

**Chancellor's University Safety Committee (CUSC) Meeting**  
**July 18, 2023 - 3:00-4:00 p.m.**  
**EHS Training Room & Zoom**

**AGENDA**

1. Introductions & Welcome (Zoom mute) (3:00 – 3:05 p.m.) Michael Livingston
2. Old Business
  - A. Update on Heads Up! sign posting project for fall (3:05 – 3:10 pm) Jody Wood
  - C. Other Old Business (3:10 – 3:15 p.m.)
3. New Business
  - A. Emergency planning & preparedness (3:15 – 3:20 p.m.) Mark Robertson
  - B. AI in Safety (3:20 – 3:40 p.m.) Sandi Christofferson
  - C. Other new business – goal (3:40 – 3:45 p.m.)
4. Injury Incidents 4th Quarter 2023-24 (3:45 – 3:55 p.m.) Betsy Howe
5. Adjourn Michael Livingston

**Meeting Schedule** (EHS training room, Warehouse 1, East Campus and Zoom)

- September 19, 2023 - Open Forum
- November 21, 2023 (Injury/Illness report July-September 2023)
- January 16, 2024 (Injury/Illness report October-December 2023)
- March 26, 2024 (4<sup>th</sup> to avoid spring break)- Open Forum
- May 21, 2024 (Injury/Illness report January-March 2024)
- July 16, 2024 (Injury/Illness report April-June 2024)

**Goal FY 2022-2023:**

*Develop, review, maintain lines of safety communication with the purpose of engaging the campus community, in particular by encouraging all to recognize and report “near misses” or potentially unsafe practices with this information to be used for educational purposes university wide.*

**Chancellor's University Safety Committee Meeting**  
**Meeting Minutes**  
**July 18, 2023 \* 3:00 - 4:00 p.m.**

The July meeting was convened at 3:00 p.m. by Chair, Michael Livingston.

## **INTRODUCTIONS**

All attendees introduced themselves by name and the department/facility they represent.

**Members In Attendance:** Martha Morton (Chemistry), Ron Bacon (Custodial Services), Eileen Bergt (Landscape Services), Stacie Ray (School of Education & Human Sciences), Samantha Link (ARD Greenhouse), Brent Morgan (Libraries), Jacob Sharrer (Husker Energy & Power), Tony Delaney (Nutrition & Health Sciences), Jody Wood (Institutional Equity & Compliance), Brenda Osthus (EHS), Elizabeth (Betsy) Howe (EHS administrative support).

**Safety Committee Chairs/Contacts:** Adam Eakin (State Museum), Erin Bauer (Entomology), and Zhiguang (Zach) Sun (NCMN)

## **OLD BUSINESS**

### **Update on Heads Up! Sign Project**

Jody Wood told the committee that the signs for posting are done. She has completed the request form to post the Heads Up! signs the first- and second-week classes start in August. The plan is to post signs one week on East Campus and one week on City Campus, pending confirmation.

### **Other Old Business**

There was no other old business.

## **NEW BUSINESS**

### **Resource: AI in Safety**

Sandra Christofferson provided information on the Role of Artificial Intelligence, Machine Learning and Virtual Reality in Workplace Safety. Her presentation reviewed OSHA statistics, identified current Artificial Intelligence Assistants, explained how digital assistants are trained not programmed, talked about three AI Assistant components with promise to tap into to manage safety, examined the possibilities of AI Assistants, looked at considerations for AI Safety Assistant use, talked about possibilities using virtual and augmented reality and provided a number of resources for those who wished to interested in investigating this topic.

## **Injury Incident Reporting for 4th Quarter 2022-2023**

Betsy Howe noted that during the 4th quarter of the current fiscal year from April 1, 2023, through June 30, 2023, there were sixty-two (62) First Reports of Injury (FRIs). Eleven of these incidents (18%) were classified as OSHA-Recordable, considered more serious injury incidents. Five (8%) of the OSHA-Recordable incidents required workers to be off work or resulted in restricted duty for the worker.

Twenty-eight (28) or 45% were Report Only (no medical treatment sought). There is value in Report Only incidents just as there is in Near Miss incident reporting. These two types of report suggest opportunities for additional training, review of existing process safety considerations, revisiting relevant EHS SOPs, etc.

