Melody A.H. Molander

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melodymolander.com

EDUCATION	University of California, Santa Barbara	September 2019 - present
	Ph.D. in Mathematics (pursuing)	
	University of Oklahoma	August 2014 - May 2017
	M.A. in Mathematics	
	University of California, Davis	September 2010 - June 2014
	B.S. in Mathematics	

PAPERS

2. "Skein Theory of Affine ADE Subfactor Planar Algebras" (in preparation)

1. "A Determinant Formula of the Jones Polynomial for a Family of Braids" with D. Asaner, S. Kumar, A. Pease, and A. Poudel (in preparation)

RESEARCH INTERESTS

Quantum algebra, low-dimensional topology, operator algebras, tensor categories, diagrammatic algebras, subfactors, structure and classification of C*-algebras and their relations to dynamical systems, knot theory, quantum groups

AWARDS		
	National Science Foundation Travel Grant ($2300)	2024
	National Science Foundation Travel Grant ($1000)	2024
	GSA Conference Travel Grant, UC Santa Barbara ($500)	2024
	USTARS Distinguished Graduate Student in Topology ($200)	2024
	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
	Math Department 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

* = INVITED

*18. *"Nuclear Dimension of Cuntz-Pimsner Algebras of C*-Correspondences"* — May 2024
Classification of C*-Algebras and Dynamics Seminar, Oberwolfach Research Institute for Mathematics, Oberwolfach, Germany

17. *"Skein Theory of Subfactor Planar Algebras"* — May 2024
Skew Braces, Braids, and the Yang-Baxter Equation Workshop, Banff International Research Station, Banff, Canada

*16. *"Using Diagrams to Describe Quantum Symmetries of Subfactors"* — April 2024
Distinguished Graduate Student in Topology Speaker at the USTARS Conference, University of Iowa

15. *"Skein Theory for Indiex 4 Subfactor Planar Algebras"* — April 2024
Graduate Student Topology and Geometry Conference, Michigan State University

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"*	January 2024	
Joint Mathematics Meetings, "Knots, Skein Modules, and Categorification" Special Session, Moscone Center		
*11. *"Skein Theory for Affine ADE Subfactor Planar Algebras"*	November 2023	
Claremont Topology Seminar, Claremont McKenna College		
*10. *"Skein Theory for Affine ADE Subfactor Planar Algebras"*	November 2023	
Twinned Conference on C*-Algebras and Tensor Categories, Fields Institute (in person) and ICMS (streamed live)		
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	
AMS Spring Western Sectional, "Algebraic Structures in Knot Theory" Session, Fresno State University		
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"*	March 2023	
Quantum Groups Seminar (Zoom), Université de Lille & University of Oslo		
2. *"Diagrammatic Presentations of Index 4 Subfactor Planar Algebras"*	December 2022	
Tech Topology Conference, Georgia Institute of Technology		
1. *"Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4"*	July 2022	
Topology Students Workshop, Georgia Institute of Technology		

POSTERS	4. *"A Determinant Formula of the Jones Polynomial for a Family of Braids"*	April 2024
	Graduate Student Topology and Geometry Conference, Michigan State University	
	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	

TEACHING	**Lead TA - UC Santa Barbara**	Fall 2022 - Spring 2023

Provided professional development and training to new math department TAs

Teaching Assistant - UC Santa Barbara	Fall 2019 - present

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, 2021, & 2024

MATH 6A - Vector Calculus I

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)

MATH 1823 - Calculus 1

Instructor of Record - University of Oklahoma	Fall 2014 - Summer 2015 & 2016

MATH 1823 - Calculus 1

MATH 1503 - College Algebra

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	**USTARS 2025 Conference Organizer**	May 2024 - present
	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	July 2023 - January 2024
	AWM Chapter at UCSB Founder and President	August 2022 - June 2023
	Quantum Algebra and Topology Seminar Co-Organizer, UCSB	September 2021 - June 2022

ORGANIZATIONS	Operator Algebra Mentor Network - Mentee	February 2023 - present