

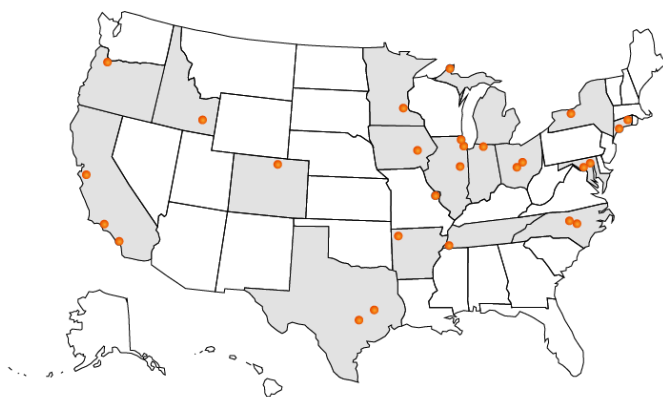
Laboratory Safety Teams (LSTs)



➤ Researcher-Led

➤ Focus on

- ✓ Solving Tangible Needs
- ✓ Bringing Groups Together
- ✓ Communication
- ✓ Useful Training
- ✓ Resources



Sarah

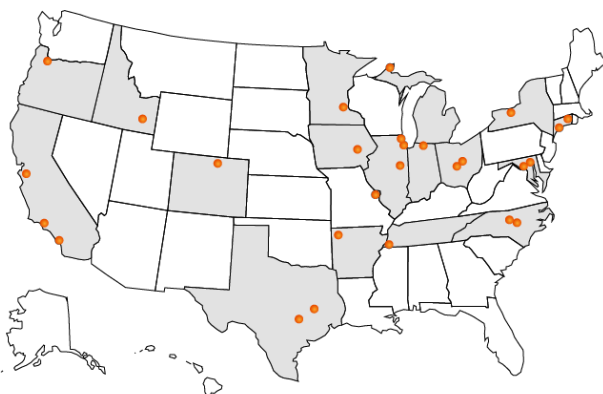
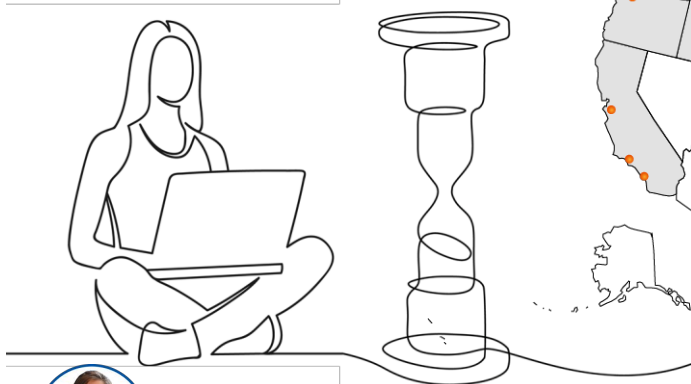
11

Laboratory Safety Teams (LSTs)



➤ Researcher-Led

But... **why?**



Sarah

12

Why is this stuff in MY refrigerator?



Jessica

13

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



Have you ever had to handle disposal of inherited samples or expired legacy chemicals?

- Yes
- No
- Not applicable



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A Graduate Student Trying to Resolve Long-Standing Safety Issues on My Own

Working to Solve It All Together With LSTs!

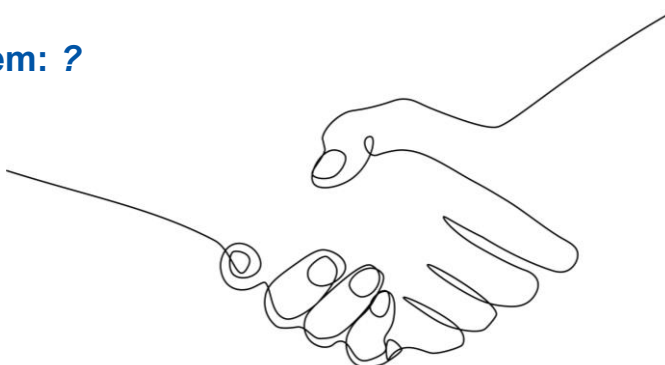


Jessica

15

Succession Planning

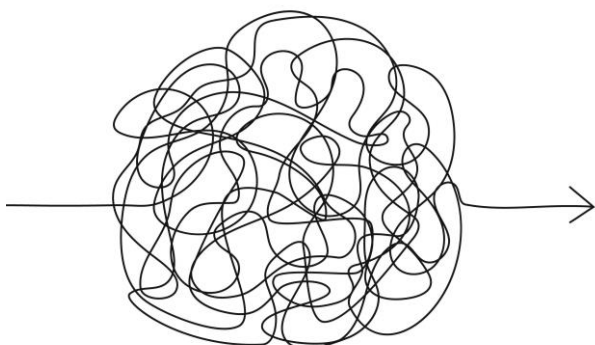
- **User training system: ✓**
- **Lab manager training system: ?**
 - Documentation
 - Knowledge transfer
 - Training
 - Overlap
- **Best intentions ≠ results**



