



A NIOSH Center of Excellence for Total Worker Health®

ANNUAL REPORT 2024 – 2025

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The California Labor Laboratory (U19OH012293)

A Collaboration of UCSF, UC Berkeley, Harvard University,
and California State Department of Public Health

Executive Summary

The California Labor Laboratory *Total Worker Health*® Center of Excellence (Lab) has been in existence since September 2021. In this annual report, we document how we have pursued our overall mission, the specific aims of the Evaluation and Planning and Outreach Cores, funded Research Projects and Pilot Grants Program, and engaged stakeholders beyond those with a formal role within the Lab to further the reach of the Lab.

As of October 2022 when we filed the initial Annual Report, we had a fully functioning infrastructure to support the success of the Center in all matters related to administration and had established five separate advisory groups to guide the Lab's work: the Internal Advisory Committee, the External Advisory Committee, the Community Engagement Board, the Policy Forum, and the Research Services Unit. The Lab has developed an interactive website allowing us to communicate with the public about our work and to receive input from them. Our communications program has resulted in the active engagement of over 1,500 members of the community who stay informed about our activities and are able to register for our programming.

The research projects are designed to provide an extensive look at the extent and impact of non-traditional employment throughout the California economy; an intensive look at the largest sector using such employment, the service sector; and a case study of one industry dominated by immigrants as both entrepreneurs and workers, artificial stone fabrication. All of the funded projects are on target to meet their timelines of accomplishment. The effort of the Lab's researchers to foment a new generation of investigators focused on emergent working conditions, the Pilot Grants Program, has been launched through the release of an RFA to which 23 applicants responded by submitting an application for funding. As of September 2023, eight investigators were funded to perform research consistent with the California Labor Laboratory's mission. In 2025, we had another competition for Pilot Grants. There were 21 applicants, and we have funded three.

The Outreach Core has had a number of significant accomplishments, including the completion of a large scale scoping review of accumulated knowledge on how working conditions in traditional and emergent employment affect the health and well-being of workers; a comprehensive catalog of what other TWH Certificate programs have done as a prelude to defining our unique niche related to non-traditional employment; the completion of a comprehensive case study of how traditional practices for planning new workplaces can bring human-centered design as a primary goal to foster healthy work and workers; the initiation of a future of work program incorporating interdisciplinary principles of TWH, and the development of high impact public-facing education programs through a monthly webinar and three annual conferences. Another major activity has been the implementation of a Future of Work Initiative. In the just completed first phase, 18 discipline-specific two-hour convenings have occurred. The convenings which are called "sandboxes" are designed to elicit the perspective of the viewpoints of the disciplines on the current state of and future trends in employment. The next phase, to be commenced in the next several months, deemed "mixers" will engage members of multiple disciplines in how their perspectives differ and in the universally held views across disciplines. This will be followed by a "summit" to draw conclusions from the inquiry across disciplines that will lead to action.

As we enter the fifth year of the Lab’s existence, we can report that the Outreach efforts are getting the Lab into the public eye, including that of legislators in DC and Sacramento. As a result of these efforts, we are again planning a series of visits to the offices of Members of the House and Senate to discuss the work of the California Labor Lab and how we can assist them in their deliberative efforts; these visits are made mainly but not exclusively to Congressional Members from California. Concurrently, we are planning a convocation for the public and policymakers in Sacramento in May 2026 to highlight the work of the Lab and to engage both audiences in the policy issues arising from the Lab’s work.

At the same time, our research projects have made enough progress in data collection and analysis to allow for presentation at professional meetings and legislative hearings as well as numerous publications in peer-reviewed journals.

The CA Labor Lab continues to prioritize community and stakeholder engagement in all of its activities. To that end, a Community Engagement Board, made up of representatives of worker organizations representing low wage workers impacted by the changing nature of work, has been formed and has met three times to provide input into ongoing work. We have also completed a Research to Practice toolkit which will support research teams in ensuring that stakeholders impacted by research are engaged in the research process as early as possible.

We have organized this report by four major overlapping functions: *the Evaluation and Planning Core*, which maintains the infrastructure to ensure the Lab's success; *the Research Program*, which describes the prevalence and impacts of emergent and traditional forms of employment; *the Outreach Core*, which sets the stage for mitigating these adverse impacts through a comprehensive set of activities; and the *Pilot Grants Program* and *Certificate Program in Total Worker Health®*, both of which seek to increase interest in the impact of emergent working conditions, focused particularly on protecting the health of workers in precarious work arrangements.

In the table below, we highlight the outputs of the Lab in its first four years of existence.

CA Labor Lab Outputs, September 2021 – October 2025	
Evaluation and Planning Core	- Established internal and external oversight committees with regular schedule of meetings. - Projects revised according to oversight from external advisory committee members. - Constituted Community Engagement Board and held four annual meetings with membership. - Working with members to advocate for changes in law and regulation affecting workers in affected occupations and industries - Created Policy Forum and held policy sessions at the Lab’s annual conferences. - Policy Forum involved in work with members of Congress, State of California Legislature and Executive Branch in matters related to oversight for workers in alternative arrangements, those subject to irregular shifts and on-call work, and - Created infrastructure for monitoring progress. - Revised logic model governing operations in response to an evaluation of our evaluation activities - Developed website and maintained regular communication with >1,500 stakeholders. - Launched public-facing education program of webinars and annual conferences with more than a thousand individual attendees

Outreach Core

- Completed scoping review of impact of healthy work and workplaces in traditional and emergent working conditions.
 - Distributed the Scoping Review Report for comment to other COEs, NIOSH colleagues, and submitting a manuscript for publication.
- Made presentations to multiple academic and professional conferences regarding Total Worker Health
- Developed and completed initial case study of using TWH principles to assist in design of academic building.
- Completed R2P toolkit for guiding community engagement.
- Initiated a Future of Work project across multiple disciplines with the goal of infusing TWH activities with interdisciplinary principles.
- Developed a proposal for the organization of a national educational Total Worker Health professional development program including core competencies for certificate program and completed review of existing programs and courses on UCSF and UCB campuses.
- Instituted an extensive public facing educational program consisting of monthly webinars in several series as well as three annual two-day conferences on precarity in employment, surveillance and monitoring of work, and the experience of work in contemporary employment.
 - The program has had over 2,000 unique individuals attending one or more event; total registrants include over 7,500 persons.

Pilot Study Program

- Finalized RFP (request for proposals), for release in November 2022
- Developed plan for broad dissemination of RFP to academic and non-profit institutions, including those serving under-represented minorities.
- Created a peer review panel and evaluative criteria for proposals received.
- Funded eight of 23 proposals received.
 - The grantees are currently presenting the results to our monthly research meeting during which they receive feedback from the Lab's investigators and Research Services Unit.
- Issued a second RFA in fall 2024. Received 21 applications and funded three.

Project 1: Emergent Working Conditions

- Held summit meeting on measurement of alternative employment.
- Developed set of potential measures of alternative employment arrangements.
- Conducted series of key informant interviews and cognitive interviews to determine appropriateness of potential measures. Interview data will be used in paper about how people view the concept of a "job" in contemporary employment.
- Pilot-tested and finalized structured survey questionnaire on work and health, including new items.
- Survey of 4,000 working age Californians launched early November 2022 and completed in May 2023
- Presented results in numerous forums beginning in October 2023.
- Published a manuscript on the impact of emergent working conditions in American Journal of Industrial Medicine and another in Journal of Occupational and Environment Medicine on changes in the nature of employment over the last 25 years using the California Work and Health Surveys from 1999-2000 and 2022-2023. Yet another publication is in press in the Monthly Labor Review on the development of our survey.
- Published eleven data briefs on select topics relevant to project, five of which were done with involvement of State of California Labor Agency.
- Disseminated data to eleven sets of researchers.
- Completed public use version of the data for public release in early 2024.

- Designed follow-up survey and completed data collection in March 2025 (data collection was cut short due to the potential for funding cuts; still 1826 interviews had been completed when data collection was ended).

Project 2: Inequality in Service Sector

- Completed multiple manuscripts.
 - The first, published in Journal of Marriage and Family disaggregated gender wage gaps in service employment into within- and between-firm components, showing that a high proportion of the gender wage gap is due to the firms in which women work.
 - Two other publications used the database of state and local policies related to employment which has been put into the public domain. The first evaluated state paid leave policies on worker outcomes. The second evaluated whether state policies lead firms to adopt those policies across jurisdictions so that there is a positive externality of states initiating progressive policies.
 - Another, published in Social Science and Medicine-Population Health, estimates the effect of sick leave policies on worker health.
 - A paper forthcoming in the Journal of Policy Analysis and Management shows the effect of implementing sick leave policies affecting workers in one jurisdiction and adjacent jurisdictions.
 - Two more manuscripts dealing with the effects of punitive work policies have been submitted for publication.
- As noted, published the database of state and local policies for public usage on Github (now being revised).

Project 3: CA Artificial Stone & Silicosis

- Completed assessment of educational resources for countertop fabrication workers and employers.
- Developed employer and worker questionnaires to assess silicosis knowledge and control methods use
- Developed new educational materials for employers: 'Silicosis Air Monitoring Employer Guide' and 'Respirable Crystalline Silica Standard Overview.'
- Developed outline and draft content for Silicosis Continuing Medical Education (CME) Course. Course has been implemented at UCLA.
- Established electronic case reporting of silicosis.
- Published a series of papers (13 in all plus 8 presentations at professional meetings)
 - American Journal Industrial Medicine
 - JAMA Internal Medicine
 - Clinical Chest Medicine
 - New Solutions
 - MMWR
 - American Journal of Public Health
- Developed course for medical professionals, hosted at the Southern California Education and Research Center (ERC).

Evaluation and Planning Core

Oversight for the California Labor Laboratory is the responsibility for the Lab's Evaluation and Planning Core (EPC); the EPC also serves as the musculoskeletal and circulatory systems for the Lab, providing an infrastructure to hold the components of the Lab together, to foster communication within the Lab, and to create a unified whole.

The overarching aim of the Evaluation and Planning Core (EPC) is to ensure that CALL achieves its mission of understanding the health impacts of emergent work conditions through its research and fosters change in the use of the forms of employment that adversely affect the health of workers through its outreach. Specific aims of the EPC are to: 1) create and sustain a communication and coordination structure for the Center that will create the means for each research and outreach activity to succeed and provide a range of services that foster that success; 2) act as an incubator of change agents in research through the development of a pilot studies program and in outreach activities through the development of an interdisciplinary training program in mitigation of the adverse impacts of emergent working conditions so that the Center's mission can be furthered after its tenure is complete; and 3) to evaluate the Center's success in conducting the planned activities during its tenure and incubation of change agents beyond its tenure.

