



STANFORD UNIVERSITY  
ENVIRONMENTAL HEALTH & SAFETY  
2025 ANNUAL REPORT

The background image is a photograph of the Stanford University campus. It features the iconic Stanford Tower (Beaumont Tower) with its red-tiled dome and light-colored stone structure. In the foreground, there are several tall palm trees on the left and a row of trees and shrubs in the middle ground. The sky is clear and blue. A decorative pattern of blue squares is overlaid on the bottom half of the image, creating a pixelated effect.



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## Director's Letter

Dear Campus Community,

*“Do not wait; the time will never be ‘just right.’ Start where you stand...”*

Author Napoleon Hill's sentiment guided Environmental Health & Safety (EH&S) this year. As higher education faced unprecedented challenges, including budget cuts, we refused to wait for a “just right” moment. Instead we made remarkable progress by leaning on each other and focusing on work that makes a difference.

This year, we strengthened partnerships and removed friction. By implementing a new incident inquiry framework we established a model of shared ownership that directly improved outcomes. We also navigated regulatory changes to dichloromethane for our researchers, creating simple compliance strategies so that they can continue their groundbreaking, mission-critical work undisrupted.

Planning was a catalyst for action in projects like the institution-wide enhancement of our Biosafety Level 3 program. A proactive safety pause and thorough program review was initiated with the full support of university and School of Medicine leadership. That pause, and the subsequent BSL-3 Program Improvement Project, demonstrated Stanford's commitment not only to safety but also to fostering a supportive environment for our researchers. I look forward to how we'll build on these principles to create an even safer community.

I am thankful for your partnership as we move forward into 2026. Looking ahead, anthropologist Margaret Mead's words resonate deeply: *“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever has.”*

Let's continue to be that group.

In Good Health,



Russell Furr  
Associate Vice Provost, Environmental Health & Safety

# Simplification by Design

Our goal is to uncomplicate essential safety processes through thoughtful design. This year, we committed to removing friction and creating clarity, allowing both our own staff and our campus partners to focus their energy where it matters most: on safe and successful research, teaching, and learning.

## FROM INCIDENT TO INSIGHT

This past year marked a paradigm shift in our approach to incident response. Driven by our commitment to preventing serious injuries and fatalities (SIF), we advanced our framework for follow up after a SIF where we use a blame-free, people-centered, and learning-focused approach to guide our partners through analysis of the incident. The power of having this clear roadmap was realized when we applied it following a near-SIF incident involving a significant equipment failure in a laboratory, and it proved invaluable. The framework involves establishing an executive sponsor and inquiry team where there is representation from EH&S and the affected department and school. By doing this, we create a shared responsibility and ownership for the incident. Initially, there was some fear and trepidation entering root cause discussions, but presenting the framework the team would all work from, and the principles guiding our inquiry, a challenging event quickly turned into a collaborative effort. Crucially, the affected department felt they were partners in the decision-making process, empowering them to take on the agreed-upon next steps and solidifying EH&S as a trusted partner.

Supporting incident and injury reporting also involved a significant technological pivot. We migrated our incident reporting forms (SU-17 and SU-17B) to the more adaptable REDCap platform, making the backbone of our investigation process more seamless and efficient. This user-focused system simplifies the experience for incident leads, allowing them to more easily track follow-ups, automate notifications, and ensure alignment with state requirements. By investing in intentionally designed processes, fostering collaborative partnerships, and leveraging supportive technology, we have built a more robust and accountable structure to learn from every event.