Kati

16

Chemical Inventory



- **How to keep track of hazards in each lab?**
- **Collaborative multidisciplinary research spaces**
 - Unique challenges
- **Policies vs. Practicality**



Kati

17

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



Have you ever had to work with a poorly-maintained or non-existent chemical inventory system?

- Yes
- No
- Not applicable



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Connecting Student Safety Enthusiasts

- **Common problems:** Lack of communication & human error
- How to make it easy to do what you're supposed to do?
- Involvement in safety groups



Kati

19

Turns Out, Reality is Not So Clean

As an outsider, my expectations were miscalibrated



University of St. Andrews

Sarah

UChicago

20

Time Spent Digging for Equipment

Do we have what
I need to start
this new project?

BEFORE



AFTER



Utter
chaos

- to -



Sarah

21

Time Spent Searching for Chemicals

Do we have what I need to start this new project?

2	Please add an entry when you purchase chemicals and delete the entry when you finish the stock. Please Ctrl+f search by CAS No. first when entering a new chemical.						
4	Substance Name	CAS No.	Hazards SDS/MDS	Amount	Room	Shelf Location	Notes
5	Please do NOT auto-alphabetize!		Click on the link	If more than one vial, enter second value on a new line in the same entry			(Dates in month/year) rcvd = received
688					E247	Shelves	
689	Rhodamine 700	63561-42-2		0.5 grams	E030	Fisher Refrigerator - Laser Dyes Box	rcvd 7/19/2018
690	Ammonium molybdate tetrahydrate	12054-85-2		25 g	E030		rcvd 8/12/2018
691	1,2,4,5-tetracyanobenzene	712-74-3		5 g	E030		rcvd 8/12/2018
692	2-mercaptoethanol	60-24-2	X	100 mL	E247	Refrigerator	
693	phosphate buffer solution, 1.0 M		X	1 gallon	E247	Refrigerator	rcvd 12/12/2019
694	Benzamidine hydrochloride, 99%	1670-14-0	X	5 g	E247	Shelves	rcvd 12/12/2019
695	Caproic acid (hexanoic acid)	142-62-1	X	100 mL	E247	Corrosives	rcvd 12/12/2019
696					E030	Refrigerator	rcvd 11/2019
697	Coumarin 153	53518-18-6		200 mg	E030	Fisher Refrigerator - Laser Dyes Box	light sensitive, rcvd 2/2021



Sarah

22

Time Spent Tracking Figuring Out Unknown Messes



Whose mess is this?

How long has this hotplate been on?



Sarah

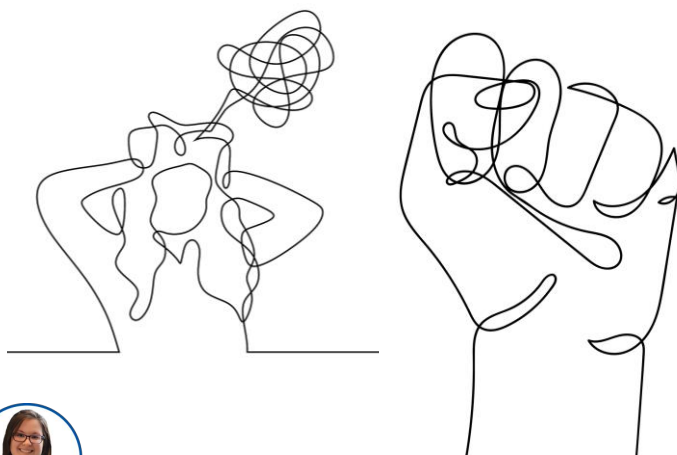
Does anyone know what's in this unlabeled vial?

23

Why I Co-Founded My LST



But it didn't last...



