



CREATE, CAOE, and CCICADA Organize a Workshop on Labor Supply During COVID-19

As we have discovered, the supply of labor is disrupted during a pandemic:

- Some people have not been able to work because their children are at home.
- Some manufacturers have seen disruption because of social distancing requirements (meat packing plants, agricultural workers).
- Others are affected by having a large number of employees who are ill.
- Some workers are scared to return to work due to concerns about workplace safety, exposure, or contracting the virus and bringing it home to their children or at-risk elderly parents.
- Teleworking has enabled a great many to continue to work while in lockdown. Is this likely to continue after COVID?
- Essential workers are typically defined in terms of the economic sector in which they work. However, the decision as to who is or is not essential is affecting sectors throughout the supply chain.

Such disruptions led three DHS university centers of excellence (COEs), [*CREATE*](#) led by the University of Southern California, [*CAOE*](#) led by Arizona State University, and [*CCICADA*](#) led by Rutgers University, to organize a virtual workshop on the Labor Supply During COVID-19. Held on August 21, 2020, the workshop was organized around two panels: “Workplace Safety” and “Workforce Issues and Economic Costs.”

The workshop was part of the [DHS University Centers of Excellence COVID-19 Supply Chain Initiative](#).

THE MARINE TRANSPORTATION WORKFORCE FACES SIGNIFICANT CHALLENGES DURING COVID

The Marine Transportation System is critical to the world’s economy and a critical component in the world’s food supply. It is very broad, and so is the workforce, which includes vessel operators, port operators, longshoreman, truck and rail operators, lock and dam operators, those working on intra-modal connections, etc.

CAPT Andrew Tucci (USCG, retired) described the special issues facing the marine transportation system:

- Vessels are closed environments prone to COVID transmission.
- The industry is, by definition, mobile and global, with obvious COVID risks.
- Merchant mariners (vessels masters and crews) often have pre-existing health factors that add to COVID risks.
- Ports are chokepoints; putting vessels and/or workers in quarantine can lead to congestion and delays in supply chain activity across the economy.
- The Jones Act limits the ability of vessel operators to hire non-U.S. personnel for vessels in the coast-wise trade.
- Many jobs in the marine transportation system require high skills and years of experience, making it difficult to meet the needs of a surge during a disaster.
- Collisions, oil spills, and other maritime disasters require many personnel coming from different areas, and working closely in conditions in which hygiene is challenging, even in the absence of COVID concerns.



Tucci: “The US Marine Transportation System is a critical component of the global food supply chain.”

Image credit: Wikimedia commons

CAPT Tucci pointed out that there may be some positive outcomes from the pandemic:

- This may accelerate automation, which is lagging in the marine industry compared to other sectors.
- Working remotely may enhance the awareness of the need for cyber security.

CLOSING DOWN AND OPENING UP A NATIONAL LABORATORY PROVIDES SOME IMPORTANT LESSONS: WORK IS A THING YOU DO, NOT NECESSARILY A PLACE YOU GO

Bill Richmond, Chief Operating Officer of the National Security Directorate at Pacific Northwest National Laboratory, talked about how PNNL closed down and then partly opened back up. There were some important lessons learned:

- There are wide exceptions to required lockdown for workers in national security, but essentially none for basic science.
- Technical infrastructure enabled successful telework.
- “Over-communication” with the workforce is important; detailed, direct instructions to staff are needed—don’t expect them to make decisions alone.
- Close contact with state and local health departments leading to internal testing and contact tracing was important.
- It was important to *reverse* the cultural bias against staying home when you don’t feel well.
- Daily checklists for employees remind them of the importance of maintaining appropriate health behaviors.

The wide-ranging telework has led to a re-examining of the future of work:

- How to optimize collaboration without physical presence?
- Recognizing that work is a thing you do, not a place you go.

FUNDAMENTAL CHANGES FOR HOW THE COUNTER-TERRORISM WORKFORCE OPERATES

Gina Ligon, Director of the [NCITE](#) COE led by the University of Nebraska-Omaha, said that COVID-19 has accelerated changing trends in counter-terrorism work, trends already underway before the pandemic. We have seen:

- A large percentage of counter-terrorism workers are teleworking.
- They may not even use DHS computers, and they are certainly not in a classified environment.
- This has accelerated cooperation across the intelligence community.
- There are opportunities for new organizational structures.

COVID INCIDENCE IS HIGHER AMONG BLACK AND LATINO POPULATIONS – NOT BECAUSE OF PRE-EXISTING CONDITIONS BUT BECAUSE OF WORKPLACE CONDITIONS

William Spriggs, Professor at Howard University and Chief Economist of the AFL-CIO, provided some data from a CDC study in Georgia about the prevalence of COVID-19 infections in Blacks and Latinos that challenged some of the widely-reported “facts”:

- The prevalence of diabetes, cardiovascular disease, chronic lung disease, and severe obesity among Black and non-Black COVID-19 patients was not significantly different; only hypertension was more common in Blacks.
- The frequency of invasive mechanical ventilation and of fatality did not differ by race.
- COVID is more prevalent in the Black community but Blacks are not more likely to die if they catch COVID.

For Blacks and Latinos, COVID is a worker problem:

- COVID incidence is much greater among working age Black and Latino populations than among whites.
- Black and Latino workers are over-represented in those professions at great risk because they interact with the public or work in close proximity to other workers.
- And, because they are low wage workers, they feel greater pressure to work, even if they are not well.

