



Department of Mathematics & Data Science

Fall 2026

83rd KIEVAL LECTURE

Learning from Data in Biology: Why AI Alone Isn't the Answer

with **Dr. Suzanne Fernandes-Sindi**

Thursday, October 1, 2026

7:00 p.m.

SCI B 135



Modern AI can predict the behavior of remarkably complex systems—but prediction is not the same as understanding. In biology, where we often want to know *why* a system behaves as it does, mechanism still matters. I'll illustrate this through two examples from my research. First, I'll show how we can learn governing equations directly from agent-based model data, discovering interpretable rules rather than simply making black-box predictions. Second, I'll describe how a mechanistic model of blood clotting can be used to generate “virtual populations” of simulated patients, revealing previously unrecognized drivers of bleeding severity in hemophilia—predictions that were later confirmed experimentally. Together, these examples show how combining data-driven methods with mechanistic models can give us something that AI alone cannot: insight into how complex biological systems work.

For more info go to www.humboldt.edu/mathematics/kieval-lecture

