Future of Work at the Human-Technology Frontier: Restructuring the Physical and Virtual Workspace

July 23, 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 (FW-HTF) 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.

Increased use of technology is disrupting work schedules, tasks, business models, even the frontier between work and non-work. Businesses and workers must define new, highly flexible relationships. These new ways of working will spill over into non-work domains of life, with implications for the way households work. The use of technology may reshape the worker’s physical presence. Technologies such as alternate, virtual, and mixed realities (AR/VR/MR), telemedicine, and virtual presence will have a dramatic impact on the geography of work, perhaps affecting the growth of superstar urban areas or, at least, reshaping commuting patterns. These new technologies enable non-traditional work arrangements, such as on-demand and flexible schedules, and allow for more complete oversight of tasks and performance. Even the micro-geographies of the office—also reshaped by COVID-19—may change, with intra-office communication increasingly digital and staff physically isolated. What understanding will employers and employees reach regarding the workplace arrangement and communication under these new circumstances? How will these technologies affect the way firms organize their physical establishments and their employee teams? What will the impact of these technologies be on the spatial distribution of work?

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: Restructuring the Physical and Virtual Workspace
Presentation and Q&A
Dawn M. Tilbury, PhD, Assistant Director, Engineering, NSF

Robert B. Stone, PhD, Director, Division of Civil, Mechanical & Manufacturing Innovation, Director for Engineering, NSF, and Member, Future of Work at the Human-Technology Frontier Steering Committee
1:55 – 2:25 pm  *Perspectives on Restructuring the Physical and Virtual Workspace*
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.

**Jinsook Han**, Growth and Strategy Lead, Applied Intelligence, Accenture

**Mandy Pant, PhD**, Academic Research Director, Intel

**Kathryn Zickuhr**, Labor Market Policy Analyst, Washington Center for Equitable Growth

2:25 – 3:05 pm  *Discussion on Restructuring the Physical and Virtual Workspace*
Facilitated discussion with panelists and NSF

**NSF FW-HTF Steering Committee Members, Panelists**

3:05 – 3:50 pm  *Breakout Sessions: Opportunities and Challenges in Restructuring the Physical and Virtual Workspace*
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*

**NSF**
Jinsook Han
Managing Director and Global Lead of Growth & Strategy
Accenture Applied Intelligence

Ms. Han leads strategy, new capability incubation, ecosystem building and acquisitions for the AI, Analytics, Cognitive Automation and Data business at Accenture.

Prior to Accenture, Ms. Han was the Senior Vice President and Global Head of Business Solutions leading business architecture, digital product management, and the launch of innovation programs, such as drones for the commercial insurance business at AIG. She was also the Interim COO of Science, overseeing its growth and leading data science and Rapid Application Development teams.

Before joining AIG, Ms. Han was the Associate Partner at McKinsey with a focus on financial and professional services, healthcare, and technology. She holds an MBA from the Kellogg School of Management and a BS in Accounting with honors from Virginia Tech.

Mondira (Mandy) Deb Pant, PhD
Academic Research Director and Principal Engineer
Intel

In her current role as Academic Research Director and Principal Engineer at Intel, Dr. Pant leads Intel's Corporate Research Council, which is Intel's Strategic University Investment Body, filling the Intel technology pipeline with new promising ideas and future talent works. She works with leading academic researchers worldwide and technical experts at Intel to seed and drive research in areas of strategic importance to Intel in particular and the computing industry in general. Prior to this, as Intel’s lead technologist in the area of power delivery and power management, Dr. Pant investigated and drove numerous challenges in the power space, particularly on-chip power delivery issues, power management, and power reduction on the Intel next generation high-volume server microprocessors. She has led Intel's on-die power delivery synergy efforts and spearheaded
Intel's power delivery roadmap program for a number of years. Further, she has been instrumental in driving and deploying Intel's company-wide internal innovation programs.

Dr. Pant has published 20+ technical papers in prestigious Very-large-scale integration (VLSI) conferences and journals, has three issued patents and five pending patents. She received her Bachelor’s (B.Tech) in Computer Science and Engineering from I.I.T Kharagpur, India, and a Masters in Electrical Engineering as well as a Doctorate in Electrical and Computer Engineering from the Georgia Institute of Technology. She joined Intel in 2001 as part of the Alpha team acquisition from Compaq Computer Corporation where she worked since graduating in 2000.

Robert B. Stone, PhD
Director, Division of Civil, Mechanical & Manufacturing Innovation, Directorate for Engineering
National Science Foundation

Dr. Stone leads the NSF’s Division of Civil, Mechanical and Manufacturing Innovation, part of the Directorate of Engineering. Its mission is to support the integration of research and education in the areas of manufacturing, engineering materials, civil infrastructure, dynamic systems, engineering modeling and design, and robotics. He co-chairs the Big Ideas steering committees for the Future of Work at the Human-Technology Frontier and Navigating the New Arctic.

Dr. Stone is a Professor in the School of Mechanical, Industrial and Manufacturing Engineering (MIME) at Oregon State University and a Fellow of the American Society of Mechanical Engineers. His research interests include design theories and methodologies, and he was the Head of the School of MIME from 2011-2015 where he hired 22 new faculty, managed a student enrollment increase of over 200% in the school's undergraduate and graduate programs, and created the interdisciplinary robotics graduate program. Prior to initiating his graduate work, Dr. Stone worked in the Missions Operation Directorate of NASA-Johnson Space Center as a Space Shuttle Flight Controller for the Guidance, Navigation and Control Section.

Dawn M. Tilbury, PhD
Assistant Director, Engineering
National Science Foundation

Dr. Tilbury leads NSF's Directorate for Engineering in its mission to support engineering research and education critical to the nation's future and foster innovations to benefit society. The Engineering Directorate provides approximately 40 percent of the federal funding for fundamental research in engineering at academic institutions and distributes nearly 1,600 research awards each year. The Engineering Directorate also helps to advance NSF’s Ten Big Ideas, including the Future of Work at the Human-Technology Frontier, the Quantum Leap, and NSF INCLUDES.

A professor at the University of Michigan since 1995 in both mechanical and electrical engineering, Dr. Tilbury has a background in systems and control engineering. She is the inaugural chair of the Robotics Steering Committee and served as an associate dean for research in the College of Engineering. Dr.
Tilbury retains her position with the University of Michigan and shall return after her term with NSF expires.

Kathryn Zickuhr  
*Labor Market Policy Analyst*  
Washington Center for Equitable Growth

Ms. Zickuhr is a Labor Market Policy Analyst at the Washington Center for Equitable Growth, a non-profit research and grantmaking organization dedicated to advancing evidence-backed ideas and policies that promote strong, stable, and broad-based economic growth. Prior to joining Equitable Growth, she served as the Director of Policy at the D.C. Policy Center, a local policy research organization in the District of Columbia.

Previously, Ms. Zickuhr studied the social impact of technology as a Research Associate at the Pew Research Center. At Pew, she published reports on topics ranging from location-based services to the digital divide, most recently focusing on the changing role of public libraries in Americans’ lives and communities in the era of digital content. Ms. Zickuhr has presented findings to a variety of local, national, and international audiences, and has been interviewed by the New York Times, the Associated Press, NPR, the Washington Post, and other major news outlets about technology adoption and use.