


A Short History of Occupational Safety and Health in the United States

David Rosner, PhD, and Gerald Markowitz, PhD

As this short history of occupational safety and health before and after establishment of the Occupational Safety and Health Administration (OSHA) clearly demonstrates, labor has always recognized perils in the workplace, and as a result, workers' safety and health have played an essential part of the battles for shorter hours, higher wages, and better working conditions. OSHA's history is an intimate part of a long struggle over the rights of working people to a safe and healthy workplace. In the early decades, strikes over working conditions multiplied. The New Deal profoundly increased the role of the federal government in the field of occupational safety and health. In the 1960s, unions helped mobilize hundreds of thousands of workers and their unions to push for federal legislation that ultimately resulted in the passage of the Mine Safety and Health Act of 1969 and the Occupational Safety and Health Act of 1970. From the 1970s onward, industry developed a variety of tactics to undercut OSHA. Industry argued over what constituted good science, shifted the debate from health to economic costs, and challenged all statements considered damaging. (*Am J Public Health*. 2020;110:622–628. doi:10.2105/AJPH.2020.305581)

health on the occasion of the Occupational Safety and Health Administration's (OSHA's) 50th anniversary explores the ongoing struggle by labor and its allies to address workplace inequalities that have resulted in injuries and disease among workers over time. This is not a comprehensive history of the various social movements, professional developments, governmental actions, or individual actors that have contributed to what is a centuries-old and ongoing effort to provide security and well-being to workers and their families. Nor does it fully explore the uneven roles that unions and public health have played in promoting safety and health. Rather, we explore here the cross-class coalitions of labor activists, lawyers, government bureaucrats, journalists, medical clinicians, social workers, some unions, and others from various social strata that at different moments in history sought to improve the lives of working people, their families, and communities.

The post-Civil War era saw America transformed from a largely rural, agricultural society to an urban society in which an industrial workforce was employed in the growing number of factories, mills, and mines. In the postwar period, legal historian Robert Steinfeld writes, the abolition of slavery "gave way to another form of legal regula-

 See also Rothstein, p. 613, and the *AJPH OSHA @50* section, pp. 621–647.

"It may seem strange that any men should dare to ask a just God's assistance in wringing their bread from the sweat of other men's faces."

—Abraham Lincoln,

Second Inaugural Address, 1865

Abraham Lincoln's Second Inaugural Address, delivered 41 days before his assassination, is rightfully remembered for its powerful statement on the moral underpinnings of the American Civil War: slavery was a system of exploitation in which owners wrenched "their bread from the sweat of other men's faces." Lincoln contended that the war was God's retribution for "all the wealth piled by the bondsman's two hundred and fifty years of unrequited toil" and might righteously continue "until every drop of blood drawn with the lash shall be paid by another drawn with the sword."¹

The physical exploitation of the powerless by the powerful, slavery itself, was literally engrained in the Constitution as a tenet of American political, economic, and legal culture. But the law was also instrumental in maintaining the power relationships of the landowner over the sharecropper, the manager over the employee, the husband over the wife, the White over the Black. In the workplace specifically, the courts often enshrined the terms "master" and "servant" to encompass a host of formal and informal relationships between worker and owner.²

This brief review of the history of occupational safety and

tion that offered workers greater formal autonomy but continued indirectly to place them at the disposal of those who owned productive assets.”³ The evolution of a labor system in which workers and owners bargained for wages in exchange for labor superficially papered over the ongoing inequalities that were intrinsic to the new industrial economy.⁴

With industrialization came mechanization, speedups, massive factories, and other changes that increased the dangers that workers faced on the job. Dangerous machinery, and the introduction of new chemicals and scientific management techniques, sapped the health and strength of industrial workers.⁵ In the wake of such conditions, unions began to fight for safer working conditions, better pay, the 10-hour and then the 8-hour day, and shorter work weeks. In May 1886, tens of thousands of workers marched in the first May Day Parade in Chicago. Subsequently, hundreds of thousands of workers throughout the country went on strike for shorter hours with no reduction in pay.⁶ Immigrant workers organized fraternal societies that provided “contract doctors” in case of sickness and burial benefits for breadwinners who died young because of injuries on the job.⁷ Labor, along with journalists, social reformers, socialists, and others, advocated for better working conditions—what today we capture under the umbrellas of “occupational safety and health” and, more generally, “public health.”⁸

