

June 29, 2023

To: White House, Office of Science and Technology Policy
Executive Office of the President
Attn: Alan Mislove, Assistant Director for Data and Democracy
Eisenhower Executive Office Building
1650 Pennsylvania Avenue
Washington, D.C. 20504

Re: Comments on Automated Worker Surveillance and Management

The undersigned organizations respectfully submit these comments in response to the White House Office of Science and Technology Policy (OSTP) Request for Information on Automated Worker Surveillance and Management, dated May 2, 2023. We thank the White House and the OSTP for highlighting and seeking comment on this vital and increasingly prevalent issue.

Our comments address the risks that arise when electronic surveillance is combined with automated management (together, ESAM) to monitor and control workers. Our comments are organized around the different types of threats that ESAM poses to workers, specifically:

- How these tools threaten the health and safety of workers;
- How these tools are used in ways that discriminate against vulnerable workers and exacerbate structural inequalities in the workplace and labor market;
- How these tools can chill and infringe on workers’ rights to organize and to engage in protected labor activities; and
- How companies use these tools to deprive workers of earned compensation.

These comments both describe the threats that ESAM poses in each of these areas and propose policy steps that federal agencies can take to prevent or mitigate those harms.

I. Definitions and Background¹

A. Defining electronic surveillance and algorithmic management (“ESAM”)

We use the definition of ESAM endorsed by National Labor Relations Board (NLRB) General Counsel Jennifer Abruzzo in an October 2022 memorandum: “a diverse set of technological tools and techniques to remotely manage workforces, relying on data collection and surveillance of workers to

¹ Much of Parts I and II of these comments is borrowed from a series of memoranda that many of the undersigned organizations, led by Governing for Impact and the Center for Democracy & Technology, sent to the Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH) in April 2023. The memoranda focus on the steps OSHA and NIOSH can and should take to address the harmful health and safety consequences of ESAM. See https://governingforimpact.org/wp-content/uploads/2023/04/Surveillance_Package.pdf.

enable automated or semi-automated decision-making,”² with “remotely manage” meaning that these tools allow employers to manage workers without the physical presence of a human supervisor. There are several categories of workplace surveillance technologies, including remote monitoring, location tracking, keystroke and mouse-click loggers, sophisticated camera and sensor technologies, and scientifically dubious systems that purport to measure emotional states and vocal characteristics. Modern ESAM allows companies to enforce pace-of-work policies that may be intentionally obscured from workers to create an atmosphere of urgency. Some employers also use gamification, which describes technology that is meant to solicit employees to work harder or longer “using video game elements, such as digital points, badges, and friendly competition.”³ Algorithmic management is the overarching system that takes input from surveillance technologies and other data sources and makes assessments – sometimes leading to disciplinary action – and adjustments to increase worker productivity.⁴

The types of technologies that enable ESAM include: handheld devices, point-of-sale systems, mobile phones, fingerprint scanners, fitness and wellness apps, cameras, microphones, body sensors, keycards, electronic communication monitoring, geolocation tracking, collaboration tools, and customer review solicitation.⁵ While surveillance of worker activity has a deep and long history in the United States,⁶ the advent of new technologies makes it easier for employers to keep close tabs on their workers without expending much time or effort.

ESAM practices are increasingly prevalent in white-collar jobs, particularly as a result of the pandemic-induced work-from-home revolution.⁷ But, as a recent Data & Society report explained:

Low-wage and hourly work—including in restaurant, retail, logistics, warehousing, agriculture, hospitality, domestic work, and healthcare—is more susceptible to datafication because these jobs’ tasks are easily measured. These workers are also often immigrants, women, and people of color, populations historically facing higher scrutiny and levels of surveillance and monitoring.⁸

² GC 23-02, *Electronic Monitoring and Algorithmic Management of Employees Interfering with the Exercise of Section 7 Rights* 5 (Oct. 31, 2022) quoting Alexandra Mateescu & Aiha Nguyen, *Explainer: Algorithmic Management in the Workplace*, Data & Society Research Institute (Feb. 2019), https://datasociety.net/wp-content/uploads/2019/02/DS_Algorithmic_Management_Explainer.pdf.

³ Tae Wan Kim, *Gamification of Labor and the Charge of Exploitation*, *Journal of Business Ethics* 152(1), (Sept. 2018), https://www.researchgate.net/publication/307091399_Gamification_of_Labor_and_the_Charge_of_Exploitation.

⁴ Matt Scherer, *Center for Democracy & Technology, Bossware May Be Hazardous to Your Health* 8 (July 29, 2021), <https://cdt.org/wp-content/uploads/2021/07/2021-07-29-Warning-Bossware-May-Be-Hazardous-To-Your-Health-Final.pdf> (hereinafter “Bossware Report”).

⁵ Aiha Nguyen, *Data & Society, The Constant Boss: Work Under Digital Surveillance* 4 (May 2021), https://datasociety.net/wp-content/uploads/2021/05/The_Constant_Boss.pdf (hereinafter “Constant Boss Report”); Kathryn Zickuhr, *Workplace surveillance is becoming the new normal for U.S. workers*, *Washington Center for Equitable Growth*, 4 (Aug. 2021), <https://equitablegrowth.org/wp-content/uploads/2021/08/081821-worker-surv-report.pdf> (hereinafter “Equitable Growth Report”).

⁶ See generally Alex Rosenblat, et al., *Workplace Surveillance*, Data & Society Research Institute, Oct. 8, 2014, <https://www.datasociety.net/pubs/fow/WorkplaceSurveillance.pdf>.

⁷ Jodi Kantor and Arya Sundaram, *The Rise of the Worker Productivity Score*, *NY Times*, Aug. 14, 2022, <https://www.nytimes.com/interactive/2022/08/14/business/worker-productivity-tracking.html>.

⁸ Constant Boss Report at 4.

The datafication of work has opened up numerous new avenues for employers to surveil and remotely manage workers.⁹

B. ESAM is pervasive throughout the economy and is increasingly used in ways that threaten workers' health, safety, dignity, and legal rights

Large companies frequently use ESAM technology to monitor their workers, and the practice is increasingly prevalent throughout the economy. The pervasiveness of ESAM is a result of cheaper and omnipresent technology, declining levels of worker power, and weak workplace regulation.¹⁰ While there are no scientific studies indicating how many companies are using these technologies – and companies are generally not required to report or disclose their use – a 2018 survey of 239 large corporations found that more than half were using “nontraditional monitoring techniques,” and projected that the number would grow to nearly 80 percent by the end of 2020.¹¹

The meatpacking and agricultural industries are both sectors in which ESAM is heavily employed to enforce intense line speeds and production quotas. Quotas and line speeds have long been tools of control for meatpacking management to keep an eye on production, but some of the largest companies are now investing in ESAM technologies like wristbands that track the movement of workers' arms as they make their cuts.¹² In the agricultural sector, guest workers, for example, face punishing quotas.¹³ The penalty for failing to meet such quotas can be severe, including job loss and subsequent deportation.¹⁴

Amazon, the second largest private employer in the United States,¹⁵ has heavily used ESAM to monitor its workers and ensure they meet demanding production quotas. In the company's warehouses, for example, workers are monitored by artificial intelligence-enabled surveillance cameras, which track their movements, and by item scanners, which measure the amount of time that passes between scans and discipline workers for time off task (“ToT”) and for failing to meet their rate goal.¹⁶ Outside of the warehouse, the company contracts out most of its delivery business to third parties.¹⁷ Amazon uses

⁹ See generally Ifeoma Ajunwa, *The Quantified Worker: Law and Technology in the Modern Workplace* (2023).

¹⁰ *Id.* at 6.

¹¹ Brian Kropp, *The Future of Employee Monitoring*, Gartner (May 3, 2019), <https://www.gartner.com/smarterwithgartner/the-future-of-employee-monitoring/>.

¹² Madison McVan, *JBS, Tyson Foods invest in smartwatch app that monitors workers*, Missouri Independent (Oct. 14, 2022), <https://missouriindependent.com/2022/10/14/jbs-tyson-foods-invest-in-smartwatch-app-that-monitors-workers/>.

¹³ David Bacon, *Growing Pains: Guest Farm Workers Face Exploitation, Dangerous Conditions – Part 1*, Capital & Main (June 5, 2018), <https://capitalandmain.com/guest-farm-workers-face-exploitation-0605>.

¹⁴ *Id.*

¹⁵ April Glaser, *Amazon now employs almost 1 million people in the U.S. — or 1 in every 169 workers*, NBC News (July 30, 2021), <https://www.nbcnews.com/business/business-news/amazon-now-employs-almost-1-million-people-u-s-or-n1275539>.

¹⁶ Annabelle Williams, *5 ways Amazon monitors its employees, from AI cameras to hiring a spy agency*, Insider (Apr. 5, 2021), <https://www.businessinsider.com/how-amazon-monitors-employees-ai-cameras-union-surveillance-spy-agency-2021-4>.

¹⁷ Josh Eidelson and Matt Day, *Drivers don't work for Amazon but company has lots of rules for them*, The Detroit News, May 5, 2021, <https://www.detroitnews.com/story/business/2021/05/05/drivers-dont-work-amazon-but-company-has-lots-rules-them/4955413001/>.

