



**WRITTEN COMMENTS FOR AI INSIGHT FORUM ON INNOVATION  
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Senate Majority Leader Schumer, Senators Heinrich, Rounds, and Young, thank you for the opportunity to represent American workers in this important conversation on artificial intelligence (AI) and innovation. My name is Amanda Ballantyne. I am the Executive Director of the AFL-CIO Technology Institute (Tech Institute). The Tech Institute is an independent, non-partisan organization affiliated with the AFL-CIO—a voluntary, democratic federation of 60 unions representing 12.5 million workers in all regions and sectors of the economy and public service. The AFL-CIO Technology Institute seeks to provide workers a voice in the technological developments sweeping the workplace and society, including artificial intelligence.

American workers have genuine concerns about AI. Even before advanced generative AI burst onto the scene, researchers documented a variety of real and potential harms presented by AI. It threatens to automate certain jobs entirely or change work tasks and activities in ways that transform workers into cogs to accommodate the new technology or systems, reducing the skill set required, the wages paid, job security, and worker autonomy, job satisfaction, and dignity.<sup>1</sup> The AI industry itself creates many poorly compensated jobs doing data labeling and annotating that expose workers to harmful content. Employers increasingly use workplace AI systems to screen potential job candidates, assign tasks, schedule work shifts, press workers to be more productive, evaluate worker performance, and discipline and/or terminate workers.<sup>2</sup> These workplace AI systems can cause psychological stress, increased risk of repetitive motion injuries and musculoskeletal pain, reduced motivation and job satisfaction, scheduling and income instability, deskilling, demoralization, burnout, and turnover.<sup>3</sup> The National Labor

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<sup>1</sup> Nunes, A. “Automation doesn’t just create or destroy jobs—it transforms them.” *Harvard Business Review*. November 2, 2021, <https://hbr.org/2021/11/automation-doesnt-just-create-or-destroy-jobs-it-transforms-them>

<sup>2</sup> AI Now Institute. (2019). “AI Now 2019 Report.” December 12, 2022. <https://ainowinstitute.org/publication/ai-now-2019-report-2>

<sup>3</sup> Sultana, T. and Alam, N. (2022). “Finding the emerging research agenda: A systematic literature review on workplace monitoring and surveillance.” *Southeast Decision Sciences Institute*. [https://www.researchgate.net/publication/358783592\\_Finding\\_the\\_Emerging\\_Research\\_Agenda\\_A\\_Systematic\\_Literature\\_Review\\_on\\_Workplace\\_Monitoring\\_and\\_Surveillance](https://www.researchgate.net/publication/358783592_Finding_the_Emerging_Research_Agenda_A_Systematic_Literature_Review_on_Workplace_Monitoring_and_Surveillance); Ball, K. (2021). “Electronic Monitoring and Surveillance in the Workplace.” *European Commission*. [https://publications.jrc.ec.europa.eu/repository/bitstream/JRC125716/jrc125716\\_electronic\\_monitoring\\_and\\_surveillance\\_in\\_the\\_workplace\\_final.pdf](https://publications.jrc.ec.europa.eu/repository/bitstream/JRC125716/jrc125716_electronic_monitoring_and_surveillance_in_the_workplace_final.pdf); Gagné, M. (2022). “How algorithmic management influences worker motivation: A self-determination theory perspective.” *Canadian Psychology*.

Relations Board issued a memo in 2022 warning of “the potential for omnipresent surveillance and other algorithmic management tools to interfere with the exercise of Section 7 rights [to form or join unions] by significantly impairing or negating employees’ ability to engage in protected activity and keep that activity confidential from their employer.”<sup>4</sup> And AI endangers workers’ civil and political rights. AI systems have been linked to various forms of algorithmic bias and discrimination in the marketplace and in interactions with public agencies. Meanwhile, cheap and powerful generative AI tools enable malicious actors to commit fraud and undermine elections.

