Type them into questions box!

“Why am I muted?”
Don’t worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.
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Hundreds of presentations from the best and brightest minds that chemistry has to offer are available to you on-demand. The Library is divided into 6 different sections to help you more easily find what you are searching.

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Learn from the best and brightest minds in chemistry! Hundreds of webinars on diverse topics presented by experts in the chemical sciences and enterprise.

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Whether you are just starting your journey, transitioning jobs, or looking to brush up or learn new skills, the ACS Career Navigator has the resources to point you in the right direction.

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- ChemIDP
- College to Career
- ACS Webinars
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Join us in our efforts to increase the diversity of chemistry.

Valued donors like you have sustained ACS educational programs that are welcoming students from diverse backgrounds into our profession.

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A Career Planning Tool For Chemical Scientists

ChemIDP is an Individual Development Plan designed specifically for graduate students and postdoctoral scholars in the chemical sciences. Through immersive, self-paced activities, users explore potential careers, determine specific skills needed for success, and develop plans to achieve professional goals. ChemIDP tracks user progress and input, providing tips and strategies to complete goals and guide career exploration.

https://chemidp.acs.org

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Advancing ACS’s Core Value of Diversity, Inclusion & Respect

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Empowering Academic Researchers to Strengthen Safety Culture

Sunday, October 17, 2021 from 2PM – 6PM ET.
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.

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
Making the Most Out of Your Ph.D. Journey
Research, Skills, and The Great Beyond

Date: Wednesday, July 14, 2021 @ 8:30 am ET
Speaker: Sunita Banerjee, Texas A&M University and ACS Omega
Moderator: Debrah Gupta, American Chemical Society

What You Will Learn:
- How to identify and set specific career goals and research objectives
- How to use your graduate school experience to advance your career opportunities
- What resources are available to help you with your Ph.D. journey

Co-produced with: ACS International Careers for an audience based in India

Expanding Your Opportunity Abroad
The Fulbright U.S. Scholar Program

Date: Thursday, July 15, 2021 @ 2-3 pm ET
Speaker: Jocelyn Atkinson, Fulbright U.S. Scholar Program
Moderator: Lina Schlaeterer, American Chemical Society

What You Will Learn:
- Insight into the application and review process as well as tips for submitting successful applications for scholars
- Award details to various regions of particular interest to ACS members
- A glimpse into the Fulbright U.S. Scholar Program, including program goals and eligibility for grants available for U.S. citizens

Co-produced with: ACS Graduate & Postdoctoral Scholars Office

Starting a Company
 Sole Proprietorship to Incorporation
ACS President H.K. Chiu honors for entrepreneurship Series

Date: Wednesday, July 28, 2021 @ 2-3 pm ET
Speakers: Jim Webber and Dan Jones, Innova Capital Law / K.N. Cheng, 2021 ACS President and US Department of Agriculture
Moderator: Jim Brown, Perspectives Inc. and ACS CHBE

What You Will Learn:
- How founders agree to join
- How to start a business
- How to set up a business for success
- How to use tax laws to your advantage

Co-produced with: ACS Industry Programs, ACS President’s ACS Board Committee on Corporate Associates, ACS Committee on Technical Mentors, the ACS Division of Small Chemical Businesses, and the ACS Division of Business Development and Management

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Working Together to Design Safer Laboratories

FREE Webinar | TODAY at 2pm ET

THIS ACS WEBINAR WILL BEGIN SHORTLY...
Working Together to Design Safer Laboratories

Presentation slides are available now! The edited recording will be made available as soon as possible.

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This ACS Webinar is co-produced with ACS Division of Chemical Health and Safety and the ACS Committee on Chemical Safety.
WHY SHOULD YOU PARTICIPATE?

• First - Who is primarily researchers for our discussion, but also EHS professionals, Facilities, ...

• Good lab design is needed to safely perform research

• To work efficiently as well as effectively, spaces should reflect major needs

• Lab Design requires a balance between creating spaces that can be used by specific researchers and spaces that can be used for many years

• Sustainability of labs both in energy/resources use as well as utility of the space

• Financial – renovations and construction are large investments

• You will benefit from participation, and the Design Team will benefit from having you there
PARTICIPATION IN PROJECT IS CRITICAL

- To get the best spaces there needs to be a dialogue
- Never Assume the Project Team will know exactly what you need
- Participation is important from the development of the project scope to final project commissioning
- Frequency and time needed will change over the course of project
- Who – the PI or member(s) of lab group participating need to represent the whole group

DOORS AND OTHER FEATURES

- The lab door example in the editorial describes just one of many features, and aspects of design that require thought, code analysis, Facilities input, understanding of institutional culture and preferences
- Sometimes it’s not as much about correct answers as answers that are correct for your building or spaces
- The best outcome may require some patience and getting several people, areas/depts and opinions sorted
- A new lab is an opportunity to do things you should do or always wanted to do
- When moving into a new bldg. or space – get to know features and the intent of design that was done
GOOD LAB DESIGN CAN ENHANCE SAFETY CULTURE

