



THE UNIVERSITY OF  
**CHICAGO**

THE COMMITTEE ON  
COMPUTATIONAL AND  
APPLIED MATHEMATICS

## COLLOQUIUM

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**A unifying perspective of scientific machine learning with kernel  
methods**

**THURSDAY, April 2nd at 4:00 PM**  
Jones 303, 5747 S. Ellis Ave. Chicago, IL 60637

### ABSTRACT

In this talk I will discuss a general framework for unifying multiple problems in scientific machine learning (ML), in particular equation learning, PDE solvers, and operator learning. I will discuss how equation learning sits at the center of scientific ML and how it relates to classic ideas in control, inverse problems, and data assimilation. Then I will present an efficient kernel method that can learn equations and their solution maps implicitly. I will present some interesting numerical benchmarks as well as theoretical support in the form of convergence rates.

Organizers:

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