## NO WASTED EFFORT FOR HAZARDOUS WASTE

Hazardous waste disposal costs have led to significant increases in the Environmental Protection Programs' (EPP) program costs. To help reduce overhead costs and improve operations, EPP launched a multi-faceted strategy to improve compliance and make the program more efficient and user-friendly. In collaboration with Lab Safety, EPP initiated a community engagement campaign to reinforce proper waste management. To make correct labeling easier, we updated the online Waste Tag application to allow users to clone labels, improving both user experience and data accuracy. We also leveraged ServiceNow to create a "one-stop-shop" for requesting waste services, which simplifies the process for researchers and allows our team to track requests more efficiently. Finally, our SWEETs team revised pickup requirements to focus on high-volume labs while enabling lower-volume labs to request on-demand service. Together, these user-centric improvements reduce the administrative burden on researchers, promote better compliance, and directly address the root causes of costly operational inefficiencies.

## NAVIGATING CHANGE FOR RESEARCHERS

In 2024, The U.S. Environmental Protection Agency (EPA) issued a new rule regulating a highly toxic chemical called dichloromethane (DCM). DCM is a versatile solvent used in many labs on campus. Recognizing the impact this regulation has on Stanford's research community, Research Safety (RS), in consultation with the Office of the General Counsel, developed a pragmatic compliance strategy. The goal is twofold: ensure compliance while also enabling essential research to continue without disruption.





Assistant Professor Monther Abu-Remaileh works in his chemical engineering lab.

Still ongoing, the program includes a user-friendly registration process, clear communications, a new online training, and a comprehensive Exposure Control Plan, with RS Specialists (RSSs) supporting our research partners every step of the way. During this project, RS recognized that coordinated exposure assessments have been a critical component of the project, by providing the opportunity to meet with researchers and understand their DCM uses and needs. In some cases, researchers have made the choice to completely eliminate DCM from their work and substitute for a less hazardous solvent.

The procurement of a new tool, a Gasmet Terra 5000 monitor, has greatly assisted RSSs with sampling. Beyond assessing facility ventilation for DCM, the Gasmet has many applications such as emergency response in research settings, due to its ability to identify a wide range of potentially hazardous gases at very low thresholds. This initiative not only ensures regulatory compliance, but also strengthens our ability to support our partners, ensuring their work can proceed safely and efficiently.

#### TRAINING FOR EVERY NEED

This year, we enhanced our training portfolio to address a wide spectrum of campus needs. We turned our Cryogenic Liquids and Dry Ice training from an in-person to an online course, allowing learners to take it wherever, whenever. Our Computer Workstation Ergonomics course was updated to include the

workstation evaluation within the training, reducing a step for employees wanting to improve their office ergonomics. To ensure regulatory compliance with the new EPA rule, we launched the Introduction to DCM training for our researchers using DCM in their labs. Finally, we delivered CPR/AED/First Aid and specialized Wilderness First Aid courses, equipping our community with life-saving skills. For our EH&S staff, we hosted a custom AI training with University IT (UIT) and the AI Tinkery. Underpinning all these efforts, we are actively shaping the future of campus learning as a key stakeholder in the STARS replacement project, which will modernize how training is delivered and managed across the university.

#### DECLUTTER DAY AT EH&S

This year, our department came together in a demonstration of teamwork and commitment to a more efficient work environment. During our department-wide Clean-Up Day on July 8th, all staff dedicated time to go beyond their desks, tackling shared closets, storage spaces, and archives. This collaborative effort allowed us to identify and dispose of obsolete equipment, surplus unneeded supplies, and purge files that were beyond their regulatory retention dates. More than just a decluttering exercise, the day was an opportunity to build our team culture and work together toward a common goal. The result is a more simplified, organized workspace that enhances our daily operations.



New Graduate Students make a splash at Fall Training where they learn about and use the safety shower.

# Planning as a Catalyst for Action

Effective planning transforms intention into impact. From developing comprehensive disaster plans to enhancing procedures for high containment facilities, our work this year focused on creating clear, actionable roadmaps that ensure the university's resilience and success through any challenge.

