AI and the Evolving Role of EHS Professionals

AMERICAN SOCIETY OF
SAFETY PROFESSIONALS

As the American Society of Safety Professionals (ASSP) embarks on its artificial intelligence (AI) strategy, members of the AI Task Force share their experiences and insights on the current state of AI implementation within environmental health and safety (EHS) and where they see it heading in the near future.

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AI early adopters set the tone for EHS profession

Describing himself as new to AI but an enthusiast, Saif Ahmad decided to build a machine learning model to extract insights from his company's EHS data. Having no formal coding background or deep statistical skills, he wanted to gain insights using the company's accident data that might prevent accidents in the future, with a very limited budget.

A senior EHS specialist for the Kuwait Oil Company and a member of the ASSP AI Task Force, Ahmad began by asking AI agent Google Gemini CLI to write a program using basic machine learning algorithms. He then uploaded Gemini's code to Claude (another popular AI agent) and gave his requirements as a prompt. "Claude responded like a seasoned reviewer, pointing out flaws and suggesting improvements," Ahmad wrote in a LinkedIn post describing his process. "After a few back-and-forths (until the free token meter blinked red), we ended up with a refined version without sharing data on any of the AI platforms."

At this point, Ahmad copied the Gemini-Claude interchange and pasted it into ChatGPT and asked for a summary. This began the iterative, "tool-hopping" process of drafting with Gemini, refining with Claude, and summarizing with ChatGPT, repeat. After several iterations, he generated useful insights into his company's accident trends such as the months when the probability of incidents increases. These insights are fostering meaningful conversations between the operations and safety teams that help them understand the root causes of incident patterns, he explained.
"I'm excited to keep learning and would love to hear from others who started their EHS-AI journey with duct tape and determination," he enthused.

Ahmad is one of many ASSP members who have been exploring how AI can help to make workplaces safer. A survey of ASSP members measuring AI familiarity taken in April and May 2025 found that while most respondents were familiar with AI and interested in using it for professional purposes, they were not yet at the stage of implementation.

Providing strategic leadership on AI

Even among the task force members, AI experience ran from very basic to advanced expertise. Recognizing this variance in ASSP membership, as well as the potential of AI to create safer workplaces, AI Task Force Chair and Director-at-Large on ASSP's Board of Directors Stephanie Johnson, spoke of the need for the association to be "a premier resource for EHS professionals when it comes to AI knowledge and resources."

The task force aims to help members use AI "very thoughtfully and successfully within their organizations," Johnson said. The task force created a position statement that affirms four basic principles that will guide how ASSP will approach AI and its use in a responsible, ethical manner: *trust, transparency, equity,* and *privacy*.

As ASSP embarks upon its AI strategy, task force members shared their views on the current state of AI implementation within EHS and where they see it going in the near future.

Developing AI competency

Recognizing that many ASSP members are only beginning their AI journeys, task force member Natasha Porter, chief customer officer for Benchmark Gensuite, recommended starting with "focus and alignment" by identifying the top two or three EHS challenges your organization faces. "Then try out an AI solution in one of those priority areas," she stated. By linking AI exploration to real business challenges, organizations are more likely to gain stakeholder buy-in and secure the funding needed to scale success, Porter explained.

Another good place to start is taking a safety plan and asking AI to improve it by writing prompts, advised task force member Rick Barker, senior director of product management and strategy for VelocityEHS. "If you haven't done anything before with prompt engineering, that becomes a good spot to practice different variations. Go find one of the introductory YouTube videos on designing good prompts and try out different prompts or refinements. Ask it to explain why it suggested the changes that it did, and it's a nice low-risk way to do it. And you'll start to see some things that it can do and then expand it out from there," he suggested.

Barker said EHS professionals are generally risk-averse individuals. "We spend our lives trying to minimize risks. As we approach AI, there's a lot of emphasis on the risk side of it," he explained. The individuals who control the budget for EHS want to minimize risk, as well. "So I think it's important that you've done your homework on exactly what AI will do, and you can outline the risks, the risk mitigations, and the fact that using AI is not as risky as it seems," Barker stated.

Making your work life easier

Task force member Boris Kiprovski, EHS director for Skanska USA Building, encourages members to use AI to make their lives easier. "Start with simple tasks that add burden to your day, and use AI to simplify them and make your life easier," he said.

Christina Brundage, a task force member who is an EHS specialist at a Cargill ground beef manufacturing plant with 350 employees, uses AI to do exactly that. She uses AI to assist in writing reports, policies, and training presentations, estimating that what before might have taken three days of work now can be done in a day. AI also helps to make her training understandable to the workers, many of whom are not high school graduates. In addition, she has found ASSP's Safety Trekr AI, which provides a fast way to find information within the ASSP Safety Professional Handbook, to be very helpful.