We know what happens when policymakers let major economic transformations play out without a concerted effort to engage workers, give workers a voice, and ensure workers share in the benefits. Free trade advocates claimed that letting industry loose would benefit everyone and any disruptions due to trade could be managed. Free trade policies ignored the needs of workers and the important role that workers and unions play in creating broad prosperity and equity, and instead pursued the offshoring of major US industries, which decimated the livelihoods and communities of millions of people at enormous human cost. From 2001 to 2018, 3.7 million U.S. jobs were lost because of the trade deficit with China alone.<sup>5</sup> There is a clear connection in the research between the decline of manufacturing jobs and the rising rates of poverty for both children and families.<sup>6</sup> And for the first time in US history, life expectancy has fallen, even prior to the pandemic, in part due to suicide and alcohol-related deaths of despair caused by economic disruption.

We can do better with this new digital economy transformation. The path of AI technological development could lead to broad societal benefits and a stronger country if AI technology is shaped by a broad social consensus with workers at the center.

Unions and allied worker organizations are the only institutions with the structural power and worker-centric focus to help working people navigate the incredible technological changes through bargaining, public policy advocacy, training, and direct engagement with researchers who are incubating new ideas.

## **Congress should foster an AI innovation ecosystem that works for working people**

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<https://psycnet.apa.org/doiLanding?doi=10.1037%2Fcap0000324>; Kantor, J. and Sundaram, A. (2022). “The Rise of the Worker Productivity Score.” *The New York Times*. August 14.

<https://www.nytimes.com/interactive/2022/08/14/business/worker-productivity-tracking.html>

<sup>4</sup> Office of the General Counsel. (2022). “Electronic Monitoring and Algorithmic Management of Employees Interfering with the Exercise of Section 7 Rights.” *National Labor Relations Board*, Memorandum No. GC-23-02. (October 31, 2022).

<https://apps.nlr.gov/link/document.aspx/09031d45838de7e0>

<sup>5</sup> Scott, R. and Z. Mokhiber, “Growing China trade deficit cost 3.7 million American jobs between 2001 and 2018,” *Economic Policy Institute*. January 30, 2020.

<https://www.epi.org/publication/growing-china-trade-deficits-costs-us-jobs/>

<sup>6</sup> Hammond, S. and A. Jain, “Deindustrialization Isn’t (Just) a White Working-Class Problem,” *Niskanen Center*. February 28, 2020.

<https://www.niskanencenter.org/op-ed-deindustrialization-isnt-just-a-white-working-class-problem-2/>

Unions are critical to helping working people navigate periods of technological transition and upheaval. They have played this role for generations. Back during electrification, for example, unions helped transform a chaotic and unsafe electrical system into a far safer and more efficient one. The International Brotherhood of Electrical Workers grew up through this technological transition and advanced policy proposals and industry standards that shaped the roll out of electrification, including through deep engagement with the Tennessee Valley Authority. Through collective bargaining we can manage these major structural changes in our economy but those efforts must be supported by strong public policy that ensures workers' voices are a part of the transition and that real training programs are funded and stood up. Unions have a long history of successfully transitioning their members. With the rapidly accelerating technologies including AI, it must be unions again that advance workers' interests and fight for an innovation-based economy that doesn't leave millions of workers behind.

Transformational technologies are not new to the labor movement. Working people are always on the leading edge of technology adoption. Virtually every sector has transformed amidst the rise of new technologies—the jobs performed by workers in vastly different segments of the economy and public service are dramatically different from the ones they performed just a few decades ago. Robotics in manufacturing, autonomous systems in transportation and retail, digital and AI tools in health care, hospitality, and the public sector, virtual reality technologies in construction, and many more innovations have changed work in dramatic ways. We know that new technologies can upend work, eliminate and change jobs, and challenge workers' skills and preparedness. But these outcomes are avoidable.

Unions—more than half of their members women and people of color—have the expertise needed for this moment to navigate technological transformation. Unions can help to build the changes we need from the ground up where workers shape the future and their jobs. Workers must have a co-equal voice along with employers, public sector institutions, regulators, and researchers in shaping the technological changes that are sweeping society and the workplace, whether you work in a hospital, in public service, a manufacturing plant, a transportation system or on a construction site.