Responding to increased labor activism that arose to protest against unsafe and unhealthy working conditions, some state legislatures passed regulations that challenged the ideology—propounded by ruling elites and the courts—that

individual workers were truly “free” to negotiate the terms of their employment. In the 1880s and 1890s, there were a series of strikes in the bakeries of New York City against horrible working conditions that often lasted 18 hours a day in hot, unventilated basements. In response, in 1895 the New York State legislature passed a law limiting bakery workers to no more than 10 hours per day or 60 hours a week.⁹ The legislation was successful in large part because the plight of workers was tied to fears that these conditions were a breeding ground for infectious diseases, particularly tuberculosis, that would be transmitted through the bread consumers ate. The role of women in this movement through the Consumers League—and especially its leader, Florence Kelley—was critical, linking together work, family, and community. In 1901, a bakery owner, John Lochner, in upstate Oneida, New York, was found in violation of this law; he appealed his conviction, and the case eventually was heard by the US Supreme Court.¹⁰ The case, *Lochner v. New York* (1905) was decided in a 5 to 4 decision, with the Court determining that the law was unconstitutional because it interfered with the “right” of owners and workers to “purchase and sell labor.”¹¹ The court held that the “free” laborer was “guaranteed” the “right” to work 18 hour days, and the state could not prevent them from doing so. For industrial workers and their advocates, this “contract” was akin to what many called “wage slavery,” and injuries on the job came to symbolize the huge costs of this new production system.¹² (We will be using the term “injury” rather than “accident” throughout as many of the events that occurred in

the rising industrial plants were anticipated, even expected. The exceptions, of course, are in the quotations of contemporaries like Upton Sinclair and Crystal Eastman.)

WORKING CONDITIONS IN THE EARLY 20TH CENTURY

The enormous costs of industrialism in the decades around the turn of the 20th century reached into every aspect of American life as “muckraking” journalists detailed the extraordinary injury rates in mining, steel manufacturing, and meat packing, and the growing number of diseases that accompanied the development of new industries and industrial processes. Upton Sinclair’s *The Jungle* is generally remembered for its role in the development of consumer protection of the food supply and the passage of the 1906 Pure Food and Drug Act. But, in fact, the novel tells the story of how Jurgis Rudkus, a vibrant, strong Lithuanian immigrant worker, was destroyed in body and soul by the production process and capitalism itself. As Sinclair himself later wrote: “I aimed at the public’s heart, and by accident I hit it in the stomach.”¹³ *The Pittsburgh Survey*, a classic investigation of working-class life in Pittsburgh, Pennsylvania, appeared in 1907. Included in the survey was *Work-Accidents and the Law* by Crystal Eastman—feminist journalist, lawyer, and cofounder of the American Civil Liberties Union—which detailed the impact of industrial injuries on working-class families and communities in this center of the steel and coal industries.¹⁴

Shortly thereafter, a massive strike of largely young immigrant Jewish and Italian women

in the garment industry in New York City brought the wretched conditions of the sweatshops of this industry to the attention of millions of people across the country. A year later, a fire in the Triangle Shirtwaist Factory in lower Manhattan galvanized the nation as thousands of onlookers—along with reporters, photographers, and graphic artists—watched women, faced with the prospect of being burned alive, jump to their deaths from the ninth floor of the factory. Reformers were spurred to action by these striking images and reports.¹⁵ The response, however, fell very short of the overall demands and only addressed the horrendous working conditions in a few of the industrial states. In the short run the impacts were limited, but the attention to the human costs of industrial capitalism were brought to a national audience. Alice Hamilton, Eleanor Roosevelt, Frances Perkins, and other women reformers emerged from the turmoil of the early 1900s dedicated to addressing the terrible conditions of work and life for the industrial workforce—both female and male, child and adult.¹⁶

Questions arose that led to ongoing debates throughout the middle decades of the new century. When was a worker truly free, and when was he or she being coerced through threats of violence, deprivation, or lost wages? When was the worker's assumption of the dangers of the job—danger from injury, from poisoning and disease—a reasonable outcome of the free negotiations between a worker and his employer? And when was it an outcome of the coercive power that employers had in their “negotiation” with workers? The question of occupational safety and health was part and parcel of a larger movement to reform

American society and improve public health.

This movement produced legislative results. Many states passed legislation to improve factory inspection systems and prodded local labor and health departments to pay attention to occupational safety and health. States passed the first significant labor legislation designed to protect women and children as particularly vulnerable, “weaker” populations. Some in the women's and labor movements objected that protective legislation excluded women from certain jobs rather than improving the workplace for the benefit of all workers, male and female. Others in those movements believed that these legislative efforts were inadequate and discriminatory but would provide the basis for more general reforms later.¹⁷ In various localities, specific acts were passed regulating working conditions in tanneries, bakeries, foundries, and other industries. Also, for the first time, there was a serious attempt to organize a more reliable method for collecting statistics on occupational injuries and deaths.¹⁸ In 1900, no state in the country had a workers' compensation law on the books, but by 1915, most highly industrialized states had passed an act for some form of workers' compensation.¹⁹ As important as this set of state laws was, historians have critiqued these laws as efforts by employers to protect themselves against large lawsuits.²⁰ Workers' compensation legislation also made filing for compensation extremely difficult for laborers.²¹

On the federal level, Congress established the Department of Labor in 1913, which included active women's and children's bureaus devoted to protecting their lives and health. In addition, in 1912 the Public Health

