THE UNIVERSITY OF TENNESSEE KNOXVILLE

Laboratory Safety Committee
Meeting Minutes
October 10th, 2024
Student Union 270

Attendance (in person):

Member	Department	Pres.	Abs.	Member	Department	Pres.	Abs.
Doug Aaron	MABE	☐	☒	Jennifer Kirkpatrick	Art (3D)	☐	☒
Michael Allen	TCE	☐	☒	John Kobza	ISE	☐	☒
Pamela Andrews	KRSS	☐	☒	Mariano Labrador	BCMB	☒	☐
Chris Baker	EHS (Lab)	☒	☐	Bryan Lord	Facilities	☐	☒
Michael Blum	A&S	☐	☒	Grace Loy	IAMM	☒	☐
James Cantu	EHS (OHSS)	☐	☒	Elysia Mann	Art (2D)	☐	☒
Carolina D. Carter	EHS (Lab)	☒	☐	Bob Martin	EECS	☐	☒
Christine Cheney	Physics & Astronomy	☒	☐	Kristen Massey	ORIED	☐	☒
Matthew Cooper	Psychology	☐	☒	Larry McKay	**Vice-Chair:** A&S	☒	☐
Steve Crouch	UTIA Safety	☐	☒	Natalie Metzger	EHS (Lab)	☒	☐
Paul Dalhaimer	CBE	☒	☐	Sarah Mobley	**Chair** - CEE	☒	☐
Ampofo Darko	Chem	☒	☐	Katie Morgan	Nursing	☒	☐
Brad Day	ORIED	☐	☒	Chris Morris	IAMM	☒	☐
Mark Denavit	CEE	☒	☐	Scott Moser	EHS (Lab)	☒	☐
Taylor Do	EHS (Lab)	☐	☒	Allan Patchen	EPS	☐	☒
Emily Deem	EHS (Lab)	☒	☐	Brian Payne	EHS (AD)	☒	☐
Bill Dunne	Tickle COE	☒	☐	Jacob Payne	UTIA Safety	☐	☒
Gerald Egeland	MSE	☒	☐	Brian Ranger	EHS/Lab	☒	☐
Scott Emert	Nuclear Eng.	☐	☒	Michael Ratliff	NucEng.	☒	☐
Jennifer Ferris	GSM	☐	☒	Darcy Rathjen	ORE	☐	☒
Jason Fogarty	Theatre	☐	☒	Tim Rials	UTIA	☐	☒
Billy Garner	EHS (Lab)	☐	☒	Anujit Sarkar	Nursing	☒	☐
Adrian Gonzalez	CEE	☐	☒	Ryan Setzer	EHS (IWS)	☐	☒
Linda Hamilton	EHS (Lab)	☒	☐	Marsha Smith	EHS (Rad)	☒	☐
Terry Hazen	CEE/EPS/Micro	☐	☒	Timothy Sparer	Microbio	☐	☒
Sally Horn	Geography	☐	☒	Daniel Thomas	EHS (Lab)	☒	☐
Randy Huelsman	Facilities	☐	☒	Joseph Williams	EEB	☐	☒
Anneke Janzen	Anthropology	☒	☐	Ling Zhao	Nutrition	☐	☒
Daleniece Jones	Public Health	☐	☒	Alanah Garner	EHS/Guest	☒	☐

Other Guests:	Department	Pres.	Abs.	Other Guests:	Department	Pres.	Abs.
Melissa Weaver		☒	☐			☐	☐
		☐	☐			☐	☐
		☐	☐			☐	☐

Agenda:

- Opening Welcome!
- Approval of Minutes
- Safety Culture Minute
  - Larry McKay
- Charter Updates
  - Addition of Past Chair Role
- Committee Reports
  - Lab Safety Culture Awards (Carter)
  - HHCC (Moser)
  - IBC (Thomas)
  - Instructional Labs (Mobley)
- Special Topic Discussion
  - The LSA role as an "experience provider" (Hamilton)
- Incidents/Concerns
  - Review with iCue Method (Introduce iCue Method)
    - Physics Lab Incident
    - Oil Spill Incident
- LSS Updates (Ranger)
- Items from the floor?
- Next meeting November 14th, 2024 – same room?

Attachments and References:

- Agenda
- September LSC Meeting Minutes
- 2024-09-23_Oil Leak_Incident629
- 2024-09-Physics Finger Injury_Incident636
- Chemical Inventory Slides
- LaboratorySafetyCommitteeCharter_Ver2.0

Topic Summaries

I. **Introductions/Opening**

- The LSC Chair, Dr. Sarah Mobley, opened the meeting.