## PLANNING WITH INTENTION

Good planning is a catalyst for impactful action. Guided by this principle, we redesigned our annual planning process this year to accelerate the strategic initiatives that advance our core services. Our refined, time-bound cycle—which features structured project assessments and culminates in a department-wide showcase—provides a clear pathway from idea to execution. This approach ensures we are not just maintaining, but actively streamlining, the essential functions that support Stanford's teaching and research.

## THE POWER OF A PAUSE

Maintaining the highest standards of safety and compliance within our advanced research facilities is a cornerstone of our mission. This year, our commitment was exemplified through a comprehensive, institution-wide enhancement of our Biosafety Level 3 (BSL-3) program. Following the identification of operational gaps, Biosafety & Biosecurity (B&BS) initiated a proactive safety pause at the Keck in vitro facility. This deliberate pause provided a critical opportunity for a thorough review, which, with the full support of University and School of Medicine leadership, launched the formal BSL-3 Program Improvement Project.

This structured project was designed to strengthen institutional oversight, align all BSL-3 programs, and move from individual responsibility to a robust institutional safety framework. Key achievements included clarifying roles and responsibilities for all personnel, revising operational procedures to align with best practices, and implementing enhanced, role-specific training for all users. These foundational

improvements were part of seven distinct workstreams aimed at systematically addressing every facet of the program, from facility manuals and emergency plans to risk assessments.

No major concerns were identified at the 6-month biosafety audit following the conclusion of the project – a testament to the project infrastructure and partner support. B&BS have built on this momentum through their support of the facility's Annual Performance Verification (APV), a comprehensive process involving full decontamination and operational testing. Overall, this project was successful because of the intangibles: improved stakeholder communication, increased confidence in each other as reliable partners, and an engagement in continuous learning as we share this responsibility to safe research.



EH&S staff practice spill response at School of Engineering.

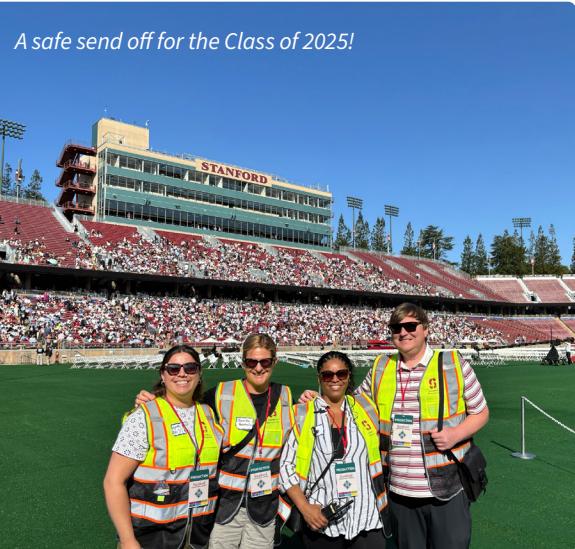
*Like riding a bike, good safety programs require planning: a mapped route, a helmet, and a partner!*

## THE LAST TENT

From mid-December 2024 through the end of the Winter Quarter, the university wrapped up what was left of the COVID-19 pandemic response efforts. In December, rapid antigen test kit distribution ended at Arrillaga Family Dining Commons, the last distribution site on campus. Kits continued to be available for a short period at campus health centers, Vaden Health Services and the Stanford University Occupational Health Center (SUOHC) at EH&S. HealthCheck, the system created for students, staff, and faculty to self-report health status and communicate test results, was decommissioned by SUOHC and UIT on March 21, 2025. This coincided with the end of free test kit distribution at Vaden and EH&S. Though pandemic response efforts have been in a ramp-down for the last couple years, these events represented a final punctuation on the university's COVID-19 pandemic response. It has been said before, but EH&S continues to be eternally grateful to our partners and the university community as a whole, for the work that was done to keep our university safe and healthy.