As discussed further below in Part III.C, the control Amazon asserts over these workers via ESAM severely undercuts the argument that these workers should be classified as independent contractors rather than employees.

extensive driver surveillance to maintain uniform operations.¹⁸ Amazon imposes a variety of requirements on these drivers,¹⁹ and enforces them through handheld devices that track package drop-offs and determine routes, as well as through artificial intelligence-enabled camera systems that monitor driving behavior.²⁰ Contract drivers have reported being fired via system-generated email.²¹

Of course, Amazon is not the only firm to engage in this kind of surveillance and automated management of workers. Walmart's Spark Driver program directs and monitors contract drivers through its mobile phone app, which plans a driver's routes, the order in which they traverse a store's aisles, and which parking spot a driver should use.²² Rideshare companies like Via and Uber tightly control their drivers through ride and job assignments as well as speed-monitoring apps, customer reviews, and cameras.²³

Outside of the independent contractor context, as early as the 1990s, franchisors were using point-of-sale ("POS") software to maintain tight control over the employees of their franchisees. 7-Eleven disclaims an employment relationship with these workers, taking the position that the workers are employees solely of the local franchisee and not of 7-Eleven itself, but exerts control over these workers by monitoring the amount of time spent at the cash register and the speed of the ordering process in order to discipline them.²⁴ By the 2010s, surveillance technology enabled Domino's and McDonald's to control their workforce in similar, but more sophisticated, ways.²⁵ In addition to disciplining workers for slow order processing, Domino's and McDonald's required their franchisees to use software that allowed the corporations to dictate worker schedules and screen applicants from headquarters.²⁶ In a lawsuit against McDonald's, the NLRB General Counsel detailed the company's use of technology to compare franchisees' labor costs to their sales and discipline franchisees accordingly.²⁷

¹⁸ Josh Eidelson and Matt Day, *Drivers don't work for Amazon but company has lots of rules for them*, (May 5, 2021), <https://www.detroitnews.com/story/business/2021/05/05/drivers-dont-work-amazon-but-company-has-lots-rules-them/4955413001/>.

¹⁹ Including minutiae like dress codes, hair styles, and deodorant usage. *Id.*

²⁰ Caroline O'Donovan & Ken Bensinger, *Amazon's Next-Day Delivery Has Brought Chaos And Carnage To America's Streets — But The World's Biggest Retailer Has A System To Escape The Blame*, BuzzFeed News (Sept. 6, 2019), <https://www.buzzfeednews.com/article/carolineodonovan/amazon-next-day-delivery-deaths>; Tyler Sonnemaker, *Amazon is deploying AI cameras to surveil delivery drivers '100% of the time'*, Business Insider (Feb. 3, 2021), <https://www.businessinsider.com/amazon-plans-ai-cameras-surveil-delivery-drivers-netradyne-2021-2>.

²¹ Spencer Soper, *Fired by Bot at Amazon: 'It's You Against the Machine'*, Bloomberg (June 28, 2021), <https://www.bloomberg.com/news/features/2021-06-28/fired-by-bot-amazon-turns-to-machine-managers-and-workers-are-losing-out>.

²² Video, drive4spark.com, (Accessed Nov. 21, 2022), <https://drive4spark.walmart.com/>. In some markets, Walmart partners with other companies like DoorDash to source independent contractor drivers. Those drivers routinely earn below Walmart's minimum wage for its own employees. Nandita Bose, *Why Walmart farms out same-day grocery deliveries to low-cost freelance drivers*, Reuters, Feb. 14, 2019, <https://www.reuters.com/article/us-walmart-labor-outsourcing-focus/why-walmart-farms-out-same-day-grocery-deliveries-to-low-cost-freelance-drivers-idUSKCN1Q30JS>. See also Ahia Nguyen & Eve Zelickson, *At the Digital Doorstep: How Customers Use Doorbell Cameras to Manage Delivery Workers* (Oct. 2022), <https://datasociety.net/wp-content/uploads/2022/10/AttheDigitalDoorstepFINAL.pdf>.

²³ Mary Wisniewski, *Uber says monitoring drivers improves safety, but drivers have mixed views*, (Dec. 19, 2016), <https://www.chicagotribune.com/news/breaking/ct-uber-telematics-getting-around-20161218-column.html>.

²⁴ Brian Callaci, *Data & Society, Puppet Entrepreneurship: Technology and Control in Franchised Industries 6-7, 13* (Jan. 2021), <https://datasociety.net/wp-content/uploads/2021/01/DataSociety-PuppetEntrepreneurship-Final.pdf>.

²⁵ *Id.*

²⁶ *Id.*; Brishen Rogers, 55 Harvard Civ. Rights-Civ. Liberties L. Rev. 531, 572, 577-78 (2020).

²⁷ Jeffrey M. Hirsch, *Joint Employment in the United States*, Italian Labour Law e-Journal Vol. 13 at 57 (2020), https://scholarship.law.unc.edu/cgi/viewcontent.cgi?article=1574&context=faculty_publications.

Despite the many known examples of intrusive ESAM, however, the full extent to which companies are engaging in such practices remains unknown and, at present, perhaps unknowable. That is because, outside of a handful of states,²⁸ companies are not currently legally required to disclose the nature or, in most cases, even the existence of workplace surveillance and monitoring. Consequently, the true breadth and depth of ESAM—and, by extension, the risks posed to workers—remains unknown to both workers and policymakers. In this regard, ESAM is a threat to workers that remains uniquely outside of their control and whose true effects may be largely hidden from regulators.

II. Risks to workers' health and safety & proposed policy interventions

Existing research and documented worker experiences indicate that ESAM has a variety of negative physical and mental health effects on workers. Across a wide range of workplaces, ESAM puts workers' physical safety and health at risk by increasing the pace of work to unsustainable levels, which results in musculoskeletal strain and an increased likelihood of accidents. Additionally, such technologies contribute to heightened levels of job strain, which has both mental and physical health manifestations. Due to the lack of transparency surrounding ESAM, however, there remains much to be learned about the prevalence of ESAM practices and the effects that they have on workers' safety and health.

A. ESAM threatens workers' physical health and safety

Workplaces with higher levels of ESAM deployment often experience an increase in the number of physical workplace injuries.²⁹ Risk of physical injury arises from the increased pace of work, a decrease in breaks and other forms of downtime that protect workers' bodies from physical strain, and the physical manifestations of the mental health effects of ESAM.³⁰

First, ESAM increases the pace of work, which can be unsustainable and increase the risk of physical injury. Even though some forms of ESAM are marketed as facilitating worker safety by more closely scrutinizing workers' movements, ESAM tools that speed up processing demands increase the likelihood of injury. For example, Amazon uses ESAM practices to accelerate workers' pace. Recent surges in demand as a result of COVID-19 led to a series of investigations into Amazon's employment practices, which include variable quotas, monitoring employees through handheld devices and cameras, and limited breaks. In part as a result of these practices, the rate of serious injuries in some of Amazon's warehouses is over five times the average for similar workplaces.³¹ Monitoring of Amazon-branded delivery contractors has allegedly contributed to traffic accidents and deaths.³²

²⁸ The California Consumer Privacy Act (CCPA) began applying to employee data in 2023, meaning that California businesses are now required to disclose any collection of "personal information" from their employees. *See* Cal. Civ. Code § 1798.100 et seq; *see also* 19 DE Code § 705 (2022) ("Notice of monitoring of telephone transmissions, electronic mail and Internet usage"); CT Gen Stat § 31-48d (2020) ("Employers engaged in electronic monitoring required to give prior notice to employees. Exceptions. Civil penalty").

²⁹ Bossware Report at 4.

³⁰ *Id.*

³¹ Reveal, *Find out what injuries are like at the Amazon warehouse that handled your packages*, (Nov. 25, 2019), <https://revealnews.org/article/find-out-what-injuries-are-like-at-the-amazon-warehouse-that-handled-your-packages/>.

³² Patricia Callahan, *The Deadly Race: How Amazon Hooked America on Fast Delivery While Avoiding Responsibility for Crashes*, ProPublica (Sept. 5, 2019), <https://features.propublica.org/amazon-delivery-crashes/how-amazon-hooked-america-on-fast-delivery-while-avoiding-responsibility-for-crashes/>.