To monitor and, if necessary, ameliorate the activities of the Lab, the EPC has constituted separate Internal and External Advisory Committees, a Community Engagement Board, a Policy Forum, and a Research Services Unit.

The Internal Advisory Committee (IAC). The IAC consists of the Lab PI, Dr. Yelin, the Associate Director for Outreach, Dr. Cristina Banks, the Associate Director for Research, Dr. Harris Adamson, the Director of Community Engagement, Suzanne Teran, who replaced Laura Stock after her retirement, and the Lab's coordinator, Alicia LaFrance. The Director of Educational Programs, Michelle Beltran, often attends these meetings to support external communication and event planning.

At the inception of the Lab, the IAC met on a weekly basis; since the Lab's initial months, these meetings have transitioned to convening on a bi-weekly basis to set strategy for the Lab's activities, monitor progress in each of the activities, and develop ways of maintaining ties among the Lab investigators.

The IAC is responsible for leading strategic initiatives, including selecting themes for the annual conference and guiding the Lab's interactions with the policy community and the public. Other key responsibilities of the IAC include facilitating external communications about outward-facing programs and events, oversight, and improvement of the communication tools within the Center, including templates for reports and data briefs, and logos. The IAC also is responsible for ensuring timely completion of progress reports to NIOSH and the university as well as this annual report.

The External Advisory Committee (EAC). The EAC is designed to provide input into the Lab's Cores and Projects as they unfold as well as to provide strategic direction to the Lab. Examples of the involvement of individual members of EAC in providing ongoing input abound. Dr. Ninez Ponce, as PI of the California Health Interview Survey (CHIS) has been an invaluable consultant to ongoing aspects and insights of the Project 1 California Work and Health Survey. Members of the EAC have also helped us make connections for speakers at our webinars and annual conference, for example assisting us in getting Senator Padilla to speak at our second annual conference, Interim Secretary of Labor Su to speak at our third conference.

To meet the Lab's aims, the EAC oversees the Lab's strategic planning. To this end, the entire EAC and the Lab's faculty and staff met most recently on February 21, 2025. Nearly all members of the EAC attended that meeting (members listed below). EAC members shared their perspectives on the overall goals of the CA Labor Lab as well as their perspectives based on their areas of expertise. During this meeting, the Lab's investigators reviewed progress to date and presented initial ideas of the evolution of the Laboratory's focus on emergent working conditions for the next five-year cycle of funding. The EAC members also weighed in on potential membership of the EAC given the evolution of the focus. The EAC will meet again in early 2026. At that meeting, the EAC will again provide a review of the California Labor Laboratory's progress in pursuing its overall mission and in bringing its funded research and outreach activities to completion.

Members of the External Advisory Committee		
Member	Affiliation	Role in Ca Labor Lab
Garen Corbett	Dir, Ca Health Benefits Review Program, UC, Berkeley	State Policy, Center Admin
Jeffrey Pfeffer, PhD	Prof, School of Business, Stanford University	Organizational behavior and health effects of work organization
Ninez Ponce, PhD	Dir, Ca Health Interview Survey, UCLA	Expertise in surveying diverse populations
Michael Reich, PhD	Prof of Econ, UC, Berkeley	Low wage and minority labor
Beth Ross, JD	Labor attorney	Legal strategy for alternative employment
Steven Shortell, PhD	Dean Emeritus, School of Public Health, UC, Berkeley	Work organization and Center Admin.
Sara Flocks	Legislative and Strategic Campaigns Director, Ca Labor Federation	Employment policy and legislative advocacy
Gervais Tompkins	Principal, Plus Gervais Architects	Design of healthy workplaces
Jora Trang	Chief of Staff and Equity, Worksafe	Community engagement and low wage employment

Community Engagement Board (CEB). The mission statement of the California Labor Laboratory puts community engagement at the center of Lab activities: everything we do we do in concert with our community partners to ensure that what we do is relevant to their needs. In the application for funding, we explicitly said that we would constitute the CEB as the work of the Lab began to unfold to make sure the work we do is informed by the needs of key stakeholders and that results of our research and other activities reach the impacted community.

Since the Labor Lab began, we have held CEB meetings in the Fall, with nearly all board members in attendance (members listed below). Thoughtful discussions about the Labor Lab’s work in research, outreach and policy, and its potential to impact the board’s constituents have been characteristic of these meetings. For example, at last year’s CEB meeting in November 2024, we discussed emerging issues for the workers that the board members represent as potential areas of focus in the Labor Lab’s next five-year cycle of funding.

The board’s input in these meetings has been reflected in various ways in the work of the Lab. For example, the discussion sections of the manuscript on the impact of forms of employment published in the America Journal of Industrial Medicine and in one now in press in the Monthly Labor Review. The members have also helped us frame a form of data release – Data Briefs – that are more accessible to their constituencies due to the use of graphical formats. The members have also influenced the content of the Laboratory’s public-facing webinars and annual conferences.

Members of the Community Engagement Board	
Member	Affiliation
Jane Thomason	California Nurses Association National Nurses United
Rocelyn De Leon-Minch	California Nurses Association
Kimberly Alvarenga	California Domestic Workers Coalition
Sara Miles	United Food and Commercial Workers (UFCW)
Ben Master	Service Employees International Union (SEIU) Fight for 15
Nicole Moore	Rideshare Workers United
Tim Shadix	Warehouse Workers Resource Center
Mitch Steiger	California Teachers Association
Ruth Silver-Taube	Legal Aid at Work
Kevin Riley	Labor Occupational Safety and Health Program (LOSH), UCLA
Jora Trang	Worksafe
Alice Berliner	UC Merced Community and Labor Center
Danny Spitzberg	Tech Workers Coalition
Maegan Ortiz	IDEPSCA (Instituto de Educacion Popular del Sur de California)
Elmer Lizardi	California Labor Federation

Policy Forum. The Policy Forum was designed to create interactions between the faculty and senior staff of the California Labor Laboratory and policymakers in the Legislative and Executive branches of the State and Federal government. The activities of the Forum are a key component of the Lab's Outreach Core and are more fully described in that section of the Annual Report.

Key accomplishments over the duration of the Labor Lab include having Senator Alex Padilla provide an introductory and closing address to our 2023 annual conference and having Interim Secretary of Labor Su do the same for our 2024 conference and identifying and engaging with key legislators and executive branch officials in both State and Federal government. In February 2024, with the University of California Washington D.C. Office, we scheduled briefings with legislators and staff on the findings of the Lab's projects. We now have an on-going relationship with Senator Padilla's staff which led to a Zoom in which we outlined results from the California Artificial Stone and Silicosis (CASS) Project and discussed potential policy initiatives to protect workers in this industry.

Currently we are collaborating with the UCSF Director for State and Local Government Relations to develop engagement strategies with California elected officials to advocate for policies to prevent silicosis, a severe, incurable, and often fatal lung disease that is completely preventable. We are planning to expand our policy engagement to federal lawmakers because of the growing evidence that the workers who fabricate countertops using artificial stone are impacted by this disease nationwide. Most recently, we held a briefing for members of the legislature and executive branch in winter 2025 to discuss the current status of our research and policy initiatives. We proposed key actions that can be taken to improve worker health. California Labor Lab data have proven useful to the California Labor Agency for whom we have prepared five data briefs using the results of the California Work and Health Survey from the Lab's Project 1. The briefs concern employment in the arts, work outcomes for older workers in the State, employment among people with disabilities, the behavioral health workforce, specifically the magnitude and working conditions, and differences in family caregiving responsibilities by generation and gender. Finally, we are currently working with the University of California Student and Policy Center in Sacramento to plan a convocation for the public and policymakers which will serve as our annual conference. The convocation will engage these two audiences in the policy implications of our research and outreach activities. The conference, available to an in-person audience in Sacramento and a virtual one via Zoom, is tentatively scheduled for the first week of May 2026.

Research Services Unit (RSU). The focus of the External Advisory Committee and Community Engagement Boards are to make sure that the projects and Cores are oriented to the important issues arising from the emergence of alternative ways in which people are hired to work. The RSU is designed to provide on-going support to the Lab's funded projects and to aid in the design and evaluation of proposed expansions of the Lab's research endeavors through additional grants to existing investigators and the Lab's Pilot Studies Program. The RSU includes expertise on the substantive orientation of the Lab to emergent working conditions as well as on the methodologies used in the Lab's research projects. The RSU members attend the Lab's monthly research meetings, providing input into the Lab's projects at every step of completion; they also consult with Lab investigators one-on-one when needs arise. The RSU membership is listed in the table below.

There are numerous examples of the use of the RSU members in the design of Lab research projects. For example, Dr. Blanc, an occupational health expert, provided input on measures of workplace exposures for our follow-up questionnaire for Project 1 and Dr. Katz has consulted with the Lab investigators regarding psychometric properties of selected data collection instruments. There are plans for future collaboration with Dr. Katz and with the Lab's Director of Outreach to develop instruments that can be used to evaluate efforts to improve worker well-being.

Many of the members of the RSU were involved in reviewing pilot project applications in the winter of 2025, as they had previously done in 2023. We also count on RSU members to provide support to a new cohort of pilot grantees research, as they have done in previous years. In past years, types of RSU support provided has included input on design issues, for example the trade-off between comprehensive measurement and respondent burden, to appropriate techniques for data analysis, providing key linkages for contacts relevant to their projects, and providing counsel and alternative solutions when projects do not go as planned.

Membership of the Evaluation and Planning Core's Research Services Unit	
Member	Expertise
Kristen Harknett, PhD	Quantitative and qualitative research, demography, labor market measures
Carisa Harris Adamson, PhD	Ergonomics, work organization
Ken Jacobs, AB	Labor market trends and measurement
Patricia Katz, PhD	Psychometrics, survey research methods, behavioral health measures
Edward Yelin, PhD	Survey research, systematic reviews, research techniques on vulnerable groups
Paul Blanc, MD, MPH	Occupational exposures

Outreach Core

Cristina Banks, PhD, Director

Laura Stock, MPH, Director of Community Engagement

Victor Rubin, PhD, Director of Policy

Monique Hosein, DrPH, Community Engagement Coordinator

Michelle Beltran, Educational Coordinator

Alicia Lafrance, MPH, MSW, Research Analyst

Jeff Loi, Research Analyst

The Outreach Core is the second pillar of the California Labor Laboratory (CALL) structure. The first pillar, the Center's Research, provides the evidence of the impact of emergent working conditions and the second pillar, the Outreach Core, turns that evidence into tangible, concrete, and accessible practice and policy information for public use. The Outreach Core's success rests on its ability to translate CALL's research findings into the right knowledge in the right forms to the right places. CALL's ambitious goal of describing, understanding the causes of, and mitigating the health impacts of existing and emergent working conditions with special attention paid to vulnerable workers, requires a robust and compelling outreach partner to turn this research into lasting change for good. The Outreach Core is designed to fulfill that need.