Sarah

Version history

Only show named versions ☐

JUNE

June 8, 2:42 PM

Current version

● Sarah Zinn

FEBRUARY

February 2, 5:18 PM

● Sarah Zinn

JULY 2020

July 18, 2020, 4:35 PM

● Sarah Zinn

July 15, 2020, 2:16 PM

● Sarah Zinn

24

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



How often have you encountered a disruptive equipment mess or chemical contamination that was produced by previous occupants of your lab space?

- Too many times
- A few times
- Never
- Not applicable



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Why I Co-Founded My LST

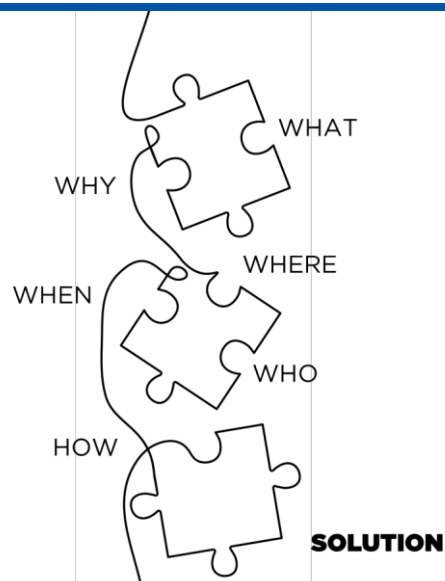


It's actually in all of our best interests to *solve* this problem.

Address the salience



**DON'T MISS THE FOREST
FOR THE TREES**

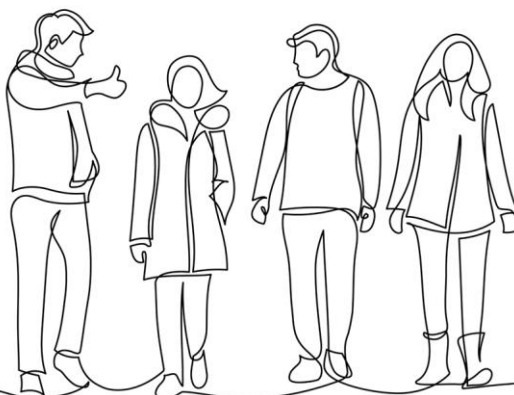


Sarah

26

Safety professionals as allies

Alone and Confused when
it comes to lab safety?



Monica

27

Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT



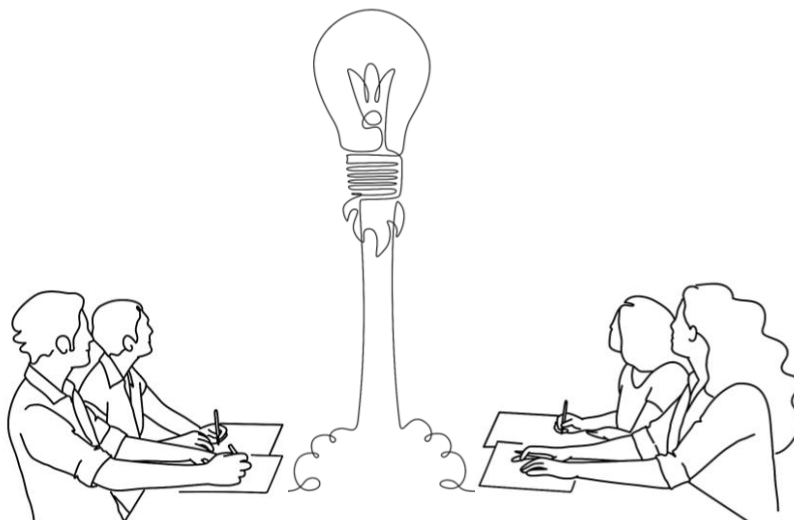
Have you ever contacted safety professionals for help with specific questions about research safety or hazardous waste issues in your lab?

- Yes, they were helpful
- Yes, they were NOT helpful
- No, I haven't needed them
- No, I don't know anyone I can contact
- Not applicable



