PURDUE INDY SAFETY PROGRAM DEPLOYMENT

A guide for deploying the ME/Purdue Safety program to the Indy Campus

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School Facilities and Safety Group

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The Purdue Program

All individuals with space assigned to them are expected to implement the Purdue EHS/ME safety program within their space

The ME Safety Binder

The School uses a standard 'Binder' to house all of the required Safety information and documentation

- The School will provide this binder, in template form, to your lab. If you have multiple independent rooms, you need multiple binders
- Each PI in a lab space must have their own binder
- This binder must be accessible to all users of the facility at all times
- This binder will contain all of the required hazard information, SOPs, Chemical Inventory, SDS sheets, and emergency contacts
- This binder will contain the training records for your current lab users. Records for prior users may be kept in your office but should be retained for at least 30 years

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The PI's Obligation

As a Principal Investigator leading a research lab, you have several obligations

- The School will provide this binder, in template form, to your lab. If you have multiple independent rooms, you need multiple binders. You will need to fill all of the information in
- The PI will be asked to Name a student safety Representative for their lab(s). This is a second point of contact for lab safety issues
- PI's may be asked to serve on Facility Safety Committee
- The PI has a Legal and Ethical obligation to run a safe lab and provide a safe working environment

Process to migrate/deploy the ME safety Program

All labs must migrate to the ME/EHS safety Program

- Step 1: Attending this meeting. We will provide you with the template binders for your lab(s)
- Step 2: Each Principal Investigator will migrate or create information needed to go into the Safety Binder. They will also identify any training deficiencies at this step. It is highly recommended to meet with Pam Graf or Mike Logan during this process.
- Step 3: Each PI will ensure all deficiencies identified in Step 2 are corrected
- Step 4: Each PI will complete an EHS Self Audit for their lab. This form is a tool used to help ensure your lab is meeting all requirements. At this time, the PI will also designate a Student Safety Representative.
- Step 5: Purdue EHS will conduct a lab inspection as part of the certification process for the school.
- Step 6: PI's will correct any deficiencies from Step 5. Step 5 and 6 are repeated annually

Detailed Information

This is a detailed view for how you will directly implement the ME safety program in your lab

Hazard Communication or Chemical Hygiene Plan

Each Lab must identify if they are using the Hazard Communication Plan (HCP) or Chemical Hygiene Plan (CHP) in their area

Hazard Communication

- 2 Versions:
  - Awareness version: ONLY for office type spaces
  - Comprehensive: Everything else
- Spaces use chemicals per manufacturer directions
- Does not involve Chemical Manipulations

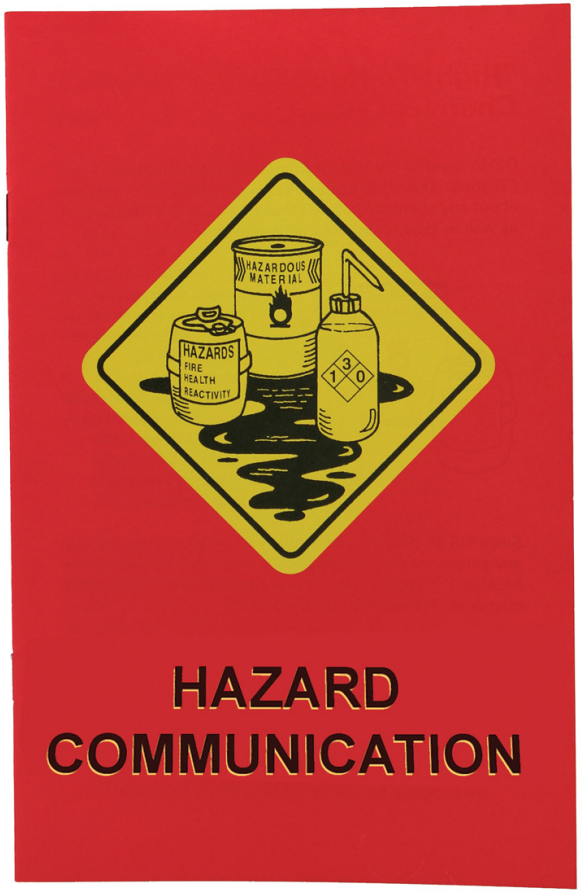
Chemical Hygiene

- Spaces do Chemical Manipulations
  - Combining chemicals in ways not explicitly directed by the manufacturer
- Typically, this is appropriate for 'Wet Lab' type research Spaces
- When in doubt, select this plan