Our innovation ecosystem and the technologies it propels isn't a product of random decisions and events—it is the result of mostly intentional decisions we make as a country, at the employer level, in government, and in our vast research infrastructure. Centering worker voices through the inclusion of labor unions in every aspect of the innovation process generates both immediate and longer-term benefits. Meaningful worker and union involvement in the innovation process creates better new technologies because the worker end-users can help craft approaches that are aligned with the real-world of workplaces. Collective bargaining can shape how or whether new technologies are brought to the workplace and can train and prepare workers to foster a less disruptive and more effective adoption of technologies. Meaningful co-creation can also ensure that this generation of innovation creates more opportunity for more people, producing prosperity that is shared widely and equitably without further eroding civic, social, and economic life and fueling more poverty and inequality.

## **Congress should invest in scaling innovative models of worker-centered R&D partnerships**

For decades our government has executed a massive research and development enterprise that has produced historic technological breakthroughs. But along the way we've moved away from what Mariana Mazzucato refers to as "mission oriented innovation," ignoring broader public and worker interests, failing to incorporate them into the innovation research processes funded by taxpayer dollars.

For too long, the federal sector, universities, and businesses have shaped and driven the public research agenda and largely left workers and worker voices out of the innovation research enterprise and routinely rolled out new technologies without worker collaboration. This paradigm has failed working people and fueled greater inequality. It has also often failed to produce outcomes that actually work well and increase productivity. Moreover, workers have often paid a heavy price through job losses and deskilling.<sup>7</sup> Without working people represented in these research initiatives, the university and business end up imposing new technological "solutions" on the end-users, workers, without enlisting their knowledge and specialized expertise.

We know that many technologies solve complicated problems, spawn the creation of entirely new products and industries, and give rise to new jobs. But they also upend workplaces without smart transition strategies in place. For many working people, technological change – without their input—is disruptive and disempowering as they lose good family-supporting jobs or see their knowledge and skills devalued and undermined. With new innovation policies, we can break this harmful cycle of poorly-managed public investments. But to do so, we must make better and different choices about who the stakeholders are and what role they should play in the enterprise.

Fortunately, Congress and President Biden are sending a different signal with key federal investments, including the CHIPS & Science Act. They realized that the sweep, pace and scale of technological change resulting from these extraordinary investments required worker and union input and engagement, also at scale, within every phase of the innovation process. The CHIPS and Science Act establishes a key formal role for labor organizations within the innovation system by writing labor into the NSF Technology, Innovation, and Partnerships Directorate, the Regional Technology and Innovation Hubs program, and the CHIPS Incentives programs. We can build from this model. R&D initiatives that center workers ensure that public research investments leverage the accumulated expertise of frontline workers who actually do the work. Working people are uniquely positioned to offer insights that are typically not found in the publicly-funded research labs. Workers, with their unions, can explain the complexities of the work and can inform researchers how work processes can be improved and the tradeoffs that technologies create around safety, security, efficiency, productivity, job quality, and training. It makes no sense for the taxpayer to foot the bill for billions in research investments without taking into account how those investments will affect working people and whether pro-worker, equitable outcomes in the private and public sector can be produced.

We've already demonstrated in a fast expanding partnership between the AFL-CIO and Carnegie Mellon University (CMU) that workers and their unions at the forefront of technological change can generate entirely different lines of inquiry inspired by worker

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<sup>7</sup> Brown, Sara. "The lure of 'so-so technology,' and how to avoid it." Massachusetts Institute of Technology Sloan School. October 31, 2019.  
<https://mitsloan.mit.edu/ideas-made-to-matter/lure-so-so-technology-and-how-to-avoid-it>

end-users that hopefully over time will help to translate research into better technologies that meet real-world needs. They can question the validity of researchers' claims and they can pressure test innovation ideas generated outside the workplaces they are designed to change or reform. The end result of durable partnerships between researchers and unions is the chance to avoid poorly-conceived innovations that do not work well in real-world workplaces and to propel innovations forward that produce strong outcomes. Unions can also smooth implementation by advocating for practical implementation plans and developing effective training to facilitate worker adoption and bring the new products and processes into the worksite more quickly and with less friction.