In the Outreach Core, we translate research into practice through the following four overlapping aims: 1) consolidation of known science across relevant fields of knowledge and California Labor Laboratory research; 2) dissemination of accumulated knowledge to stakeholder groups; 3) engagement in mitigation and prevention efforts through research to practice (R2P) process, development of intervention strategies, consultation with organizations, and development of policies; and 4) development of educational programming to inform the public, policymakers, labor, and industry and to develop a cadre of change agents who will work with these constituencies to improve the health and well-being of the working age population.

Consolidation of Known Science. In the first two years of the California Labor Lab, the Outreach Core conducted a multi-disciplinary scoping review, collecting and summarizing healthy work and worker wellbeing literatures. A scoping review is a type of literature review performed when the goal is to map the literature and is generally used to address broader topics. Thus, using a scoping review framework seemed apt for mapping the literature that relates to the broad list of Total Worker Health priority issues. In 2023, draft reports of the scoping review were circulated with all of the Total Worker Health COEs, and presentations were shared with the Total Worker Health audience. Feedback accumulated from these audiences helped to hone and refine the messaging of the scoping review findings. The scoping review was published in the Journal of Occupational and Environmental Medicine in the spring of 2025. Other manuscripts that build upon the scoping review are in progress.

A key finding from the scoping review is that literature from several disciplines were found to have relevance to TWH priorities but appear to be missing in the practice and application of TWH interventions. In addition to the publication, the Outreach Core created a publicly accessible online database containing the literature citations included in the scoping review plus the primary discipline associated with each citation, summaries or abstracts of each citation, and a selection of interventions and/or best practices

extracted from the citations. We have invited comments from readers to suggest new literature that can be added to the citation list to have the potential to further inform and expand the TWH field of practice.

Community Engagement Board. An important goal of the Outreach Core is to inform a wide range of stakeholders about the health impacts of traditional and emergent working conditions. The stakeholders include labor and industry, researchers, advocates, and policymakers at the local, state, and national levels. One venue for the engagement with stakeholders is the Community Engagement Board, which provides oversight into the ways the Lab involves the community in its work. The Community Engagement Board also suggests issues for the Lab to address and how to spur more effective utilization of the Lab's research in the communities whose health and safety we seek to advance in partnership.

The California Labor Laboratory held the first Community Engagement Board (CEB) meeting in fall of 2022; a second was held in October 2023, and a third in the fall of 2024. The primary goals of the CEB include providing input and guidance to the Lab to ensure that community and stakeholder interests are reflected in its overall strategies; sharing knowledge and experience regarding practices and mitigation strategies; assisting in development of overall outreach and dissemination plans; and assisting in identifying and advocating for effective policy strategies to ensure the impact of Center research. The meetings have been well attended by members of organizations representing workers affected by changing working conditions in California. The list of members appears in the Evaluation and Planning section above.

During the CEB meetings, CALL investigators provide updates on current activities and future plans, while the board provides input on a) key issues facing their members; b) suggestions for the Lab's research agenda; c) outreach and training needs; and d) suggestions for our policy agenda. In the Fall 2024 meeting, members reviewed the CALL Logic Model and provided input into future goals and priorities that can be incorporated into the upcoming 5-year renewal proposal.

Research to Practice. Research to Practice (R2P), refers to the basic principle that research needs to serve a purpose and lead to action to improve the health and safety of workers and other community members. R2P also refers to the process of incorporating systematically researched interventions and solutions for broader adoption and implementation. It also involves a 'practice to research' orientation which involves setting research agendas that originate with and respond to concerns and priorities of workers, employers, and other key stakeholders.

An important activity of the Lab in the first three years has been the development of the R2P toolkit to promote community engagement in research. This toolkit is designed to help research teams create a plan to identify and engage key stakeholders early in the research process and develop a research-to-action strategy to disseminate their most significant findings and recommended action. It also guides both researchers and communities in how to define a common set of goals for research, how to better serve community needs through this research, and how to ensure that the results have maximal effects when it is time to turn the results into actionable programs and policies.

This year, Laura Stock, Director of Community Engagement, and Monique Hosein, coordinator of UC Berkeley's Labor Occupational Health Program's (LOHP) R2P work, finalized the R2P toolkit. They partnered with Michelle Beltran and her team from the Center for Occupational and Environmental Health (COEH) with expertise in instructional design to finalize the design and structure of the document. In June of 2024, the toolkit was pilot tested by one of the national centers as part of their mid-course center-wide evaluation. It was used with their project teams to help them focus on dissemination products and

activities. The CALL team used results from that pilot test to refine the tool in advance of public dissemination.

Since the toolkit was finalized, the following dissemination activities have taken place: posting the toolkit on the CALL website and those of other relevant organizations; leading a webinar in Spring 2025 on Research to Practice, with project examples and instructions on how to use the Toolkit; meeting with CALL researchers to introduce the Toolkit and promote and support efforts to engage communities in research and dissemination plans; and presenting a poster on the R2P Toolkit at APHA's Annual Meeting in October 2024. Additionally, the toolkit has been introduced to students as well as established researchers, in classrooms for graduate students in occupational and environmental health, as well as at the Southern California NIOSH Education and Research Center (ERC) Symposium at UCLA in Spring 2025.

Society for Total Worker Health. Dr. Banks was elected as President-Elect of the Society in 2024 and took over leadership of the organization in 2025. As President during a year when CDC funding and staff were cut by the President, Dr. Banks and other members of the NIOSH Total Worker Health Centers of Excellence took steps to continue their work in various ways. Dr. Banks prepared a proposal for the Society to become the "hub" for Total Worker Health professionals in the place of NIOSH which was believed to be eliminated by the Administration. Dr. Banks presented the proposal to her Board Directors and received support to begin shopping the concept with other Centers and with the membership in general. A presentation of the new vision of the Society's role with respect to the Total Worker Health profession was made at the Work, Stress, and Health Conference in Seattle WA in June 2025 to attendees and received a positive reception. In 2026, Dr. Banks will move into the role of Past President and continue this move toward a broader, supportive organization for those seeking a career in Total Work Health.

Research. In this period, Labor Occupational Health Program (LOHP) staff involved in the California Labor Laboratory partnered with COEH researcher, Sadie Costello, on a study, funded by Santa Clara County Office of Labor Standards Enforcement, of food service workers in Santa Clara County. The purpose of the study is to capture experiences of fast food and full-service restaurant workers relating to wage theft, health and safety, and general working conditions. The study was conducted in collaboration with the Fair Workplace Collaborative, a network of community-based organizations and workers centers in Santa Clara County. These trusted community groups were responsible for recruitment and data collection. A report summarizing findings was completed in the fall of 2024.

Another example of research includes UC Berkeley's Interdisciplinary Center for Healthy Workplaces' (ICHW) efforts in administering an online survey created in collaboration with researchers at Norwegian University of Science and Technology. The survey measures the degree to which employees experience features of a healthy workplace. This particular version of the Healthy Workplace Index (HWI) was a shortened form of the team's previous analyses that could identify the most discerning items for predictive personal and organizational outcomes embedded in the survey.

The survey was administered in June to 300 UC Berkeley University Health Service staff, and 58 completed surveys were returned. Analyses were conducted based on the 58, and the attached report describes the results and implications of the survey responses. The plan is to eventually administer the HWI to all UC Berkeley staff, and then it may be rolled out to all staff across University of California campuses as part of the Healthy Campus Initiative under Associate Vice Provost for the Semel Healthy Campus Initiative Center based in UCLA.

Work Futures Project. The Work Futures Project is a joint initiative by the UC Berkeley Haas Business School, the Interdisciplinary Center for Healthy Workplaces, and the CA Labor Lab. The project orchestrates a series of “Sandbox” meetings, which bring together a wide range of thought leaders and stakeholders from multiple, work-relevant fields and occupations. The significance of this project lies in its unique approach; it is driven by first-hand perspectives of professionals from various health-informing disciplines.

Sandbox participants are asked to offer their best thinking and perspectives about their concerns about the current state of work and living, as well as predictions of their futures. We conducted virtual conversations unshaped by predetermined views or agendas to get their “unfiltered views” about our country’s current and future state. These unfiltered views were captured in lightly structured conversations among occupational and stakeholder peers, recorded and transcribed into verbatim narratives.

The Sandbox portion of this project was recently completed in August 2025, with 17 total Sandbox meetings successfully completed in 2024 and 2025. Participants from 2024 included a wide array of occupational groups such as architecture/design workplace strategists, occupational safety and health professionals, occupational health psychologists, senior HR professionals, C-suite HR leaders, work psychologists, building owners/developers, urban planners, government agencies, public policy professionals. 2025 Sandboxes discussions were conducted with union representatives, technologists, artists, CEOs, college student leaders, and venture capitalists and top executive leaders.

The Sandbox summaries are being collated into a two-volume book: the first volume captures the Sandboxes conducted in 2024, and the second volume represents the final Sandboxes conducted in 2025. The books will be distributed to a select group of experts representing several professional disciplines to set the stage for an in-person Mixer event slated for 2026. During this event, participants will synthesize the gathered information to forge a new, collaborative, and interdisciplinary vision for the future of work, workers, and workplaces. The integration task is given to a group of individuals as expert “Knitters,” people who are comfortable thinking at a systems level and can recognize patterns and intersections across a field of information. This vision will be crafted in a workshop-style setting, emphasizing a framework that emerges directly from the voices of the participants rather than from top-down research directives.

Once a future of work, workers and workplaces framework is established, a contracted cohort of experts will transform these ideas into tangible outputs, potentially including written pieces (e.g., articles, briefings, presentations, guides, and toolkits), audio pieces (e.g., podcasts, interviews, videos, and online training), and higher ed pieces (e.g., business school curricula, executive education courses, continuing education courses, professional trainings), thus translating the future of work vision into actionable strategies.