Indeed, Amazon's record on workplace injuries is such that the company routinely ends up on the Council for Occupational Safety and Health's annual "Dirty Dozen" list of the least safe American workplaces.³³ The Washington State Department of Labor and Industries has cited and fined Amazon repeatedly for forcing its warehouse workers to work at punishing speeds that exacerbate the risk of injury.³⁴ In one such instance, the department concluded that "[t]here is a direct connection between Amazon's employee monitoring and discipline systems and workplace MSDs (musculoskeletal disorders)."³⁵

Employers across other industries have likewise used ESAM technologies to speed up production with dangerous consequences for workers.³⁶ The meat industry, as noted above, has been able to dramatically increase line speeds in processing and packaging facilities, in part thanks to new surveillance methods.³⁷ These high speeds are part of the reason that the poultry processing industry has some of the highest injury rates in the United States economy.³⁸

Restrictions on breaks and pace of work requirements also pose a significant threat to pregnant and breastfeeding workers who often need to take more time to rest, drink water, use the restroom, and express breastmilk. Such practices have the potential not only to discriminate against pregnant and lactating workers but also to contribute to adverse health and birth outcomes, including miscarriage.³⁹

B. ESAM poses risks to workers' mental health

ESAM reduces worker control and increases physical and mental demands by requiring them to be busy at every moment, which extensive research has linked to job strain.⁴⁰ An influential 1979 paper by Robert Karasek first defined job strain as the combination of high "psychosocial workload demands" and low "decision latitude"⁴¹—a framework often referred to as the "demand/control" model of job strain. Extensive research has demonstrated that job strain is related to anxiety, depression, insomnia,

³³ Jon Fingas, *Amazon makes advocacy group's list of most dangerous US workplaces, again*, Engadget (Apr. 27, 2022), <https://www.engadget.com/amazon-cosh-most-dangerous-workplace-list-212035329.html>.

³⁴ Lauren Rosenblatt, *Fine with fines? Amazon isn't making enough changes to protect warehouse workers, Washington state says*, TechXplore (Mar. 29, 2022), <https://techxplore.com/news/2022-03-fine-fines-amazon-isnt-warehouse.html>.

³⁵ Washington State Department of Labor and Industries, *Citation and Notice: Amazon Services 2* (May 4, 2021), <https://s3.documentcloud.org/documents/20787752/amazon-dupont-citation-and-notice-may-2021.pdf>.

³⁶ Saima Akhtar, *Employers' new tools to surveil and monitor workers are historically rooted*, Washington Post (May 6, 2021), <https://www.washingtonpost.com/outlook/2021/05/06/employers-new-tools-surveil-monitor-workers-are-historically-rooted/>.

³⁷ *Id.*

³⁸ Human Rights Watch, *When We're Dead and Buried, Our Bones Will Keep Hurting* (Sept. 4, 2019), <https://www.hrw.org/report/2019/09/04/when-were-dead-and-buried-our-bones-will-keep-hurting/workers-rights-under-threat>.

³⁹ See Jessica Silver-Greenberg & Natalie Kitroeff, *Miscarrying at Work: The Physical Toll of Pregnancy Discrimination*, New York Times, Oct. 21, 2018, <https://www.nytimes.com/interactive/2018/10/21/business/pregnancy-discrimination-miscarriages.html>; Lauren Kaori Gurley, *Amazon Denied a Worker Pregnancy Accommodations. Then She Miscarried.*, Vice, July 20, 2021, <https://www.vice.com/en/article/g5g8eg/amazon-denied-a-worker-pregnancy-accommodations-then-she-miscarried>; Alina Selyukh, *Senators Want An Investigation Of How Amazon Treats Its Pregnant Workers*, NPR, Sept. 11, 2021, <https://www.npr.org/2021/09/10/1033247833/u-s-senators-call-for-probe-of-amazons-approach-to-pregnant-workers>.

⁴⁰ Bossware Report at 4; Constant Boss Report at 12 ("A multitude of data sources drive automated decision-making systems, and such systems are designed to take choices out of workers' hands").

⁴¹ Robert A. Karasek, Jr., *Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign*, 24 Admin. Sci. Qtrly 285 (1979).

and other negative health outcomes. The National Institute for Occupational Safety and Health (NIOSH) has stated that prolonged periods of job strain increase the “rate of wear and tear on biological systems.”⁴² This type of stress causes fatigue, and research has linked it to mood and sleep disturbances, upset stomachs and headaches, and chronic health problems like cardiovascular disease and musculoskeletal disorders.⁴³ In fact, health care expenditures are nearly 50 percent higher for workers who report higher levels of stress.⁴⁴

A large body of research has shown that job strain is strongly linked to depression and anxiety. One 2018 study demonstrated that job strain was strongly associated with serious suicidal thoughts in workers.⁴⁵ Studies have also found that fatigue and stress are major risk factors to workplace accidents that can result in physical harm to both workers affected by stress and fatigue and to the workers around them, and that this risk increases the longer workers go without a break.⁴⁶

The implications of this research are alarming given the expanding use of ESAM technologies. Many surveillance practices produce the exact risk factors for job strain: reducing worker control and increasing physical and mental demands by ensuring that workers are busy at every moment.⁴⁷ These technologies allow employers to maximize productivity and eliminate even brief periods of worker downtime by continuously monitoring and enforcing a faster work pace. An investigation into Amazon’s surveillance practices concluded that the company’s monitoring of Time off Task through handheld scanners “create[d] the psychological effect of a constant ‘low-grade panic’” in the workplace.⁴⁸ The fact that employees did not know what productivity rate they needed to hit until they received a warning caused anxiety that followed workers home.⁴⁹ These practices worsen the job strain generated by other forms of ESAM, such as the use of scheduling algorithms that often produce erratic and precarious schedules that prevent workers from planning other aspects of their lives.⁵⁰

As NIOSH has noted, job conditions – rather than characteristics of individual workers – are the main drivers of workplace stress.⁵¹ State workers’ compensation systems also recognize the impact of working conditions on mental health.⁵² Workers surveyed by Human Impact Partners reported that

⁴² NIOSH, *STRESS...At Work*, (1999), <https://www.cdc.gov/niosh/docs/99-101/#Job%20Stress%20and%20Health>.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ See Bongkyoo Choi, *Job strain, long work hours, and suicidal ideation in US workers: a longitudinal study*, 91 *Int’l Archives of Occ. & Environ. Health* 865 (2018).

⁴⁶ Philip Tucker, *The impact of rest breaks upon accident risk, fatigue and performance: a review*, *Work & Stress*, 17(2), 123-137.

⁴⁷ See Constant Boss Report at 12 (“A multitude of data sources drive automated decision-making systems, and such systems are designed to take choices out of workers’ hands”).

⁴⁸ Daniel A. Hanley & Sally Hubbard, *Eyes Everywhere: Amazon’s Surveillance Infrastructure and Revitalizing Worker Power* 10, Open Markets Institute (Sept. 2020),

https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/5f4cfea23958d79eae1ab23/1598881772432/Amazon_Report_Final.pdf.

⁴⁹ *Id.*

⁵⁰ *Id.* at 18.

⁵¹ NIOSH, *STRESS...At Work*, (1999), <https://www.cdc.gov/niosh/docs/99-101/#Job%20Stress%20and%20Health>.

⁵² See *id.*

“constant surveillance results in stress, anxiety, and depression.”⁵³ In 1987, the now-defunct United States Office of Technology Assessment issued a report that highlighted how “monitoring contributes to employee stress by creating a feeling of being watched.”⁵⁴

ESAM may also increase the risk of both mental and physical health impairments because of the opaque and seemingly arbitrary nature of ESAM-driven disciplinary decisions. These characteristics of ESAM may impact organizational justice, a model of job stress that examines “the role of fairness perceptions, e.g., regarding the distribution of resources, the fairness of decision-making processes, and the fairness in interpersonal interactions.”⁵⁵ Research indicates that poor organizational justice may increase both feelings of anxiety and depression and the risk of musculoskeletal disorders.⁵⁶

Just as ESAM increases the risk of job strain under the demand/control model, it also increases the risk of job strain under the organizational justice model. When a worker is electronically monitored and is later disciplined or fired through an opaque ESAM-driven system, that reduces organizational justice and increases the risk of job strain--with all the well-documented mental and physical health consequences that follow.

C. Proposed policy interventions

The federal government could take a number of steps to address the health and safety risks that ESAM poses to workers. Earlier this year, a coalition of organizations led by Governing for Impact and the Center for Democracy & Technology sent a set of memoranda to the Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH) that includes greater detail on the policy interventions suggested below.⁵⁷

i. NIOSH: Funding research into the health and safety effects of ESAM

By all accounts, ESAM technology is rapidly spreading through workplaces around the country, making research into its effects on workers’ safety and health a top priority. As regulators and legislators begin to take action, they must be able to do so based on scientific knowledge and understanding. Consequently, NIOSH should use its existing statutory authority to fund studies that examine: 1) the effects of ESAM on workers’ mental health; 2) the effects of ESAM on workers’ physical health; and 3) the effects of ESAM on accident rates. These studies should also address the effects of ESAM on workers who are disabled, pregnant, or otherwise protected by law.

⁵³ Martha Ockenfels-Martinez, *Blog: Workplace surveillance harms essential workers*, Berkeley Othering & Belonging Institute (Jan. 21, 2021), <https://belonging.berkeley.edu/blog-workplace-surveillance-harms-essential-workers>.

⁵⁴ U.S. Congress, Office of Technology Assessment, *The Electronic Supervisor: New Technology, New Tensions*, OTA-CIT-333 (Washington, DC: U.S. Government Printing Office, Sept. 1987), <https://ota.fas.org/reports/8708.pdf>.

⁵⁵ Raphael M. Herr, et al., *Three job stress models and their relationship with musculoskeletal pain in blue- and white-collar workers*, 79 J. Psychosomatic Res. 340 (2015).