II. **Approve Minutes from Last Meeting** (September 12th, 2024)

- The LSC Meeting minutes from September 12th, 2024, were approved as written with one abstention.

III. **Safety Culture Minute**

- **HazWaste & Chemical Cleanup (**Larry McKay**)**
  - Follow up to talk on chemical inventory management given last month by Scott Moser.

- College of Arts & Sciences does have a history of problems with Hazardous Waste & Legacy Chemicals.
    - Poor management of chem inventories in active laboratories.
    - Legacy collections of HazWaste & old/unlabeled chemicals that require expensive, difficult, slow cleanups.
    - Transfers of labs to new users without commissioning & decommissioning.
    - Lack of understanding of departmental roles in these issues.
- Impacts of Poor Labs Waste/Chemical Management.
    - Risk of injury for students, staff, & faculty working in a poorly managed lab environment.
    - Reduction in research productivity caused by clutter of wastes & chemicals.
    - High cost of cleanup, especially when outside contractors (*ex. Veolia*) are required.
    - Forced shutdowns of labs during cleanup.
    - Long delays in reassigning labs to new hires, because of late decommissioning & recommissioning.
- <u>Examples</u> in College of Arts & Sciences:
    - Incomplete lab decommissioning when departments moved out of Walters Life Sciences in 2018.
        - Took 3 years to complete the decommissioning.
        - Delayed the design & renovation of spaces for new occupants in the Arts, Math & Social Sciences.
    - HazWaste & Legacy Chemical Cleanup:
        - Over the past two years, labs assigned to 3 former CAS faculty members & one who was about to retire required extensive clean up.
        - *Examples of the Dabney Buehler lab-clean out were shown*
            - This specific instance involved varying types of chemicals, etc. This cleanup required a 2-week restricted access & 1-day shut-down of the building.
            - No safe, productive lab research can be done in labs in this condition.
            - The refrigerators were especially hazardous.
                - Headaches were reported immediately after opening them.
            - This could have resulted in worse incidents & health risks.
        - *It was asked if this lab had gone through annual EHS inspections.*
            - It was noted that the lab was not in a deteriorated condition upon the most recent inspection. It was hypothesized that the 'big snow of 2024' was the date of the change in the room quality. There was no visible deterioration in early December 2023.
            - EHS has not typically been made aware of when labs change hands.
            - This lab was not decommissioned when the lab changed hands about 5 years ago. This was at a point in time when EHS was rolling out their decommissioning/commissioning initiative.
            - Warnings were given until a final stop work order was issued.
            - The final condition of the lab was the result of many people's inaction.
        - *Examples of lab cleanouts & legacy chemicals were shown*
- Total Cost of Recent CAS Cleanups:
    - More than $280k in payments to contractors in the past 2 years relating to the CAS problems.
        - Approximately $30k in additional invoices expected
    - Approximately 700 hours of EHS staff time spent on assessment & cleanup, with value of $82k (much of which was absorbed by EHS).
    - Unknown number of hours spent by departments, college leaders, & staff

- Many hours spent by incoming faculty, who in some cases assisted with cleanup of their new labs
    - For new hires, they should be provided with a clean, safe lab space!
- Delays of up to 2 years for lab assignments

- "Who Pays for the Cost of Cleanup?"
    - WE ALL PAY!
    - If EHS pays, they have fewer funds for other needs. If it is a recurring problem, they will pass on their costs to the departments & colleges.
    - If the department pays, it is usually with the funds the college has given them. If the college pays, they have less funds to give to the departments.
    - The college pays central admin $30 per sqft. for space, including labs that are unusable. (*this does not include space such as bathrooms, etc.*)
    - Faculty & staff pay through loss of productivity & delays in graduation.
- "What is the Solution?"
    - Greater involvement of LSAs, Faculty, PI's, Department Heads, & College Admins.
    - Improved communications, so everyone is aware of their responsibilities & risks.
    - Plan ahead to reduce chemical inventory and waste in the year before a retirement or lab transfer.
        - A good operating lab has a constant chemical & waste turnover rate.
        - Most of the time, there is ample time & notice before faculty member leaves/arrives.
    - Start lab decommissionings before a faculty member leaves UT.
    - Start commissioning as soon as new faculty member arrives.
        - McKay mentioned a focus to get this included in the offer letter
    - "Whole Department" Lab Safety assessments, rather than focusing on just on annual lab safety inspections
        - "What are the issues here?"

IV. **Charter Updates (**Mobley**)**

- Addition of Past Chair Role
    - This was included in the agenda items
    - Past chair will hold this position until there is a new past chair
        - The goal is to keep recycling & transferring institutional knowledge
        - Addition of formality of process:
            - *"The immediate Committee Past-Chair will retain membership status. In addition to customary member privileges, the Past-Chair may lead meetings in the absence of both the Chair and Vice-Chair."*
    - The committee voted to approve this charter update with one abstention.
    - This will be updated on the EHS website.