### **Models of worker-centered R&D partnerships**

The AFL-CIO and the AFL-CIO Tech Institute have fostered and developed closer relations between unions and universities such as CMU and the Massachusetts Institute of Technology to co-create labor union/university partnerships for studying and developing technology in real time, bringing workers and unions into laboratories to collaborate on the research, design and implementation of innovation.<sup>8</sup> CMU recognized the importance of humanizing its engineering and research programs to do more than innovate new technologies and launch new enterprises. The university wanted to recognize the role of workers and the impact on the Western Pennsylvania economy and local job creation.<sup>9</sup> This relationship has generated the following examples of worker-centered R&D partnerships:

- The AFL-CIO Tech Institute's "What's Human About Work" project brought together CMU, the Transport Workers Union, and Amalgamated Transit Union to share transit operator expertise with engineering and public policy professors to better understand what bus operators do on the job.<sup>10</sup> Bus operators do not just pilot the vehicles. They are first responders that cope with medical and safety emergencies; navigators that deal with weather, traffic, and road emergencies; safety professionals that face on-board disruptions including unruly passengers who threaten operators and passengers; and caretakers that assist older passengers and those with disabilities to ensure transit is accessible. In 2022 CMU released a white paper, "How to Make Sense of Bus Transit Automation," that concluded that no self-driving transit bus could perform the essential tasks that require the quick responses of human operators to safeguard passengers and keep the transit system functioning.<sup>11</sup> This program is producing rich data from operator insights that is reshaping the conversation about the roles and limitations of autonomous and "driver assist" driving systems in the real world public transportation operating environment.

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<sup>8</sup> Shuler, Liz. AFL-CIO President. "We need a modern labor movement that brings good jobs." *Chicago Sun-Times*. September 16, 2021.

<https://chicago.suntimes.com/2021/9/16/22677636/liz-shuler-modern-labor-movement-unions>

<sup>9</sup> Markley, Jordan (Markley). Carnegie Mellon University (CMU). "CMU researchers are helping frontline workers shape the technology that is shaping their work." *Making Possible*. Winter 2022.

<https://makepossible.cmu.edu/impact-stories/workforce-development/>

<sup>10</sup> Transport Workers Union. "Transit Future of Work research project with Carnegie Mellon University." March 3, 2022.

<sup>11</sup> Martelaro, Nikolas, et al. Carnegie Mellon University Traffic 21. "How to Make Sense of Bus Transit Automation: Considerations for Policy Makers on the Future of Human-Automation Teaming in the Transit Workforce." Spring 2022.

<https://www.cmu.edu/traffic21/research-and-policy-papers/traffic21-policy-brief-22.1---apr-14-002.pdf>