Mitigation and Prevention Efforts. The Lab has completed a case study to apply the basic principles of *Total Worker Health*® to the process of designing and building a new workplace. The Lab worked with the Hobby School of Public Affairs (HSPA) at the University of Houston (UH) as a test case for how to apply the basic principles of *Total Worker Health*® to the development of a new educational building in order to build into the new structure spatial and behavioral components that prevent illness and injury and promote occupant health, safety, well-being, and productivity. In the history of building construction on the UH campus, occupant physical and behavioral health and well-being have not been considered significantly at the early planning stage. The Outreach Director of the Labor Lab was invited by the School

Dean and Building Committee to collaborate with the Facilities & Construction Unit in plan development and most important, to lead the effort in determining occupant needs, potential workplace stressors, and work context factors that were important for occupant health, well-being, and productivity and should be included as critical components of the building plan. Over a period of nine months, Dr. Banks, with the assistance of Drs. Alan Witt and Dustin Maneethai of UH, devised a pre-design process for collecting essential information from future building occupants and integrating occupant data into the Facilities & Construction Unit's pre-design plan. Occupant data were collected using a new methodology designed specifically for this purpose and then translated into building design requirements that meet occupant needs and preferences. The pre-design process consisted of conducting a "building vision" workshop, developing and administering work and workplace surveys, analyzing occupant data with respect to occupant experience and space requirements, summarizing survey findings, and issuing recommendations to the Facilities & Construction Unit and outside design consultants for utilization in the planning process.

Policy Forum. The Policy Forum is the Labor Lab's committee devoted to identifying and engaging with key legislative and executive branch officials with involvement in issues related to our mission understanding and mitigating emergent working conditions. To that end, we have maintained and developed relationships with the government affairs officers of the two flagship campuses of the Lab, UCSF and UC, Berkeley, to identify key officials with whom to have a dialog around policy opportunities across various projects of the Lab. In 2024, investigators of the California Artificial Stone and Silicosis Project met with staff from Senator Padilla's office to discuss policy solutions at both state and federal levels to mitigate and prevent cases of accelerated silicosis among workers who fabricate countertops using artificial stone.

We have also established a working relationship with the UCSF Director for State and Local Government Relations to develop strategy for state legislative targets to engage regarding policy recommendations from the Lab's research projects. In previous years, at the behest of members of U.S. Congress, the Outreach Director and staff provided a briefing on the current state of remote work. We have also invested in relationships that have helped us at the federal level, including connections with the Senior Director, Federal Government Relations & Advocacy. This kind of engagement has helped facilitate connection with civil servants, such as Julie A. Su, Acting Secretary of the U.S. Department of Labor who provided opening remarks for our 2024 annual conference.

Finally, we have worked with the California State Labor Agency to tailor information to their data needs as reflected in four Data Briefs that we completed using data from the California Work and Health Survey. The four briefs done for the Labor Agency concern arts-related employment, employment among people with disabilities, work outcomes for older workers, and the magnitude of the behavioral health workforce.

Dissemination of Knowledge: Educational Programming & Public-Facing Programs. An important goal of the Outreach Core is to inform a wide range of stakeholders, including the public, about the health impacts of traditional and emergent working conditions. A primary venue for the engagement with a broad audience is in our regular public-facing educational programs. Our aim is to engage the public in the issues raised by emergent working conditions with the hope that they will be involved in efforts to improve the health of the workforce both for themselves and their colleagues as well as by engaging in efforts to improve legislation and regulation. The California Labor Lab has built a successful program of public-facing educational programs, including monthly webinars and an annual two-day conference.

The Lab's educational programs are available for CME credits in various health professions. All webinars and the entire two-day annual conference have been recorded and are publicly accessible through the Labor Lab website: <https://calaborlab.ucsf.edu/educational-programs> and in our YouTube channel.

Since the inception of the California Labor Lab in 2021, we have held 27 webinars across four series. The first series, held in spring 2022, provided insights into the employment situation in the wake of Covid-19 in the State of California and the nation, as well as insights into one of the fastest growing sectors in the economy, warehouse workers. The series concluded with a discussion of mitigation efforts. The second series, held in winter and spring of 2023, concerned occupational health issues across the spectrum of blue-, pink-, and white-collar work. Topics ranged from ergonomics, homes as a workplace, organizational changes to improve health, job quality measurement, federal, state, and local legal protections, and rideshare experience. During the fall and winter of 2023, the CA Labor Lab hosted a third series on marginalized workers. The webinars in this series discussed the policies that impact workers from all kinds of demographic and social backgrounds, the well-being of gig workers in California, and the risks the countertop fabrication industry poses to immigrant workers. The series in the spring of 2024, focused on the health and well-being of workers, exploring topics such as the role of work conditions in the causation of chronic illness, the role of leadership in supporting workers' mental health, and effective workplace interventions to prevent workplace mistreatment. Webinars in the spring of 2025 covered topics such as the avian flu and how TWH approaches could support impacted producers and workers, occupational and environmental risk among U.S. agricultural workers. In the fall 2025, the webinars will turn to topics related to the future of work, engaging futurists, and using data collected from multiple disciplines to discuss trends in workplace wellbeing across a myriad of industries, as well as data collected from the California Work & Health Survey.

Across all webinars and annual conferences, 7,578 people have registered for our public-facing programs, with 4,426 attending live. Attendees include 2,084 unique learners who have attended one or more of the webinars and conferences; many have attended multiple events, with even more viewing the recordings on our website. Our most well-attended webinar was held on November 29th, 2023, and featured a presentation on the California Artificial Stone and Silicosis (CASS) Project, with 381 real-time viewers.

We are proud that all of the annual conferences and webinars have consistently been very well attended. Our annual conference has grown from 95 unique learners in 2022 to 168 unique learners in 2025, with an average of 96 learners attending annually. The Lab's fourth and most recent annual conference, which was convened on April 29th and 30th, 2025, explored the evolving nature of artistic labor in an era of economic instability and shifting employment structures. Notably, opening remarks were provided by Joely Fisher, who holds a leadership position with SAG-AFTRA, and talks were provided by both academics and people who work in the arts and entertainment industry. Previous conferences were entitled Modern Work & Workers' Voices (May 2024), Monitoring, Surveillance, and Data-Gathering in Contemporary Employment (May 2023), and Precarity in Employment (May 2022), and recordings are available on the Lab's website.

Teaching/Student Engagement. LOHP staff have provided remote classroom presentations, including interactive activities, for graduates and undergraduates. Topics have included principles of participatory action research, research to practice, methods for engaging with community and labor stakeholders, and overview of occupational health and principles of taking action. LOHP staff who are part of the California Labor Laboratory provided presentations for undergraduate SPH students on racism and health, to nurses at the UCSF School of Nursing on labor and occupational health on Research to Practice as part of STEER,

COEH's summer internship program; in the Targeted Research Training (TRT) Program for students in the UC Berkeley Labor Center internship program; as part of UCB Labor Studies, among others. In the fall of 2024 and 2025, LOHP's biannual class, *Social Justice and Workers' Health*, has been offered in the Berkeley School of Public Health.

LOHP has also worked to ensure that the voices of workers and worker organizations are included in the CA Labor Lab annual conference. LOHP organized and facilitated three panels at the 2024 Labor Lab annual conference: Low wage immigrant workers, workers in health care, and workers in higher education. Each panel included front line workers as well as representatives of unions/worker organizations engaged in efforts to advance protective policies. LOHP also planned and co-facilitated the conference panel on Policy Initiatives.

Certificate Program in *Total Worker Health*®. The Lab has two principal programs to train a generation of change agents focused on the principles of *Total Worker Health*®: the Pilot Studies Program for researchers described in its own section of this Annual Report, and the Certificate Program for practitioners across a range of disciplines, including those interacting with workers on a daily basis as well as those who are involved in policy through law and regulation.

The Outreach Core is exploring the development of a new Total Worker Health continuing education curriculum, including curriculum content, and targeting specific audiences who would most benefit from a certificate. To this end, and in collaboration with colleagues at another COE, the Outreach Core cataloged existing TWH programs and investigated the competencies required for TWH training. The Lab and partnering COE surveyed all COEs to assess the educational programs they offer, aiming to understand the current state of TWH education, its evolution, and potential future collaborations among the COEs. The data has been analyzed and will be presented at the pre-conference of the 4th International Total Worker Health Symposium in Bethesda, MD in October 2025. During the pre-conference, participants will build on the analysis to revise, enhance, and close the gaps found across the TWH continuing education curriculum. The pre-conference meeting will also include a review of the TWH core competencies for professional education and training, expanding on the existing foundation. Leveraging the leadership position of Dr. Cristina Banks as current president of the Society of TWH, the ultimate vision is to have the Society become the managing hub of the TWH education programming nationally, making the training more accessible and more tailored to professional needs. Moreover, the Society would develop outreach to employers and other organizations to create more demand for TWH professionals.

Finally, the Lab is in dialogue with NIOSH Education & Research Center at UC Berkeley, the UC Berkeley Graduate Education Program, and with UC Berkeley Executive Education to explore the development of a TWH educational program in California.

Papers

1. Cristina Banks, Alicia LaFrance, Ima Varghese Mac, Trisha Iley, Bruce Abbott, Ed Yelin. Scoping Total Worker Health: An Expanded View of Worker Well-Being. *Journal of Occupational and Environmental Medicine*. 2025.

Presentations

1. Cristina Banks. Strategic Benefits: How Employee Benefits Can Create a Competitive Advantage-- Symposium on Place Rights as a Strategic Benefit. In-person symposium presentation at the Annual Meeting of the Academy of Management in Copenhagen, Denmark, July 27, 2025.