The Event/Exposure By Worker Type chart indicated that the primary event/exposure was “Struck Against or By.” In addition to being provided with a report on OSHA Recordable injury Incidents by Employee Type, the committee was provided a recap of Near Misses reported through the EHS website Near Miss/Close Call Reporting Tool. Moving forward, Near Miss information will be provided quarterly.

### **Other New Business**

Martha Morton shared with the group an article titled “Insights from a laboratory fire” (<https://www.nature.com/articles/s41557-023-01254-6>). The consequences of fire in a chemical laboratory can be devastating. This article provides first-hand experience with a laboratory fire including lessons learned.

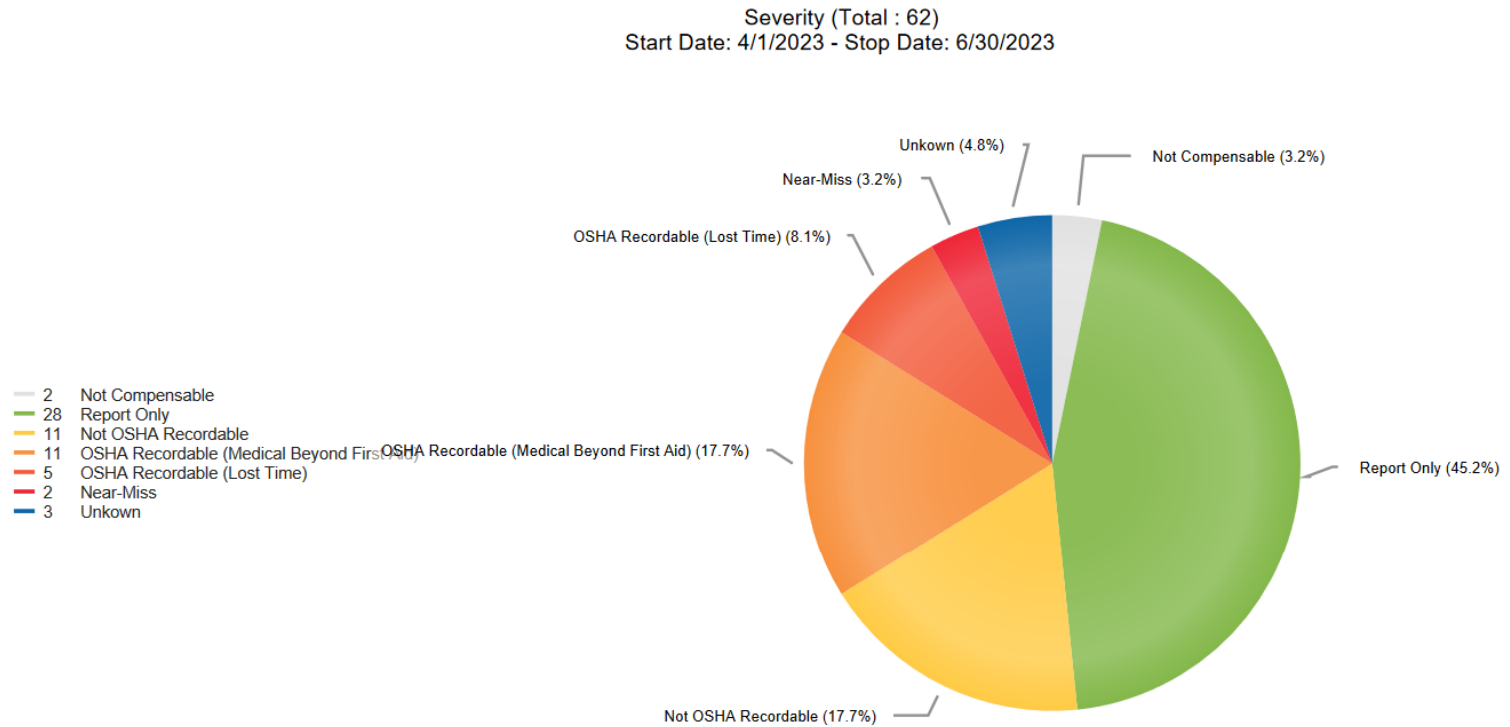
### **CLOSING REMARKS**

Michael Livingston, Chair, adjourned the meeting at 3:40 pm. The next meeting will be on September 19, 2023.