- Fewer than one in five Black workers and roughly one in six Latinos are able to work from home.
- And, especially for Latino workers, the rise in unemployment has demonstrated the fact that they lack the safety-net of access to health insurance.

FEELING SAFE TO GO TO WORK

Whether or not a worker feels safe going to work during or after a disaster depends on changes made in the workplace, communication about those changes, and the risks involved. John Dony, Director of the Campbell Institute at the National Safety Council, described resources the NSC has made available to assist businesses of all kinds in making the workplace safer.



Blacks and Latinos are over-represented in front-line jobs where they interact with the public or work in close proximity to other workers.

Source: Rho, Brown and Fremsted, A Basic Demographic Profile of Workers in Frontline Industries, Center for Economic Policy and Research, <https://cepr.net/a-basic-demographic-profile-of-workers-in-frontline-industries/>

Chart credit: William Spriggs

Dony emphasized the importance of communication to ease the process of returning to work. A communication plan should:

- Involve effective, timely, and frequent communication to create a shared sense of safety and security among the workforce
- Include details of the transition
- Anticipate employee concerns and questions
- Exhibit enhanced caring from leadership
- Help employees practice better awareness of their surroundings for physical distancing and more.

Richard John of the [CREATE](#) COE also discussed communication, in particular gain-loss framing effects in risk messaging. Based on experiments he has conducted, he found differing risk averse behavior emerged with different kinds of disasters, with more risk averse behavior during hurricanes and floods, and less during earthquakes.



Richard John found that there was more risk averse behavior during hurricanes and floods and less during earthquakes.

Image credits:

Earthquake: U.S. Air Force photo by Master Sgt. Jeremy Lock via Wikimedia commons
Flood: Voice of America Indonesian Service via Wikimedia commons

Professor John also noted that risk perception, emotions, cognition, and behavior change as a disaster unfolds. Studies of a simulated evolving biological disaster (flu epidemic) showed that emotional, cognitive, and behavioral responses to the evolving disaster increased as the disaster escalated. However, avoidance behavior was more pronounced when the origin of the flu was unknown as opposed to when it was known to have been caused by a terrorist attack or a medical lab accident. This has implications for message framing during an evolving disaster such as a pandemic. Message studies show that building trust is key.

DIFFERING OCCUPATIONS HAVE DIFFERENT RISK AND DIFFERENT ECONOMIC IMPACTS

Healthcare and Education are two occupations that have been at the center of the pandemic. Different occupations have different risks as well as different economic “multiplier effects.” Both Adam Rose, Director of the [CREATE](#) COE, and Aaron Strong, an economist at the RAND Corporation, discussed the influence of occupation on economic impacts. Strong’s occupational analysis of 800 different occupations combined both economic and epidemiological considerations. Among the conclusions from Strong’s analysis:

- Healthcare, retail, and education are in the higher risk, higher economic impact category.
- Real estate is in the higher risk, lower impact category.
- Chemical manufacturing is in the lower risk, lower impact category.
- What we are looking for are lower risk, higher impact industries, but these are hard to find.

THE PANDEMIC COULD HAVE UNEXPECTED LONG-RUN EFFECTS ON THE ECONOMY

During the pandemic, many people have worked at home. In the short run, Janet Kohlhasse, an economics professor at the University of Houston, observed, this has had a number of positive impacts, including reduced roadway congestion and improved air quality. However, in the long run, if increased teleworking reduces face-to-face contact at the workplace and threatens the viability of employment subcenters in urban areas, creativity may suffer. Could the potential loss of creativity and reduced viability of employment subcenters have a severe impact on those urban areas and a ripple effect on the entire economy? Moreover, if firms follow the last-hired, first-fired paradigm, could that impact the improved diversity in the economy and also have negative economic growth consequences?

THE DRAMATIC IMPACT OF COVID ON THE U.S. ECONOMY

COVID-19 has caused one of the most dramatic impacts on the U.S. economy in our history. Several speakers discussed different modeling approaches to estimate how dramatic the effect has been and to predict future impact. Tony Cheesebrough, Chief Economist for the Cybersecurity and Infrastructure Security Agency (CISA) at DHS, described a July 10, 2020 CISA study with the [CAOE](#) COE carried out by Victoria University's Centre of Policy Studies (CoPS). The study will begin to produce monthly updates in October that will be calibrated by the most recent employment and GDP statistical releases. The July results included the following findings:

- COVID-19 will reduce U.S. GDP over the next year by 12.3% (\$2.6 trillion) and employment by 12.7% (22.8 million one-year jobs).
- Tourism industries are the most impacted, with hotels and restaurants greatly affected.
- Construction will be slow to recover, with output 24% below baseline even after two years.
- Many national critical functions are impacted, in particular the education industry and air transportation of passengers and cargo.

Adam Rose described computable general equilibrium models that characterize the entire economy as a set of interrelated supply chains and that are based on decisions by individual producers and consumers in response to price signals, regulations, and external shocks within limits of available capital, labor, and natural resources. His analysis performed in conjunction with colleagues at CREATE led to the conclusions that:

- Mandating closures generated a 37.5% drop in the U.S. GDP, even while telecommuting muted the negative impact.
- Teleworking is easier for some sectors (computer sector, academics) but harder in others (hospitals, retail, hair salons). The information sector, financial sector, and professional services had telecommuting before the pandemic.
- Pent-up demand could reduce the overall negative economic impact on GDP by 17.8%.

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For more information on all of the COEs: <https://www.dhs.gov/science-and-technology/centers-excellence>. The COEs are funded by the [Office of University Programs](#) in DHS' Science and Technology Directorate.