Arianna Howard, a task force member who is partner and co-founder of the Syncra Group consultancy, referred to University of Pennsylvania Wharton School professor Ethan Mollick's "10-hour rule" for AI. In a blog post, the professor stated, "my rule of thumb is you need about 10 hours of AI use time to understand whether and how it might help you." Howard said that "by the time people get to the 10 hours of use, they're bought in. And then they start to realize AI's potential, and they start to get curious and start asking their vendor partners, 'Can it do this?' But until they hit the 10-hour threshold, it still feels scary. And it's more of the fear of the unknown versus the fear of the tool or the technology."

Sharing knowledge and success stories about EHS and AI

Howard adds that ASSP members will be served by success stories around piloting AI "whether you're advocating for an in-house-built system or some type of AI technology." These stories can help members to choose a problem to solve and set a hypothesis before buying "the shiny object," she explained. "Some believe that once they sign on the dotted line, they're committed forever. We need to show people how to advocate for themselves with vendors and also coach vendors on how to meet customers in the middle, too." Moreover, these stories can help members learn from pilot experiences and adjust before wider rollout, she stated.

Starting with piloting and moving forward from there is "an iterative approach to problem solving," said task force member Chet Brandon, a long-time EHS professional and current director of global EHS for Hexion. "We call it the scrum approach — an agile framework for managing complex projects by breaking them down into short, iterative cycles."

Howard advised keeping your eyes on the project objective during this iteration. "You need to roll with the punches and be flexible, but the CFO may not like to hear that," she warned. "So you have to find a way to balance the spin with the risk. And that's where you must tie it back to your problem statements, your data, and your company objectives."

Through all of this development, mentorship will be an important way for ASSP members to pass both EHS experience and knowledge about AI to others. "I've gained a great amount of knowledge at this point in my career about many topics in our profession," Brandon stated. "And it worries me that younger professionals aren't going to get that depth of exposure, and the only way they're going to get it is talking to older guys and ladies like me. We've got to find a way to help them to share that knowledge. I think AI will help us do that by pulling it out of us better."

Brandon recently created a "digital twin" of himself to provide information to co-workers when he is not immediately available, he revealed. "I also use it to help me crunch data. 'Hey, here's a summary of a meeting, and I need you to pull out the key themes for action in the next week.'" He said he fed hundreds of his presentations and various documents conveying his knowledge into the digital twin. Then, he asked the twin to ask him some questions about his EHS knowledge. As a result, "it thinks like me, it writes like me. I put some ethics in there as well, and it's been a powerful tool to extend my impact on my organization," he stated.

Building trust in AI through evidence-based research and experience

As ASSP members become more comfortable and competent in using AI, the Society plans to make case studies, research papers, and other information available to members through a resource center. "In this way, members are able to evaluate what's being done, how it has worked, how it has contributed to improvements, and then how they can use it," Johnson stated.

Porter emphasized that education and transparency are essential to building confidence in AI. "Education is the foundation of the pyramid," she said. "The second layer is showing real, live examples of AI working and delivering value in an accurate way. And at the top of the pyramid is peer-to-peer or mentoring group engagement. I'm 20 times more likely to implement something if I hear firsthand from someone in the field who's done it successfully." These three elements—education, evidence and experience—form the backbone of trust in any emerging technology, she stated.

As an assistant professor in Texas A&M's Department of Construction Science, task force member Zhenyu Zhang, Ph.D., is conducting AI research specifically relating to construction safety. A certified safety professional and an OSHA-authorized construction trainer, Dr. Zhang also has experience performing EHS work for a contractor. In an initiative aimed at enhancing construction site safety through the innovative use of neuro-informed safety training and AI, Dr. Zhang was the co-principal investigator for a collaboration between MYCON General Contractors' Educational Foundation and the Department of Construction Science's Ph.D. graduate research program. The research gained insights into how AI-enhanced training programs can increase safety training adoption and improve jobsite safety.

Sharing examples of advanced competencies through use cases

With some ASSP members already on the leading edge of AI, the Society also plans to showcase their knowledge. Task force member Tom West is a vice president and global practice leader for MākuSafe, a wearable sensor technology vendor. "We've been giving birth to the idea that sensors could be very useful in automatically collecting leading indicators of potential hazards and risk in real time, and visualizing for safety leaders through the use of AI and analytics what they should be focusing on to prevent and predict injuries before they happen in the workplace," he explained.

A big part of his job is getting potential customers to imagine how AI can make their workplaces safer, and then getting them to pilot an approach. Once they do, MākuSafe has the use cases to show that AI applied to EHS challenges works. "Imagine that a company can eliminate strain and exertion incidents, eliminate those costs, and sustain that through peak business periods for now going on three years. Imagine that a company could deploy MākuSafe enterprise-wide within a 12-month period and experience their best work comp year in history. Imagine that you could lower work comp costs by 60% within 12 months. All of these accomplishments are in our use cases," he said.