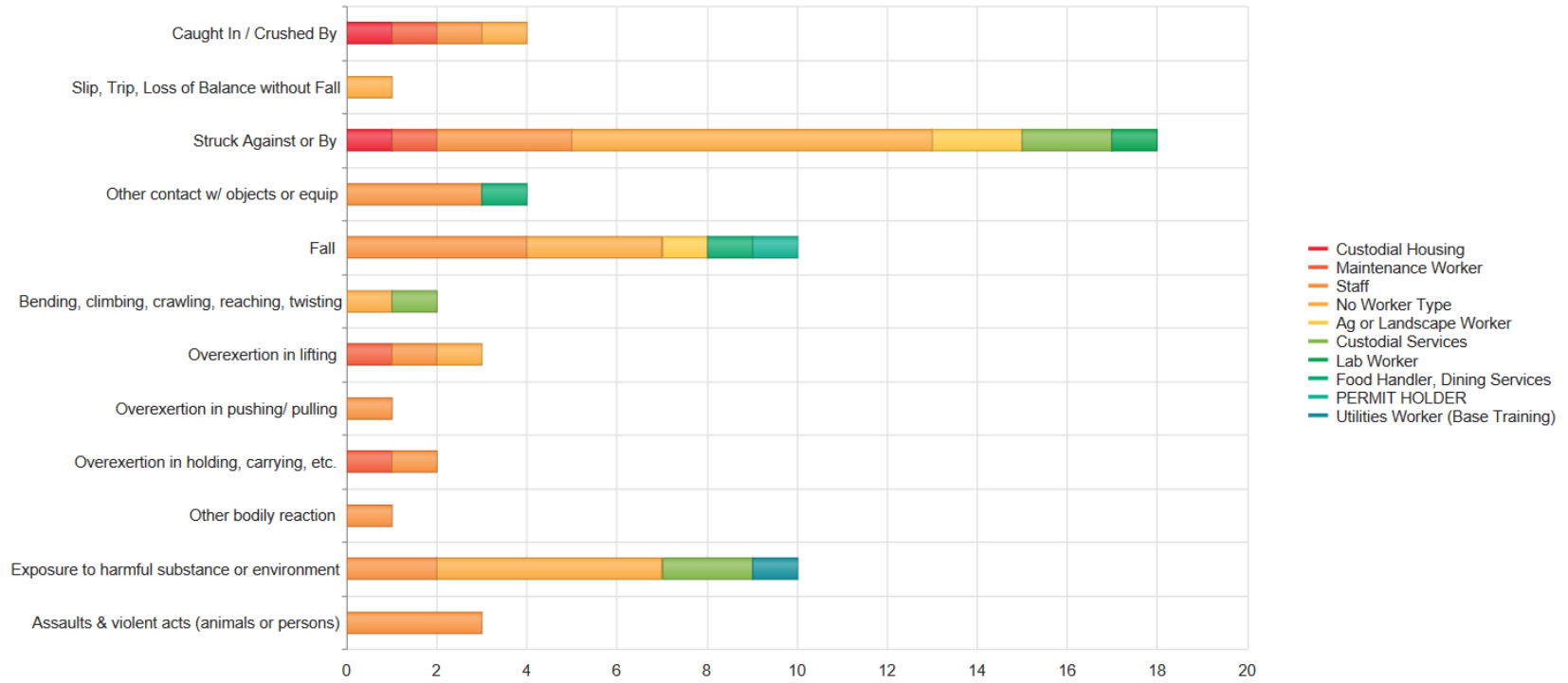
## CUSC Workers Compensation Incident Report (April- June 2023)