## A PLAN FOR RESILIENCY

In April 2025, the Office of Emergency Management (OEM) created Stanford University's first comprehensive Disaster Medical and Behavioral Health Response Plan, establishing an integrated framework to address both the medical response and psychological impacts following major disasters, such as earthquakes or active threat incidents. This plan represents a significant advancement in campus emergency preparedness by planning the coordination of medical triage, crisis counseling, and long term mental health services across multiple university departments; our partners at Vaden Health Services, Counseling and Psychological Services, and the Faculty Staff Help Center. Recognizing that the emotional impact of disasters extends throughout entire communities, the plan provides structured support through administration of psychological first aid, disaster behavioral health teams, a family assistance center, and ongoing resources during recovery. By proactively establishing these coordinated response capabilities, Stanford ensures that comprehensive care is available when



A safe send off for the Class of 2025!

our community needs it most, supporting both immediate safety and longer term healing and recovery.

## STRUCTURED RESPONSE

In high-stakes emergencies, a structured response is a safer response. To better protect our own personnel during high-risk incidents, EH&S developed and implemented a new Site Safety Plan template. This form is used by EH&S incident responders for events involving significant hazards, such as respiratory exposure risks, potential toxic gas leaks, or facility evacuations. Pinned directly to our incident response Slack channel for immediate access, the template guides responders through a comprehensive risk assessment before entering a scene. It ensures the organized dissemination of vital data—such as chemical properties and required PPE—and formalizes the strategy for securing the area, managing cleanup, and designating safe re-entry, ultimately making our emergency response more methodical, effective, and safe for everyone involved.

## A WARM SEND OFF

This year, EH&S played a critical role in ensuring a safe Commencement ceremony for the Class of 2025 amid high heat concerns. Recognizing the potential risks well in advance, our teams worked closely with the Office of Special Events and the President's Office to develop the comprehensive High Heat Event Plan that balanced safety priorities with the significance of the occasion. On the day of the event, EH&S staff were embedded



throughout the venue, actively monitoring on-field temperatures with technical devices and distributing water to graduates and their guests. By engaging early with university leadership and maintaining a responsive presence throughout, we demonstrated our commitment to supporting the university's most important moments while ensuring the health and safety of our community.

## PREPARED THROUGH PRACTICE

Our commitment to readiness is proven not just in planning, but in hands-on practice. This year, our technical teams validated our response capabilities through a series of diverse and realistic drills across campus. Teams conducted highly specific exercises, such as the Toxic Gas Ordinance drill at the Paul Allen building, to ensure compliance and familiarize staff

with critical monitoring equipment. We also tested our resilience to critical system failures through a timely spill drill that simulated a Slack outage, requiring response teams to use radio communications—a scenario that proved its value when a real outage occurred just hours later!

On a much larger scale, Stanford University Fire Marshal's Office (SUFMO) and Residential & Dining Enterprises (R&DE) executed a monumental effort conducting evacuation drills for over 150 student residences, a complex operation spanning six nights. From technical hazard response to large-scale evacuations, these varied exercises ensure our teams, systems, and community are prepared to respond effectively to any challenge.

# Partnerships Built on Accountability

A strong safety culture is not built on rules alone; it's forged through shared responsibility and proactive preparation. Whether strategically responding to change, testing our readiness, or being there when our community reaches milestones, our goal remains the same: to build a foundation of trust where every member of our community is healthy and safe.

## CONFIDENCE ACROSS CONTINENTS

This year, we enhanced our Field Safety program to better support the diverse and global nature of Stanford's research enterprise. In a model of inter-institutional collaboration, we adapted portions of the highly successful University of California Field Safety program with permission from our peers. In part, we updated the Field Safety website with this new information, and enhanced the user experience to help field researchers understand what is needed for every stage of planning – from initial risk assessment to in-field support. "Field Notes," a set of durable, laminated backpack cards were developed as a physical complement to the updated website. "Field Notes" serves as a quick reference to the wide array of university resources, including global safety, biosafety, and travel medicine. Together these tools empower our researchers by giving them the confidence and support needed to conduct their vital work safely, anywhere in the world.



