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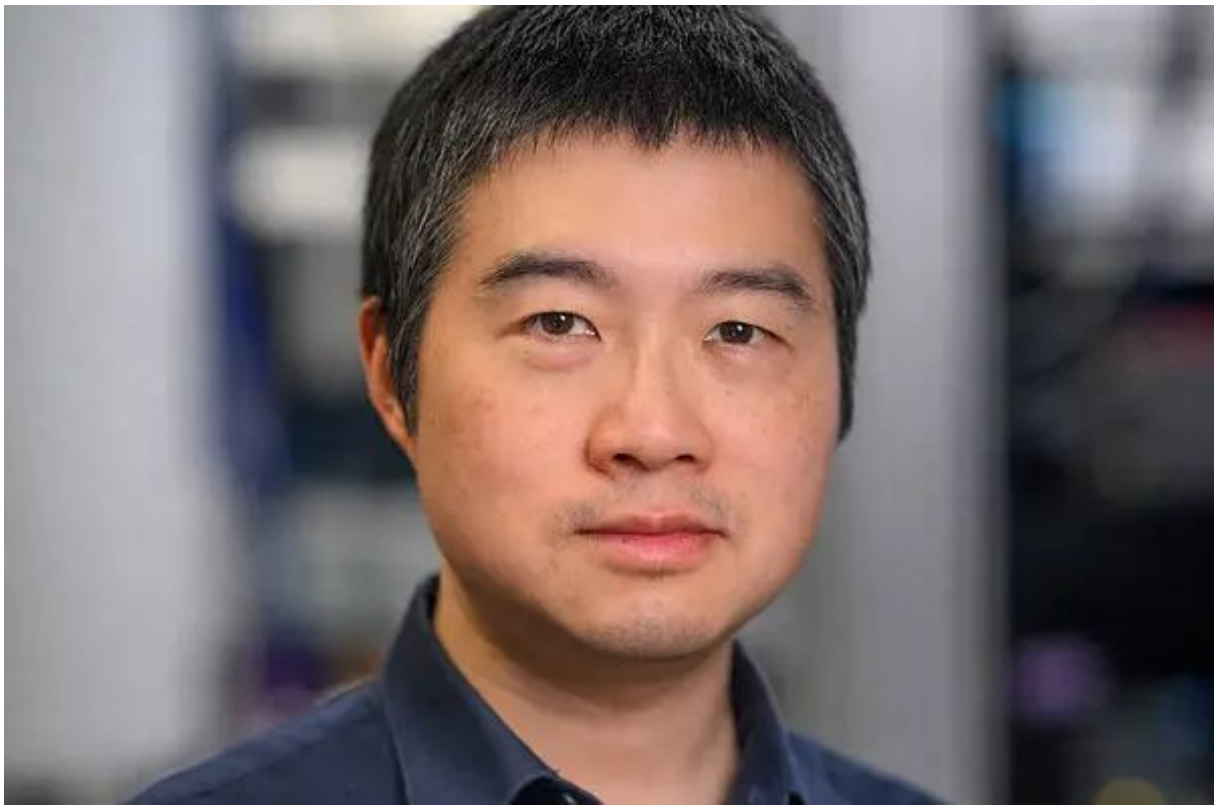

INSIGHT SEMINAR: Quantum Information on Quantum Matter

DAFEI JIN

October 22, 2026
12:00 to 13:00
Elements Room

ABSTRACT:
Noble-gas atoms, such as helium and neon, condense into quantum liquids and solids at low temperatures. They are the purest forms of matter in nature, free of chemical contamination or electromagnetic noise, and can serve as ideal hosts for quantum information carriers. In this talk, I will present our series of developments over the past few years, in trapping electrons and atoms on noble-gas quantum matter and manipulating their quantum states by on-chip electronics and optics. Our research has established new platforms for quantum computing, networking, and sensing.

BIO:
Dafei Jin is an Associate Professor of Physics and Electrical Engineering at the University of

Notre Dame. His research lies at the intersection of quantum matter and quantum information. He pioneered the development of quantum information platforms based on electrons and atoms trapped on noble-gas quantum solids. He is a recipient of the 2021 Julian Schwinger Foundation Award for Physical Research, the 2024 Department of Energy Early Career Award, and the 2026 Moore Foundation Experimental Physics Investigator Award.
Hosted by: Prof. Dr. Adrian Bachtold