

# Quarterly Research Safety Update

## In This Slick:

- Win a gift card;
- An Exciting New UCSB Program: FUERTE;
- Understanding Limitations & Their Importance in the Laboratory -The MAQs of Chemical Inventory;
- Field Steam Presents - Save the dates March 4th and April 1st;
- Lessons Learned - Vacuum Trap Explosion and LASER class 4 eye exposure
- The Likeability Trap - 20 min listen on what 'likeability' really means in the workplace (Podcast-Life Kit)

You are receiving this quarterly newsletter as a part of the UCSB research community.

Please share and encourage lab fellows to [subscribe](#).

Not your cup of tea? [Unsubscribe here](#).

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## Training

Click [here](#) for details on upcoming EH&S courses.

- **Fundamentals of Laboratory Safety - Live classes are [now scheduled](#).** Next class will be **this Friday, February 18th**. This is a new, interactive version of the class;

- **Wilderness First Aid Classes** - February 19th - 21st and February 22nd-24th; email [nelly.traitcheva@ucsb.edu](mailto:nelly.traitcheva@ucsb.edu)
- **2022 UC Field Safety Leadership Retreat**, February 2022 at UCLA's Lake Arrowhead Lodge
- **Field Steam Presents** on March 4th and April the 1st - details below.

## Win a Prize:

Which of the following drives staffing and budget for Environmental Health and Safety?

- a) Amount of grant funding
- b) Total student enrollment, i.e., tuition and fees
- c) Total net assignable square footage for campus
- d) Number of faculty with laboratory spaces
- e) Total annual hazardous waste generated in laboratories

Submit your answer as soon as you can to

[ehs-labsafe@ucsb.edu](mailto:ehs-labsafe@ucsb.edu) for a chance to win a Starbucks or Blenders in the Grass gift card!

## Field Research Safety

An Exciting New UCSB Program: **FUERTE**

### **The Field-based Undergraduate Engagement through Research, Teaching, and Education (FUERTE)**

**Fellows Program** is meant to support first-year students who are traditionally underrepresented, especially Latinx, Indigenous, Black, and first-generation undergraduates. The program is designed to build the students' foundation at UCSB and develop the skills they need for a career in conservation, environmental, and marine sciences. FUERTE

The FUERTE Fellows will embark on a 3-year journey **receiving support in their transition to University life, research experience, and professional development.** Fellows can expect the following major activities:

- Summer of Year 1: A 2-week intensive field trip to the Sierra Nevada Aquatic Research Laboratory (SNARL) in the Eastern Sierras
- Summer of Year 2: A summer research experience with a mentor, working for 8 weeks on a research project that is fieldwork oriented
- Summer of Year 3: An internship with a partner organization (e.g., The Nature Conservancy, the U.S. National Park Service, or the Ocean Science Trust here in California) designed to provide experience in what having a career in environmental sciences and conservation science could be like

Throughout the academic years and in collaboration with on-campus resources, FUERTE will host workshops, social events, and activities that promote student success and experience in the outdoors such as hikes, camping, and more. There is no cost to participate. **Undergraduates**, to be considered to become a FUERTE Fellow, you must fill out an application, submit your statement of interest and CV/resume. Applications for this academic year close **February 27, 2022**. For more information on the application process, visit: <https://fuerte.eemb.ucsb.edu/about>;

**Graduate Students, Faculty and Staff**, if you would like to find a way to get involved with FUERTE's mission of supporting undergraduate students, contact [eemb-fuerteprogram@ucsb.edu](mailto:eemb-fuerteprogram@ucsb.edu) with any questions; FUERTE would not have been possible without the hard work and dedication of Professor Gretchen Hofmann (EEMB) and the Program Coordinator, Miguel Guillen.

### **FUERTE UPCOMING EVENTS:**

FUERTE online information sessions this month - [learn more](#);

FUETRE office hours - [learn more](#);

FUERTE application deadline coming soon - [learn more](#);

Coal Oil Point Reserve Tour organized by FUERTE, Feb 24th and 25th - [learn more](#).