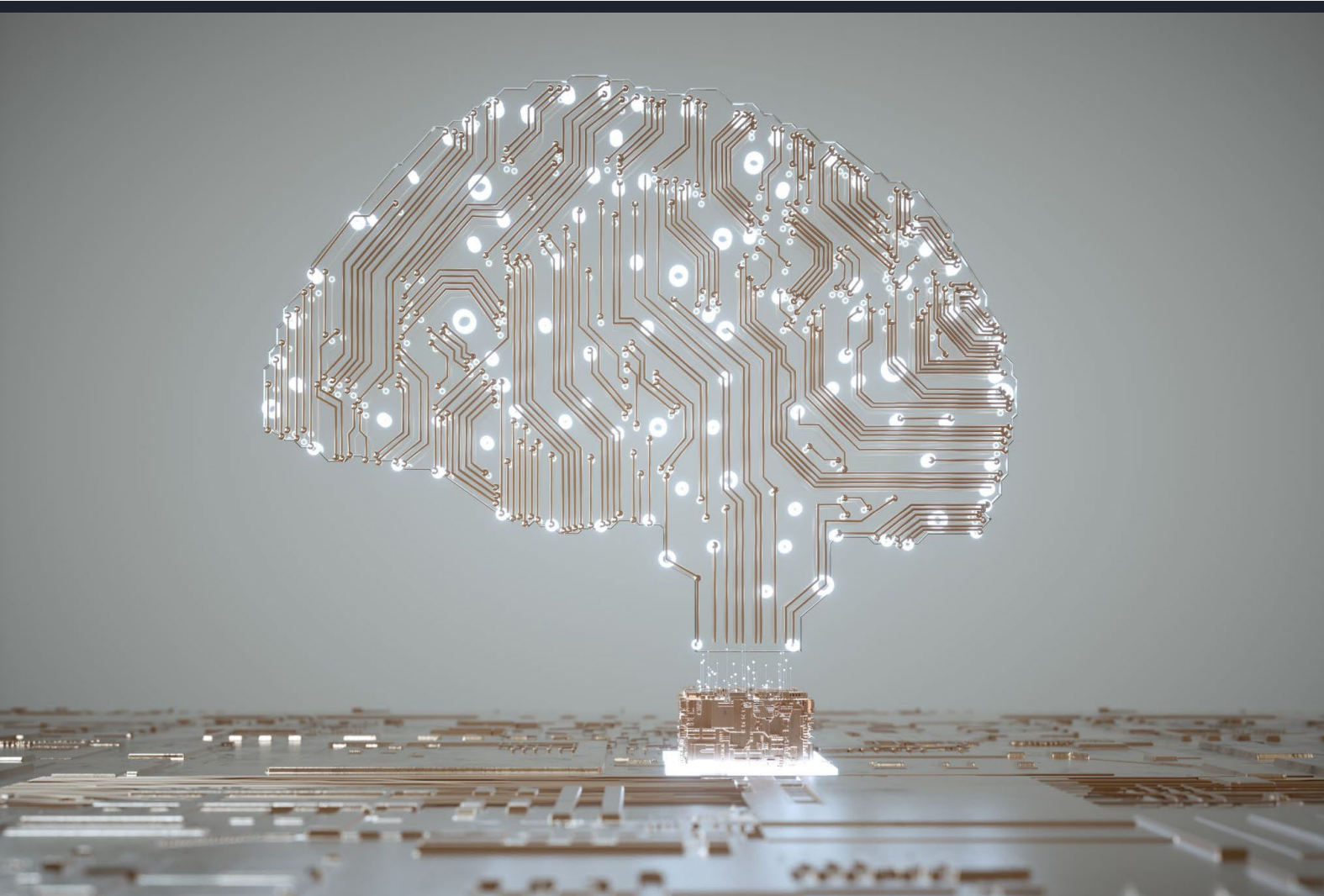
As of June 30, 2023, sixty-two (62) FRIs were received for injuries occurring between April 1 and June 30, 2023.

- Twenty-eight (28) or 45% were “report only” (no medical treatment sought)
- Eleven (11) or 18% were not OSHA recordable, meaning they were minor in nature (requiring only one visit to the clinic without prescription medication).
- Eleven (11) or 18% were classified as OSHA recordable and are considered potentially more serious. Five (5) or 8% of the OSHA recordables are Lost Time incidents that require the employee to be away from work or have restricted work.