28

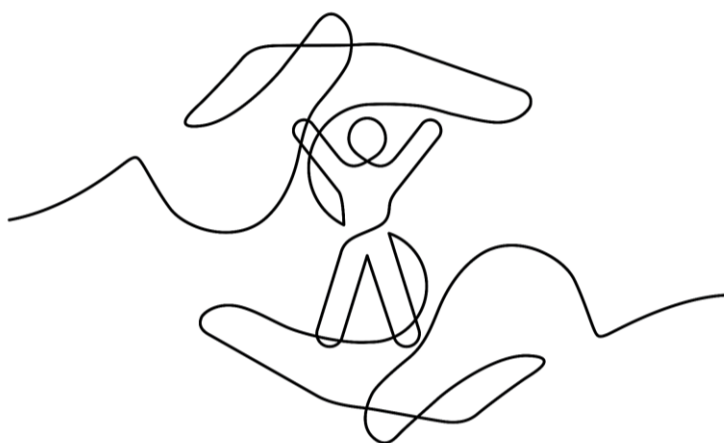
Safety-related Team Conversations with Peers



Monica

29

Safety Networks



Monica

30

Research Productivity and Housekeeping Challenges



Jessica

31



Graduate and Postdoctoral Led Laboratory Safety Teams

Safety Professionals and Faculty Champions



Jessica

32

dchas.org



The workshop started at an ACS National Meeting in 2018...and the rest is history!

ACS Chemistry for Life®

ACS Committee on Chemical Safety

ACS Chemical Safety Programs

ACS Division of Chemical Health and Safety

FALL 2019 NATIONAL ACS WORKSHOP

Developing Graduate Student Leadership Skills in Laboratory Safety

SUNDAY, AUGUST 25 • 3:00–6:00 PM • \$25

Featuring three safety program experts

Create individualized plans for student safety programs

REGISTER OR

REFERENCE MATERIAL

HISTORY OF THE CHAS LST WORKSHOP

NOVEMBER 4, 2020 • RALPH STUART • LEAVE A COMMENT

In 2018, Dr. [Kali A. Miller](#), at the time a graduate researcher at the University of Illinois-Urbana Champaign and involved in the laboratory safety team there, developed a workshop called "Developing Graduate Student Leadership Skills in Laboratory Safety." Initially supported by the ACS Committee on Chemical Safety, ACS Division of Chemical Health and Safety, ACS Safety Programs, and the ACS Office of Graduate Education, the workshop was first held at the ACS National Meeting in Spring 2018. A paper was published describing this pilot workshop and initial survey analysis that [can be found here](#). The workshop continued to be held at ACS National Meetings with different graduate researcher facilitators.



Jessica

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2021 CHAS Graduate Student Safety Leadership Award



Recognizing graduate student researcher or recent graduate who demonstrates outstanding leadership in the area of chemical health & safety in their laboratory or department.

Jessica DeYoung, University of Iowa
 Omar Leon Ruiz, University of California, Los Angeles
Sarah Zinn, University of Chicago
 Cristian Aviles-Martin, University of Connecticut



In recognition of these students' collective and individual contributions to the workshop "Empowering Academic Researchers to Strengthen Safety Culture" supported by the ACS Division of Chemical Health and Safety and for their role in developing and strengthening Laboratory Safety Teams (LSTs) at their respective institutions.



Jessica

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ACS Division of Chemical Health and Safety

ABOUT US WORKSHOPS

CHAS WORKSHOPS 2021

© SEPTEMBER 1, 2021 & RALPH STUART

The Division of Chemical Safety presents several workshops as part of the American Chemical Society's continuing education program around chemical safety issues. CHAS has two workshop tracks, aimed at either specific stakeholders or chemistry professionals who need specific chemical safety education to complete their expertise, either in the lab or in business settings. The stakeholder workshops are taught by people from that group with safety experience (e.g. grad students teaching grad students), whereas the professional development workshops are taught by full time Environmental Health and Safety professionals.

To register for any of these workshops, click on the **workshop description for that workshop**.

We can also help arrange presentations of these workshops in other venues. If you are interested in arranging any of these trainings for your company or local section meetings, contact us at member-sh@nichas.org

ACS CHAS Stakeholder Workshop:
Empowering academic researchers to strengthen safety culture

Let by Monica Reyes of the Michigan Technological University and Kate McCarty of the University of Texas at Austin. October 11, 2021 from 9PM - 6PM ET. Registration for this workshop is \$35 per participant. This workshop is directed at chemistry researchers to academic institutions: graduate students, postdoctoral scholars, and independent researchers. Faculty and safety staff are also very welcome to participate.