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# Laboratory Safety

## **Understanding Limitations & Their Importance in The Laboratory**

### *The MAQs of Chemical Inventory*

#### **What exactly is an MAQ?**

**An MAQ is the Maximum Allowable Quantity of a hazardous material in an individual control area.** Per NFPA standards and California Fire Code, hazardous material must be stored and used in control areas and the quantity of hazardous material in an individual control area cannot exceed the MAQ. Since control areas are areas that will contain the hazardous materials (e.g. flammable liquids, pyrophorics, oxidizers, etc.), they must be properly protected to minimize the impact that a fire incident in those areas would have on the remainder of the building or area. This is particularly useful when determining how much hazardous material may be safely stored in a designated control area. For instance, flammable gas such as hydrogen with a storage amount of 200 ft<sup>3</sup> per cylinder has a storage limit of 1000ft<sup>3</sup> per control area (CFC 5003.1(1)) - indicating that no more than 5 Hydrogens may be stored in one control area. What defines a control area?

**A control area is a space within a building where a hazardous material is stored, dispensed, used, or handled.** Control areas are generally determined by the fire department or campus fire marshal.

Examples of a control area may be:

- A compressed gas cage with separation
- One floor of a building
- Storage room or laboratory suite

The fire protection elements within a designated control area contribute to the MAQ calculation of a given hazardous material stored. For instance, a storage room that is sprinklered increases

the MAQ of a flammable liquid by 100 percent (CFC 5003.1(1)). Other factors such as occupancy class and floor level may contribute to the MAQ within a given control area. So why is this important for a researcher?

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## **Improper chemical storage is one of the leading causes of laboratory fire/explosion incidents**

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Understanding the storage, use and handling limitations of hazardous materials is an important tool in maintaining a safe culture in the laboratory.

### **How can Principle Investigators and researchers best manage their hazardous materials?**

A great way to manage hazardous material is by use of the **UC Chemicals application – a tool for chemical inventory**. UC Chemicals is a free, web-based system that facilitates the collection and storage of information related to chemical types and amounts within campus laboratories and facilities. By maintaining inventories in this system, one can best manage chemical storage thresholds for their facility as well as ensure all state and local requirements are met. Maintaining an accurate chemical inventory helps the campus comply with: state reporting regulations (CERS, CUPA, DTSC, etc.); evaluate compliance with fire code control areas (MAQs); assist design and renovation projects; collect air pollutant emissions; and assist in identifying specific hazards that may trigger other reporting requirements. Creating an inventory in the application is easy and there are many resources to assist in the set-up!

Familiar with UC RSS applications? Great! Simply log on to [UC Chemicals](#) using your campus credentials and follow the prompts. Unfamiliar with UC RSS applications? No problem! Click the link below to register for a free step-by-step tutorial:

[2022 Tutorial: Chemicals for PIs, Delegates, and Lab Managers](#) – **click link to register**

Other resources:

<https://ehs.ucsc.edu/programs/research-safety/documents/UC-Chem-Getting-Started.pdf>

**For UC Chemicals assistance at UCSB contact:**  
[Chandra McCarthy](#) 805-893-3264  
[Nikolai Evdokimov](#) 805-893-4930

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## Field Steam Presents

**Field Steam** - a series of events for Field Researchers takes place at EH&S' Patio and Training room. Bagels, Coffee and Tea are served at 9:30 am; Workshops start at 10 am.

**March 4th, 2022 Workshop:**

"A culture of safety in the field sciences" by [Lindsay Buff](#), *Earth Sciences*

Outline:

- Cultivating a safe environment before, during, and after field work
- Inclusive trip planning and preparation
- Power dynamics in field settings

**April 1st, 2022 Workshop:**

"Meteorology 101"

This workshop starts with an introduction to Meteorology by [Tyson Tilmont](#) a Forecast Duty Officer at **Point Mugu Naval Air Station** and will be followed-up by a brief presentation on what to do when you're stuck outside during extreme weather events by [Ed Romero](#), UCSB's HF Radar Specialist.

