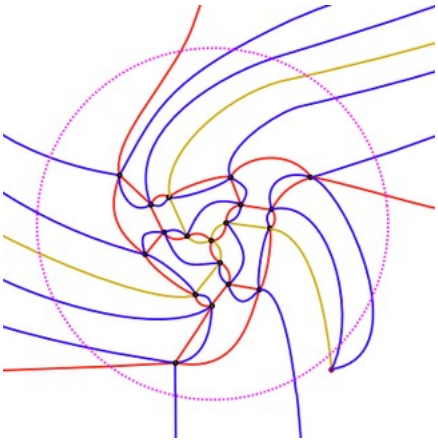
institute for pure & applied mathematics

Workshop II: Contact Geometry, Cluster Algebras and Skein Theory

OCTOBER 26 - 29, 2026



Scientific Overview

This workshop will focus on recent interactions between contact/symplectic geometry, cluster algebras, and skein theory.

Legendrian knots/submanifolds and their Lagrangian fillings have recently been discovered to be intimately related to cluster algebras through either Floer theory or (equivalently) microlocal sheaf theory. This has opened up a large dictionary between Lagrangian fillings (and augmentation varieties) of Legendrian submanifolds and cluster algebras (including quantum Teichmüller theory). The time seems right for a large-scale interaction between the symplectic and cluster communities to further develop both fields using insights obtained from the other.

In a related direction, skein theory has also recently been tied to Floer theory and specifically symplectic field theory.

Skein theory plays a role in many parts of mathematics–invariants of low-dimensional manifolds and knots, quantum topology, representation theory–and is an important recurring theme for the long program. In the setting of Floer theory, skein theory is related to string topology, and the geometric insights from Floer theory may help shed more light on skein theory (for example, on some positivity questions). A goal of this workshop is to bring together experts in symplectic aspects of skein theory and string topology and experts in quantum topology in the same space.

This workshop will include a poster session; a request for posters will be sent to registered participants in advance of the workshop.

Long Program Schedule

This workshop is part of the long program Quantum Topology, Character Varieties and Low-Dimensional Geometry (QT2026).

- Quantum topology, character varieties and low-dimensional geometry Tutorials: September 24 - 29, 2026
- Workshop I: Hyperbolic Structures and Quantum Invariants: October 12 - 15, 2026
- **Workshop II: Contact Geometry, Cluster Algebras and Skein Theory: October 26 - 29, 2026**
- Workshop III: Categorification in Quantum Topology: November 16 - 19, 2026
- Quantum topology, character varieties and low-dimensional geometry Culminating Retreat at Lake Arrowhead: December 13 - 18, 2026

Organizers

Roger Casals
University of California, Davis (UC Davis)

Daniel Douglas
Virginia Tech

Ko Honda
University of California, Los Angeles (UCLA)

Ian Le
Australian National University

Lenny Ng
Duke University

Angela Wu
Bucknell University

Invited Speakers

Dylan Allegretti (Tsinghua University), **Orsola Capovilla-Searle** (Oregon State University), **Roger Casals** (University of California, Davis (UC Davis)), **Tobias Ekholm** (Uppsala University), **Eugene Gorsky** (University of California, Davis (UC Davis)), **Rei Inoue** (Chiba University), **Xin Jin** (Boston College), **Richard Kenyon** (Yale University), **Roman Krutowski** (Massachusetts Institute of Technology), **Beibei Liu** (Ohio State University), **Ciprian Manolescu** (Stanford University), **Lukas Nakamura** (Institut de Mathématiques de Jussieu - Paris Rive Gauche), **Andrew Neitzke** (Yale University), **Lenny Ng** (Duke University), **Yoon Jae Nho** (University of California, Davis (UC Davis)), **Yu Pan** (Tianjin University), **Minh-Tam Trinh** (Howard University), **Daping Weng** (University of North Carolina), **Angela Wu** (Bucknell University), **Peng Zhou** (UC Berkeley PATH)

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For program details and registration:

Scan the QR code or visit ipam.ucla.edu/QTWS2