Service (PHS) was assigned responsibility for addressing occupation-related diseases. The advent of World War I made occupational safety and health a national priority as business, political, and labor leaders emphasized the need to protect the workforce, especially in the war-related industries. The concern with the unknown effects of new toxic chemicals such as TNT and picric acid shifted some of the focus of the PHS, with its established laboratory and technical expertise, from infectious disease to the dangers of the new industrial workplace.²²

RADICALS AND CONSERVATIVES IN THE INTER-WAR YEARS

During the more conservative 1920s, the broad view of the relationship between work and health narrowed. Many corporations, large and small, joined the National Safety Council, first formed in 1912, which focused on the prevention of what the organization called accidents through its “safety first” educational campaigns.²³ In addition, during the 1920s some companies attempted to hide the impact of industrial exposures and dangers from the workforce through their employment of occupational physicians. During this time, physicians interested in occupational safety and health had few options other than to work directly for corporations. Therefore, they were often placed in the position of serving their employers by identifying workers who were ill or poisoned on the job so that companies could lay them off before they filed workers' compensation claims.²⁴

But there were countervailing tendencies as well, such as the Workers' Health Bureau of America. It was organized

by Grace Burnham, Charlotte Todes, and Harriet Silverman—leftist women who sought to use both technical expertise and union activism to address workplace hazards. Providing the former were Emory Hayhurst of the Ohio Department of Health, Yale University's C.E.A. Winslow, and Harvard's first female professor, Alice Hamilton. Among the unions that worked with the bureau were the International Union of Painters and Allied Trades, the United Hatters of North America, and the International Ladies' Garment Workers' Union. In 1927, the Workers' Health Bureau organized the First National Labor Health Conference with the Pennsylvania Federation of Labor, the Michigan Federation of Labor, the Electrical Workers, and the United Mine Workers, among others, although the American Federation of Labor itself maintained a frosty relationship with the bureau.²⁵

The New Deal expanded the role of the federal government in the field of occupational safety and health, particularly regarding the chronic dust diseases silicosis and asbestosis. This was in part due to the tragedy at Gauley Bridge, West Virginia, in which more than 700 primarily African American migrants died as a result of dust diseases contracted while digging a tunnel for Union Carbide.²⁶ The PHS provided money to state and local departments of health to establish industrial hygiene units. By 1941, 24 states established offices with funds from Title VI of the Social Security Act of 1935. Before 1936, only five state departments of health had industrial hygiene units.²⁷ At the same time, the US Department of Labor established the Division of Labor Standards, but there were fundamental differ-

ences in the ways that the PHS and the Department of Labor approached the issue of how to protect workers on the job. The PHS defined its role as primarily to gather data and act as non-partisan scientists, not as activists. The Department of Labor—under the leadership of the first woman cabinet secretary, Frances Perkins, and her colleagues Verne Zimmer and Clara Beyer—saw its role as an advocate for labor in union efforts to improve working conditions.²⁸ The United Automobile Workers, for example, incorporated working conditions into their original unionization demands.²⁹

Until the New Deal, the state departments of labor were the sole governmental agencies that had any right to intervene in the private workplace. This changed in 1936, when the first federal legislation to control workplace conditions was enacted. The Walsh–Healey Act required companies with contracts with the federal government of more than \$10 000 to maintain certain workplace standards for health and safety.³⁰ Until the enactment of OSHA, the limited protections of Walsh–Healey were the only federal safeguards workers could expect.

World War II presented new challenges for protecting workers' safety and health. The massive military buildup, combined with the draft of millions of young men, resulted in the recruitment of women in unprecedented numbers into heavy industry, and they were faced with speedups and long hours.³¹ The exposure of these workers to asbestos in the ship-building industry, to benzene, beryllium, lead, and a host of other toxic chemicals in airplane and ordinance production—along with the dangers inherent in the production of explosives—made

safety and health and the conservation of labor a major concern for government, management, and unions alike.³²

THE POSTWAR LABOR ACCORD AND THE CREATION OF OSHA

The end of the war unleashed many of the tensions that had been built up between management and labor during the war years. In 1945, the death of President Franklin D. Roosevelt and the resignation of Secretary of Labor Frances Perkins marked the end of the New Deal for labor. In the two years following the end of the war, there were more strikes involving more workers than at any other time in American history. Business and more conservative politicians reacted strongly to this challenge to business dominance in labor-management relations. Spearheaded by conservative Republican congressmen and fueled by a growing fear of communism at home and abroad, a series of antilabor initiatives were passed, including the Taft–Hartley Act of 1947. In addition to legislation, labor and management sought to achieve an “accord” to reduce labor strife. As part of this accord, most unions often ignored or downplayed issues of occupational safety and health in contract negotiations. Although wages and hours were negotiable, safety and health issues were ceded to management as part of their control over the work process.³³ This had important, negative effects on labor's ability to shape conditions at work. For most unions, negotiations regarding health now revolved around health insurance and hospital and physician care rather than control over working conditions. For example, the United Mine Workers, among the most

radical unions of the 1930s, was faced with demands for increased production and greater exposure to deadly coal dust with the introduction of high-speed power drills. In exchange for this increased production and, ultimately, higher rates of disease, owners provided funding for a system of hospitals and health clinics for their workforce. There were notable exceptions to a pattern of exchanging health services for control over the workplace, such as the Union of Mine, Mill and Smelter Workers in the 1950s and the Oil, Chemical and Atomic Workers Union in the 1960s, both of which continued to prioritize working conditions.³⁴

