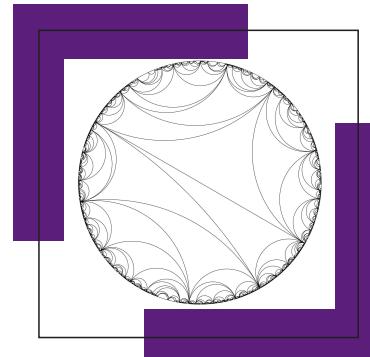


# New Interactions Between Probability and Geometry

January 26 - 30, 2026



## Scientific Overview

Universal structures that arise from continuum limits of planar statistical mechanics models at criticality have been the subject of intense research activity in the past 25 years. The mathematical analysis of such structures – random conformal geometry – is at the intersection of probability, complex analysis, geometry, and mathematical physics. Tools such as Schramm-Loewner evolutions (SLE), Gaussian random fields, and rigorous approaches to conformal field theory have led to spectacular progress on several fronts. The fractal geometry of such rough geometric objects has been much studied in recent years but newly discovered and surprising links to smoother and non-Euclidean geometric structures are virtually unexplored. In the same vein, relevant probabilistic models on surfaces are not well-understood, and in many cases even basic definitions are lacking.

The underlying philosophy of this workshop is the desire to bridge the deterministic geometric world and the random world, and to extend deterministic methods from con-formal geometry and analysis for potential applications to probabilistic settings that arise in modern research. Areas such as SLE that have gained quite some prominence in the recent past will not be neglected, but the primary focus will be to pursue topics that have not been heavily featured in conference and workshop activities. In a very broad sense the workshop can be seen as a continuation of the program “Random Shapes” that took place at IPAM in 2007. It will be a forum to discuss recent advances in the field and will provide an opportunity for a fruitful interaction between complex analysts, geometers, probabilists and physicists.

With generous support from the Myra Reinhard Family Foundation.

## 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.

## Organizers

**Mario Bonk** (University of California, Los Angeles (UCLA))

**Steffen Rohde** (University of Washington)

**Fredrik Viklund** (Royal Institute of Technology (KTH))

**Yilin Wang** (Institut des Hautes Études Scientifiques (IHES))

## Speakers

**Tom Alberts** (University of Utah)

**Omer Angel** (University of British Columbia)

**Juhan Aru** (EPFL (Ecole Polytechnique Fédérale de Lausanne))

**Illa Binder** (University of Toronto)

**Jacopo Borga** (Massachusetts Institute of Technology)

**Shirshendu Ganguly** (University of California, Berkeley)

**Maria Gordina** (University of Connecticut)

**Ewain Gwynne** (University of Chicago)

**Kurt Johansson** (KTH Royal Institute of Technology)

**Daniel Meyer** (University of Liverpool)

**Ellen Powell** (Durham University)

**Eero Saksman** (University of Helsinki)

**Scott Sheffield** (Massachusetts Institute of Technology)

**Vittoria Silvestri** (Università di Roma “La Sapienza”)

**Joe Thomas** (Durham University)

**Paul Wiegmann** (University of Chicago)

**Catherine Wolfram** (ETH Zurich)

**Tianyi Zheng** (University of California San Diego)



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For more information, visit the program webpage:

[www.ipam.ucla.edu/IPG2026](http://www.ipam.ucla.edu/IPG2026)