2. Cristina Banks. Research-to-Practice Capacity Building. Panelist of six researchers and practitioners at the 2025 Work, Stress and Health Conference at the University of Washington, Seattle, WA, July 11, 2025.
3. Cristina Banks, Liu-Qin Yang. Looking into the Future of Occupational Safety and Health: Research-to-Practice and Practice-to-Research. In-person lunch tutorial at the 2025 Work, Stress and Health Conference at the University of Washington, Seattle, WA, July 11, 2025.
4. Cristina Banks. The Future of Total Worker Health and You. In-person lunch tutorial at the 2025 Work, Stress and Health Conference at the University of Washington, Seattle, WA, July 10, 2025.
5. Cristina Banks. In-person panelist at the 2025 Work, Stress and Health Conference at the University of Washington, Seattle, WA, July 9, 2025.
6. Cristina Banks. Sustainability is a priority. How does it impact workers? Virtual presentation on LinkedIn hosted by SAP SuccessFactors, November 21, 2024.
7. Cristina Banks, Sally Augustin. Total Worker Health Fills the Gap Between Good and Great Workplaces. In-person conference presentation at the 2024 Corenet Global Summit North America in Washington D.C, November 1-3, 2024.
8. Cristina Banks. Unfiltered Voices Heard through the Work Futures Initiatives. Virtual Keynote Presentation at the 2024 Annual Member Meeting for the Society for Total Worker Health, October 31, 2024.
9. Monique Hosein. Development of a research-to-practice (R2P) toolkit for occupational safety and health to increase dissemination of research findings through community engagement. Poster presentation at the American Public Health Association Annual Meeting, Minneapolis, MN, October 28, 2024.
10. Cristina Banks. Introducing AI in the Workplace. Presentation to Executive Development Program, CSHRP, October 2024.
11. Cristina Banks. Human and Organizational Factors in AI Risk Management - A Workshop. Virtual Panel Presentation given at National Academies Division on Engineering and Physical Sciences, June 26, 2024.
12. Cristina Banks. Enhancing the Reach and Depth of Worker Health, Safety, and Well-Being Through Total Worker Health®. In-person presentation at the American Industrial Hygiene Association - Northern California Section Technical Symposium, April 24, 2024.
13. Cristina Banks. Home-Like Workplaces: Where Do We Draw the Line? In-person panel discussion at the SIOP Annual Conference in Chicago, Illinois, April 18, 2024.
14. Cristina Banks, Ed Yelin. Traditional and Alternative Employment in Contemporary Work: Who Takes Responsibility for Workers' Well Being? Virtual presentation at UC Davis COEH's Builds Bridges Conference, January 20, 2024.

15. Cristina Banks, Lawrence Witt. New Building Design: A Total Worker Health® Opportunity. Virtual presentation at the Work, Stress, & Health Conference, November 9, 2023.
16. Cristina Banks. Interdisciplinary Scoping Review of Literature Relating to Worker Health, Safety, and Well-Being. Virtual presentation at the Work, Stress, & Health Conference, November 9, 2023.
17. Cristina Banks, Lawrence Witt. Work Experience: It's Not About Stuff. In-person presentation at the Academy of Management Annual Conference, Boston, MA, August 2023.
18. Cristina Banks. Work Experience: It's Not About Stuff. In-person presentation to CoreNet Houston, TX, June 2023.
19. Cristina Banks. Work Experience: It's Not About Stuff. Virtual presentation to Google Workplace R&D Conference, March 2023.
20. Cristina Banks. Work Experience: It's Not About Stuff. Virtual presentation to GSA Digital, March 2023.
21. Cristina Banks. Panel Discussion, "Is There a Business Case for Healthy Workplaces?" Society for Industrial/Organizational Psychology Annual Meeting, Seattle, April 2022.

Research Briefs

1. [A Brief Review of the Current State of Remote Working](#). By Ima Varghese Mac, Cristina Banks. April 8, 2024.

Products

1. Cristina Banks, Alicia LaFrance, Ima Varghese Mac, Trisha Iley, Bruce Abbott, Ed Yelin. Scoping Review Database: Literature Relevant to Total Worker Health, Categorized by Discipline and Subdiscipline. Zenodo. 2025. <https://doi.org/10.5281/zenodo.11557715>

Pilot Studies Program

Edward Yelin, PhD, Principal Investigator
Carisa Harris Adamson, PhD, Co-Investigator

The Pilot Studies Program of the California Labor Lab serves to advance the twin goals of the Center – describing the magnitude and effect of emergent working conditions on health along with preventing and mitigating health effects of adverse working conditions – by increasing the number of researchers focusing in these areas and providing opportunities to those already experienced in this work to explore emerging issues as they arise. This program has funded eight projects with plans to fund three more in the fourth year of the grant. These pilot projects will continue to expand the scope of research beyond the established projects proposed in this TWH Center application, allowing CALL to broaden the field of research in emergent working conditions and health and to truly serve as a laboratory for testing new concepts and ideas in this area. Specific aims of the program are: 1) To expand the number and kind of researchers addressing the relationship between emergent working conditions and health and well-being to junior investigators beginning a research career (graduate students, post-doctoral fellows, junior faculty) and to senior investigators segueing to a focus on this area; 2) To expand the range of topics covered under the broad umbrella of emergent working conditions and health and well-being by funding researchers from a wider array of disciplines and methodological orientations than the Center's existing investigators; 3) To expand the use of the Center's state of the art data sources by new investigators to aid in achieving the prior aims of expanding the number and kind of researchers and disciplines applied in this work; 4) To identify emerging issues consistent with the Center's mission of improving the health of the working age population affected by emergent working conditions.

The Pilot Studies Program is supported by the California Labor Laboratory grant and contributions from the two home campuses, UCSF and UC, Berkeley. For the first year of the pilot studies program, announced in fall of 2022, we issued eight grants of up to 18 months duration in two funding cycles. For the initial RFA, our colleagues from the Center for Occupational and Environmental Health, several of whom are Lab investigators, developed a comprehensive list of universities and research organizations in California and beyond. Having this list helped us improve the probability that grantees would represent a wide range of social and demographic backgrounds, and would address important priority areas for the Lab, describing the impact of emergent working conditions on the health of affected populations.

In the fall of 2024, we announced our second pilot studies request for applications (RFA) for a funding period starting in 2025 and ending in 2026, also leveraging this network. We received 21 applications for the pilot program (in the program's initial year, the Lab received 23 applications). Consistent with the first year of the program, applications were evaluated by a review panel that consists of Lab investigators, including members of the Research Services Unit; members of the External Advisory Committee. Two reviewers were assigned to evaluate each application based on the rubric outlined in the RFA. Out of this process, three applications were selected to receive funding during 2025-2026. Applicants will address issues related to work, health, and wellbeing from their respective disciplines, including economics, community public health, and industrial and organizational psychology.

The first cohort of pilot program included eight award recipients, in which funding was dispersed in September 2023 with projects running for 12- to 18-months at the grantees' discretion. This cohort was

predominantly made up of trainees and included principal investigators from a wide range of organizations. The pilot program recipients presented their research progress at the Lab's monthly research seminars through the conclusion of their projects in early 2025. Two of our Pilot Study Grantees, Drs. Nicholas Smith and Heather Amato have gotten tenure track jobs at new universities: Dr. Smith at the University of Texas-Arlington and Dr. Amato at the School of Public Health of the University of Maryland. In addition, another grantee, Dr. Sheiphali Gandhi has received an internal UCSF K2 Award and grants from the UCSF Hellman Fellowship for Faculty Development, UCSF Irene Perstein Award Program, and the California Silicosis Support Network. Progress from each pilot project from the 2023-2024 cohort is summarized below.

The second pilot program, set to begin in October 2025, includes three selected award recipients, each PhD students, two from universities in California, and one from a university in Connecticut. Their projects aim to cover workplace issues in particular industries, including labor that takes place in private households, academia, and in low-wage service industries such as warehousing, retail, and food services. Their work will aim to address a series of highly relevant questions, including: Are injury rates higher when wages are lower? How can we develop tailored interventions to mitigate the negative consequences of abusive supervision among graduate students? Why and how are domestic workers unprepared for retirement, and how can we create innovative policy solutions that protect their livelihoods?

October 2025 – August 2026 Pilot Grant Awardees and Projects:

1. Sandra Garcia (UCLA Ph.D. Student): Retirement Preparedness Among Domestic Workers in California
2. Mostafa Dastgheib (University of Connecticut Ph.D. Student): Abusive Supervision of PhD students and Postdocs and Its Psychological and Job Impacts
3. Denis Sosinskiy (UC Davis Ph.D. Student): Workplace Injuries in Low-Wage California Industries

2023-2024 Pilot Grant Awardee: Heather Amato, PhD, MPH

- **Project Title:** Zoonotic pathogens and antibiotic resistance near concentrated animal feeding operations (CAFOs) in California's Central Valley
- **Aims:** To identify antibiotic resistant zoonotic pathogens in various environmental exposure pathways near dairy CAFOs and in communities without dairy CAFO; to assess carriage of resistant pathogens in dairy farm workers in community members.
- **Publications/Reports/Presentations:** In May 2024, preliminary findings were presented in a poster presentation at CZ BioHub Confab. In May 2025, sequencing and regression results were presented in a poster presentation at the National Institute of Antimicrobial Resistance Research and Education (NIAMRRE) annual meeting. A final manuscript is in final preparations for preprint submission in October 2025.

2023-2024 Pilot Grant Awardee: Marley Zalay, MPH

- **Project Title:** Assessment of Diesel Exhaust Exposures and Work-Related Stress among Farmworkers using Off-Road Diesel Equipment
- **Aims:** Characterize personal occupational exposures to diesel exhaust among farm workers, investigate perceptions of work stress, work-related exposures, and hazards, and develop worker-informed results return materials.
- **Publications/Reports/Presentations:** Manuscripts from this work are in-progress, targeting publishing in the 2026 spring semester.

2023-2024 Pilot Grant Awardee: Lina Stepick, PhD

- **Project Title:** The Union Effect for Direct Care Workers in the United States
- **Aims:** Examine the effect of being covered by a union contract on direct care workers' economic and wellbeing outcomes.
- **Publications/Reports/Presentations:** Results from this pilot study were published both in in the journal Health Affairs in 2025, "Centering marginalized care: Home care cooperatives and system change", and as a PHI research issue brief in 2025 titled, "The Union Effect for Direct Care Workers".

2023-2024 Pilot Grant Awardee: Nicholas Smith, PhD

- **Project Title:** Assessing the Implications of State-Level Overtime Pay Legislation among Latine Agricultural Workers
- **Aims:** Evaluate the impact of the phase-in of Oregon's overtime law for farm workers, assess workers' perceptions and understanding of the law, and convene a group of subject matter experts to support ongoing development and implementation of the study.
- **Publications/Reports/Presentations:** In June 2024, work sponsored by the Lab was presented at the Association of European Qualitative Researchers in Psychology Conference in Milan, Italy. Also in 2024, a poster presentation using data from this project was given at the European Academy of Occupational Health Psychology Conference in Granada, Spain. In May 2025, a presentation using data from this project was given at the European Association for Work and Organizational Psychology in Prague, Czech Republic. Also in July 2025, a presentation was given at the Work, Stress & Health Conference in Seattle, WA.

2023-2024 Pilot Grant Awardee: Serena Rice, MS

- **Project Title:** Trade Union Staff Health and Well-being: A Mixed Methods Study
- **Aims:** Examine and describe the working conditions and health status of a sample of trade union staff members to understand how they perceive their health and well-being to be impacted by their work.
- **Publications/Reports/Presentations:** Findings were presented at the 2025 Work, Stress, and Health Conference in Seattle, WA.