By the 1960s, the beginnings of deindustrialization and the mobilization around the war in Vietnam led US industry to intensify its demands on labor, which resulted in longer hours and increasingly dangerous working conditions. Workers in the shipyards of Louisiana and the oil fields of west Texas would witness epidemics of once seemingly rare silicosis; miners in West Virginia and Pennsylvania would later find themselves disabled by coal workers' pneumoconiosis. Immigrant labor was an early focus of attention among unorganized agricultural workers in California, Washington State, and Oregon. Cesar Chavez brought to national attention the sorrowful conditions of labor and the threat of pesticides to migrant workers through a national strike and boycott of grapes, joining together their concerns with those of middle-class consumers who, in the wake of Rachel Carson's *Silent Spring*, were conscious of the potential harms of pesticide residues in foods. In addition, labor organizers, public health physicians, scientists, environmentalists, and consumer ad-

vocates such as Tony Mazzocchi, Irving Selikoff, Barry Commoner, Ralph Nader, Lorin Kerr, and Rachel Carson became part of a broader environmental and labor movement pushing for federal legislation to protect workers and consumers alike. Among the major occupational diseases that were the focus of attention and activism were asbestosis and mesothelioma, coal workers' pneumoconiosis, byssinosis, and lead poisoning for both workers and children.³⁵ Out of this mobilization by unions and social movements alike came the passage of the Coal Mine Health and Safety Act of 1969 and the Occupational Safety and Health Act of 1970 (OSH Act), as well as the National Environmental Policy Act (1969), the establishment by Executive Order of President Richard Nixon of the Environmental Protection Agency (1970), and the Consumer Product Safety Act (1972). The role of Mazzocchi and the Oil, Chemical and Atomic Workers Union was especially important for the passage of the OSH Act, but it was the organized efforts of retired union miners with the guidance of Lorin Kerr, even in the face of opposition or inaction on the part of the United Mine Workers, that led to the passage of Coal Mine Safety and Health Act. Never before had the federal government established agencies with as broad a mandate to protect the majority of the nation's workers, the environment, and consumers alike.³⁶

THE OSH ACT AND BEYOND

The OSH Act is rightfully recognized as a milestone in overcoming the challenge that Lincoln raised a century earlier. Through it, the long history of labor's struggles over exploita-

tion was formally recognized by the government, and two agencies, OSHA and the National Institute for Occupational Safety and Health (NIOSH), were established to rectify centuries of injustice. NIOSH, as an agency in the Department of Health, Education, and Welfare, was designed to provide OSHA with the best scientific evidence of how workers should be protected from harm, and under administrators such as Anthony Robbins it fulfilled those objectives. But OSHA, as a regulatory agency, had a more complex mandate: to balance the interests of labor and management, as well as to take into consideration the economic impact of regulations and their technical feasibility. From the first, the historical tensions over the inequalities that led to workers' deaths and diseases were evident. The history of asbestos regulation is an example. NIOSH, in 1972, speaking of asbestos-associated lung cancer and mesothelioma, held that there was no truly "safe" level of exposure. But OSHA was unable to adopt a zero-exposure standard that threatened the existence of entire industries. While OSHA had over the decades significantly lowered the Permissible Exposure Limit for asbestos, to this day, despite the unanimity of professional opinion that asbestos is carcinogenic, it is still allowed in many products.

Despite the legislation's shortcomings, there was tremendous optimism among unions and their membership that OSHA would improve conditions on the job, bringing the authority and power of the federal government to work on behalf of labor. The leadership of Eula Bingham from 1977 to 1981 gave hope that this could be the case, especially since OSHA

was able to establish a series of new standards that significantly lowered exposures to dangerous materials such as asbestos, arsenic, benzene, lead, cotton dust, and others, including a number of carcinogens.³⁷ Bingham also was instrumental in broadening OSHA's base of support through her use of "New Directions" grants, which provided support for the Committees for Occupational Safety and Health that had begun forming in the early 1970s.³⁸ OSHA's reputation as an activist agency stems almost completely from its activities during Bingham's brief tenure.