West added that studies have already proved that AI and other technologies make workplaces safer. He referred to a construction industry 2023 study published in the journal *Engineering*. The study looked at OSHA data over a one-year period and concluded that wearable sensing devices could have prevented 34% of deaths and fatalities in construction. However, the study also found that 46% of construction labor are not willing to use biometric wearable sensing devices, and 59% of construction labor are not willing to use tracking wearable sensing devices.

But organizations that implemented these tools not only mitigated risk and kept people safer; they also increased productivity. "One of our use cases found a 6% productivity increase on average across multiple sites over the course of a couple of years. Six percent sounds like a small number, but that's millions of dollars in gains per site, per year, and people are safer," West emphasized.

Using video analytics to improve safety in the NFL and at Amazon

Another ASSP member with advanced experience working with AI is task force member Marla Corson, Ph.D. Founder and current president of Corson Consulting and Speaking, a principal consultant with DEKRA, and an adjunct professor at the University of Alabama Birmingham, Dr. Corson also advises Kepler51 and Voxel AI and previously held roles as the director of workplace health and safety for Amazon, director of safety, health and environment for Nestle Waters, and global director of environmental health and safety for Alcoa Forgings and Extrusions.

While at Amazon, she partnered with the Amazon Web Services (AWS) team that used AI to develop the NFL's digital athlete for player safety. She did so in an effort to "create the same type of AI safety innovation" for Amazon associates working in customer fulfillment centers, she stated. Dr. Corson explained that for both the NFL and Amazon, developers used high-definition camera technology, including computer vision technology and data collection, to analyze on-field or worksite impacts and to develop precise data points from movements from different angles, varying speeds, and other parameters. "Through machine learning and algorithms, models can be developed using these data points that can predict the outcomes and thresholds for injuries," Dr. Corson said.

The AWS/NFL digital athlete uses sensors in shoulder pads, helmets, mouth guards, and other equipment, along with computer vision technologies, to collect data for risk analysis and predict and thereby prevent or reduce player injuries and incidents. Some outcomes have influenced changes in safety equipment and game rules. These same uses of AI and other technologies are transferable to a variety of other activities including workplace safety, Dr. Corson explained.

Task force member Andrew Chrostowski said the use of video analytics where AI and machine learning algorithms identify and watch for safety hazards is ripe for more success stories. The host of the "Connected Workers Podcast" about the impact of AI and other technology on frontline workers stated, "You're going to have machine learning algorithms that will do a better job of analyzing what's happening in the workforce and doing workforce metric analytics that can prevent injuries or identify trends much sooner. You're going to find that the timeframe between when an incident is reported and when it's fully analyzed and understood and distributed is going to shrink dramatically, which will be a success story."

Chrostowski continued, "Typically, today, a fatality or an injury happens, and there's a stand down, there's a wait. The data have to be collected, and an EHS professional has to write a report, and that report has to be vetted. That vetted report has to be approved by management. That timeline can be compressed considerably with the move to different types of agentic-based EHS models. I think those are where the success stories are going to happen, and they'll be adopted because they make a difference and will impact people's lives who are out there in risky areas."

Maintaining the human element while using AI

Maintaining critical thinking as AI assumes tasks currently performed by workers will be a challenge, Chrostowski said. “Organizations have to help people focus on making sure that they verify and critically examine all conclusions, no matter what their source,” he stated. “Transparency is about what you can assure, as well as what you can't assure.” Just as you cannot assure that an individual in your organization has the right answer to any given problem, you can’t assure that AI knows it. “The use of AI doesn't eliminate the necessity for critical thinking,” he emphasized.

Brandon provided an excellent story of how human experience and critical thinking skills ensured that the best information was used to control risk in a chemical operation. “We had an issue related to the potential for overpressure in a chemical reactor, and it's a big deal. That's how you blow up plants,” he remembered. His team needed to quickly find out how to mitigate the risk. Brandon asked AI about the proper range of protected limits when using rupture disks, which are a type of overpressure protection.

AI’s answer initially appeared to provide what he was searching for, but then he saw the acronym “PRV.” While Brandon asked specifically about rupture disks, the response included data for PRVs, or pressure relief valves, a completely different type of overpressure control device. He immediately knew he needed to verify the response because it did not provide what he asked for. Using that number would have meant relying on incorrect data, which could have been dangerous. Due to years of experience, as soon as he saw that acronym, he knew he had a problem. Brandon said that he worries EHS professionals might overlook an incorrect but important detail provided by AI. “It made some assumptions that were incorrect, and therefore the output was incorrect,” he explained.

