

# Graduate Summer School: Mathematics of Topological Phases of Matter

**June 22-26, 2020**

## Scientific Overview

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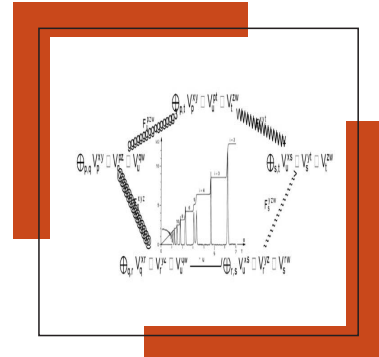
The application of topology to physics has become an integral part of a second quantum revolution in the sciences. The discovery of topological insulators and progress towards topological superconductors realizing non-abelian statistics has moved topological phases of matter onto the center stage in the interaction of topology and physics beyond the quantum Hall effect. While topological physics has been intensively investigated by physicists for the last few decades, the mathematical theory lags far behind. One challenge is formulating the right definition of topological phases of matter, which is closely related to the notoriously difficult problem of finding a rigorous mathematical formulation of quantum field theory.

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

## Participation

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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

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Colleen Delaney (UCSB),  
Michael Freedman (Microsoft  
Research), Matthew Hastings  
(Microsoft Research) and Zhenghan  
Wang (Microsoft Research).

## Speakers

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A list of confirmed speakers will be  
announced at a later time.