Hazard Communication Implementation

Implementing the Hazard Communication Plan requires

- Program Notice Form
- Designated Trained Individuals
  - These are people who can provide initial Hazcom training and annual refresher training. Each lab must have a DTI designated
- Annual Training for Everyone (new/refresher)



Chemical Hygiene Plan Implementation

Implementing the Chemical Hygiene Plan requires

- Creating the lab specific CHP plan from template provided
- Annual initial and refresher training required
- Posting Chemical Keys in the lab
- Typically requires SOP's for most operations and equipment

Hazard Assessments

All labs must complete Hazard Assessments (Hazcom and CHP)

- By Task
  - This is the preferred method for most research labs. Each task completed in the lab will have a unique hazard assessment. New tasks get new form
- By Space
  - This is appropriate for dedicated function rooms where only one type of task is completed. All hazards must be identified on this single form and updated when new functions are added
- By Person/Role
  - This is appropriate for spaces with dedicated staff. All hazards must be identified for this form and it must be updated when new tasks are introduced to the role

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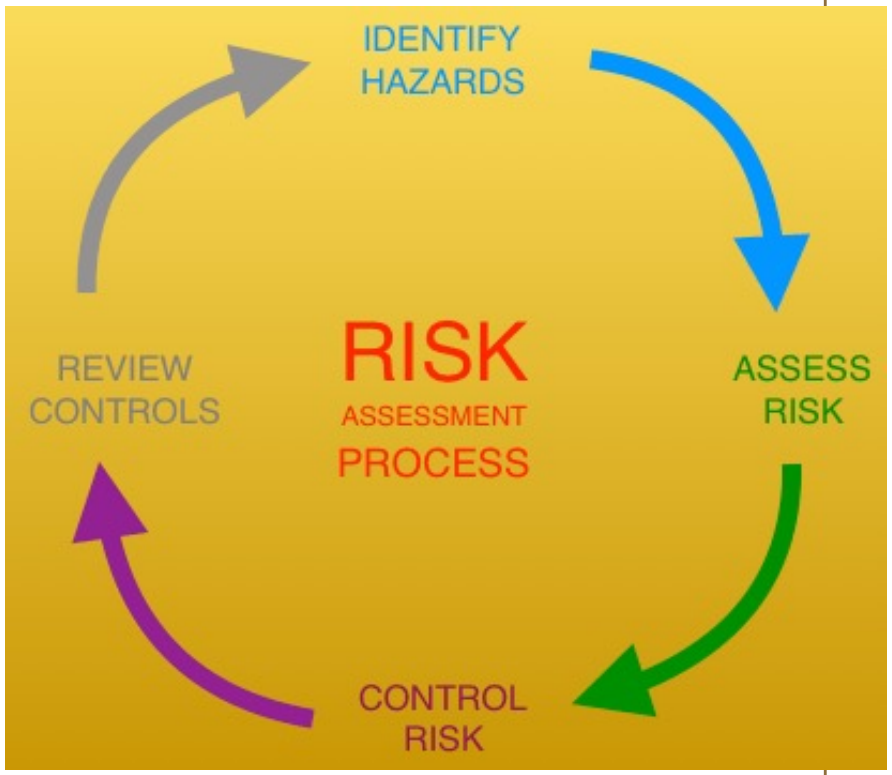
Hazard Assessments

These must be kept up to date and trained on

- All Assessments should be reviewed annually
- All impacted users must get first time and annual training on these hazard assessments
- Hazard Assessments will define required Personal Protective Equipment (PPE). Training for PPE is also required
- Hazard Assessments may indicate a need for a Standard Operating Procedure (SOP)



Standard Operating Procedures

These must be kept up to date and trained on

- All SOP's should be reviewed annually
- All impacted users must get first time and annual training on these SOP's
- If you have an SOP, there should be an associated Hazard Assessment
- If you introduce a new process, you may need a new SOP
- SOP's may dictate specific PPE which also requires training