2023-2024 Pilot Grant Awardee: Ashley Membere, PhD

- **Project Title:** An investigation of factors driving health disparities for affected workers in California.
- **Aims:** Assess the physical and mental health outcomes of California workers in various industries including gig workers and investigate health disparities based on sociodemographic variables and other contextual factors (e.g., family care responsibilities).
- **Publications/Reports/Presentations:** None to report yet.

2023-2024 Pilot Grant Awardee: Sarah Beth Stein, MPH

- **Project Title:** Workplace violence in food services: Workers' compensation and lived experience.
- **Aims:** Describe the past and current state of workplace violence-related workers' compensation claims submitted by food service industry workers in the state of California; characterize current workplace violence experiences of food service workers in Los Angeles

County; and present findings to relevant stakeholders and incorporate feedback to form policy recommendations.

- **Publications/Reports/Presentations:** Findings were summarized in a report co-authored with community partners from the Worker Empowerment Community Network LA, titled “Restaurant Work in LA County” that includes a variety of experiences the restaurant workers shared, as well as policy recommendations to improve the working conditions of this workforce. Also, a commentary paper is in progress, titled “A call for U.S. universities to appropriately compensate their community partners.”

2023-2024 Pilot Grant Awardee: Sheipali Gandhi, MD, MPH

- **Project Title:** Understanding Pulmonary Fibrosis Through Complex Occupational Exposure Assessments
- **Aims:** Develop a pulmonary fibrosis-specific job exposure matrix (PF-JEM) for work-related inhalational exposures to link job titles with indices of exposure. Utilizing the developed PF-JEM, measure the association between occupational exposures and PF in Cal-EDRS using a frequency-matched case-control analysis of California decedents using the California Electronic Death Registration System.
- **Publications/Reports/Presentations:** Findings presented via an oral presentation at the CHEST Annual Meeting hosted in Boston, Massachusetts in October 2024.

Project 1: Impact of Emergent Working Conditions on the Health of Working Age Californians

Edward Yelin, PhD, Principal Investigator

Nari Rhee, PhD, Co-Investigator

Alicia Lafrance, MPH, MSW, Coordinator

Ima Varghese Mac, Project Analyst

Trisha Iley, Project Analyst

The overarching aim of the proposed project is to evaluate the impact of the totality of change in work as well as of important sentinel working conditions that are part of that change on the health of the working age population. Three major changes are noted: the growth of alternative ways that workers are hired, spanning task-, project-, and contract-based employment; increase in contingent forms of employment; and erosion of traditional working conditions. Specific aims are to: 1) develop a survey instrument capable of measuring several axes of change in work and a range of adverse health outcomes; 2) compare the utility of individual axes of emergent working conditions singly and in combination to predict changes in health status of the working age population over time and to estimate the critical individual sentinel working conditions within the axes in determining future health status; and 3) evaluate the changes in the organization of work as defined by the axes of change and important sentinel individual conditions for the health of vulnerable groups in the labor force.

The context for this project is that many analysts have noted that the labor market measures that have been developed do a poor job of characterizing alternative and contingent forms of employment. The purpose of the California Work and Health Survey (CWHs) is to capture information about the employment and health status of California adults in a longitudinal survey. One distinctive feature of the CWHs is that it collects information on jobs worked in the past month, not just the past week. The rationale is that alternative and contingent forms of employment may be episodic and less likely to be captured in data collection solely about the week prior to interview.

The major activity of the first year of Project 1 (2021-2022) was to develop a large-scale survey instrument-the CWHs-to be conducted among a random sample of working-age Californians. The development of the survey included consulting with experts, conducting key informant interviews, piloting new survey questions via cognitive interviews, and pre-testing the survey instrument in its entirety. The CWHs baseline survey was conducted from November 2022 to May 2023, with a total of 4,014 respondents, of whom 74% completed an online version of the survey and 26% completed it via telephone.

In the third year (2023-2024), Project 1 investigators conducted analyses of the dataset, presented initial findings, submitted and published papers in academic journals, and published a series of data briefs summarizing CWHs findings to our website. In a series of webinars during the fall of 2023, investigators presented the results of the CWHs. Two of the webinars focused on the prevalence and impact of alternative, contingent, and app-based employment, while another discussed the forms of monitoring and surveillance of work. Early in 2024, we continued our analyses and summarized our findings in manuscripts and submitted them to two journals. One manuscript exploring the health and economic impacts of non-standard work, was published by the American Journal of Industrial Medicine (AJIM), and the second manuscript focuses on the prevalence of non-standard forms of work was accepted for publication in the Monthly Labor Review. Among the data briefs, one concerning the magnitude of arts-

related employment was completed at the behest of the State of California Labor Agency who sought information on that issue. Another being done at the Labor Agency's behest concerns the characteristics of workers in app- and project-based employment. Yet a third done for the Labor Agency concerns the nature of employment among older workers.

A key finding, as published in our AJIM article, was that risks associated with alternative, contingent, and app-based work included strong associations of earnings at or below a living wage for a single individual and high reported frequency of wage theft. The association between the forms of work and current health status was less consistent; however we did observe that workers in alternative arrangements are less likely to have access to a pension or employment-based health insurance, and those in contingent jobs experience a higher probability of reporting fair or poor mental health and high levels of perceived stress. We anticipate that there may be clearer associations between forms of work and health status when we analyze data from the respondents who were re-interviewed in 2025, due to the long latency period of many health problems.

In 2024, the research team developed the follow-up CWHS questionnaire. Many of the question items from the baseline CWHS remained similar; the main difference is that the follow-up survey only asks about respondents' main job. During the fall and winter of 2024, the CWHS follow-up questionnaire was piloted in English and Spanish to a test group of Californians, and the survey instrument was subsequently finalized. In February 2025, the follow-up CWHS was administered to as many of the original 4,014 respondents as possible, and it was anticipated that about 2/3 of the baseline respondents would complete the follow-up. 1,826 interviews were conducted from February through end of March 2025, when we shut down data collection prematurely due to federal funding concerns. The research team is currently working on a manuscript comparing the health and economic outcomes between 2023 and 2025 for respondents in traditional vs. alternative, contingent, and app-based employment from the first and second waves of the survey. Another manuscript is being developed about the extent of heat exposure on the job and workplace mitigations in place for those with exposures utilizing new questions added in the second wave of the survey. There are data briefs planned on subjects including app work, regional comparisons, and public benefit reciprocity.

We offer a public use version of the first wave of the CWHS dataset, which is made available to researchers outside of the CA Labor Lab upon request. As of this writing, the dataset has been shared with 11 researchers from various institutions, including the UCLA Fielding School of Public Health, the University of Southern California, and Harvard University. The projects of these researchers focus on many distinct topics, such as the relationship between working conditions and the health of farmers and the correlation between precarious employment and worker well-being. More information about the CWHS and a data request form is available at <https://calaborlab.ucsf.edu/cwhs>.

In 2025, from June to August, the Project 1 research team supported an undergraduate student intern, Yuliia Vitela, funded by the Short Term Educational Experience for Research (STEER) Program at the UC Berkeley Center for Occupational and Environmental Health. Ms. Vitela created the first geovisual analyses of CWHS 2022 data using R and ArcGIS software. The California maps Ms. Vitela created using this software demonstrated significant regional differences of poverty and financial strain despite employment, prevalence of alternative and contingent employment, and on-the-job injury rates. One interesting finding from Ms. Vitela's data visualization is that, despite the perception that the tech-heavy San Francisco Bay Area would have the highest rates of app-based employment, the data show that the San Bernardino/Riverside region and Greater Los Angeles actually lead in app-based employment. The maps also revealed that the highest rates of injury are in the Central Valley, which may be linked to

agricultural employment; Central Coast and San Diego regions had the next highest rates, which also may be tied to the significant amounts of agricultural and warehouse work in these regions.

Papers

1. Ed Yelin, Alicia LaFrance, Trisha Iley. Erosion of Traditional Employment: Impact on Health and Economic Well-Being. *Journal of Occupational and Environmental Medicine*. September 2025.
2. Ed Yelin, Laura Trupin, Trisha Iley, Nari Rhee, Alicia LaFrance, Ima Varghese Mac. The Impact of Alternative, Contingent, and App-Based Employment on the Well-being of Working Age Adults: Results from the California Work and Health Survey. *American Journal of Industrial Medicine*. June 17, 2024.
3. Laura Trupin, Alicia LaFrance, Nari Rhee, Trisha Iley, Ima Varghese Mac, Ed Yelin. Exploring the Complexities of Nonstandard Employment: The 2023 California Work and Health Survey. *Monthly Labor Review*. In press.

Presentations

1. Alicia LaFrance and Ed Yelin. Extent of Precarious Employment in California's Behavioral Health Workforce. Poster presented by Alicia LaFrance at the Creating Sustainable Work Conference, Stockholm, Sweden, May 8, 2025.
2. Ed Yelin. Is Work Changing and to What Effect? Results from the California Work and Health Survey. Presentation given at the Western States Occupational Network - 15th Annual Meeting, Denver, Colorado, September 19, 2024.
3. Ed Yelin. Surveillance and Monitoring in Contemporary Employment. Talk given at Society for Total Worker Health Peer Learning Webinar, November 2, 2023.
4. Ed Yelin. The Future of Work is Now: Results from the California Work and Health Survey. Presentation given at California Labor Laboratory Webinar, October 25, 2023.
5. Ed Yelin. Prevalence and Impact of Alternative, Contingent, and App-Based Employment: First Estimates from the California Work and Health Survey. Presentation given at NIOSH Webinar, October 19, 2023.

Data Briefs

1. [Family Caregiving among Californians in 2022: Sex and Generational Differences](#). By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. April 24, 2025.
2. [On-the-Job Injuries among California's Workers](#). By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. January 29, 2025.
3. [The Extent of Precarious Employment in California's Behavioral Health Workforce](#). By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. December 10, 2024.
4. [Education Mismatch in the California Workforce](#). By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. December 9, 2024.
5. [Employment through the Working Years, With Special Emphasis on Older Workers](#). By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. October 4, 2024.

6. [Quality of Union vs. Non-Union Work in California.](#) Trisha Iley, Ed Yelin, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. July 12, 2024.
7. [Employment among Persons with Disabilities in California.](#) By Ed Yelin, Trisha Iley, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. July 2, 2024.
8. [Employment in Arts and Related Occupations and Industries in California.](#) By Ed Yelin, Trisha Iley, Laura Trupin, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. May 29, 2024.
9. [Financial Strain among Working Age Californians.](#) By Ed Yelin, Trisha Iley, Laura Trupin, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. April 8, 2024.
10. [Work Quantity in California.](#) By Ed Yelin, Trisha Iley, Laura Trupin, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. April 8, 2024.
11. [Working from Home in California.](#) By Ed Yelin, Trisha Iley, Laura Trupin, Alicia LaFrance, Nari Rhee, Ima Varghese Mac. March 13, 2024.