Keeping worker safety top of mind

When introducing AI technology into an organization, protecting worker privacy and being transparent about the use of data is extremely important, West stressed. “We’re looking outward for experiences and exposures; we're not looking inward at the worker at all. We're not collecting any personal data or biometric information.”

Instead, MākuSafe collects data about the work environment, sound exposure, air quality, heat index, and low light levels, as well as ergonomic risks such as twisting and turning, pushing and pulling, repetitive motion, hazardous movement, slips, trips, and falls. “We can deliver hazard and risk intelligence, which enables better decisions about how to keep people safe rather than anything being collected to hold the worker accountable for an accident. Leading organizations and safety leaders can now solve problems and mitigate risk before people get hurt,” he stated.

With the help of AI, these data enable a safety leader to see injury trends and patterns on a map of a facility. “It’s a transformational shift from reacting to lagging indicators about who got hurt last month and what should we do about it going forward to instead becoming proactive and preventative based on data evidence,” West stated.

This approach is also consistent with building a safety and reporting culture as well as breaking down communication barriers. “Any worker can push a button on our wearable and speak into the device and report concerns or near misses or good catches from the front lines without ever stopping what they're doing, which can be game-changing for organizations,” he explained. He said there’s no better way to build safety culture than to have conversations with front-line workers. No matter what they’re doing—AI related or not, safety leaders must explain to workers its importance. “I need to know what you see and how this affects you and what your opinion is. That's how we build safety culture,” he emphasized. “And if we're targeting the work rather than the worker as the problem that needs to be solved, then we can design systems and processes for how to mitigate or remove hazards.”

"Everyone's heard the axiom, garbage in – garbage out," West stated. If AI is fed only lagging indicator information about what's happened in the past, you'll get the same performance you received before, he emphasized. Instead, EHS professionals can break down communication barriers with human-centric tech that allows in-the-moment, push-to-talk voice reporting of near-misses, good-catches, or observations that historically go unreported; this reporting enriches the data available to AI with real-time leading indicators about what workers are experiencing, West said. "That approach fuels AI to help the safety professional achieve greater results and business value, makes their jobs easier, and benefits the front-line workers, as well as the organization," he stated.

Porter underscored the importance of clear, inclusive communication when introducing AI in the workplace. "You have to message it in a way people can understand," she noted. "The CEO and a front-line worker who doesn't speak English may have two totally different perspectives. How technology solutions are positioned, so each person can see the value and feel supported, is critical." Ensuring that the AI value proposition resonates across all levels of the organization helps maintain a shared commitment to worker safety, Porter added.

Becoming a trusted authority on AI

As part of its AI strategy, ASSP aims to become a trusted authority on AI by showcasing what members are doing to mitigate the risks and to develop trustworthy AI initiatives built upon accurate information. Chrostowski said achieving high reliability with AI is essential toward gaining trust. "ASSP has built its reputation around clear, concise, accurate information and ensuring the safety of people," he explained. Achieving reliability will require training AI models on valid data, with the sources of the data and the conclusions they find rigorously examined and verified, he added.

Johnson emphasized the need for EHS professionals to engage with AI. "I have to understand it, and I have to know how to use it if I want to be relevant in the next few years," she stated.

Porter views the integration of AI into EHS as a transformative opportunity for the profession. "This is our chance to lead and shape how EHS work evolves through technology," she said. "That's what will drive membership engagement. It's no different than when web technologies took off in the late '90s, followed by mobile innovation. AI is the next wave and the question now is how we harness it to achieve practical, meaningful results in our day-to-day work."

Where we go from here

Howard encouraged ASSP members to begin conversations within their organizations about AI governance and other issues relating to the technology. "Be the power user in your organization," she encouraged. "If no one on your team is talking about safety in AI, be the person that's talking about it. Ask to host a lunch and learn. Get the conversation started." Other enthusiasts and partners will help you along the way, she said. "The conversations don't have to be super in-depth," she suggested, covering how to navigate the AI ecosystem, feel confident enough to ask the right questions, and how to implement the technology and understand the results. "That would ease a lot of people's concerns because right now it's a black box because many don't understand how it works," she explained. "When you realize that AI is regurgitating what is already on the internet at scale, it becomes less intimidating."

Knowledge workers and humanity as a whole must figure out how to use AI for good without causing themselves to be irrelevant, Brandon stated. Acknowledging that businesses often focus on the short-term gains a technology can produce, he said focusing on the long-term benefits of AI is important. "We've got to get it right," he emphasized. "The tech exists to improve the human condition; it does not exist to replace us. It has no purpose, ultimately, in nature other than to help humans do a better job of being human and to produce good outcomes for our society."

Resources

ASSP Position Statement, AI Terms to Know and Understand, and Various ASSP AI Resources

"AI Is Here to Stay," Linda M. Tapp, 2025-2026 ASSP president and ASSP Foundation chair

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