Very quickly, strong industry opposition to OSHA developed through such organizations as the Business Roundtable, the John Birch Society, and lawsuits challenging the right of OSHA inspectors to enter private workplaces without warrants.³⁹ Soon, OSHA's efforts to reform the workplace were undermined by lawsuits, industry-funded scientific studies, challenges to the evolving science of occupational safety and health, and an enormous propaganda campaign associating regulatory actions as a threat to business growth and prosperity.⁴⁰ Beginning in the 1980s with the ascent of Ronald Reagan to the presidency, business groups pushed an antiregulatory program. OSHA was a particular target as Reagan appointed Thorne Aughter, an executive in the construction industry, to head the agency. As Charles Noble describes his tenure, Aughter "withdrew [OSHA's own] booklets on cotton dust, acrylonitrile, health and safety rights, and vinyl chloride because they were too one-sided."⁴¹ Opposition continued through the 1990s and early 2000s. During the Clinton administration, OSHA worked with labor unions to

pass new ergonomic standards, but their efforts were quashed by the Republican Congress and George W. Bush, who in March 2001 signed a joint resolution to reject it.⁴²

Barack Obama's election led to new hope that OSHA would once again live up to its original promise, especially with the appointment of David Michaels, epidemiologist and labor advocate, as its administrator. He reinvigorated an agency that had been under assault for nearly its entire existence. One major accomplishment was OSHA's promulgation of a silica standard that the agency had first proposed in the 1970s.⁴³ Shortly after the advent of the Trump administration, OSHA once again found itself under attack as the administration's antiregulatory policies led to "declining federal oversight of workplace safety" that "coincided with an increase in deaths in workplaces monitored by OSHA."⁴⁴ Michaels stated in 2010 that "Fourteen workers die on the job each day, far from the headlines, often noted only by their families, friends, and co-workers."⁴⁵ And injuries have been far from the only hazards US Labor faces. As Michaels pointed out, "every year more than four million workers are seriously injured or sickened by exposure to toxic agents."⁴⁶

Throughout the 20th century, the central contradiction of a culture that idealized the rights of the individual and equality between workers and owners was pressed by the changing social realities of work in America. On the one hand, the state could intervene to protect the health and welfare of workers because it recognized that there was a fundamental inequality in power between management and labor. On the other hand, despite all

the reforms and accomplishments of OSHA, there is a continuing inequality in power between owners and workers. Although Lincoln's Second Inaugural addressed the fundamental immorality of slavery and although the Civil War formally ended the most obtuse manifestation of its grotesque legacy, the struggle over occupational safety and health continues.

In 1960, Edward R. Murrow commented on the world as he saw it then when he noted that "We no longer own slaves; now we can rent them."⁴⁷ Today, the daily toll of mesothelioma, lead poisoning, injuries in construction and trucking, silicosis, and numerous other deaths and diseases is a testament to this truth. As this short history of occupational safety and health demonstrates, labor and its allies have recognized these perils in the workplace, and as a result, workers' safety and health capture the ongoing history of America's struggles against various forms of oppression. **AJPH**

ABOUT THE AUTHORS

David Rosner is with the Center for the History & Ethics of Public Health, Department of Sociomedical Sciences, Mailman School of Public Health, and Department of History, Columbia University, New York, NY. Gerald Markowitz is with Interdisciplinary Studies, John Jay College of Criminal Justice, and the History Department, Graduate Center, City University Of New York, New York, NY.

Correspondence should be sent to David Rosner, PhD, Department of Sociomedical Sciences, Mailman School of Public Health, Center for History & Ethics of Public Health, 722 West 168th St, Room 935, New York, NY 10032 (e-mail: dr289@cumc.columbia.edu). Reprints can be ordered at <http://www.ajph.org> by clicking the "Reprints" link.

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CONFLICTS OF INTEREST

Both authors have appeared in court on behalf of workers who have been harmed by industrial injuries and disease.

ENDNOTES

1. Abraham Lincoln, "Second Inaugural Address," April 10, 1865, <https://www.ourdocuments.gov/doc.php?flash=false&doc=38&page=transcript> (accessed December 7, 2019).

2. Robert Steinfeld, *The Invention of Free Labor: The Employment Relation in English & American Law and Culture, 1350–1870* (Chapel Hill, NC: University of North Carolina Press, 1991), 8. See the various works by legal scholars who have traced the transformation of American law as it responded to the social and economic transformation of American society in the 19th and 20th centuries: Christopher Tomlins, *Law, Labor, and Ideology in the Early American Republic* (New York, NY: Cambridge University Press, 1993); Steinfeld, *The Invention of Free Labor*; Robert Steinfeld, *Coercion, Contract, and Free Labor in the Nineteenth Century* (New York, NY: Cambridge University Press, 2001); Karen Orren, *Belated Feudalism: Labor, the Law, and Liberal Development in the United States* (Cambridge, UK: Cambridge University Press, 1991); Karen Orren, "The Laws of Industrial Organization, 1870–1920," in Michael Grossberg and Christopher Tomlins, eds., *Cambridge History of Law in America*, vol. 2 (New York, NY: Cambridge University Press, 2008), 565.