V. **Committee Reports**

- **Lab Safety Culture Awards (**Carter**)**
    - Q4 awards are almost done
    - October 14th is the deadline for submissions – Theme: Ways to Mitigate Stress in Labs
    - Awards dinner planned for end of year to congratulate awards winners, etc.
    - Q1 topics will be decided for January after the cutoff for Q4 submissions.

- **HHCC (**Moser**)**
    - Meeting with Natalie Metzger for setting up the HHCC

- She has experience with a High Hazard Chemical Committee at her former institution.
- *"What can we do to get the ball rolling? How to make this committee more sustainable?"*
- There may be a meeting with the LSC for ways they can help.

- **IBC (**Thomas**)**
  - The IBC is looking for a new vice chair.
    - If there is any interest in this position, please reach out to Linda Hamilton.
  - Welcome Emily Deem!
    - Emily is EHS's new Lab Safety Compliance Manager.
    - Emails, etc. will now come from Emily.
    - Any correspondence to/from Jess will now be sent to/from Emily.
  - Safety Stratus
    - 3rd year renewals
      - PI's will have to enter registration into Safety Stratus. It will not be automatically imported

- **Instructional Labs (**Mobley**)**
  - *Briefly discussed at previous meeting*
  - Possibly 7-8 people who want to be on the committee, and around 20 people who manage instructional labs that are interested in involvement.
  - No set date for meeting; this is still in the stage for gathering involvement.
  - Excited for this community!
    - This committee will be focusing on any place that has high undergrad engagement.
  - Please let us know if anyone should be or wants to be on the committee, or at the very least on the email list.
    - They could also be included in the email list just to receive the information.
  - Possible meeting for after end of semester.

VI. **Special Topic Discussion**

- Based on the summer Survey Results, many agenda topics will be covering LSAs.

- **The LSA role as an "experience provider" (**Hamilton**)**
  - *"How to Engage in Positive Rhetoric to Maximize Conversations."*
  - Exercise:
    - Based on the provided words, write down the first 10 words that come to mind within 2 minutes.
    - "Advocate – Advocacy"
  - It is important for the LSA to provide new experiences that change beliefs about safety because:
    - *"What beliefs am I going to foster, or actions am I going to provide in experiences?"*
    - Actions (behaviors) will be influenced because experiences build beliefs & beliefs direct actions.
    - The population you serve will be more engaged.
      - Less avoidance, defensiveness, etc.
      - Increase in psychological confidence – items being brought to the LSA will be heard & taken seriously.
      - Improvement in learning environment.
      - More hazard concerns brought to attention.

- Safety Advocacy Conversations (SAC) (1:1 or in group meeting)
  - Hold intentional safety related conversations with every layer of the dept.
    - Most being with, "*What*?"
      - Very open way to ask questions that initiate critical thinking.
      - Yes/no questions are not very curious or inviting.
    - *"What would you do if you were injured or exposed?"*
    - *"What if you found an unsafe condition or experienced a near miss?"*
    - *"What would make the CHP a more useful tool for you?"*
- Methods that will provide belief changing experience during the safety advocate conversation:
  - Ask – don't tell – lead with curiosity.
    - *"What?", "Help me understand…", "Say more about…"*
  - Listening with an open mind
    - Listen for the meaning behind the words.
    - Do not interrupt.
    - Suspend your agenda.
      - This can be difficult!
      - Recognizing this is a practice!
    - Remove biases of what you think the person will say.
  - Be comfortable with silence & wait for the response.
  - Replace emails with face-to-face encounters when possible.
    - This might offer more opportunities for experiences
- Exercise – Pair share storytelling:
  - 1. First person tells a story – 2 minutes
  - 2. The second person listens without interrupting. When the first speaker finishes, the second person will ask questions to gain a better understanding of their story – 2 minutes.
  - 3. Switch & repeat: 4 minutes
    - Experiences of this exercise were discussed.
      - "*How can this exercise provide benefits?"*
      - Participants noted that it was difficult to not interject with questions or to respond to a part of the story told, especially if they were interested in the topic. Some found that it was much easier to be the storyteller rather than the audience.
      - Participants mostly found they were able to avoid yes/no questions.
      - Some participants found that the meaning of the story changed as they listened.
  - Be Mindful. Be curious. Listen.
  - *This will be continued in the new business/open floor agenda items for upcoming meetings.*

VII. **Incidents/Concerns – Review with iCue Method**

- *Introduce iCue Method* **(**Mobley & Hamilton**)**
  - The purpose of this method is to find the real root cause of the incidents, not just what happened.
  - *Attachments were provided to meeting attendees to complete while the incidents are being discussed.*
    - *Identify aspects of the incident that were good, or that could explain why it happened, i.e. workspace, headspace, groupspace accuracies or errors, etc.*
  - iCue stands for: Intelligent Cues
    - Bring awareness to Safety Culture being more than the workspace.
      - Risks can be more than physical objectives.

