



## Drivers of Change in the Future of OSH

*NIOSH Centers Meeting 2022*

July 26, 2022

Sarah A. Felknor, DrPH and Jessica M.K. Streit, PhD, CHES<sup>®</sup>

NIOSH Office of Research Integration

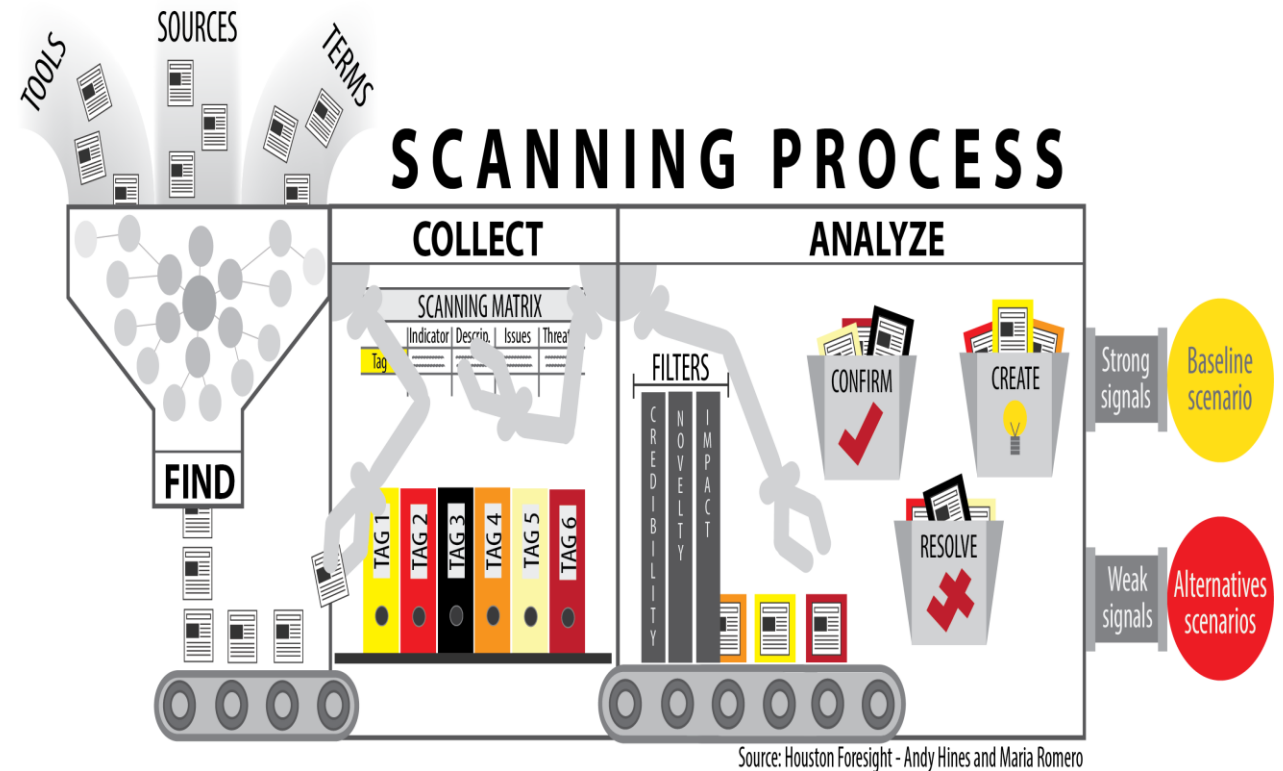
# Four Futures for OSH

- Consider how the future will impact OSH
- Identify implications for future OSH research and service
- Test the use of strategic foresight as a tool for planning and thinking about the future
- Project results presented in January 2021, and available at: [cdc youtube four futures for osh - Bing video](#)



# Identifying Drivers of Change

- Scan the horizon to collect information on signals of change that describe how the future might be different
- Catalogue and analyze the scanning 'hits'
- Identify trends, issues, plans, and projections that might influence the future
- Identified thematic clusters that we called drivers of change



# Key drivers of change in the future of OSH

- Advanced Technology
- Climate and Energy
- Data Security
- Knowledge Generation
- Social Credit
- Nonstandard Work Arrangements
- Virtual Work
- Workforce



---

<b>Driver Name</b>	<b>Driver Description</b>
--------------------	---------------------------

<b>Advanced Technology</b>	Advances in industrial technologies, particularly in the areas of data collection, automation, cloud computing, and AI dramatically increase productivity and allow highly customizable work environments but threaten to outpace the rate at which workers with obsolete skills can be retrained, or the rate at which systems can be built to cope with the hazards created by reliance on these new technologies.
----------------------------	--

<b>Climate Change</b>	Companies have expressed plans to improve infrastructure and technology in order to move towards more sustainable and efficient processes (e.g., reduced carbon emissions, improved battery technology). These changes will likely affect the way OSH research and service are performed and create new hazards and risks for workers in multiple industries.
-----------------------	---

