

# Workshop III: Statistical Mechanics Beyond 2D

**MAY 6 - 10, 2024**

## Scientific Overview

While classical “integrable” statistical mechanics has been restricted to one and two dimensions, recent ideas have extended our understanding to (some) higher dimensional situations, or to models on non-planar graphs. These include graph limits, posets, multinomial models, random complexes and random groups, and more. While these topics are quite diverse, they nonetheless have common tools, notably the use of random walks, the graph laplacian, homology theory, and determinants. Topics will include: Benjamini-Schramm limits of graphs, unimodular measures, spanning trees and spanning complexes, chip firing/sandpile models, matroids, higher determinantal processes, random complexes, multinomial models, random groups, rigidity, and statistical physics in more than two dimensions.

## Long Program Schedule

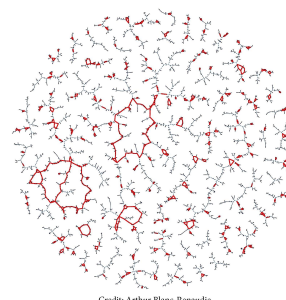
This workshop is part of the long program Geometry, Statistical Mechanics, and Integrability

- Geometry, Statistical Mechanics, and Integrability Opening Day : March 11, 2024
- Geometry, Statistical Mechanics, and Integrability Tutorials : March 12-15, 2024
- Workshop I: Statistical Mechanics and Discrete Geometry : March 25-29, 2024
- Workshop II: Integrability and Algebraic Combinatorics : April 15-19, 2024
- **Workshop III: Statistical Mechanics Beyond 2D : May 6-10, 2024**
- Workshop IV: Vertex Models: Algebraic and Probabilistic Aspects of Universality : May 20-24, 2024
- Geometry, Statistical Mechanics, and Integrability Culminating Workshop at Lake Arrowhead : June 9-14, 2024

## Participation

Additional information about this workshop including links to register and to apply for funding, can be found on the webpage listed below.

Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM’s mission, and we welcome their applications.



Credit: Arthur Blanc-Renaudie

## Organizers

**Vadim Gorin** (University of California, Berkeley) **Alejandro Morales** (Uni.of Massachusetts Amherst) **Greta Panova** (University of Southern California), **Asaf Nachmias** (Tel Aviv University), and **Perla Sousi** (University of Cambridge).

## Invited Speakers

TBA



**UCLA**



For more information, visit the program web page:

**[www.ipam.ucla.edu/GSIWS3](http://www.ipam.ucla.edu/GSIWS3)**