Products

1. California Work and Health Public Use Dataset. October 2023. Access to the dataset is granted on a per request basis at <https://calaborlab.ucsf.edu/accessing-cwhs-dataset>.

External CWHS Users & Projects

1. Name/affiliation: Ashley Membere, PhD, Assistant Professor at CSU Dominguez Hills Department of Psychology. Project: An Investigation of Factors Driving Health Disparities for Marginalized Workers in California.
2. Name/affiliation: Cindy Calderon Correa, UC Berkeley, MPH in Environmental Health Sciences Student. Project: Total Workers Health: The Joint Interaction Between Housing and Employment Instability in California's Workforce.
3. Name/affiliation: Jane Fazio, UCLA Fielding School of Public Health, UCLA David Geffen School of Medicine. Department of Medicine. Project: Disparities in work related injuries and worker's compensation.
4. Name/affiliation: Sarah Beth Stein, UCLA Fielding School of Public Health, Department of Community Health Sciences. Project: Precarious employment as a contributor to poor physical and mental health among California immigrants.
5. Name/affiliation: Emily Kaner, MPH MCP, UCLA Fielding School of Public Health, Department of Community Health Sciences. Project: An intersectional approach to investigating the relationship between precarious employment and mental health.
6. Name/affiliation: Ezinne Nwankwo, University of Southern California, USC Dornsife Equity Research Institute. Project: Workplace bullying and the health of immigrant adults in California.
7. Name/affiliation: Karen Lau, Visiting Graduate Researcher at UCLA; PhD candidate at St. George's, University of London & London School of Hygiene and Tropical Medicine. Project: Precarious work and health outcomes in immigrant workers: analysis of California Work and Health Survey (CWHS) data in 2022-23.

8. Name/affiliation: Ryan J. Walsh, PhD Candidate at the University of Southern California, Ostrow School of Dentistry, Chan Division of Occupational Science and Occupational Therapy. Project: Understanding Social Determinants of Health and Health Disparities in Emerging Work Contexts.
9. Name/affiliation: Charlotte O'Herron, PhD Candidate at Harvard University, Department of Sociology & Social Policy. Project: Alternative Work, Job Quality, and Well-Being.
10. Name/affiliation: Dr. Annie Keeney, Assistant Professor at San Diego State University. Project: The Role of Workplace Conditions, Social Support, and Caregiving Responsibilities Among Agricultural Workers.
11. Name/affiliation: Yuliia Vitela, Intern at UC Berkeley Center for Occupational and Environmental Health. Project: Exploring the Changing Employment Structure and Worker Health in California.

Project 2: Job Conditions in the Service Sector

Kristen Harknett, PhD, Co-Principal Investigator

Daniel Schneider, PhD, Co-Principal Investigator

Reflecting the progress in the project and shifting priorities within NIOSH, the project focus and priorities for Year 5 have been amended. This report reflects the new priorities – to focus on analyzing novel data on low-wage working conditions, the association between working conditions and worker health outcomes, and to examine the role of policies and employer practices that affect working conditions and worker health outcomes.

Working conditions influence population health and contribute to disparities in a range of health outcomes, and these conditions have deteriorated over the past forty years. Much of the research on precarious working conditions has focused narrowly on hourly wages, but precarious working conditions go beyond wages and include multiple dimensions such as schedule control, predictability, and stability; paid time off, health insurance, and other fringe benefits; as well as job security and job satisfaction. Precarious work schedules, lack of benefits, and job insecurity and dissatisfaction are particularly pronounced for the nearly 20% of American workers employed in the service (including retail, grocery, food service) sectors. These sectors have also been sites of legislative interventions to improve job quality, with states and localities implementing higher minimum wages but also passing laws that require large private sector employers to provide greater work schedule stability and predictability, offer paid sick leave, and provide access to paid family and medical leave.

Yet, there is little existing data that captures multi-dimensional measures of job quality and that allow comparisons across policy environments and employers. To fill this gap, we use data from The Shift Project from over 200,000 service sector workers nested in more than 150 large firms, collected from 2017-2023 and from a subset of workers followed longitudinally between 2021-2024 (data collection is funded by other sources, primarily an NIA R01 award).

We use this data to accomplish three key aims: (1) to document work conditions that are social determinants of health but are typically absent from national data sources; (2) to estimate the effects of job conditions on worker health (3) to examine the role of local labor laws and higher road employment practices on job conditions and worker health.

In year four, our paper “Estimating the Impact of State Paid Sick Leave Laws on Worker Outcomes in the U.S. Service Sector, 2017-2023,” was presented at the annual meeting of the Population Association of America and later published in the journal, *Social Science Medicine-Population Health*. In Year 5, we will continue to execute analyses of working conditions and worker health and whether labor regulations or company high-road practices affect working conditions and health outcomes. We will work towards the publication of manuscripts on paid sick leave policies and working while sick, and on punitive time and attendance policies and working while sick. We will also continue to gather the most up-to-date information on state and local policies that mandate access to paid sick leave for workers.

To this end, our paper, “Beyond Borders: Does Firm-Level Exposure to State and Local Paid Sick Leave Mandates Lead to Policy Diffusion?” was accepted for publication and is forthcoming in the *Journal of Policy Analysis and Management*. In addition, our paper, “The Prevalence and Consequences of Punitive Time and Attendance Policies in the Food and Retail Industries”, is now under review. This paper shows

how parents and workers with health conditions are disproportionately disadvantaged by punitive attendance policies. This paper was coauthored by Meredith Slopen, Kess Balentine, Kristen Harknett, and Daniel Schneider and presented at the annual meeting of the Population Association of America in April 2025 and will be presented at the 2026 Society for Social Work and Research conference. Another paper, “Points, Presenteeism, and Paid Sick Leave: The Challenge of Punitive Workplace Policies for Public Health Goals” is also under review. This paper shows that punitive attendance policies are associated with working while sick, whether or not workers are entitled to paid sick leave. This paper was coauthored by Meredith Slopen, Kess Balentine, Kristen Harknett, and Daniel Schneider.

Papers

1. Tyler Woods, Daniel Schneider, Kristen Harknett. Estimating the Impact of State Paid Sick Leave Laws on Worker Outcomes in the US Service Sector, 2017-2023. SSM-Population Health. 2025.

Presentations

1. Kristen Harknett. *“How am I Supposed to Plan my Life”* Spillover Effects of Precarious Work. Presented at the annual meeting of the American Sociological Association, August 12, 2025.
2. Kristen Harknett. Taking Our Time: The Consequences of On Call Expectations in the US Labor Market. Keynote at the annual conference of the Council for Community and Economic Research (C2ER) in Sacramento, CA, May 29, 2025.
3. Kristen Harknett. Predictably Unstable? Precarious Work and Precarious Relationships in the United States. Presentation given at the Population Association of America 2025 Annual Conference in Washington, DC, April 12, 2025.
4. Kristen Harknett. Zoom meeting with the staff of Assembly Member Matt Haney about Legislation regarding curtailing just-in-time scheduling and health monitoring for app-based workers. October 28, 2024.

Press Coverage

1. Caroline O'Donovan. Senators pressure Jeff Bezos over Amazon schedules they say squeeze workers. Washington Post. September 15, 2025.
2. Taylor Telford. She went viral running a Burger King solo. Then she got fired. Washington Post. August 25, 2025.
3. Burrito bowl blues: How Chipotle became a Wall Street darling — and a ‘Wall of Shame’ employer. Business Insider. August 10, 2025.
4. Nicole Leonard. As Philly region sees record temperatures, report shows heat illness and health risks among indoor service workers is widespread. WHYY PBS NPR. June 25, 2025.
5. Claire Savage. Fast food is a staple of American culture, but some of its workers struggle to survive. Associated Press. January 25, 2025.

Project 3: California Artificial Stone and Silicosis (CASS) Project

Kristin Cummings, MD, MPH, Co-Principal Investigator

Robert Harrison, MD, MPH, Co-Principal Investigator

Amy Heinzerling, MD, MPH, Co-Investigator

Fernanda Florez, Research Associate

Jennifer Flattery, MPH, Epidemiologist

California workers who fabricate countertops using artificial stone are at risk of developing accelerated silicosis, a severe, incurable, and potentially fatal lung disease that is completely preventable. The Occupational Health Branch (OHB) of the California Department of Public Health (CDPH) has been instrumental in characterizing this emerging occupational health issue in California.

The burden of silicosis in California's countertop fabrication industry is unknown, but it is likely that these cases and the handful of others that have been reported to OHB in the last year represent the tip of the iceberg in an industry that employs at least 9,000 people statewide. The traditional approach to workplace hazards is regulation by the California Division of Occupational Safety and Health (Cal/OSHA). Indeed, occupational exposure to silica has been regulated for decades, and more protective standards comprising a lower exposure limit and requirements for exposure monitoring, exposure controls including respiratory protection, and medical surveillance were introduced in 2016. Yet the occurrence of advanced and fatal lung disease in young silica-exposed workers highlights the limitations of this strategy for the countertop fabrication industry.

The overarching aim of this project is to promote respiratory health among vulnerable workers in California's countertop fabrication industry through education, medical monitoring, and statewide enhanced surveillance. The overall hypothesis of this project is that a multifaceted public health intervention will increase compliance with silica regulations and the detection of silicosis in the contemporary workplaces of California's countertop fabrication industry. The specific aims are to: 1) increase awareness in the countertop fabrication industry about the risk of silicosis to workers using artificial stone and methods for effective strategies for prevention; 2) facilitate medical monitoring of silica-exposed workers in the countertop fabrication industry; and, 3) enhance public health surveillance of silicosis related to working with artificial stone through increased reporting.

This surveillance project will use data per OHB's legal mandate (under Health and Safety Code §105175) to collect and summarize statistics describing the causes and prevalence of work-induced diseases in California.

During Year 4 of the CASS Project, we made substantial progress on all three project aims.

Aim 1. We updated our current educational materials for workers, employers, and healthcare providers to reflect Cal/OSHA's permanent standard to protect workers from exposure to respirable crystalline silica that went into effect in December 2024.