<b>Data Security</b>	Use of new data collection and communications technologies such as cloud storage, biometrics, wearable sensors, and apps that collect personal data has led to an increased need for cybersecurity/encryption and worker data oversight. There is a growing need to ensure data security to protect the privacy of individuals, and prevent cybercrime, while leveraging the connectivity of data to improve health and safety.
----------------------	---

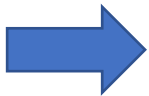
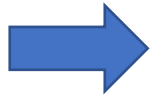
<b>Knowledge Generation</b>	Lack of trust in government information challenges federal agency ability to disseminate prevention strategies that can protect and promote safety and health in the future of work. Funding and research partnerships between university-industry collaborators will steer projects toward a broader benefit base, and information formats will adapt to the demands of the communities they serve.
-----------------------------	--

---

<b>Driver Name</b>	<b>Driver Description</b>
<b>Social Credit</b>	Data on social standing can be used to reward or punish behaviors at both the individual worker and organizational levels. Consumers and workers actively seek to support companies that exhibit Corporate Social Responsibility to promote people, planet, and profitability on equal terms.
<b>Nonstandard Work Arrangements</b>	The people engaged in or available for work continue to face challenges associated with non-traditional work arrangements and ever-evolving hiring practices. There is increasing acceptance of workers with more fluid employment histories, fueled by an emphasis on skills over pedigree and company loyalty.
<b>Virtual Work</b>	No longer limited to one physical location, workplaces are now ubiquitous – at home, on the road, in an airplane or an office. "Work" is defined by what you do, not where you go, each day.
<b>Workforce</b>	Education systems are pressured to prepare future workers for employment while simultaneously helping the current workforce upskill and reskill to meet growing talent needs. Increasingly sedentary work and the blurring of work and personal life boundaries continue to affect workers' physical and mental health, resulting in an increased need to allocate resources to support all aspects of employee health and well-being.

# Cross impact matrix revealed most influential drivers

++ Strongly Reinforcing + Reinforcing 0 Neutral - Contradictory -- Strongly Contradictory	Social Credit	Virtual Workplace	Work Arrangements	Workforce	Data Security	Climate and Energy	Knowledge Generation	Advanced Tech
Social Credit		++	+	+	++	++	-	0
Virtual Workplace	++		++	+	++	++	+	++
Work Arrangements	0	++		++	--	0	+	+
Workforce	+	++	++		-	0	+	+
Data Security	+	0	+	0		+	++	++
Climate and Energy	++	+	0	0	0		+	++
Knowledge Generation	+	0	0	+	++	+		++
Advanced Tech	+	++	++	+	++	++	++	



# Four Futures for OSH

**Continuation: Boundaries continue to blur**



**Collapse: The perfect storm**



**New Equilibrium: Remote controlled**



**Transformation: One world health**





# Strategic issues and themes across time horizons

Strategic Focus Area	Strategic Issues
<b>Mental health</b>	<ul style="list-style-type: none"><li>• Significant increase in resources devoted towards development of guidance for workplace psychosocial health and well-being policies</li><li>• New OSH competencies and a related discipline are needed to address significant worker mental health burden</li></ul>
<b>Virtual work</b>	<ul style="list-style-type: none"><li>• Federal human resources policies for remote work are not in line with private industry*</li></ul>
<b>OSH Research</b>	<ul style="list-style-type: none"><li>• Research into exposures of novel hazards and mental health require reorganization and reeducation to incorporate expertise in new technologies</li><li>• Declining Public/Congressional support limits mandated scope</li><li>• OSH community must continue to address traditional hazards as new OSH issues emerge at a rapid pace and require attention</li><li>• OSH research is driven by target population need, stakeholder interest, and OSHQ metrics, requiring a new approach to the OSH research portfolio</li></ul>
<b>Partnerships</b>	<ul style="list-style-type: none"><li>• The OSH workforce no longer meets worker needs due to worker fear of being monitored and data privacy issues.</li><li>• Partner and stakeholder connections must be built and maintained as virtual staff become more geographically dispersed</li></ul>
<b>Data security</b>	<ul style="list-style-type: none"><li>• OSH researchers lose ability to access surveillance data and work sites due to changes in OSH policies and regulations</li><li>• Increased data security demands pose greater challenges to OSH research and surveillance activities</li></ul>

\* This project was concluded in 2021. Since that time, there have been significant changes to the federal remote work policies that are more closely aligned with the private sector.

**Thank you**

**Sarah A. Felknor** | [SFelknor@cdc.gov](mailto:SFelknor@cdc.gov)

**Jessica M. K. Streit** | [JStreit@cdc.gov](mailto:JStreit@cdc.gov)

For more information, contact CDC  
1-800-CDC-INFO (232-4636)  
TTY: 1-888-232-6348 [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

