

Future of Work at the Human-Technology Frontier: Mapping the Human-Technology Partnership

August 6, 2020 | 1:30 pm EDT
Zoom Workshop

About the Workshop

The National Science Foundation (NSF) seeks to understand the future of work at the human-technology frontier and develop useful, convergent research on human-technology partnerships. NSF's work will inform the design of new technologies to augment human performance, illuminate the emerging socio-technological landscape, understand the risks and benefits of new technologies (especially artificial intelligence) for workers, and foster lifelong learning. Workshop participants from industry, academia, non-profits, and government will work together to map the key issues created by rapid technological change and develop a framework for future collaboration.

In the near term and for most jobs, technology will not displace humans but will appear alongside them in factories, offices, stores, hospitals, schools, and other work contexts. While these technologies will contribute to increasing human performance, they will still require critical human input. For example, although artificial intelligence (AI) is increasing its presence from the manufacturing floor to the office suite, humans are still required to fine-tune algorithms and monitor the AI's performance. In return, the presence of AI enables human workers to focus on more specialized tasks, augmenting and improving the humans' performance. Over time, therefore, a technology and its human partner must each adapt to the characteristics of the other. What new skills must humans acquire? How should the mix of technology and labor be negotiated? What will the interfaces for human-technology collaboration look like in the future?

The increasing role of automated technologies, such as robots, allows greater task specialization for human workers. As a result, industries that once epitomized the American economy, such as manufacturing, will face significant evolutionary changes. Labor- and time-intensive tasks, as well as those with a high level of routineness, are among those most likely to face disruption and automation. Workplaces of all kinds face this disruption, and leaders and workers alike must rethink how they interact with the built environment and their new digitized coworkers. How is the increasing role of data and machines affecting workplace decisions? Will the adoption of these technologies upend the demand for and distribution of workers within a business or organization? What new jobs will emerge for those workers displaced by the growing presence of machines and new technologies?

Meeting Agenda

1:00 – 1:30 pm *Participants Log on*

1:30 – 1:35 pm *Welcome, Introductions, and Logistics*

Roland Stephen, PhD, Director, Center for Innovation Strategy and Policy, SRI International

- 1:35 – 1:55 pm *NSF's Future of Work Big Idea: Mapping the Human-Technology Partnership*
Presentation and Q&A
- Margaret Martonosi, PhD**, Assistant Director, Computer and Information Science and Engineering, NSF
- Henry A. Kautz, PhD**, Director, Division of Information and Intelligent Systems, Directorate for Computer and Information Science and Engineering, NSF, and Member, NSF Future of Work at the Human Technology Frontier Steering Committee
- 1:55 – 2:25 pm *Perspectives on Mapping the Human-Technology Partnership*
Panelists will provide brief remarks [5-7 minutes each] on their views of the big issues facing society as change in work and the workplace accelerates.
- Lawrence Jeff Johnson**, Deputy Director, Research Department, International Labour Organization
- Rebekah Kowalski**, Vice President, Manpower Manufacturing and Client Workforce Solutions, ManpowerGroup North America
- Mike Richey, PhD**, Chief Learning Scientist, Boeing
- Martha Russell, PhD**, Executive Director, mediaX, and Senior Research Scholar, Human Sciences and Technologies Advanced Research Institute (H-STAR), Stanford University
- 2:25 – 3:05 pm *Discussion on Mapping the Human-Technology Partnership*
Facilitated discussion with panelists and NSF
NSF FW-HTF Steering Committee Members, Panelists
- 3:05 – 3:50 pm *Breakout Sessions: Opportunities and Challenges in Mapping the Human-Technology Partnership*
Facilitated breakouts with meeting participants
NSF and SRI International
- 3:50 – 4:25 pm *Breakout Session Report Back*
Implications of breakout session output for future investments by NSF
NSF FW-HTF Steering Committee Members
- 4:25 – 4:30 pm *Wrap-up*
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