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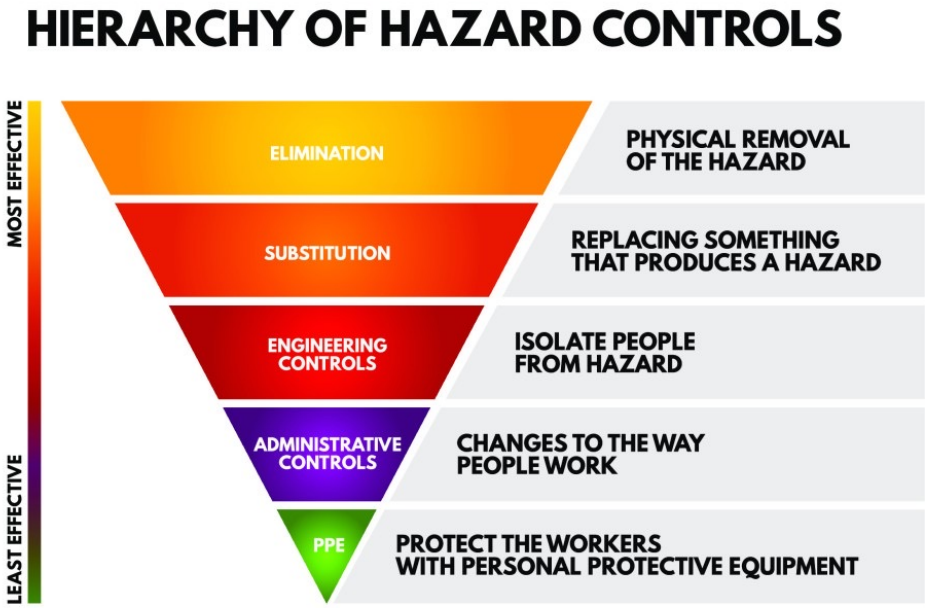
Personal Protective Equipment (PPE)

Personal Protective Equipment requires Training and Fitting for proper use

- PPE must be selected based on the specific hazards faced
- PPE is the last line of defense.
  - Elimination of the Hazard
  - Substitution of the Hazard
  - Engineering Controls
  - Administrative Controls
- Some PPE may require additional fitting to a specific user
- If you are using Respiratory Protection (N95, APR etc), you MUST be part of the Purdue Respiratory protection program



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Onboarding Checklists

Checklists are tools for labs to ensure students are fully trained and ready to work in your lab

- The School provides three templates
  - New User Checklist
    - This checklist contains everything a new lab researcher needs to do when starting to work in your lab
  - Annual User Refresher
    - This checklist contains everything a lab user needs to do each year
  - Annual Facility
    - This checklist details the tasks the PI needs to complete for the facility each year

Chemical Inventories

Every Lab is required to keep an inventory of ALL Chemicals in the lab

- If you add a chemical, it must be listed on the inventory
- Inventories should be reviewed annually.
  - Dispose of un-needed chemicals to reduce the lab hazards
  - Inventory forms should be retained for 30+ years
- EHS has a hazardous waste pickup process for waste and unneeded chemicals
  - https://www.purdue.edu/ehps/rem/about/hmm.html

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Safety Data Sheets

Every Chemical Must have a Safety Data Sheet

- These should be either in your Lab Binder or a separate SDS Binder
- These should be readily available to everyone in your lab as well as any first responders
- You must keep these at least 30 years after your last use
- SDS Sheets from chemicals no longer in your lab my be stored in your office

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Chemical Labels and Safety Data Sheets