3. Steinfeld, *The Invention of Free Labor*, 9.

4. William Graebner, "Doing the World's Unhealthy Work: The Fiction of Free Choice," *Hastings Center Report* 14, no. 4 (1984): 28–37.

5. See Frederick Winslow Taylor, *The Principles of Scientific Management* (New York, NY: Dover Publications, 1911, 1997).

6. Roy Rosenzweig, *Eight Hours for What We Will: Workers and Leisure in an Industrial City, 1870–1921* (New York, NY: Cambridge University Press, 1983).

7. Gerald Markowitz and David Rosner, "Seeking Common Ground: A History of Labor and Blue Cross," *Journal of Health Politics, Policy and the Law* 16 (1991): 695–718; Robert Asher, "The Limits of Big Business Paternalism: Relief of Injured Workers in the Years Before Workmen's Compensation," in Rosner and Markowitz, eds., *Dying for Work: Workers' Safety and Health in Twentieth Century America* (Bloomington, IN: University of Indiana Press, 1987), 19–33.

8. David Rosner and Gerald Markowitz, "The Early Movement for Occupational

Safety and Health, 1900–1917," in Judith Leavitt and Ronald Numbers, eds., *Sickness and Health in America*, 2nd ed. (Madison, WI: University of Wisconsin Press, 1985), 507–521.

9. Cited in *Lochner v. New York*, 198 US 45 (1906), Argued February 23–24, 1905, Decided April 17, 1906, p. 197–198, <http://supreme.justia.com/cases/federal/us/198/45/case.html> (accessed February 10, 2020). This was in spite of the conditions of the New York bakeries, conditions that had provoked 10 years of strikes and labor disputes from the 1890s on. Books have been written on this case, largely interpreting the conflicting constitutional principles ostensibly embodied in the 14th Amendment's Due Process Clause, which protected the individual from the arbitrary power of the State. This amendment, initially meant to protect freed slaves, was, ironically, used to assert the "rights" of workers to work long hours in unhealthy conditions. It was interpreted in various decisions to mean that the "liberty" of contract trumped the regulatory "intrusion" of the state into management–labor disputes. Some maintain that *Lochner* represented a certain type of "respect" for the concept of the "independent artisan" of old. See John Fabian Witt, *The Accidental Republic: Crippled Workingmen, Destitute Widows, and the Remaking of American Law* (Cambridge, MA: Harvard University Press, 2004); David Bernstein, *Rehabilitating Lochner: Defending Individual Rights Against Progressive Reform* (Chicago, IL: University of Chicago Press, 2011).

10. "A Strike for Clean Bread," *The Survey* 24 (June 18, 1910): 483–488; "Investigations Have Disclosed the Fact That Unhealthy and Poisonous Bread Is Made in Non-Union Bake Shops," *Woman's Label League Journal* (June 1913): 13.

11. *Lochner v. New York*, 198 US 45 (1906), Argued February 23–24, 1905, Decided April 17, 1906, <http://supreme.justia.com/cases/federal/us/198/45/case.html>, p. 197–198 (accessed February 10, 2020).

12. The term "wage slave" first began to appear in the years around the Civil War, with its usage sky-rocketing after the 1880s. See "wage slavery" in Google Books N-Gram Viewer, https://books.google.com/ngrams/raph?content=wage+slavery&year_start=1800&year_end=2000&corpus=15&smoothing=3&share=&direct_url=t1%3B%2Cwage%20slavery%3B%2Cc0#t1%3B%2Cwage%20slavery%3B%2Cc0 (accessed December 7, 2019). The term "wage slave" continued well into the 20th century to capture the evolving exploitation of the new factory system. See Gerald Markowitz and David Rosner, eds., *Slaves of the Depression: Workers' Letters About Life on the Job* (Ithaca, NY: Cornell University Press, 1987).

