

2024

H.N. Gupta Memorial Lecture

Steven Rayan

University of Saskatchewan

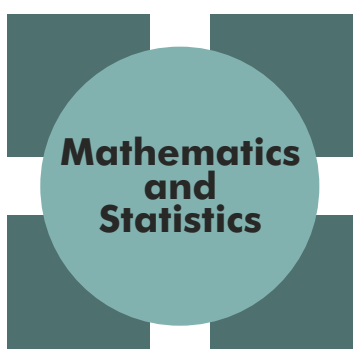
**Wednesday
October 23
3:30-4:30 pm**

Education Building 114



Mathematics and the Quantum Future

Serious attempts in both academia and industry to design practical quantum computers are pushing materials to their extremes. The rise of quantum materials, influenced in part by these attempts as well as by other disruptive applications, has involved new perspectives and tools not only from physics, chemistry, and material science, but also from mathematics — and not only applied mathematics, but also pure mathematics. I will discuss my work over the past half decade in using ideas from pure mathematics to anticipate new models of quantum materials as well as new paradigms for programming quantum devices that would result from these materials. I will explain, with lots of pictures, not only the mathematical and scientific ideas here, but also how the path to fabrication and actualization has led to exciting interdisciplinary collaborations between mathematics and other sciences and between academia and industry.



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50
YEARS



Faculty of
Science