Spaces and features in lab can help with safety performance

- Space to don and doff lab coats and other PPE/public spaces separated
- Appropriate sized and ventilated storage areas and cabinets for chemicals
- Waste collection areas and enhancements can help prevent waste management problems – hazardous waste, bio-waste, other waste
- The correct size, number and well appointed fume hoods with utilities (also energy efficient)
- Type, location and designation of emergency eyewashes, safety showers and other safety equipment
- Safe and convenient locations to eat
- Appropriate and specific signage

DOI: (10.1021/acs.chas.1c00034)
Lab Design - Virtual Special Issue (VSI)

- We want many voices representing many aspects of the lab design process
- Ideas, concepts and discussion of how we can all contribute to creating better, safer, more efficient spaces are requested
- Please share https://pubs.acs.org/doi/10.1021/acs.chas.1c00034

Audience Survey Question

What has been your experience in moving your science into a new laboratory?

- It went smoothly
- There were some hiccups that were addressed promptly
- We have ongoing issues which we have to work around
- Moving into our current lab is a never-ending challenge
- Other (Tell us more in the chat!)
Part 2: Laboratory Operations: Commissioning Ventilation Systems

Commissioning Ventilation Systems

Verifies that systems are operating as designed

- Air Exchange Rates (speed and volume of ventilation)
- Temperature and Relative Humidity
- Room Pressurizations (direction of air movement between spaces)
Notes: Carbon sinks or reductions include retired renewable energy certificates, offsets from composting food waste on campus, and emissions associated with exported electricity.

Retro-commissioning

Value added;

Opportunity to optimize safety and operating costs;

Continuously changing research operations requires ongoing oversight of ventilation systems.
Lab Design that Reduces Potential Exposure

Five foot VAV fume hood

Existing 8" round perforated supply
Air Quality Considerations

- Single-pass ventilation in labs
- What types of filtration is cost effective?
  - Pre-filters with MERV ratings 1-8
  - MERV 9-15

Communicating about Ventilation

Properly functioning mechanical systems support safe lab work.
How engaged are the PI’s or lab managers at your organization with lab design or facility operations?

- We routinely work with facilities staff to maintain good working conditions for our science and our scientists
- We work well with facilities staff when problems arise
- We have comfort problems that tend to persist over time but they do not interfere with our work
- We have ongoing problems that interfere with our scientific productivity
- Other (Tell us more in the chat!)

Importance of Understanding Ventilation Systems to Successfully Solve Problems

Melinda Box, Chem Dept Safety Officer, North Carolina State University

Bill Garfield, Technical Sales, BlueHat Mechanical
Case Study #1 – Fumes in the Hallway

- **VAV (Variable Air Volume) Hood Components**
  - Sash position sensor
  - hood damper
  - General exhaust damper
  - Supply air control

- **Air Changes per Hour (ACH)** - measure of the air volume added to or removed from a space in one hour, divided by the volume of the space

Case Study #1 – Fumes in the Hallway

- Exhaust vs. Return Air
- Supply Air vs. Makeup Air
- Air pressure balance
  - Positive vs negative

Case Study #2 – A Perfect Storm

- Humidity condensing on ceiling fixtures in multiple locations and dripping down in a lab space

- Extreme hot and extreme cold in adjacent locations

- All hoods alarming at once at irregular intervals in different locations on the same floor (locations not in synch)
  - High flow alarms
  - Raising sashes fixes this

Dehumidification and Duct Heating
Variable Air Volume (VAV) Hoods

Understanding how ventilation worked meant:

<table>
<thead>
<tr>
<th>RATHER THAN REPORTING ...</th>
<th>REPORT INSTEAD ...</th>
</tr>
</thead>
<tbody>
<tr>
<td>that fumes are detected in a hallway</td>
<td>That a specific room has a pressurization issue</td>
</tr>
<tr>
<td>that a room or lab has extreme temps or high humidity</td>
<td>If applicable, that an adjacent room is experiencing the other extreme</td>
</tr>
<tr>
<td>large scale issues now and then</td>
<td>As regularly as possible, because design issues are difficult to identify and potentially even more challenging to remedy</td>
</tr>
</tbody>
</table>
IMPORTANCE OF RESPONSIVENESS

PREVENT THE SAFETY ISSUE of LEARNED HELPLESSNESS

It takes a village ...
In your experience, what has been the GREATEST FACILITY INFRASTRUCTURE CHALLENGE you have faced in the laboratory you have worked in?

- Lab ventilation challenges
- Temperature and relative humidity control
- Inconsistent power supply or electrical services
- Uncomfortable office and classroom conditions
- Other (Tell us more in the chat!)

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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.

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Working Together to Design Safer Laboratories

FREE Webinar | TODAY at 2pm ET

ASK YOUR QUESTIONS AND MAKE YOUR COMMENTS IN THE QUESTIONS PANEL NOW!

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