Using Kemeny Rankings" February 2014 MAA Golden Section Meeting, Student Poster Session - Sonoma State University Lead TA - UC Santa Barbara Fall 2022 - Spring 2023 Provided professional development and TA training to new mathematics department TAs Fall 2019 - present 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 Associate Instructor - UC Santa Barbara Summer 2020 & MATH 6A - Vector Calculus I Summer 2021 MATH 4A - Linear Algebra with Applications Adjunct Mathematics Professor - Cosumnes River College Spring 2018 - Spring 2019 MATH 30 - Pre-Algebra STAT 300 - Introduction to Statistics and Probability MATH 20 - Arithmetic Teaching Assistant - University of Oklahoma Fall 2015 - Spring 2017 MATH 1743 - Business Calculus I MATH 1914 - Calculus 1 (Fast Track)

MATH 2924 - Calculus 2 (Fast Track)

July 2023 - January 2024

September 2021 - June 2022

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MATH 1823 - Calculus 1

Instructor of Record - University of Oklahoma Fall 2014 - Summer 2015 &

MATH 1823 - Calculus 1 Summer 2016

MATH 1503 - College Algebra

**WORKSHOPS Quantum Invariants and Low-dimensional Topology** August 2023

American Institute of Mathematics (AIM)

Women in Operator Algebras 3 June 2023

Banff International Research Station (BIRS)

**MENTORSHIP UCSB Directed Reading Program Mentor** December 2019 - June 2023

> **REU Graduate Mentor, UCSB** June 2022 - August 2022

Women in STEM Mentor, UCSB September 2019 - June 2022

SERVICE **AWM Student Chapter at UCSB, Secretary** June 2023-present

> Directed Reading Program at UCSB Co-Organizer December 2020 - July 2023

Graduate Quantum Algebra and Topology Seminar Co-Organizer, UCSB

AWM Chapter at UCSB Founder and President August 2022 - June 2023

Quantum Algebra and Topology Seminar Co-Organizer, UCSB

**ORGANIZATION** 

Operator Algebra Mentor Network - Mentee February 2023 - present **MEMBERSHIPS**