

Agentic AI and the Future of Discovery

Wednesday, 3 December 2025 09:00 (45 minutes)

An AI agent is a computational entity that can interact with the world and adapt its actions based on learnings from these interactions. I discuss the potential for such agents to serve as next-generation scientific assistants, for example by acting as cognitive partners and laboratory assistants. In the former case, agents, with their machine learning and data-processing capabilities, complement the cognitive processes of human scientists by offering real-time data analysis, hypothesis generation, and experimental design suggestions; in the latter, they engage directly with the scientific environment on the scientist's behalf, for example by performing experiments in bio-labs or running simulations on supercomputers. I invite participants to envision a future in which human scientists and agents collaborate seamlessly, fostering an era of accelerated scientific discoveries, new horizons of understanding, and—we may hope—broader access to the benefits of science.

Presenting Author

Email

Student or Postdoc?

Institute

Registered for the conference?

CHPC User

CHPC Research Programme

Workshop Duration

Primary author: Dr FOSTER, Ian (University of Chicago & Argonne National Laboratory)

Presenter: Dr FOSTER, Ian (University of Chicago & Argonne National Laboratory)

Session Classification: Keynote

Track Classification: DIRISA