In addition, we developed new resources for healthcare providers conducting medical surveillance required by Cal/OSHA. These materials include a patient questionnaire and report templates for

employees and employers. These are currently being finalized and will be made available on our website in Year 5.

All our educational materials are available on our website:

<https://www.cdph.ca.gov/Programs/CCDCPHP/DEODC/OHB/Pages/SilicaStoneFabricators.aspx>

In addition, the Los Angeles County Department of Public Health has a webpage on silicosis that links to our resources: <http://ph.lacounty.gov/silicosis/>

In *Year 4*, we also improved the accessibility of our website by creating designated pages for workers, employers, healthcare providers, and local health jurisdictions. We curated the content on each page to ensure it provided the most helpful information for every group.

Aim 2. We continued offering continuing medical education (CME) on silicosis through UCLA during *Year 4*. Our free CME course (<https://erc.ucla.edu/ced/courses/silicosis-countertop-fabrication>) covers the health effects of silica exposure, the hazards of artificial stone, diagnosis, referral, and treatment of silicosis, reporting cases to CDPH, vulnerable workers, and components of the silica medical examination. We are updating the training materials to reflect the new December 2024 Cal/OSHA silica standard and anticipate the updated version of the course will be made available in Year 5.

Additionally, we published an educational document in the American Thoracic Society about the diagnosis and treatment of silicosis that healthcare providers can distribute to their patients. We also published two items in the American Journal of Respiratory and Critical Care Medicine: a viewpoint article raising awareness about the silicosis epidemic and a research letter highlighting the increase in lung transplants for individuals with silicosis.

During *Year 4*, our team also expanded recruitment for our pilot study comparing routine and enhanced testing protocols for detecting silicosis. As of August 2025, a total of 55 participants have completed the study.

Aim 3. In *Year 4*, we published a silicosis data dashboard on our updated silicosis webpage. The dashboard provides the current tally of artificial stone-related silicosis cases identified through surveillance and presents basic demographics, metrics of disease severity (lung transplants, deaths), epidemiologic curves, and a state map with information by county.

We have also continued our multi-source surveillance, including hospital discharge records, direct provider reporting, and electronic case reporting using the Reportable Conditions Knowledge Management System (RCKMS).

In addition, in July 2025 we successfully added silicosis to the California Title 17 list of reportable conditions. Healthcare providers in the state are now required to report cases to their local public health departments, which in turn report to CDPH. We updated our website to reflect this change.

In *Year 5*, we will finalize our educational materials, complete the pilot study, and continue multi-source surveillance, including providing support to local health departments receiving reports of silicosis from providers in their jurisdictions.

Papers

1. Jennifer Flattery, Chelsea Woolsey, Jane Fazio, Sheiphali Gandhi, Amy Heinzerling, Robert Harrison, Kristin Cummings. Silicosis Surveillance in California, 2019-2024: Tracking an Epidemic. *American Journal Public Health*. 2025.
2. Jane Fazio, Sandra Garcia, Ivy Torres, Sheiphali Gandhi, Kristin Cummings, Russell Buhr, Kevin Riley, Ninez Ponce, Arturo Vargas Bustamante, Beth Glenn. Silica Hazards in Engineered Stone Countertop Production: Worker Experiences and Challenges in Los Angeles. *American Journal of Industrial Medicine*. 2025.
3. Amy Heinzerling, Robert Harrison, Jennifer Flattery, Jane Fazio, Sheiphali Gandhi, Kristin Cummings. Reply to Currow et al. and to Akgün (letter response). *American Journal of Respiratory and Critical Care Medicine*. 2025.
4. Amy Heinzerling, Robert Harrison, Jennifer Flattery, Jane Fazio, Sheiphali Gandhi, Kristin Cummings. Deadly Countertops: An Urgent Need to Eliminate Silicosis among Engineered Stone Workers. *American Journal of Respiratory and Critical Care Medicine*. 2025.
5. David Blackley, Noemi Hall, Jennifer Flattery, Drew Harris, Kristin Cummings, A. Scott Laney. Rise in Lung Transplantation for Coal Workers' Pneumoconiosis and Silicosis. *American Journal of Respiratory and Critical Care Medicine*. 2025.
6. Jane Fazio, Amy Heinzerling, Sheiphali Gandhi, Carrie Redlich, Kristin Cummings. Silicosis: A Chronic Work-Related Lung Disease. *ATS Sch*. 2025.
7. Jennifer Flattery, Chelsea Woolsey, Melanie Epstein-Corbin, David Blackley, Robert Harrison, Kristin Cummings. Surveillance of silicosis using the Reportable Conditions Knowledge Management System — California, December 2022–July 2023. *Morbidity and Mortality Weekly Report (MMWR)*. 2023.
8. Sheiphali Gandhi, Amy Heinzerling, Jennifer Flattery, Jane Fazio, Asim Alam, Kristin Cummings, Robert Harrison. Active Surveillance of Engineered Stone Workers Facilitates Early Identification of Silicosis: A Discussion of Surveillance of Occupational Lung Diseases. *New Solutions*. 2023.
9. Jane Fazio, Sheiphali Gandhi, Jennifer Flattery, Amy Heinzerling, Nader Kamangar, Nawal Afif, Kristin Cummings, Robert Harrison. Silicosis among Immigrant Engineered Stone (quartz) Countertop Fabrication Workers in California. *JAMA Internal Medicine*. 2023.
10. Sheiphali Gandhi, Amy Heinzerling, Jennifer Flattery, Kristin Cummings. Occupational Contributions to Respiratory Health Disparities. *Clinics in Chest Medicine*. 2023;44(3):635-649.
11. Ariana Spiegel, Kristin Cummings, Jennifer Flattery, Robert Harrison, Amy Heinzerling. Self-reported Silica Exposures and Workplace Protections among Engineered Stone Fabrication Workers in California. *American Journal of Industrial Medicine*. 2022.
12. Krishna Surasi, Brittany Ballen, Justin Weinberg, Barbara Materna, Robert Harrison, Kristin Cummings, Amy Heinzerling. Elevated Exposures to Respirable Crystalline Silica among Engineered Stone

Fabrication Workers in California, January 2019—February 2020. *American Journal of Industrial Medicine*. 2022.

Presentations

1. Amy Heinzerling, Jennifer Flattery, Chelsea Woolsey, Robert Harrison, Kathryn Gibb, Jane Fazio, Sheiphali Gandhi, Kristin Cummings. Characteristics of California engineered stone countertop fabrication workers undergoing lung transplantation. Poster presentation at the American Thoracic Society International Conference, May 2025.
2. Jane Fazio, Kathryn Gibb, Amy Heinzerling, Jennifer Flattery, Sheiphali Gandhi, Beth Glenn, Kristin Cummings, Russell Buhr, Ninez Ponce, Arturo Vargas Bustamante. Hospitalization costs and payors for silicosis among engineered stone countertop workers in California. Poster presentation at the American Thoracic Society International Conference, May 2025.
3. Kristin Cummings. A modern epidemic of an ancient disease: Silicosis among engineered stone fabricators. Presentation at University of Toronto, Occupational and Environmental Health Seminar, January 31, 2025.
4. Jennifer Flattery, Chelsea Woolsey, Jane Fazio, Sheiphali Gandhi, Amy Heinzerling, Robert Harrison, Kristin Cummings. Silicosis associated with engineered stone exposures and tuberculosis: overlaps in clinical presentation and delayed diagnosis. Poster presentation at the American Thoracic Society International Conference, May 20, 2024.
5. Kristin Cummings. Public health surveillance. Presentation at the Preventing Silicosis Caused by Artificial Stone in the United States Conference, Los Angeles, California, May 16, 2024.
6. Kristin Cummings. Engineered stone countertop fabrication and silicosis in California, USA. Presentation at the European Respiratory Society Vision Live webinar, April 2, 2024.
7. Jane Fazio, Amy Heinzerling. Silicosis in Engineered Stone Fabrication Workers: An Emerging Epidemic. Presentation at the California Medical Association Virtual Grand Rounds, November 14, 2023.
8. Jane Fazio, Sheiphali Gandhi, Jennifer Flattery, Amy Heinzerling, Nader Kamangar, Nawal Afif, Kristin Cummings, Robert Harrison. Identification of a statewide epidemic of silicosis among engineered stone fabrication workers – California. Oral presentation at the American Thoracic Society International Conference, May 22, 2023.
9. Kristin Cummings. Silicosis related to engineered stone in California. Presentation at the Western States Occupational Network (WestON) – 13th Annual Meeting, Council of State and Territorial Epidemiologists, NIOSH Western States Division, Denver, Colorado, September 15, 2022.
10. Sheiphali Gandhi, Amy Heinzerling, Jennifer Flattery, Asim Alam, Kristin Cummings, Robert Harrison. Active surveillance of artificial stone workers facilitates early identification of silicosis. Poster presentation at the American Thoracic Society International Conference, May 16, 2022.

Products

Available at:

<https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/OHB/Pages/silicosis.aspx>

1. Engineered Stone (ES) Silicosis Surveillance Dashboard
2. CASS Study Flier (English and Spanish)
3. Hazard Alert for Workers: Silica Dust from Countertop Work Can Harm You!
4. A Guide for California Employers: Workplace Air Monitoring for Silica during Engineered Stone (Quartz) Fabrication Work
5. Silicosis in Countertop Fabrication Workers: What Providers Need to Know
6. Health Advisory: Global Epidemic Comes to California: Silicosis in Countertop Workers
7. Continuing Medical Education Course: Silicosis In Countertop Fabrication Workers
8. Guide for Stone Fabricators: Exposure to Respirable Crystalline Silica

Press Coverage

The issue of silicosis related to artificial stone in California has received extensive media attention.

Below is a selection of pieces that were published/aired in *Year 4*:

1. Samantha Raquel Norris. Young Latino stone fabrication workers in the Northeast Valley are battling silicosis. San Fernando Valley Sun/El Sol. April 30, 2025.
2. Jim Morris. California introduces online dashboard to track silicosis cases. Public Health Watch. February 7, 2025.
3. Enrique Chiabra. For these California workers, silicosis remains a potentially fatal threat to their health. USC Annenberg Center for Health Journalism. February 4, 2025.
4. ¿Por qué la silicosis afecta a los trabajadores en California? Telemundo 52. December 9, 2024.
5. Emily Alpert Reyes. Safer stone? New countertop options emerge amid concerns over silicosis and worker deaths. Los Angeles Times. October 21, 2024.
6. Lolita Lopez, Helen Jeong. SoCal man with silicosis wins lawsuit against makers of artificial stone slabs. NBC 4 Los Angeles. September 18, 2024.