Workshop Goals:
• Increase participants' understanding of the value of risk assessment
• Create participants' research plans regarding safety culture changes in their institutions
• Encourage participants to support their safety research and chemical laboratory safety efforts

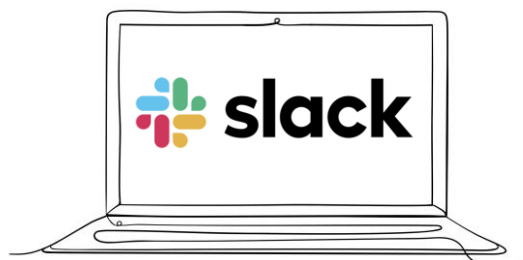
Also known as the Lab Safety Teams workshop, taught by chemistry graduate students with experience with implementing and maintaining laboratory safety programs at their home institutions. This workshop will meet on **Monday, October 11, 2021**, you can register for it [here](#).

CHAS WEBSITE CONTENTS

- CHAS WEBSITE STRATEGIC PLAN
- CHAS INFORMATION SOURCES
- ACS CHEMICAL SAFETY RESOURCES
- CHEMICAL SAFETY EDUCATION RESOURCES
- LABORATORY LESSONS LEARNED PAGES
- LAB SAFETY TEAM RESOURCES
- ASSESSING SAFETY OF CHEMICAL SPACE
- PERIODIC TABLE OF SAFETY RISKS
- CHAS LAB RISK ASSESSMENT VIDEO
- WORKING ALONE IN THE LAB VIDEO

CHAS WORKSHOPS 2021

- design: A review and how-to guide / October 2, 2021
- CHAS Workshops 2021 / September 1, 2021
- Fall 2021 National Meeting Technical Presentations
- CHAS August 2021 National Meeting Activities / August 10, 2021
- ACS Webinar: Working Together to Design Safer Laboratories / July 30, 2021



Workspace: labsafetyteams



Jessica

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ACS
Chemistry for Life®

Co-produced with:

ACS Technical Division
Chemical Health & Safety (CHAS)ACS Committee
Chemical Safety

Enhancing Research Productivity

Through Student-Led Laboratory Safety Teams


FREE Webinar | **TODAY** at 2pm ET

ACS Webinars
CLICK • WATCH • LEARN • DISCUSS

ASK YOUR QUESTIONS NOW IN THE QUESTIONS WINDOW...THE Q&A IS ABOUT TO BEGIN!

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Empowering Academic Researchers to Strengthen Safety Culture



Sunday, March 20, 2021 from 2PM – 6PM EDT.

The workshop is \$25 per participant.

Workshop goals are to:

- Educate participants about the value of risk assessment
- Guide participants towards gaining awareness of safety culture messages from the leadership at their institutions
- Empower participants to expand their safety networks and develop laboratory safety teams.



RACHEL WILEY
STEM Doctoral Fellow,
The University of Memphis



OMAR LEON RUIZ
Graduate Student,
Department of Chemistry &
Biochemistry, UCLA

This 4-hour workshop is primarily directed at frontline researchers in academic institutions: graduate students, postdoctoral scholars, and undergraduate students. Faculty and safety staff are also very much encouraged to participate.

<https://dchas.org>

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Date: Wednesday, November 10, 2021 @ 7:30am ET (6-7pm IT)
Speaker: Ashutosh Sharma, Indian Institute of Technology, Kanpur
Moderator: Deeksha Gupta, American Chemical Society

[Register for Free!](#)

What You Will Learn:

- What are the current career options and job opportunities for chemistry graduates in India
- How to choose a career based on personal strengths and values
- How to bridge gaps to increase your chance of employability

This special broadcast is targeted for an audience based in India and is co-produced with ACS International and ACS Publications.



Date: Wednesday, November 10, 2021 @ 2:30pm ET
Speaker: Lee Ellen Drechsler, Procter & Gamble
Moderator: Rebekah Paul, American Chemical Society

[Register for Free!](#)

What You Will Learn:

- Real life innovations where the chemical industry has incorporated sustainability into their operations
- Future sustainable innovations being developed in corporate R&D
- Professional opportunities for the next generation in the chemical industry

Co-produced with: ACS Communications and ACS Industry Member Programs



Date: Thursday, November 11, 2021 @ 2:30pm ET
Speakers: Katherine Aubrecht, Stony Brook University and John Randazzo, North Park University
Moderator: David Constable, American Chemical Society

[Register for Free!](#)

What You Will Learn:

- What it is to teach and learn chemistry with a system thinking approach
- Perspectives on implementing and assessing systems thinking in chemistry education
- How systems thinking can enrich student learning, and how it strengthens the ACS GCJ Green and Sustainable Chemistry Modules

Co-produced with: ACS Green Chemistry Institute

www.acs.org/acswebinars

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