⁵⁶ *Id.*; Chester Spell & Todd Arnold, *A Multi-Level Analysis of Organizational Justice Climate, Structure, and Employee Mental Health*, 33 J. Mgmt. 724 (2007).

⁵⁷ Available at: https://governingforimpact.org/wp-content/uploads/2023/04/Surveillance_Package.pdf.

NIOSH has funded extensive research on both work-related musculoskeletal disorders and on the physical and mental health effects of job strain. For example, NIOSH-funded research found that job strain and long work hours contribute to significantly higher rates of moderate to severe suicidal ideation in working adults.⁵⁸ Other research indicates that job strain increases the risk of musculoskeletal pain by up to 62%,⁵⁹ and that job strain significantly increases the risk of requiring a disability pension due to musculoskeletal disorders.⁶⁰ This potential link between job strain and musculoskeletal disease underscores the need for additional research into the health effects of ESAM. To date, however, we are aware of only one study that examined the impact of electronic surveillance—and that study was limited to computer workers and conducted nearly three decades ago.⁶¹

NIOSH should conduct or commission research in several areas related to ESAM, answering some or all of the following research questions:

- ESAM and job strain
 - What are the conditions under which ESAM heightens workers' risk for job strain?
 - What types of ESAM practices and technology contribute to more severe job strain?
 - What are the rates of job strain and other mental health issues among workers who are exposed to ESAM?
 - What physical diseases, disorders, and manifestations arise in workers affected by ESAM-associated job strain?
- ESAM and repetitive stress injuries
 - What are the conditions under which ESAM heightens workers' risk for repetitive stress injuries and other musculoskeletal injury?
 - What features of ESAM technologies are the biggest contributors to this risk?
 - Does the risk of repetitive motion injuries suggest a clear limit on the "safe" pace of work for workers in particular industries or workplaces?
 - What are the conditions under which mental health and job strain effects of ESAM contribute to physical injury risk?
- ESAM and industrial accidents

⁵⁸ Sarah Mitchell & Bongkyoo Choi, Job Strain, Long Work Hours, and Suicidal Thoughts, NIOSH Science Blog, (Sept. 13, 2018), <https://blogs.cdc.gov/niosh-science-blog/2018/09/13/suicide-prevention/>.

⁵⁹ Sohrab Amiri & Sepideh Behnezhad, Is job strain a risk factor for musculoskeletal pain? A systematic review and meta-analysis of 21 longitudinal studies, 181 *Pub. Health* 158 (2020), <https://www.sciencedirect.com/science/article/abs/pii/S0033350619303932>.

⁶⁰ Anne Mantyniemi, et al., Job strain and the risk of disability pension due to musculoskeletal disorders, depression or coronary heart disease: a prospective cohort study of 69 842 employees, 69 *Occupational & Environ. Med.* 574 (2012), <https://pubmed.ncbi.nlm.nih.gov/22573793/>.

⁶¹ Schleifer et. al., Mood disturbances and musculoskeletal discomfort: Effects of electronic performance monitoring under different levels of VDT data entry performance, *International Journal of Human-Computer Interaction* Volume 8, 1996 - Issue 4, <https://doi.org/10.1080/10447319609526159>.

- Under what conditions, if any, does increased pace-of-work lead to more frequent workplace accidents?
- Does the risk of workplace accidents suggest a clear limit on the “safe” pace of work for workers in particular industries or workplaces?
- Physical health and safety generally
 - How does employer use of ESAM affect access to reasonable accommodations in the workplace for workers who require and are entitled to such accommodation, including disabled, pregnant, and lactating workers?
 - Do employers’ and vendors’ claims that ESAM technologies reduce injury rates stand up to independent evaluation?
 - Does employer use of ESAM discourage workers from reporting workplace safety and health concerns?

NIOSH should fund both studies that examine how ESAM is impacting workers today, and also longitudinal studies that examine the cumulative effects of ESAM-driven practices over time.

ii. OSHA should issue regulations and guidance on potentially harmful uses of ESAM

OSHA should issue rules regulating the use of ESAM in the workplace, including but not limited to ending uses of ESAM that increase the risk of musculoskeletal disorders, job strain and associated health effects, and workplace accidents. OSHA has the legal authority to conduct ESAM rulemaking that covers each of these topics.⁶²

OSHA should also incorporate discussion of ESAM into its sector-by-sector guidance on workplace injury prevention and issue new guidance that comprehensively identifies workplace injury risks and solutions in warehousing. OSHA has issued ergonomics guidance to advise employers in some sectors of best practices to prevent musculoskeletal disorders. However, none of these guidance documents discuss the role that ESAM can play in creating ergonomic risk. Additionally, there is not currently a comprehensive ergonomic guidance document for the warehousing sector, in which ESAM and musculoskeletal disorders are both especially pervasive. OSHA should update existing guidance documents for poultry processing and grocery warehousing to include a discussion of ESAM and issue a new guidance document on ESAM risks and solutions in warehousing.

iii. The EEOC and OFCCP should update existing regulations to address the impact of ESAM on disabled, pregnant, and lactating workers

As discussed above, intrusive uses of ESAM pose a particularly acute risk to the health of disabled and pregnant workers. Consequently, and as discussed further in Part III, the EEOC and OFCCP should issue regulations under the Americans with Disabilities Act (ADA) and Rehabilitation Act as well as the

⁶² Governing for Impact, et al., Memorandum, OSHA’s Authority to Begin a Regulatory Process on Workplace Electronic Surveillance and Algorithmic Management, available at <https://cdt.org/wp-content/uploads/2023/04/Complete-Electronic-Workplace-Surveillance-OSHA-NIOSH-memo-package.pdf>.

Pregnancy Discrimination Act (PDA) and the Pregnant Workers Fairness Act (PWFA) (which becomes effective on June 27, 2023), detailing employers' obligation to ensure that deployments of ESAM do not threaten disabled and pregnant workers' rights, including their right to reasonable accommodation, and prohibiting uses of ESAM that further harm or marginalize such workers. Similarly, the DOL should issue regulations clarifying employers' obligations to ensure that uses of ESAM do not threaten lactating workers' rights under the Providing Urgent Maternal Protections for Nursing Mothers (PUMP) Act.

III. Discrimination and structural inequalities in the workplace and labor market & proposed policy interventions

The increasing use of ESAM in workplaces threatens to dramatically worsen the barriers that workers from disadvantaged groups already face in the workplace and labor market.

A. ESAM practices threaten to further marginalize historically disadvantaged groups of workers

At a basic level, the sheer scale of data that employers collect through ESAM—often without informed or meaningful consent—gives them access to troves of sensitive personal information, including health data, religious practices, family structure, race, gender, sexuality, and nationality/immigration status.⁶³ For example, data collection on health can capture fertility, pregnancy or other private health data. It is not an unfounded fear that these tools may become additional opportunities for employers to discriminate in the workplace. ESAM has the potential to exacerbate harmful workplace dynamics for Black workers, women, people with disabilities, and other marginalized groups of workers who have long faced greater scrutiny.⁶⁴ But ESAM also increases the risk of discrimination and widens existing gaps in the workplace in less obvious but no less impactful ways.

The use of ESAM is heavier in industries where workers are disproportionately from marginalized groups, including people of color, women, and immigrants.⁶⁵ It also tends to be used in industries where workers rarely have union protection, leaving them less able to effectively confront exploitative practices.

Additionally, when ESAM is used to impose standardized expectations of behavior, or to identify and flag “atypical” patterns of behavior, workers from already marginalized or underrepresented groups are likely to suffer. A worker with a physical disability may move in ways that an automated video surveillance system identifies as suspicious. Immigrant workers in call centers monitored through speech-recognition systems may speak with accents that the algorithm may not accurately decipher. A tracking system using facial scanning may not function for workers with darker skin. A diabetic worker

⁶³ Zickuhr, Equitable Growth Report.

⁶⁴ See Constant Boss Report at 4. See *generally* Simone Browne, *Dark Matters: On the Surveillance of Blackness* (Durham: Duke University Press, 2015).

⁶⁵ Constant Boss Report at 4.

in a warehouse may need to adjust their activity level or take unscheduled breaks or downtime to manage their blood sugar.

Similarly, ESAM tools also may internalize and repeat existing discriminatory stereotypes about how workers from protected groups “should” act or speak. One particularly troubling category of ESAM consists of so-called “emotion recognition” technologies, which have been built into hiring and employee assessment tools and purportedly “promise[] organizations the ability to better know, manage and monitor employees’ interior states and traits.”⁶⁶ Even leaving aside the deep privacy and dignity concerns that such tools raise, there is virtually no evidence that emotion recognition systems are scientifically valid,⁶⁷ and research indicates that these systems are both less accurate and more likely to assign negative emotional states when analyzing women and people of color.⁶⁸ Such tools thus may represent an automated form of the “tone policing” that occurs with women of color, and Black women in particular, and are likely to have outsized negative effects on women, people of color, LGBTQI+ persons, disabled workers, and other historically underrepresented and marginalized groups.