Faculty, Staff & Students get their flu and COVID shots.

## STRATEGIC TOOLS FOR CLEAR COMMUNICATION

To ensure the quality of all our communications is consistent, we launched the comprehensive EH&S Communications Guide & Toolkit. This internal resource provides staff with practical guidance and templates to streamline, standardize, and elevate their work. It also clarifies how to partner with the Communications team to anchor our activities in department goals. Key components include a guide for using the Stanford AI Playground as a writing coach and an infographic on lab filming and photography, developed with the Office of the Vice Provost and Dean of Research (VPDoR) Communications team. These improvements provide tools for clearer communication, empowering our staff and strengthening our partnerships.

## EXTINGUISHING DIGITAL CONFUSION

The Strategic Initiatives (SI) team partnered with SUFMO to address a key operational challenge that limited their efficiency and created barriers to compliance for the campus community. SUFMO staff were spending significant time on redundant communications, while users struggled to find information and implement fire safety tasks. To solve this, we facilitated a strategic revision of their webpage, aiming to streamline communication and enhance user accessibility. The result is a completely redesigned webpage that is functional, visually clear, and structured around user needs. The project's success is already evident: SUFMO has seen a significant reduction in routine email inquiries, indicating a vastly improved user experience and freeing up their experts to focus on higher-priority safety initiatives.



## A HIGHER STANDARD FOR ROOF SAFETY

When it comes to roof safety, consistency is critical. A myriad of design standards across campus created unpredictable and unnecessary risks for anyone conducting work on university building roofs. To establish a uniform standard of safety, Occupational Safety & Health (OSH) partnered with facilities to assess key safety elements, including the integrity of ladders and hatch access, the condition and availability of fall protection systems, and general housekeeping. The findings provided our partners with a clear roadmap for implementing necessary upgrades, which will result in safer conditions for the researchers, staff, and third-party contractors who access these areas. The project's momentum continues, with facilities working on corrective actions. Meanwhile, OSH and Lands, Buildings & Real Estate (LBRE) will be revisiting roof access management guidelines and developing a long-

term strategy for this critical infrastructure.

## STRIKING A CHORD WITH GOOD HEALTH

Preventing injuries before they occur is the most effective form of occupational medicine. This year, the SUOHC providers put principles into practice through an innovative partnership with the Department of Music. "Music 139: Optimizing Health and Wellness for Performing Musicians" was born; a for-credit course that equips student musicians with evidence-based strategies for a long and healthy career. By teaching biomechanics and sustainable practice habits, this collaboration embeds musculoskeletal wellness directly into the curriculum to support the long-term well-being of Stanford's student artists.

# Transforming Through Tech

Our safety programs are increasingly measured by the quality of our digital tools and accessibility of our online information. Our role is to ensure these platforms are not only powerful, but purposeful.

## SAFETY'S DIGITAL FRONT DOOR

The EH&S Homepage got a refresh this year! SI took on a large-scale effort to transform EH&S's front-facing image, resulting in a more dynamic, data-informed, and service-oriented homepage design. The new site simplifies key safety tasks, provides a more personalized user experience, and highlights the full spectrum of services we offer, making it the digital front door for safety at Stanford. The redesign was informed and inspired by prior research from Palo Alto Research Center, the recent successful Fingate redesign, and quantitative analytics on all of our bespoke applications and websites. In this project, we were able to accelerate the redesign, test real user behavior, and use that data to drive continuous improvement by applying our new approach to working and launching, and then learn.



*The Medical Health Physics team tests the new C-arm CT at SHC.*

## MISSION: CONTINUITY

OEM launched CardinalShield this year, after two and a half years of development. This system brings our emergency response into the 21st century, enabling all units across the university to work together and track information in real time. CardinalShield strengthens institutional resilience through Incident Management for enhanced crisis visibility, IT Disaster Recovery for rapid technology restoration, and Mission Continuity for operational planning across schools and departments. This coming year, OEM will be familiarizing and training teams that will need to use CardinalShield in an emergency event. This unified platform positions Stanford to protect our community and maintain excellence during unexpected challenges.