- All 3 levels in the risk maturity matrix are important for risk intelligence.
- *"How 'X' thinks", "How culture impacts work"*

- *Forms & Attachments were provided*
  - Complete form based the discussed incident & the 3 levels of Risk Maturity
    - Identifies root cause
    - Provides better understanding of different levels of the risk & incident

- **Physics Lab Incident (**Moser**)**
  - Finger cut incident
  - This was reported to CorVel, and occurred on Friday, Sept. 20th at 5pm.
  - CorVel Stated:
    - This happened in a research lab; aluminum fell, cutting the right index finger.
    - Student Report Notes: *"I injured my right index finger in the lab while constructing aluminum ladder steps in group, when a table leg hit my finger, causing a cut. At the time of injury, I was assisting in the construction of aluminum ladder steps as part of my duties as a TA, and in preparation for joining the research group."*
  - Investigation Findings:
    - The student was in the lab group, assembling the aluminum ladder to be used with equipment in the lab. Reports stated that others were actively working at the same time, accidentally letting go of one of the legs, causing it to fall & cut the injured student's right index finger.
      - There was a lack of spatial awareness and collaboration within the group.
    - The student went to Urgent Care. The finger is improving & getting better, with no lasting effects.
  - There were varying reports; however, they all included the injured finger.
  - What Questions Came Up? *(Discussion)*
    - Why was the aluminum ladder needed in the lab?
      - The equipment in use was very large, & the area where samples need to be entered is tall enough where a ladder is needed.
      - Clarification was given that the "ladder" was actually a platform with some steps. While "ladder" is an accurate label, it was misleading within the context.
    - How deep was this cut? Why would maintenance not put together ladder?
  - Workspace Questions:
    - Was the ladder in good shape? Was the ladder in a good shape/space? Were they using gloves? Adequate materials?
    - Lack of attention!
  - Groupspace, Headspace, workspace issues (what went wrong)
  - Was this task discussed & organized?
    - (i.e, *X* is going to do this, *X* is going to do that, etc.) There were 4-5 people involved in the lab.
- "Help me understand": 1) why working after 5pm, etc.

- **Oil Spill Incident (**Moser**)**
  - This incident did not involve any injuries.
  - This was reported to EHS on Monday, Sept. 9 around 1:20pm via email.
  - Investigation Findings:
    - A grad student found 5-gallon bucket of hydraulic fluid that was cracked & leaked under sink.
    - The bucket had no containment and it was unknown when the leak started.

- The lab had no more absorbent pads to cleanup spill.

- Incident Response:
  - By 2pm on the date of the incident, EHS was on scene (Moser & Garner).
  - EHS reps brought absorbent powder and pads to clean up the spill within ten minutes of arrival.
  - After an additional ~40 minutes, the fluid and the spilled material were collected for hazardous waste.
- Questions/Discussions:
  - How long has this been sitting in lab in container, leaking?
    - Members of the lab were unable to establish a timeline for the bucket.
      - The total spill area was approximately 25 square meters.
  - Lab members had not started cleaning up prior to EHS arrival due to no on-hand spill kit.
  - Importance & need to inform dept. heads, supervisor, etc.
    - Student was new TA.
    - EHS was trying to figure out who, what, when, why.
- What does this incident mean for lab management?

VIII. **LSS Updates (**Ranger/Hamilton**)**

- Lab Safety reviews are on track to be completed by Thanksgiving.
- SERF Loading Dock:
  - This will be closed to Pedestrian Traffic on the last Wednesday & Thursday in October (and every month going forward).
  - There will be multiple communications on this; the area will be well marked as well.
  - Closing for the safety of people traveling that way. Veolia will be here those days.
    - It would be a danger for pedestrians to be in the area.
- Please communicate with EHS/LSS on:
  - Commissionings/decommissionings
  - Changes that result in a higher hazard profile, chemical.
  - Changes that result in a higher hazard profile, equipment (lasers, NMR, etc.)

IX. **New Business / Open Floor**

- N/A
- If something, this can be added to the agenda for next month's meeting.

X. **Next Meeting**

- Thursday, November 14th, 2024, from 1:30pm – 3:00pm EST. – in Student Union 270

[Meeting Adjourned**]**