B. ESAM poses risks for disabled, pregnant, and lactating workers and threatens their right to accommodation under federal law

ESAM serves as a lever to further heighten the substantial barriers that disabled and pregnant workers have long faced. Disabled people—regardless of race or gender—are more than twice as likely to be unemployed in the United States as non-disabled people, according to the Bureau of Labor Statistics.⁶⁹ Disabled workers who work in low-wage and precarious jobs without other financial support are particularly vulnerable to exploitative and dangerous practices because of the need to keep a job, no matter how unsafe or unjust the working conditions—particularly since the ADA currently allows employers to pay disabled workers subminimum wages in some instances.⁷⁰ Disabled people of color who face the lifelong impacts of both ableism and racism are also more likely to face systematic employment and hiring discrimination, and to believe they have less bargaining power to ask and advocate for better working conditions.⁷¹

⁶⁶ Kat Roemmich, et al., *Emotion AI at Work: Implications for Workplace Surveillance, Emotional Labor, and Emotional Privacy*, Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, at 1 (2023).

⁶⁷ Kate Crawford, et al. *AI Now 2019 Report*, at 51, https://ainowinstitute.org/wp-content/uploads/2023/04/AI_Now_2019_Report.pdf; Greg Noone, *Emotion recognition is mostly ineffective. Why are companies still investing in it?*, Tech Monitor, June 30, 2022, <https://techmonitor.ai/technology/emerging-technology/emotion-recognition>.

⁶⁸ Zickuhr, *Equitable Growth Report* (citing Ruha Benjamin, *Race After Technology: Abolitionist Tools for the New Jim Code* (Cambridge, UK: Polity Press, 2019)); Lauren Rhue, *Racial Influence on Automated Perceptions of Emotions* (2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3281765.

⁶⁹ *America's Recovery: Labor Market Characteristics Of People With A Disability*, U.S. Bureau of Lab. Stat. (Oct. 2021), <https://www.bls.gov/spotlight/2021/labor-market-characteristics-of-people-with-a-disability/pdf/labor-market-characteristics-of-people-with-a-disability.pdf>.

⁷⁰ 29 U.S.C. 214(c).

⁷¹ Nanette Goodman, Michael Morris & Kelvin Boston, *Financial Inequality: Disability, Race, and Poverty in America*, National Disability Institute (Feb. 2019) at 13-14, <https://www.nationaldisabilityinstitute.org/wp-content/uploads/2019/02/disability-race-poverty-in-america.pdf>; Rob Gould, Courtney Mullin, & Sarah Parker Harris, *Race, Disability, and Employment: An ADA Knowledge Translation Center Research Brief*, University of Illinois at Chicago Department of Disability and Human Development (2021); https://adata.org/sites/adata.org/files/files/Race_Disability_and_Employment_FINAL_LP.pdf.

Women—especially Black, Latina, and Native women, women with disabilities, and immigrant women—and LGBTQIA+ individuals have also long been disproportionately likely to experience poverty and hardship. As a result, many women may feel constrained fighting against discriminatory standards and seeking improved working conditions. Pregnant workers face numerous barriers to equal pay and treatment in the workplace. Despite the fact that Title VII and the recently enacted Pregnant Workers Fairness Act protect pregnant workers from discrimination, fully one-fifth of mothers report having experienced pregnancy discrimination in the workplace, and nearly a quarter of mothers have considered leaving their jobs due to a lack of reasonable accommodations or fear of discrimination during a pregnancy.⁷² Women who are pregnant or are perceived as having the potential to be pregnant are at a significant disadvantage compared to men and also to women who are perceived to be past childbearing age.⁷³

ESAM poses unique risks that threaten to exacerbate the disadvantages that pregnant and disabled workers already face. One of the most common uses of ESAM is to increase the pace of work, discouraging workers from taking breaks or downtime and often penalizing them for doing so. Such practices may discriminate against disabled and pregnant workers, who may be more susceptible to new and aggravated injuries and illnesses in the workplace and are expected to comply with arbitrary, automatically enforced standards that do not consider disability- and pregnancy-related needs that may require opportunities for rest, flexibility, and supportive work environments.⁷⁴ Workers with gastrointestinal and urinary tract disorders, for example, may need to use the restroom more frequently or at unpredictable times.

Likewise, many disabled workers, including those with arthritis, musculoskeletal disorders, chronic pain, ADHD, and heart conditions, as well as some workers who are pregnant or lactating, may need to take rest breaks more often. Eliminating breaks also tends to discriminate against neurodivergent workers and those with anxiety disorders, depression, and other psychiatric and cognitive conditions, particularly if combined with intense pacing requirements.⁷⁵

Pregnant workers who need accommodations may also need more frequent breaks to use the restroom or to rest, and have suffered penalties for taking such breaks.⁷⁶ The lack of adequate break and rest time can have serious health and safety consequences for such pregnant workers, including an increased risk of miscarriage and adverse birth outcomes.⁷⁷ The PWFA and the PUMP for Nursing

⁷² Bipartisan Policy Center - Morning Consult, 1 in 5 Moms Experience Pregnancy Discrimination in the Workplace, Feb. 11, 2022, <https://bipartisanpolicy.org/blog/bpc-morning-consult-pregnancy-discrimination/>.

⁷³ Sascha O. Becker, et al, Discrimination in hiring based on potential and realized fertility: Evidence from a large-scale field experiment, 59 Labour Economics 139 (2019).

⁷⁴ Lydia X.Z. Brown, et al., Center for Democracy & Technology, Ableism and Disability Discrimination in New Employment 50 (May 23, 2022), <https://cdt.org/wp-content/uploads/2022/05/2022-05-23-CDT-Ableism-and-Disability-Discrimination-in-New-Surveillance-Technologies-report-final-redu.pdf>.

⁷⁵ Disability Discrimination in Surveillance Technologies at 53; Samuel B. Harvey et al., The Role of Job Strain in Understanding Midlife Common Mental Disorder: A National Birth Cohort Study, 5 Lancet Psychiatry 498 (2018), [https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366\(18\)30137-8/fulltext](https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(18)30137-8/fulltext).

⁷⁶ See Alfred Ng & Ben Fox Rubin, Amazon Fired These 7 Pregnant Workers. Then Came the Lawsuits, CNET (May 6, 2019), <https://www.cnet.com/tech/tech-industry/features/amazon-fired-these-7-pregnant-workers-then-came-the-lawsuits/>.

⁷⁷ See Part II.A, *supra*.

Mothers Act, which built on the Break Time for Nursing Mothers Act, provide new protections for these workers, but workers may face obstacles accessing these protections in the face of ESAM's automatically enforced standards—workers might be automatically fired for taking breaks guaranteed for them by law. Moreover, ESAM policies and practices may discourage workers from exercising their rights, given the lack of transparency in ESAM systems and the concerns many workers may have regarding retaliation.

Increasingly, employers are setting productivity expectations based on the pace of non-disabled workers,⁷⁸ an approach that tends to disadvantage disabled and some pregnant and breastfeeding workers. This is particularly true if the employer does not provide reasonable accommodation, which the ADA requires for disabled workers and the PWFA for pregnant workers. Under the ADA and PWFA, employers must engage in an interactive process with workers who may require disability accommodation to determine “the precise limitations resulting from the disability and potential reasonable accommodations that could overcome those limitations.”⁷⁹ The use of ESAM can short-circuit this interactive process.

For example, deaf and hard-of-hearing workers often require communication accommodations, such as ASL interpreters and text communication, that entail the use of intermediaries (whether human or technological). The use of such intermediaries often means that deaf or hard-of-hearing workers need additional time to complete tasks. ESAM systems are rarely designed with such accommodations in mind and, on the contrary, often instead penalize such workers for requiring extra time because automated systems do not account for the right to these accommodations.

Additional breaks are another widely accepted form of accommodation for workers with a wide range of disabilities,⁸⁰ but the lack of transparency surrounding ESAM and the productivity quotas that employers enforce through ESAM mean that workers often do not know what accommodations they might need, or are unable to obtain such accommodations in practice.

As a result, ESAM-enforced productivity management often has the effect, or even the purpose, of screening out workers because of their disabilities or pregnancy. Pregnant and disabled workers may be penalized or terminated for failing to meet arbitrary standards, set without regard to their accommodation rights. Some workers may avoid such jobs altogether knowing that they cannot succeed in these jobs without accommodations. In some contexts, such productivity requirements could also result in discriminatory impacts and harms to other protected workers, such as older

⁷⁸ See Jenny R. Yang, *Adapting Our Anti-Discrimination Laws to Protect Workers' Rights in the Age of Algorithmic Employment Assessments and Evolving Workplace Technology*, 35 ABA J. Labor & Emp. L. 207, 234 (2021) (aggressive productivity targets could “operate to disproportionately exclude individuals based on protected characteristics,” such as pregnancy, age, disability status, or religion).

⁷⁹ 29 C.F.R. § 1630.2(o)(3).