13. Upton Sinclair, "What Life Means to Me," *Cosmopolitan* 41 (October 1906): 594; Arlene Finger Kantor, "Upton Sinclair and the Pure Food and Drugs Act of 1906," *American Journal of Public Health* 66 (1976): 1202–1205; Deborah Blum, *The Poison Squad: One Chemist's Single-Minded Crusade for Food Safety at the Turn of the Twentieth Century* (New York, NY: Penguin Books, 2018).
14. Crystal Eastman, *Work-Accidents and the Law* (New York, NY: Russell Sage Foundation, 1910). Her study first appeared in *Charities and the Commons*, a leading social welfare journal of the period. See Maurine Greenwald and Margo Anderson, eds., *Pittsburgh Surveyed: Social Science and Social Reform in the Early Twentieth Century* (Pittsburgh, PA: University of Pittsburgh Press, 1996).
15. "Joint Sanitary Standards in the Cloak, Suit and Skirt Industry," *The Survey* 26 (August 19, 1911): 734. See Richard Greenwald, *The Triangle Fire, the Protocols of Peace, and Industrial Democracy in Progressive Era New York* (Philadelphia, PA: Temple University Press, 2005).
16. New York State's Second Report of the Factory Investigating Commission, Volume V (1913), 1576–1577.
17. See, for example, Alice Kessler-Harris, *Out to Work: A History of Wage-Earning Women in the United States* (New York, NY: Oxford University Press, 1982).
18. Amy Fairchild, Ronald Bayer, and James Colgrove, *Searching Eyes: Privacy, the State and Disease Surveillance in America* (Berkeley, CA: University of California/Milbank, 2007), 83–92.
19. David Rosner and Gerald Markowitz, "Safety and Health During the Progressive Era," in Leavitt and Numbers, *Sickness and Health in America*, 507–521.
20. Anthony Bale, *Compensation Crisis: The Value and Meaning of Work-Related Injuries and Illnesses in the United States, 1842–1932*, PhD Dissertation (Waltham, MA: Brandeis University, 1986).
21. This discussion of conservative reforms such as worker's compensation laws can be traced back to, for example, James Weinstein, *The Corporate Idea in the Liberal State, 1900–1918* (Boston, MA: Beacon Press, 1968). David Rosner and Gerald Markowitz, *Deadly Dust: Silicosis and the Politics of Occupational Disease in Twentieth Century America* (Princeton, NJ: Princeton University Press, 1991).
22. T.W. Schereschewsky, "Industrial Hygiene," *Public Health Reports* 30 (October 1, 1915): 2928; "Editorial: Our Public Health Service," *American Journal of Public Health* 29 (September 1939): 1044–1045; W.S. Bean, "The Role of the Federal Government in Promoting Industrial Hygiene," *American Journal of Public Health* 15 (July 1925): 626.
23. Mark Aldrich, *Safety First: Technology, Labor, and Business in the Building of American Work Safety, 1870–1939* (Baltimore, MD: Johns Hopkins University Press, 1997).
24. Christopher Sellers, *Hazards of the Job: From Industrial Disease to Environmental Health Science* (Chapel Hill, NC: University of North Carolina Press, 1997), 138–139.
25. See Workers' Health Bureau File, in C.E.A. Winslow Papers at Yale University Archives, and C.E.A. Winslow to L.R. Thompson, March 7, 1922, National Archives Record Group (NARG) 90, Public Health Service; "Proceedings," The First National Labor Health Conference, Cleveland, Ohio, June 18–19, 1927; David Rosner and Gerald Markowitz, "Safety and Health as a Class Issue: The Workers' Health Bureau of America, 1921–1927," *Science and Society* 48 (winter 1984–1985): 466–482.
26. Martin Cherniack, *The Hawk's Nest Incident: America's Worst Industrial Disaster* (New Haven, CT: Yale University Press, 1989); Rosner and Markowitz, *Deadly Dust*.
27. Thomas Parran to Verne Zimmer, December 8, 1938, NARG 90, "General Classified Establishments"; Memorandum, Dr. Jones to Mrs. Beyer, January 11, 1937, NARG 100, First Series, 1934–1937, 7-2-3-5. Box 65; Christopher Sellers, "The Public Health Service's Office of Industrial Hygiene and the Transformation of Industrial Medicine," *Bulletin of the History of Medicine* 65 (1991): 42–73.
28. David Rosner and Gerald Markowitz, "Research or Advocacy: Federal Occupational Safety and Health Policies During the New Deal," *Journal of Social History* 18 (1985): 365–381.
29. Nelson Lichtenstein, *The Most Dangerous Man in Detroit: Walter Reuther and the Fate of American Labor* (New York, NY: Basic Books, 1995).
30. See, for example, J.L. Henshaw, G.S. Haffney, A.K. Madl, and D.J. Paustentbach, "The Employer's Responsibility to Maintain a Safe and Healthful Work Environment: An Historical Review of Societal Expectations and Industrial Practices," *Employee Responsibilities and Rights Journal* 19 (2007): 173–192; W.G. Whitaker, "Federal Contract Labor Standards Statutes: An Overview," Congressional Research Service, 2005, https://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1207&context=key_workplace (accessed December 2, 2019).