- An industrial union collaboration is also emerging with the major AFL-CIO affiliates whose members work across the manufacturing supply chain launching, in partnership with the AFL-CIO Tech Institute and the AFL-CIO Industrial Union Council, a collaboration with several CMU faculty members. This partnership, while still under development, will bring a frontline manufacturing worker voice into the emerging industry initiatives at CMU around 3D manufacturing and robotics and machine learning innovations that are changing manufacturing. This is especially important during a time when Congress and the Biden administration are attempting to rebuild our manufacturing sector. These manufacturing unions have been at the center of the rise of the industrial sector and are now at the center of emerging technologies that are changing the way we produce goods and redefining the nature of the work. This type of partnership can help us get ahead of innovation, foster new industries and good job creation, and prepare the workforce for transitions that are coming at a rapid pace especially as we see the rise of new innovations and manufacturing capacity in semiconductors and clean energy.
- Another multi-year union-university project focuses on the impact of algorithmic management and other technology in the hospitality industry, partnering with the nation's largest hospitality union, UNITE HERE. The hospitality industry has widely adopted algorithmic management tools across hotel operations, including chatbots, mobile check-in, and devices to assign and manage employee tasks, impacting the industry's frontline workers who are predominantly women, people of color, and immigrants.<sup>12</sup> Hotel housekeepers have some of the highest hospitality industry injury rates from pushing hundred-pound carts, scrubbing floors, making dozens of beds, and other physically demanding work.<sup>13</sup> Many hotel companies use apps that direct housekeeper work by assigning the sequence of rooms for workers to clean. The apps can direct workers to spend time moving from floor-to-floor, inefficiently ignoring nearby dirty rooms and leaving workers worried they would be disciplined for not completing their tasks.<sup>14</sup> The apps also sometimes force workers to clean multiple, more intensive, check-out rooms in a row, rather than allowing housekeepers to switch between check-out and stayover rooms to pace their workload, as they had typically done before the advent of the apps. The apps can incentivize workers to speed up in order to meet their daily room quotas while following the algorithmic management that might direct them to move between floors or distant hotel wings, or to over-exert themselves by cleaning multiple check-out rooms, potentially increasing the likelihood of an injury.<sup>15</sup> The apps can have the incidental impact of reducing the personal service housekeepers provide to longer-term guests, diminishing quality service and reducing job satisfaction for the housekeeper.<sup>16</sup> The National Science Foundation funded a research project partnering several

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<sup>12</sup> Spektor, Francesca et al. (Spektor et al. 2023). "Charting the automation of hospitality: An interdisciplinary literature review examining the evolution of frontline service work in the face of algorithmic management." *Proceedings of the ACM of Human-Computer Interaction*. Vol. 7. No. CSCW1. April 2023 at 20:2 and 20:5. <https://dl.acm.org/doi/pdf/10.1145/3579466>

<sup>13</sup> Buchanan, Susan, et al. "Occupational injury disparities in the US hotel industry." *American Journal of Industrial Medicine*. Vol. 53, No. 2. February 2010 at 116 to 125, <https://pubmed.ncbi.nlm.nih.gov/19593788/>; Canadian Centre for Occupational Health and Safety. [Fact sheet]. "Occupations and Workplaces: Hotel Housekeeping." January 2, 2020. [https://www.ccohs.ca/oshanswers/occup\\_workplace/hotel\\_housekeeping.pdf](https://www.ccohs.ca/oshanswers/occup_workplace/hotel_housekeeping.pdf)

<sup>14</sup> Vanian, Jonathan. "How unions are pushing back against the rise of workplace technology." *Fortune*, April 30, 2019. <https://fortune.com/longform/unions-workplace-technology/>

<sup>15</sup> UNITE HERE communication with AFL-CIO Technology Institute. June 2023.

<sup>16</sup> Spektor et al. 2023 at 20:8.

universities (including CMU) and UNITE HERE to develop worker-centered prototypes to preserve jobs, improve job quality and satisfaction, reduce technology-accelerating economic inequality, and highlight the lack of worker input in the adoption of automation in the hospitality industry.<sup>17</sup> UNITE HERE President D. Taylor explained CMU's worker-centered approach: "most people who develop technology for the service sector don't feel a need to engage with the people who use their products. We've found that CMU researchers take the voices of housekeepers, servers and other service sector workers seriously and are willing to engage with their concerns."<sup>18</sup>

These collaborative projects have demonstrated the practical utility of bringing workers into the innovation development process to share their first-hand experiences with scientists and engineers. Researchers recognize that someone with a frontline job has important insights into technological development and can be essential to implementing the next-generation technologies and protecting against bringing poorly conceived innovations to market.

Sincerely,

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<sup>17</sup> National Science Foundation. Division of Information & Intelligent Systems. "[Upskilling workers and re-designing workplaces for the future of the hospitality industry.](#)" NSF Award Abstract No. 2128954. August 24, 2021.

<sup>18</sup> [Markley](#). 2022.