⁸⁰ See *id.*; 29 C.F.R. § 785.18; U.S. Dep't of Labor, Office of Disability Employment Policy, *Accommodations for Employees with Psychiatric Disabilities*, available at <https://www.dol.gov/agencies/odep/program-areas/mental-health/maximizing-productivity-accommodations-for-employees-with-psychiatric-disabilities> (“Breaks according to individual needs rather than a fixed schedule, more frequent breaks and/or greater flexibility in scheduling breaks, provision of backup coverage during breaks, and telephone breaks during work hours to call professionals and others needed for support.”).

workers, women, or people with religious needs.⁸¹ In some agricultural workplaces, for example, productivity standards are based on guestworkers,⁸² who are almost all young men, and have contributed to discrimination against women and older workers.⁸³

Employers are also gathering workers' health-related data through workplace wellness programs to try to incentivize workers to increase their productivity. Like some other ESAM practices, some wellness programs try to influence workers' health decisions through gamification methods, such as web-based challenges where workers receive rewards for completing certain tasks or reaching milestones.⁸⁴ Workers with certain disabilities and some older and pregnant workers may not be able to get the benefit of these programs when they are unable to fulfill the criteria or expectations set by these programs, so they are essentially punished for not being as "healthy" as workers who do successfully participate in these programs.⁸⁵

C. Proposed policy interventions

Many of the applications of ESAM described above violate workers' rights under federal anti-discrimination laws. Employers that use electronic surveillance systems to purposefully single out workers from protected groups for particular scrutiny would violate Title VII, the ADA, the PDA, or the Age Discrimination in Employment Act, depending on the targeted group. Similarly, ESAM that disproportionately flags members of protected groups as engaging in suspicious or disfavored behavior, or that otherwise tends to generate unfavorable evaluations of or actions towards protected groups of workers, may lead to unlawful disparate-impact discrimination. The EEOC should issue regulations or guidance making it clear that ESAM practices that tend to disadvantage protected groups of workers can violate applicable anti-discrimination laws if they negatively impact the terms and conditions of affected workers' employment.

The ADA provides particularly robust protections for the millions of disabled workers who it covers. An employer that leverages ESAM to automatically penalize disabled workers for taking breaks would likely violate the ADA unless the employer offers an alternative form of accommodation to those disabled workers who generally require more frequent breaks. Likewise, if an employer adopts a faster pace-of-work standard and enforces it rigidly, even against workers with conditions that the increased pace would aggravate, the employer could run afoul of the ADA's prohibition against "standards, criteria, or methods of administration . . . that have the effect of discrimination on the basis of

⁸¹ *Id.*

⁸² Specifically, workers engaged in temporary agricultural work under an H-2A visa. See Farmworker Justice, H-2A Guestworker Program, https://www.farmworkerjustice.org/advocacy_program/h-2a-guestworker-program/.

⁸³ See, e.g. Washington State Office of the Attorney General, Sunnyside mushroom farm will pay \$3.4 million for violating the civil rights of its workers, News Release, May 17, 2023, <https://www.atg.wa.gov/news/news-releases/Sunnyside-mushroom-farm-will-pay-34-million-violating-civil-rights-its-workers>; Centro de los Derechos del Migrante, Ripe for Reform, 2020, <https://cdmigrante.org/wp-content/uploads/2020/04/Ripe-for-Reform.pdf>.

⁸⁴ Joseph Sanford & Kevin Sexton, Opinion: Improve Employee Health Using Behavioral Economics, CFO, Feb. 3, 2022, <https://www.cfo.com/human-capital/health-benefits/2022/02/employee-health-wellness-medical-claims-behavioral-economics/>; Zirui Song & Katherine Baicker, Effect of a Workplace Wellness Program on Employee Health and Economic Outcomes, 321 J. Am. Med. Ass'n 1491 (2019) <https://jamanetwork.com/journals/jama/fullarticle/2730614>.

⁸⁵ Disability Discrimination in Surveillance Technologies at 54-55.

disability.”⁸⁶ The EEOC and DOL should issue regulations acknowledging these realities and clarifying that employers should not use ESAM to establish or enforce standards that inherently disadvantage disabled workers.

Like the ADA, the PWFA requires employers to provide workers affected by pregnancy, childbirth, or related medical conditions with reasonable accommodations. Title VII, the PUMP Act, and the ADEA also offer protections to women, older workers and other protected workers who may be harmed by ESAM. The EEOC and DOL should issue regulations and guidance addressing the potential of ESAM to discriminate against such workers.

In the absence of formal rulemaking, informal agency guidance could provide signposts for courts deciding discrimination cases and assist and encourage employers to proactively account for the needs of disabled and other protected groups of workers when deciding whether and how to use these emerging technologies and techniques. The EEOC has issued such guidance with respect to automated decision-making systems for the ADA and Title VII, but that guidance focused primarily on systems that make decisions or recommendations during hiring and promotion processes. This guidance should be updated or supplemented with material that specifically addresses the ADA risks that ESAM poses, as well as employers’ obligations under Title VII, the PWFA, and the ADEA when deploying ESAM or implementing associated practices.

The five principles within the Blueprint for an AI Bill of Rights (AI BoR) also provide the EEOC with a framework to address ESAM practices that disadvantage protected worker groups.⁸⁷ The AI BoR states that AI systems must be safe and effective, not discriminate, protect privacy and security, be transparent, and generally allow for the possibility of human alternatives or fallbacks.⁸⁸ Marginalized workers should not serve as guinea pigs, and some systems should be prohibited from use outright. If a system is used, it must be vetted by outside audits to evaluate whether it could have a discriminatory impact.

Finally, the administration must prioritize research to better understand and address the impacts of ESAM on the workplace. Greater information is needed about how ESAM is being used and developed; its impact on the workplace and workers generally; how ESAM-driven practices impact protected groups of workers; and what practices and protections best protect workers’ rights and dignity. Research should also identify ways in which ESAM can protect workers’ rights, such as by using ESAM to detect or prevent workplace discrimination and harassment.

⁸⁶ 42 U.S.C. § 12112(b)(3)(A).

⁸⁷ “Blueprint for an AI Bill of Rights,” White House Office of Science and Technology Policy (Oct. 2022), <https://www.whitehouse.gov/ostp/ai-bill-of-rights/>.

⁸⁸ *Id.*

IV. Interference with union organizing and workers' labor rights, and proposed policy interventions

A. How ESAM practices are encroaching on workers' right to organize

In addition to using ESAM to control workers' behavior in minute detail, companies are using ESAM to identify and disrupt workers' efforts to organize themselves and push back against harmful workplace practices. Amazon, for example, has sought to hire analysts and purchase software that would allow it to monitor "labor organizing threats" and analyze data on unions.⁸⁹

The increasing use of ESAM also undermines workers' labor rights in more insidious ways. As noted in a report published by the Washington Center for Equitable Growth, "the normalization of workplace surveillance weakens worker power by allowing more avenues for companies to justify their anti-union surveillance while also creating a general atmosphere where workers know they are always being watched."⁹⁰ Workers' increasing use of employer-owned computers and mobile devices has blurred the line between work and home life for many workers, which increases the risk that employers will monitor protected organizing activities even when workers are supposedly off-the-job.⁹¹

NLRB General Counsel Abruzzo's October 2022 memorandum directly addresses the threat that electronic surveillance poses to workers' rights under the National Labor Relations Act (NLRA).⁹² In it, she identified a number of applications of ESAM and employer actions surrounding their use that could interfere with workers' right to organize:

- Using surveillance specifically to monitor protected activities;
- Introducing new monitoring technologies in response to protected activities;
- Disciplining workers "who concertedly protest workplace surveillance or the pace of work set by algorithmic management";
- Using a hiring or management algorithm that discriminates against workers that engage in protected activity (or based on a prediction that they might do so);
- If workers are unionized, failing to provide information about tracking technologies or failing to bargain over them; and
- Using electronic surveillance and a "breakneck pace of work" that "severely limit[s] or completely prevent[s] employees from engaging in protected conversations about unionization or terms and conditions of employment."⁹³

⁸⁹ Annie Palmer, *How Amazon keeps a close eye on employee activism to head off unions*, CNBC, Oct. 24, 2020, <https://www.cnbc.com/2020/10/24/how-amazon-prevents-unions-by-surveilling-employee-activism.html>.

⁹⁰ Zickuhr, Equitable Growth Report.

⁹¹ *Id.*

⁹² Jennifer A. Abruzzo, Memorandum GC 23-02, Electronic Monitoring and Algorithmic Management of Employees Interfering with the Exercise of Section 7 Rights, Oct. 31, 2022.

⁹³ *Id.*

B. Proposed policy interventions

We endorse General Counsel Abruzzo’s useful multi-pronged test for determining whether an employer’s surveillance and management practices violate the NLRA:

- Determine whether the practices, “viewed as a whole, would tend to interfere with or prevent a reasonable employee from engaging in activity protected by” the NLRA. If not, then, the memo implies, the practices would not violate the NLRA.
- If the practices would tend to interfere with Section 7 rights, then the employer must establish several things before use of the technology is permissible under the NLRA:
 - “[T]hat the practices at issue are narrowly tailored to address a legitimate business need—i.e., that its need cannot be met through means less damaging to employee rights”;
 - That the business need “outweighs employees’ Section 7 rights”; and
 - That the employer discloses to employees “the technologies it uses to monitor and manage them, its reasons for doing so, and how it is using the information it obtains.”
 - An employer can only withhold such notice if it “demonstrates that special circumstances require covert use of the technologies.”⁹⁴

This standard is both sensible and straightforward to apply. The NLRB itself should adopt Abruzzo’s analysis and use its authority to provide redress when employers use ESAM to interfere with workers’ organizing rights. This would significantly curtail many of the most harmful applications of ESAM.

