

Melody A.H. Molander

CONTACT INFORMATION

melodymolander[at]math.ucsb.edu
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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

AWARDS

Department of Mathematics Graduate Fellowship - University of Oklahoma
Awarded to graduate students who make exceptional contributions to the mathematics department

2015

Richard V. Andree Memorial Scholarship - University of Oklahoma
Awarded to graduate students who have shown academic excellence, department and university citizenship, and activity in support of Pi Mu Epsilon

2015

Yueh-Jing Lin Fund - UC Davis
Awarded to high-achieving graduate or undergraduate students.

2013

RESEARCH EXPERIENCE

Graduate Research Assistant
Mathematics Department, University of California - Santa Barbara
Giving diagrammatic presentations by generators and relations for subfactor planar algebras of index 4.
Advisor: Dr. Stephen Bigelow (UC Santa Barbara)

May 2020 - present

Graduate Mentor
UC Santa Barbara Mathematics REU Program
Recovering knot polynomials from graphs.
Mentor: Dr. Sanjay Kumar (UC Santa Barbara)

June 2022 - present

Undergraduate Research Assistant
Mathematics Department, University of California - Davis
Used Kemeny ranking to predict how often preference voting and majority voting result in different winners. Funded through the REU program.
Advisor: Dr. Jesús De Loera (UC Davis)

September 2012 - June 2014

Undergraduate Research Assistant
Mathematics Department, University of California - Davis
Studied Fluid Mechanics and shallow water equations and how to more accurately model shallow water. Funded through the REU program.
Advisor: Dr. Mark Rummel (UC Davis)

June 2012 - August 2012

Undergraduate Research Assistant
Mathematics Department, University of California - Davis
Studied combinatorics and the diameter of simplicial complexes. Programmed in GAP to find the shortest path between two nodes of a simplicial complex in 2-dimensions.
Advisor: Dr. Jesús De Loera (UC Davis)

September 2011 - March 2012

TEACHING EXPERIENCE

Teaching Assistant - UC Santa Barbara
MATH 8 - Transition to Higher Mathematics
MATH 6A - Vector Calculus I

Fall 2019 - Present

MATH 6B - Vector Calculus II
MATH 34B - Calculus for Social and Life Sciences

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

**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

**SELECTED
PRESENTATIONS**

Diagrammatic Presentations of Affine Type A Subfactor Planar Algebras of Index 4
BRIDGES Conference, Poster Session, University of Utah

June 2022

Katherine Johnson: The Pioneer Whose Research Got Us to Outer Space!
Hypatian Seminar, UC Santa Barbara

November 2021

The Total Beginner's Guide to Creating Your Graduate Student Webpage
Hypatian Seminar, UC Santa Barbara

January 2021

Pascal's Triangle
AWM, UC Santa Barbara

February 2020

Ada Lovelace: Victorian Computer Programming Visionary
Hypatian Seminar - University of California, Santa Barbara

November 2019

My Career In Web Development (and Teaching!) May 2018
 Mathematics Career Day - University of California, Davis

Fractals and the World Around Us (with Dr. Jeffrey Meyer) November 2015
 Math Day Fun Session - University of Oklahoma

Comparing Voting Systems Using Kemeny Rankings April 2014
 Undergraduate Research Conference, Student Poster Session - UC Davis

Comparing Voting Systems Using Kemeny Rankings February 2014
 MAA Golden Section Meeting, Student Poster Session - Sonoma State University

Barbers, Painters, and Berry: Famous Paradoxes and Their Relation to Mathematics October 2013
 Math Club at UC Davis

ACADEMIC SERVICE

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, SQL, and LaTeX