AI Agents: Accelerants for Drug discovery and Commercialization

On November 12, 2025, the HSI lunchtime seminar series featured Sloan alums Dr. Harison Hong, Executive Director and Brand Lead at Astria Therapeutics, and Tim Sun of Google's Cloud AI GTM team, who discussed the role and impact of AI in the pharmaceutical industry development and sales cycles.

One of the speakers cited a McKinsey report that estimated that AI is poised to generate between $60 and $110 billion in annual value across the pharmaceutical value chain. AI can be applied to some of the most confounding challenges in discovery, clinical trials, and commercialization. The key points of the wide-ranging discussion on AI applications are summarized in the table below.

PHASE	CHALLENGE	AI APPLICATION	DESCRIPTION
Drug Discovery	Generates vast amounts of protemic, genomic, and molecular data	AI Research Co-Pilot	Use AI agents to digest copious amounts of literature and data to help researchers develop new hypotheses and research directions.
	Choosing which molecules to test	Generative Molecular Design	AI tools to design new molecules that have specific properties
Clinical Trials	Recruitment of a diverse group of appropriate patients	Intelligent Patient Recruitment	Combine large EHR data sets with genetic data to assemble diverse and representative patient cohorts.
	Creating the required lengthy clinical trial protocols and study reports is time-intensive and uses up significant resources	Automated Report Generation	Use LLMs to generate first drafts of complex documents, significantly reducing manual effort.
Commercialization	Using similar engagement strategies across targets	Personalized HCP Engagement	Use comprehensive data analysis to make interactions with HCPs smarter and more personalized.
	Lack of knowledge/not enough time to find and digest information	Advanced Business Intelligence	Deploy AI agents to track competitors' drug development, monitor publicly available sources, and identify novel therapeutics.

The seminar speakers also discussed the challenges of AI adoption. One major decision facing companies is “build versus buy”, which is a challenge companies face with nearly every technological innovation. It is not specific to AI technologies.

The biggest block to AI adoption is not the technology, but the human element. Mobilizing people to adopt new methods is often more complicated and challenging than implementing the technology itself. Fear of being replaced by technology, inertia toward changing long-standing practices, a lack of understanding of the benefits of the new technology, and a lack of clarity about how the change will affect performance appraisals are all issues that organizations will have to address.

The speakers made clear that AI can help address several issues in drug discovery, clinical trials, and commercialization. As industry leaders contemplate how to implement these solutions, they also need to keep in mind the human element that bedevils any introduction of new technology.