Additionally, the NLRB initiated rulemaking in late 2022 on a standard for determining joint-employer status.⁹⁵ Joint-employer status occurs when two (or more) businesses both act in the capacity of an employer with respect to a particular worker. When this occurs, both companies must adhere to federal labor laws. The crux of the NLRB’s proposed standard is whether each purported employer possesses the “authority to control” or actually exercises the “power to control,” whether directly or indirectly, the terms and conditions of a worker’s employment.⁹⁶ In the final rule or a future revision, the NLRB should make clear that the use of ESAM to monitor and manage workers can be evidence of control and thus of employer status.⁹⁷

⁹⁴ *Id.*

⁹⁵ Fed. Reg. No. 2022-19181 (to be codified at 29 C.F.R. pt. 103) (proposed Sept. 6, 2022).

⁹⁶ Proposed 103.40(c).

⁹⁷ See generally Amaury Pineda & Reed Shaw (Jobs With Justice & Governing for Impact), Letter to NLRB Executive Secretary Roxanne Rothschild re Comments Regarding NLRB’s Notice of Proposed Rulemaking on the Standard for Determining Joint-Employer Status, Dec. 5, 2022, <https://governingforimpact.org/wp-content/uploads/2022/12/Jobs-With-Justice-Governing-for-Impact-NLRB-Joint-Employment-Comment.pdf>.

V. Wage theft and proposed policy interventions

Companies are increasingly using ESAM systems in ways that may violate workers' rights under federal wage and hour laws, both by denying workers their lawfully earned wages and by exercising control over workers that companies classify as "independent contractors."

A. Employers are using ESAM to dock workers' pay for taking short breaks or for declining to subject themselves to surveillance

The increase in remote work since the start of the COVID-19 pandemic has led to a proliferation of tools that employers use to monitor the productivity of remote workers. Certain ESAM vendors have offered products that integrate with timekeeping and payroll systems, giving employers the ability to automatically dock workers' pay for time spent away from the computer.⁹⁸ Protected workers who may need more frequent breaks, such as certain workers with disability or women who are pregnant or breastfeeding, could be disproportionately impacted by such ESAM-driven practices. Workers may also incorrectly have time deducted for doing work away from their computer, or work that is not readily legible to these tracking systems.

Sadly, there are already examples of ESAM that could be used to deprive workers of earned compensation. Time Doctor, a suite of desktop software with both activity monitoring and time management features, takes periodic screenshots of workers' computer screens so that employers can determine if the worker is on-task. Time Doctor lets workers delete those screenshots, but according to the software's FAQ, the time period during which the deleted screenshots were taken will be deducted from the worker's work hours.⁹⁹ In other words, if used as the FAQ suggests, the worker would not be paid for the period during which a deleted Time Doctor screenshot was taken. Docking workers' pay for short periods of inactivity violates workers' rights under the FLSA, which allows workers to take breaks of up to 20 minutes during the workday without losing pay.¹⁰⁰

Recent Medicaid requirements regarding electronic visit verification (EVV) have resulted in many home health care workers facing not only increased surveillance, but also lost or delayed wages. Most of these care workers are women, and often women of color or immigrants.¹⁰¹ Further, the EVV systems

⁹⁸ Despite employers' obvious ability (illustrated here) to track working time to the nanosecond, they also continue to game antiquated FLSA regulations permitting rounding and automatic break deductions to the detriment of workers' paychecks. See Elizabeth Tippet, How Employers Profit from Digital Wage Theft Under the FLSA, *American Business Law Journal* 55(2):315-401 (July 2018), https://www.researchgate.net/publication/325201518_How_Employers_Profit_from_Digital_Wage_Theft_Under_the_FLSA.

⁹⁹ FAQ - Time Management Software, Time Doctor, <https://www.timedoctor.com/faq.html> (accessed May 15, 2023) ("If your manager is using the 'screenshots' feature, you'll also be able to see all screenshots that were taken while you were working, and can delete any screenshots that you choose (the associated time would also be deducted from your work hours).").

¹⁰⁰ See, e.g., 29 C.F.R. § 785.18 ("Rest periods of short duration, running from 5 minutes to about 20 minutes . . . must be counted as hours worked."). This issue is discussed further in the policy interventions section, below.

¹⁰¹ Lydia X.Z. Brown, EVV Threatens Disabled People's Privacy and Dignity — Whether We Need Care, or Work as Professional Caregivers, Mar. 22, 2022, <https://cdt.org/insights/evv-threatens-disabled-peoples-privacy-and-dignity-whether-we-need-care-or-work-as-professional-caregivers>.

require workers to manage a demanding technology—time for which they may not be paid—on top of their challenging jobs.¹⁰²

B. Some companies are using ESAM to obfuscate and mislead gig workers regarding their compensation

Compensation for gig workers is opaque and confusing to begin with; a 2021 report by the Pew Research Center found that fewer than half of gig workers understood how the companies for which they work determine how much they get paid.¹⁰³ Some gig platform companies use ESAM in ways that both increase this information asymmetry and exploit it to reduce gig workers' pay and lure workers into jobs that pay far less than promised or advertised.¹⁰⁴ Companies also use algorithms to engage in algorithmic wage discrimination, using data mining and ESAM to estimate and pay the lowest amount the system estimates an individual worker will accept to engage in desired behaviors.¹⁰⁵ The underlying algorithms are opaque and error-ridden.¹⁰⁶

Such practices sever the longstanding relationship between time spent laboring and income earned. In addition to the concerns that algorithmically determined wages will not meet a minimum wage, an unpredictable (to the worker) and opaque wage calculation mechanism deprives the worker of any insight into how the firm values their labor and of any predictability in their ability to earn a sufficient sum. Some gig-economy platforms exploit this ambiguity by combining low overall pay with volume and time-based incentives that maximize workers' time on the platform while minimizing workers' take-home pay.¹⁰⁷

C. Employers are increasingly using ESAM to exert control over workers (mis)classified as “independent contractors”

Some of the companies behind gig economy platforms also pioneered ESAM systems to manage their workers. Many of those same companies attempt to classify their workers as independent contractors rather than employees, in an effort to avoid the legal obligations that arise from the employer-employee relationship. But the use of ESAM can be evidence that such employers actually exert a high level of control over workers and have misclassified them.

Under the FLSA, the employer's right to control a worker's on-the-job activities is “strong evidence suggesting the existence of an FLSA employment relationship.”¹⁰⁸ Installing location trackers, cameras,

¹⁰² Virginia Eubanks & Alexandra Mateescu, *'We don't deserve this': new app places US caregivers under digital surveillance*, The Guardian, July 28, 2021.

¹⁰³ Monica Anderson, et al., Pew Research Center, *The State of Gig Work in 2021: How gig platform workers view their jobs*, Dec. 8, 2021, <https://www.pewresearch.org/internet/2021/12/08/how-gig-platform-workers-view-their-jobs/>.

¹⁰⁴ See Dan Calacci & Alex Pentland, *Bargaining with the black-box: Shipt shopper pay*, Oct. 13, 2020, <https://gigbox.media.mit.edu/posts/posts/bargaining-with-the-black-box-shipt-shopper-pay/>.

¹⁰⁵ See generally Veena Dubal, *On Algorithmic Wage Discrimination*, Jan. 23, 2023, available at https://ssrn.com/abstract_id=4331080.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*; see also Veena Dubal, *The House Always Wins: The Algorithmic Gambification of Work*, LPE Project Blog (Jan. 23, 2023), <https://lpeproject.org/blog/the-house-always-wins-the-algorithmic-gambification-of-work/>.

¹⁰⁸ U.S. Department of Labor, Wage and Hour Division, *Independent Contractor Status Under the FLSA: Withdrawal*, 86 FR 24303 (May 6, 2021) (citing *Razak v. Uber Techs., Inc.*, 951 F.3d 137, 145 (3d Cir. 2020)).

and digital monitoring equipment and software that continuously track a worker’s activities and assess performance dramatically increases a company’s right (and practical ability) to control the timing and manner in which the worker completes their tasks. Companies who engage in such practices while continuing to treat their workers as “independent contractors” are trying to have it both ways--exercising the control of employers while avoiding the legal responsibilities and obligations to workers that come with that status.¹⁰⁹ This practice often deprives workers of crucial protections under employment laws, such as minimum wage and family and medical leave, and anti-discrimination laws as well as essential employment-based benefits, like healthcare coverage.

D. Proposed policy interventions

- i. The DOL should issue regulations prohibiting automated time-docking for ESAM-detected breaks

The FLSA prohibits employers from requiring employees to clock out or docking their pay if they take brief breaks during the workday, briefly engage in non-work-related activities, or have short periods where they are not at their assigned workstation.¹¹⁰ The Department of Labor’s (DOL’s) FLSA regulations state: “Rest periods of short duration, running from 5 minutes to about 20 minutes . . . must be counted as hours worked.”¹¹¹ While the FLSA does not require employers to allow employees to take rest or bathroom breaks and generally allows employers to discipline employees for taking unpermitted or excessive breaks, the employee must still be paid for any brief breaks taken during the workday, regardless of whether those breaks are required by law or permitted by company policy.¹¹²

Unfortunately, and as the continued public marketing of features like Time Doctor indicates, the illegality of ESAM-driven practices contrary to these established rules does not appear to have deterred some employers from adopting them. DOL should issue FLSA regulations addressing time docking for periods where an ESAM system perceives a worker as temporarily inactive or because workers decline to subject themselves to surveillance.