To Register for "A culture of Safety in the Field Sciences", March 4th, click [here](#)

To Register for "Meteorology 101", April the 1st, click [here](#)

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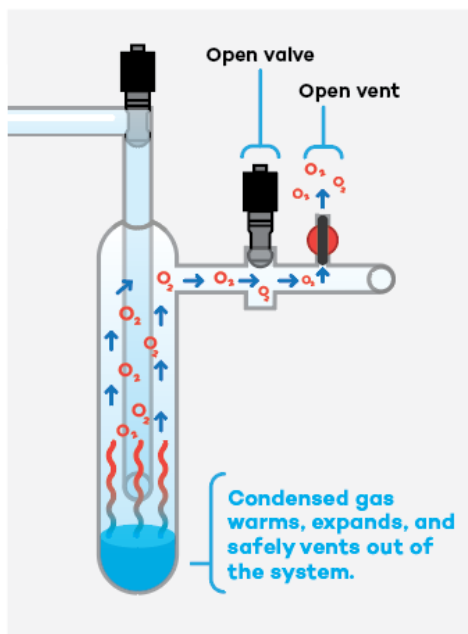
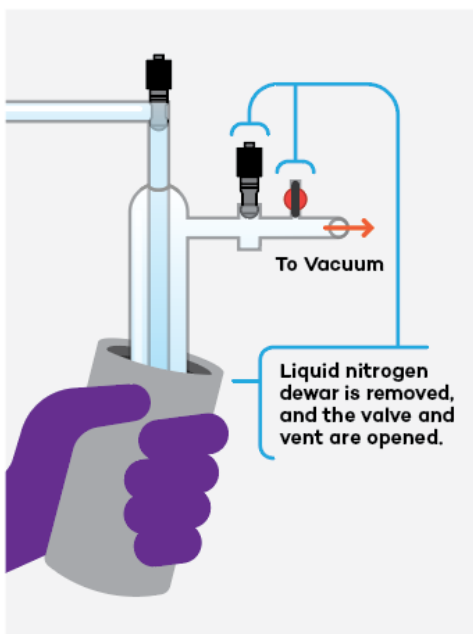
# Lessons Learned

## Vacuum Trap Explosion - Northwestern University Incident Summary

Please use the [following link](#) to review an important safety alert from Northwestern University.

If your lab uses vacuum systems or vacuum-gas manifolds (such as Schlenk lines) equipped with glass cold traps, please discuss this alert with your group, and review your lab's standard operating procedures for vacuum cold trap use. Personal protective equipment, including safety glasses, safety goggles, and face shields, are always available from Research Safety.

### ✓ Safe Venting of a Vacuum Trap ✓

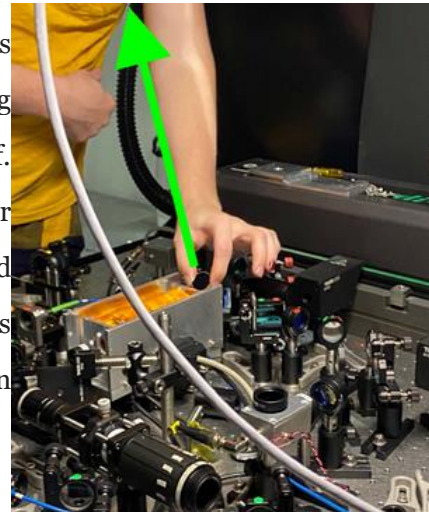


In a [previous issue](#) we posted about another recent vacuum pump related incident from Penn University caused by lack of exhaust within the pump storage cabinet.

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### **Laser Eye Exposure from a 1 Watt Class 4 Laser Beam at UC Berkeley**

A researcher was exposed to a 1 watt continuous wave beam from a Ti-Sapphire (852 nm) laser while visually inspecting a non-linear crystal on the optical table with a dielectric mirror. The researcher was unaware that the beam was present and it was directed into their right eye. The researcher was not wearing laser eye protection because they thought the laser was off. Shortly after finishing the visual inspection, the researcher noticed a spot in their field of vision and realized that they had been exposed to the 852 nm laser beam. The researcher was seen at the Tang Center Optometry Clinic and a clinician confirmed a laser eye injury.



Read details [here](#).

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## Combating "The Likeability Trap"

*"**Likeability**"* is a loaded word. And try as we might, none of us has full control over who likes us. Journalist and podcaster Alicia Menendez, author of *The Likeability Trap*, says who we like is shaped by who we are — and often, likeability is a way of shielding biases in the workplace." Listen to the **Life Kit's** episode

**"What Likability Really Means at the Workplace"** [HERE](#).

(20 minutes listen or ~ 10 minutes read).





*Our mailing address is:*  
USCB, EH&S, Building 565  
Santa Barbara, CA 93106-5132