## IMAGING AT THE POINT OF CARE

Advancing patient care at Stanford requires the rigorous commissioning and oversight of state-of-the-art medical technology. This year, multiple new CT scanners, a new O-arm in an Operating Room, and a specialized mobile CT for the Emergency Department were validated and commissioned by Health Physics' Medical Physics team at Stanford Health Care (SHC) and the VA. The installation of these instruments now allows physicians to perform medical imaging where care is being provided. The team's expertise was also instrumental in securing the successful American College of Radiology (ACR) accreditation renewal for six CT scanners. This commitment to the highest standards of radiation safety was validated by the Joint Commission, which completed its survey of the team's equipment testing and dose management programs with no findings.

## MODERNIZING A CRITICAL TOOL

To advance our ability to support the research enterprise, we successfully upgraded a key piece of analytical equipment this year to support Health Physics. The acquisition of a new, state-of-the-art Hidex scintillation device was a model of cross-departmental partnership, requiring meticulous coordination between Health Physics, EH&S Building Management, who guided the physical installation, and the Digital Services team, who were instrumental in ensuring the new equipment met all cybersecurity requirements. This new unit replaces an aging device, now offering increased precision for contamination detection, improved sensitivity, and the ability to capture paperless data for both research and clinical settings. This

successful collaboration modernizes a critical tool that directly facilitates and safeguards research across the university.

## DIGITAL SOLUTIONS, SIMPLY

This year, we advanced our technology strategy to build a secure, simplified, and data-informed future for EH&S. The Digital Services team analyzed the chemical inventory system researchers use across campus and designed a multi-phased upgrade to modernize the technology and enhance its value. To ensure our own team operates securely, we also seamlessly upgraded more than 100 staff members to Windows 11. In collaboration with central UIT resources, these initiatives create a safer and more efficient environment for all.



# EH&S Snapshot

## SUPPORT OF THE BUILT ENVIRONMENT

- Fire/life safety building inspections
- Plans reviews
- Laboratory decommissioning
- Management of hazardous materials in construction
- Indoor air quality evaluations
- Hazardous waste pickups
- Surplus chemical management
- Underground tank remediation

## SAFETY DEVICE MANAGEMENT

- Fire alarm/extinguisher inspections and testing
- Biosafety cabinet management
- Calibration and readiness of EH&S monitoring equipment

## URGENT RESPONSE

- Hazardous materials spill/release response
- Regulatory reporting
- Incident investigations/root cause evaluation
- Business continuity consultations

## EH&S OPERATIONS

- Leadership in panels, committees, and safety meetings
- Submissions of HMMPs to county
- Management of permits, licenses, registrations, matching fund programs, MOU/SLAs
- Management of EH&S IT systems and infrastructure

## MEDICAL CARE

- Delivery of occupational injury/illness care
- Medical surveillance services
- Travel consultations
- PT, acupuncture, chiropractic care

## WORKER HEALTH & SAFETY

- Ergonomics assessments
- Exposure assessments
- Respirator fit testing
- SU-17 follow-up
- Field safety consultations
- Shop/makerspace consultations

## ADMINISTRATION OF SAFETY PROGRAMS

- Updates of institutional safety programs
- Authorizations (e.g., toxic gas, hot work, use of controlled substances, lasers)
- Development of EH&S online trainings
- Delivery of EH&S trainings
- Activation of STAT Team/DOCs

## RESEARCH & CLINICAL SUPPORT

- Biosafety protocol reviews
- SOP reviews
- Research animal administration
- Radioisotope and x-ray safety oversight
- Radiation surveys
- Dosimetry management
- HP clinical support of patient spaces