- ii. DOL and NLRB should issue rules or guidance stating that the use of ESAM is evidence of employer status

DOL is currently reviewing comments in response to a Notice of Proposed Rulemaking (NPRM) published in October 2022 regarding employee or independent contractor status under the FLSA.¹¹³ The

¹⁰⁹ See Matt Scherer, Center for Democracy & Technology, *Bossware Makes It Difficult to Classify Workers as Contractors*, Aug. 16, 2021, <https://cdt.org/insights/bossware-makes-it-difficult-to-classify-workers-as-contractors/>.

¹¹⁰ 29 C.F.R. § 785.18 (“Rest periods of short duration, running from 5 minutes to about 20 minutes . . . must be counted as hours worked.”).

¹¹¹ *Id.*

¹¹² See, e.g., *Sec’y United States DOL v. Am. Future Sys.*, 873 F.3d 420, 426 (3d Cir. 2017) (employer violated FLSA when it required workers to log off for any breaks during workday, and docked workers’ pay if they logged off for more than 90 seconds); U.S. Dep’t of Labor, Wage & Hour Div., *Opinion Letter Fair Labor Standards Act (FLSA)*, 1996 DOLWH LEXIS 39, 1996 WL 1005233, at *1 (Dec. 2, 1996) (work breaks are paid time even if taken “for a myriad of non-work purposes – a visit to the bathroom, a drink of coffee, a call to check the children, attending to a medical necessity, a cigarette break, etc . . . without regard to the relative merits of an employee’s activities.”).

¹¹³ U.S. Department of Labor, Wage and Hour Division, *Employee or Independent Contractor Classification Under the Fair Labor Standards Act*, 87 FR 62218, Oct. 13, 2022. See also Center for Law and Social Policy & Governing for Impact, *Comments Regarding DOL’s Notice of*

DOL's proposed rule explicitly stated that the use of electronic surveillance to monitor workers' activities constitutes evidence of control, and therefore weighs in favor of employee status.¹¹⁴ DOL should similarly update its joint-employer standards to clarify that the use of ESAM to control workers weighs in favor of a finding of employer status.

A recent NLRB decision tightened the standard that that body will use to determine employee status under the National Labor Relations Act, returning to a common-law standard that considers factors such as the employer's exertion of control and whether work is performed without supervision.¹¹⁵ The NLRB should clarify in future decisions that the use of ESAM is strong evidence of control and supervision, and thus indicates that a worker is an employee rather than an independent contractor.

- iii. The FTC should issue rules prohibiting gig platform companies from leveraging ESAM to engage in misleading or opaque pay practices

Last year, the FTC issued a policy statement stating that its unfair or deceptive acts or practices authority could apply to the use of automated systems to limit gig workers' compensation.¹¹⁶ The FTC should build on this policy statement with formal rulemaking and enforcement action targeting opaque and arbitrary ESAM-driven pay practices that mislead workers and reduce their pay. Similarly, the FTC should use its enforcement authority to penalize companies whose recruitment, advertising, and marketing materials misrepresent workers' actual pay as a result of the use of ESAM.

The FTC also recently provided a policy statement on biometric information.¹¹⁷ The policy statement notes that failure to accurately disclose biometrics being used or to assess reasonably foreseeable harms may constitute an unfair or deceptive practice.¹¹⁸ Because many ESAM technologies collect and use biometrics, and ESAM-driven practices pose a wide range of potential harms to workers, the FTC should scrutinize employers' ESAM practices as part of its biometrics enforcement.

Proposed Rulemaking on the Employee or Independent Contractor Classification Under the Fair Labor Standards Act, RIN 1235-AA43, Dec. 12, 2022, <https://governingforimpact.org/wp-content/uploads/2022/12/CLASP-Governing-for-Impact-DOL-Independent-Contractor-Rule-Comment.pdf>.

¹¹⁴ DOL, Notice of Proposed Rulemaking on the Employee or Independent Contractor Classification Under the Fair Labor Standards Act, 87 Fed. Reg. 62218, 62275 (Oct. 13, 2022) (discussing facts relevant to "nature and degree of control" including "whether the employer uses technological means of supervision (such as by means of a device or electronically)."); *see generally* Emily Andrews, Lorena Roque & Reed Shaw (Center for Law and Social Policy & Governing for Impact), Letter to DOL Director of Regulations, Legislation, and Interpretation Amy De-Bisschop re Comments Regarding DOL's Notice of Proposed Rulemaking on the Employee or Independent Contractor Classification Under the Fair Labor Standards Act, Dec. 12, 2022, <https://governingforimpact.org/wp-content/uploads/2022/12/CLASP-Governing-for-Impact-DOL-Independent-Contractor-Rule-Comment.pdf>.

¹¹⁵ *In re Atlanta Opera, Inc.*, 37 NLRB No. 95 (June 13, 2023), available at <https://www.nlr.gov/news-outreach/news-story/board-modifies-independent-contractor-standard-under-national-labor>.

¹¹⁶ Fed. Trade Comm'n, Policy Statement on Enforcement Related to Gig Work, Policy Statement on Enforcement Related to Gig Work, Sept. 22, 2022, <https://www.ftc.gov/legal-library/browse/policy-statement-enforcement-related-gig-work>.

¹¹⁷ Federal Trade Commission, Policy Statement of the Federal Trade Commission on Biometric Information and Section 5 of the Federal Trade Commission Act, May 18, 2023, <https://www.ftc.gov/legal-library/browse/policy-statement-federal-trade-commission-biometric-information-section-5-federal-trade-commission>.

¹¹⁸ *Id.*

VI. The federal government should restrict harmful uses of ESAM within the federal government and by federal contractors

The federal government has the ability to restrict harmful uses of ESAM by ensuring that the millions of citizens employed by federal agencies and contractors are not subjected to ESAM practices that threaten their health, safety, dignity, and legal rights. The Office of Personnel Management (OPM) and Office of Management and Budget (OMB) should conduct a study to determine how the various arms of the federal government and their contractors currently use ESAM to monitor and manage federal workers. Those agencies should then issue rules and guidance to ensure that federal agencies refrain from potentially harmful uses of ESAM, unless such uses are necessary due to transparency laws, national security requirements, or other compelling interests.

In those instances where the use of ESAM is deemed necessary, rules and personnel policies should ensure that federal workers are given adequate notice of the nature and purpose of any surveillance or data collection, as well as information regarding how any information collected by ESAM is used in personnel decisions. Under no circumstances should discipline or termination decisions be made based on ESAM-collected information without adequate human review.

Similarly, DOL's Office of Federal Contractor Compliance Programs (OFCCP) should prohibit federal contractors from using ESAM in a manner that undermines workers' health, safety, dignity, or legal rights, and should issue rules ensuring adequate transparency and accountability when contractors do use ESAM. Last fall, OFCCP proposed revisions to its audit scheduling letter that called for employers to provide "[d]ocumentation of policies and practices regarding all employment recruiting, screening, and hiring mechanisms, including the use of artificial intelligence, algorithms, automated systems or other technology-based selection procedures."¹¹⁹ OFCCP should adopt the revised scheduling letter and update the letter further to require employers to submit information on any ESAM systems and practices that the contractor uses to monitor, manage, or direct workers.

Conclusion

While there are, as yet, no federal laws that directly address the use of ESAM in the workplace, existing federal statutes and regulations provide the Administration with ample authority to address the risks that ESAM poses to U.S. workers. In addition, proposed legislation such as S.262, the Stop Spying Bosses Act, which was introduced in the Senate earlier this year, would bring some much-needed transparency to employers' use of ESAM and place some important guardrails around ESAM-driven practices. We urge the Administration to consider supporting this important legislation. But the administration need not wait for Congress to protect our workers. It can and should take concrete steps, such as those outlined in these comments, to ensure that technological advances are not used in ways that harm workers, particularly those who are already vulnerable and marginalized.

¹¹⁹ See OFCCP, Agency Information Collection Activities; Proposals, Submissions, and Approvals: Supply and Service Program, Fed. Reg. No. 2022-2511, Nov. 20, 2022, <https://www.regulations.gov/document/OFCCP-2022-0004-0001>. The proposed scheduling letter itself is available at <https://www.regulations.gov/document/OFCCP-2022-0004-0003>.

We thank you for your attention and look forward to engaging with the Administration further on these issues in the future.

Respectfully submitted by:

Center for Democracy & Technology

Governing for Impact

Accountable Tech

American Civil Liberties Union

Communication Workers of America

Jobs With Justice

The Leadership Conference on Civil and Human Rights

National Employment Law Project

National Women's Law Center

Open MIC

Service Employees International Union

TechEquity Collaborative

United Auto Workers

Upturn