31. Alice Kessler-Harris, "Where Are the Organized Women Workers?" *Feminist Studies* 3 (1975): 92–110; Allison L. Hepler, "Shaping the Life of the Pre-Natal: Labor Laws, Liability, and Lead Poisoning of Women in Industry in Twentieth-Century United States," *Social Politics*, 6 (1999): 54–75; Allison L. Hepler, "'And We Want Steel Toes Like the Men': Gender and Occupational Health during World War II," *Bulletin of the History of Medicine* 72 (1998): 689–713.
32. Walter E. Fleischer, Frederick J. Viles Jr, Robert Gade, and Philip Drinker, "A Health Survey of Pipe Covering Operations in Constructing Naval Vessels," *Journal of Industrial Hygiene and Toxicology*, 28 (January 1946): 9–16.
33. Nelson Lichtenstein, "From Corporatism to Collective Bargaining: Organized Labor and the Eclipse of Social Democracy in the Postwar Era," in Gary Gerstle and Steve Fraser, eds., *The Rise and Fall of the New Deal Order, 1930–1980* (Princeton, NJ: Princeton University Press, 1989), Chapter 5. For broader reviews of the evolution of health insurance debates, see also Alan Derickson, *Health Security for All: Dreams of Universal Health Care in America* (Baltimore, MD: Johns Hopkins University Press, 2005), and Colin Gordon, *Dead on Arrival: The Politics of Health Care in Twentieth Century America* (Princeton, NJ: Princeton University Press, 2003).
34. Alan Derickson, *Black Lung: Anatomy of a Public Health Disaster* (Ithaca, NY: Cornell University Press, 1998); Josiah Rector, "Environmental Justice at Work: The UAW, the War on Cancer and the Right to Equal Protection from Toxic Hazards in Post-War America," *Journal of American History* 101 (2014): 480–502; Laura Polido, *Environmentalism and Economic Justice: Two Chicano Struggles in the Southwest* (Tucson, AZ: University of Arizona Press, 1996); Barbara Smith, *Digging Our Own Graves: Coal Miners and the Struggle Over Black Lung Disease* (Philadelphia, PA: Temple University Press, 1987); Les Leopold, *The Man Who Hated Work and Loved Labor: The Life and Times of Tony Mazzocchi* (White River Junction, VT: Chelsea Green Publishing, 2007).
35. Ray Davidson, *Peril on the Job: A Study of Hazards in the Chemical Industries* (Washington, DC: Public Affairs Press, 1970), 184–185.
36. Tony Mazzocchi, interview by Gerald Markowitz and David Rosner, January 25, 2001; See David Vogel, *Fluctuating Fortunes: The Political Power of Business in America* (New York, NY: Basic Books, 1989), 86.
37. David R. McCaffrey, *OSHA and the Politics of Health Regulation* (New York, NY: Plenum Press, 1982), 132–137.
38. National Council for Occupational Safety and Health, "A History of the COSH Movement," <https://coshnetwork.org/history-cosh-movement> (accessed January 10, 2020).
39. Occupational Safety and Health Administration, "Reflections on OSHA's History," January 2009, https://www.osha.gov/history/OSHA_HISTORY_3360s.pdf (accessed January 10, 2020). For a broad history of the early years of OSHA, see Nicholas Ashford, *Crisis in the Workplace: Occupational Disease and Injury: A Report to the Ford Foundation* (Cambridge, MA: MIT Press, 1976); Daniel Berman, *Death on the Job* (New York, NY: Monthly Review Press, 1978).
40. David Vogel, *The Market for Virtue: The Potential and Limits of Corporate Social Responsibility* (Washington, DC: Brookings Institution Press, 2005), 202.
41. David Noble, *Liberalism at Work, the Rise and Fall of OSHA* (Philadelphia, PA: Temple University Press), 193.
42. US Department of Labor, "Ergonomics Background," <https://www.osha.gov/archive/ergonomics-standard/archive.html> (accessed January 11, 2020).
43. See US Department of Labor, "1926.1153—Respirable Crystalline Silica," <https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1153> (accessed January 10, 2020); Tom Musick, "Long Run: An Interview With OSHA's David Michaels," *Safety & Health*, June 26, 2019, <https://www.safetyandhealthmagazine.com/articles/14298-long-run-an-interview-with-oshas-david-michaels> (accessed November 11, 2019).
44. Michelle Chen, "Declining Federal Oversight of Workplace Safety Could Have Fatal Consequences," *The Nation*, March 27, 2019, <https://www.thenation.com/article/workplace-injuries-osha-trump> (accessed November 11, 2019); "Updated OSHA Agenda Reflects Trump Administering's Focus on Deregulation," *Safety + Health*, <https://www.safetyandhealthmagazine.com/articles/15985-updated-agenda-reflects-trump-administration-focus-on-deregulation> (accessed November 11, 2019).
45. Remarks by David Michaels, Occupational Safety and Health Review Commission (Annual Judicial Conference, Charleston, SC, September 14, 2010), <https://www.osha.gov/news/speeches/09142010> (accessed February 10, 2020).
46. David Michaels, "OSHA at Forty: New Challenges and New Directions," July 19, 2010, http://www.thepumphandle.org/wp-content/uploads/2012/04/54652-OSHA_at_Forty-1.pdf (accessed February 10, 2020).
47. Edward R. Murrow, *Harvest of Shame* [documentary film], CBS, directed by Fred Friendly, released November 25, 1960. This documentary stimulated sympathy for migrant workers, among the most exploited laborers in the nation at the time.