Event/Exposure By Worker Type (Total : 59)  
 Start Date: 4/1/2023 - Stop Date: 6/30/2023





ROLE OF ARTIFICIAL  
INTELLIGENCE,  
MACHINE LEARNING,  
AND VIRTUAL REALITY  
IN WORKPLACE SAFETY

UNL Chancellor's Safety  
committee

7-18-23

# OSHA stats

**Human error is the leading cause of workplace incidents. This is where AI can help.**

## **Worker Fatalities (2021)**

- 4,764 workers died on the job in 2020 (3.4 per 100,000 full-time equivalent workers).
- Workers in transportation and material moving occupations and construction and extraction occupations accounted for nearly half of all fatal occupational injuries (47.4 percent), representing 1,282 and 976 workplace deaths, respectively.
- Top 10 most cited OSHA standards violated are categorized as construction, or energy control (lockout/tagout). These are other categories in the top 10:
  - *Respiratory protection, general industry*
  - *Hazard Communication, general industry*
  - *Powered industrial trucks, general industry*
  - *Machinery and machine guarding, general industry*

[Commonly Used Statistics | Occupational Safety and Health Administration \(osha.gov\)](https://www.osha.gov)

# Artificial Intelligence Assistants

- AI-powered assistants (Alexa, Siri,…) surround us.
- AI assistants for company safety work in similar ways. The power—and also the challenge—of applying artificial intelligence to safety is that the system is tracking millions of data points to analyze, report and make recommendations on safety for tens to thousands of employees.



# **Digital assistants are trained not programmed**

- **Digital assistants – described as cognitive computing.**
- **Taught to learn, reason, communicate, and make decisions on their own.**
- **Can complete tasks traditionally performed by people.**
- **Learn from safety managers and their responses will improve over time.**

# **Three AI Assistant components to manage Safety**

- 1. A natural language processing (NLP) / understanding algorithm, which lets safety managers make requests that the AI assistant responds to.**
- 2. Machine learning (ML), which is the neural network that scans data to locate patterns. Increasingly, these technologies are being built into business applications to extend their functionality.**
- 3. A visual component such as a closed-circuit TV (CCTV) to observe workers at a jobsite or on the shop floor or an optical character reader (OCR) to convert paper records into digital data that can be analyzed.**

# Possibilities of AI Assistants

- **Computer Vision & Machine Learning:**
- Track data from CCTV images – workers interacting with machines, for example – reporting to managers who can proactively intervene.
- **Natural language conversations by voice or text:**

“Hey ‘Safe-ti’ – is Bob Eden trained to use the Genie lift?”

“Yes, but their training just expired. I will schedule them for training.”



# Considerations for AI Safety Assistants

## **Usable data**

Start fresh by digitally collecting new data using applications such as those for EHS.

Employees contribute near-miss data using mobile or web apps.

## **Training period**

Similar to training a new human assistant, but with important differences (limited and specific set of interactions that it can recognize).

## **Concerns over privacy**

Can be alleviated by including employees (& IT & HR) when these technologies are introduced as well as being transparent about the use of AI.

# Virtual Reality

- **Virtual reality (VR) can be used to provide employees with realistic training simulations. This technology can be used to teach safety managers and even human resources how to check for vital signs, how to safely operate equipment, respond to emergencies, and improve workers' safety performance.**
- For example, Boeing has developed a VR training program for its employees that allows them to experience various emergency scenarios, such as an engine failure or cabin decompression. This program has helped reduce training time by up to 50%.

# Augmented Reality

## Augmented Reality for Inspections and Maintenance

Augmented reality (AR) can be used to provide employees with instructions and guidance for performing inspections and repairs. With this technology, employees can be provided with real-time information about the equipment they are working on, including part numbers, sizes, and specifications.

*– For example, AR can be used to help mechanics identify faulty parts and understand how to properly repair them. This technology can also be used to provide workers with safety instructions for performing tasks, such as working at height or repairing a gas line.*

# Additional resources

- [Smarter Than You Think: AI's Impact on Workplace Safety | EHS Today](#)
- [Preventing Workplace Accidents With AI – CompScience](#)
- [Artificial intelligence and on-the-job safety | Safety+Health magazine \(safetyandhealthmagazine.com\)](#)
- [Enhancing Workplace Safety with the Adoption of Artificial Intelligence -- Occupational Health & Safety \(ohsonline.com\)](#)
- *Podcast*