

### **Priyanga Ganesan - Quantum Graphs**

Quantum graphs are an operator space generalization of classical graphs. In this talk, I will motivate the idea of a quantum graph and its significance in quantum communication. We will also look at the different notions of quantum graphs that arise in operator systems theory, non-commutative topology and quantum information theory.

### **Ka Ho Wong - An introduction to knot polynomials**

In this talk, I will discuss an elementary definition of the famous Jones polynomial of knot and its generalization.

### **Quyuan Lin - Well-posedness, Ill-posedness, and finite-time blowup**

In the mathematical analysis of PDEs, people usually care about the well-posedness/ill-posedness of the equation and the global existence/finite-time blowup of solutions. I will briefly talk about the definition of these concepts, and give some examples related to Navier-Stokes equations and Primitive equations..

### **Angelique Morvant - Modeling the Bending of Prestrained Plates**

A prestrained plate is a thin sheet of material that deforms from the flat configuration to minimize its energy. In this talk we will give an overview of how to derive and minimize the energy of a prestrained plate, and we will also give some ideas on how to model the behavior of such a plate in a Stokes fluid.

### **Jordy Lopez Garcia - What is a Scheme?**

I will introduce the audience to the concepts of a variety and a scheme in algebraic geometry.

### **Tushar Pandey - Art to mathematics to quantum**

There are triangles with angle sum 0 and infinite perimeter, interesting right? Or infinitely many lines through a point and parallel to a fixed line. Various artistic images and coral reefs are related to hyperbolic geometry. And for people who have seen these, there will be something on quantum invariants and knot theory to make it look fancy.