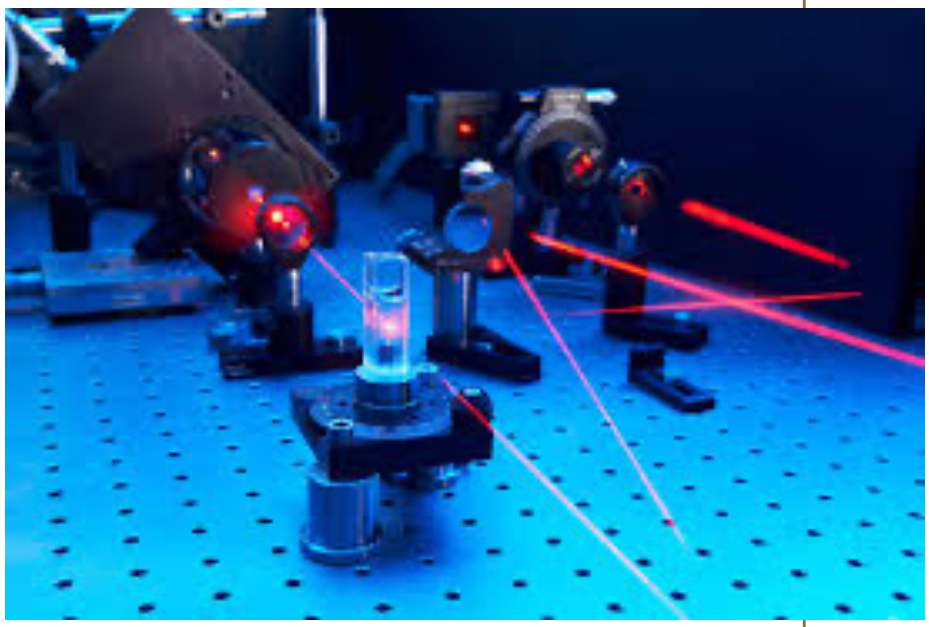
Any Chemical Used in a Room must have a Safety Data Sheet (SDS/MSDS) available and must be listed on the Chemical Inventory in the labs Safety Binder

- If you are using chemicals, you must:
  - Maintain a current inventory, updated as new chemical arrive
  - Maintain a binder of Safety Data Sheets for each Chemical
  - Ensure every container in room has legible labels for what the contents are. Labels should meet GHS standard.
- If you bring in a new chemical, you must add it to the Chemical Inventory for the room and add the Safety Data Sheet to the labs Safety Binder
- Chemicals include items such as Motor Oil, Cleaning Fluids, Paint, Adhesives, and Compressed Gases. This is not limited to traditional Chemical Reagents.
- Area's where Chemicals are used should NOT have Food or Drinks.
- If you add a new chemical, you should update SOP's and Hazard assessments as needed to reflect this new chemical

Laser Safety and Laser Use Plans

If you use a class 3b or class 4 LASER, you must register the laser in the Purdue Laser Safety Program

- Users of Class 3B or Class 4 Lasers must have an approved laser project from the Purdue Laser Safety Committee
- There must be an approved Laser Principal Investigator, an approved Laser SOP, and Laser facility
- These may require specific signage, interlocks, barriers, or isolation procedures
- If you use lasers, please talk with Mike Logan to help coordinate the migration



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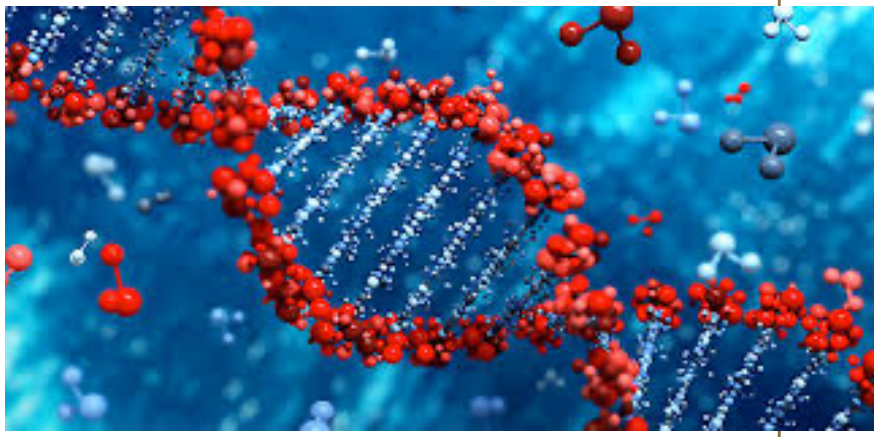
Biological Research Plans

If you are working with Biological items, you must be evaluated for participation in the Biological Exposure Occupational Health Program

- On the EHS website, you can request a Biological Safety Review
- Risk Group 2, BSL level 2, rDNA materials, Human fluids, Human Cells, or Human tissues need to coordinate with EHS on a Bio Safety Plan for their project. Plans are project specific



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Human Subjects Research

Any work with human subjects must be approved by the Purdue Institutional Review Board (IRB)

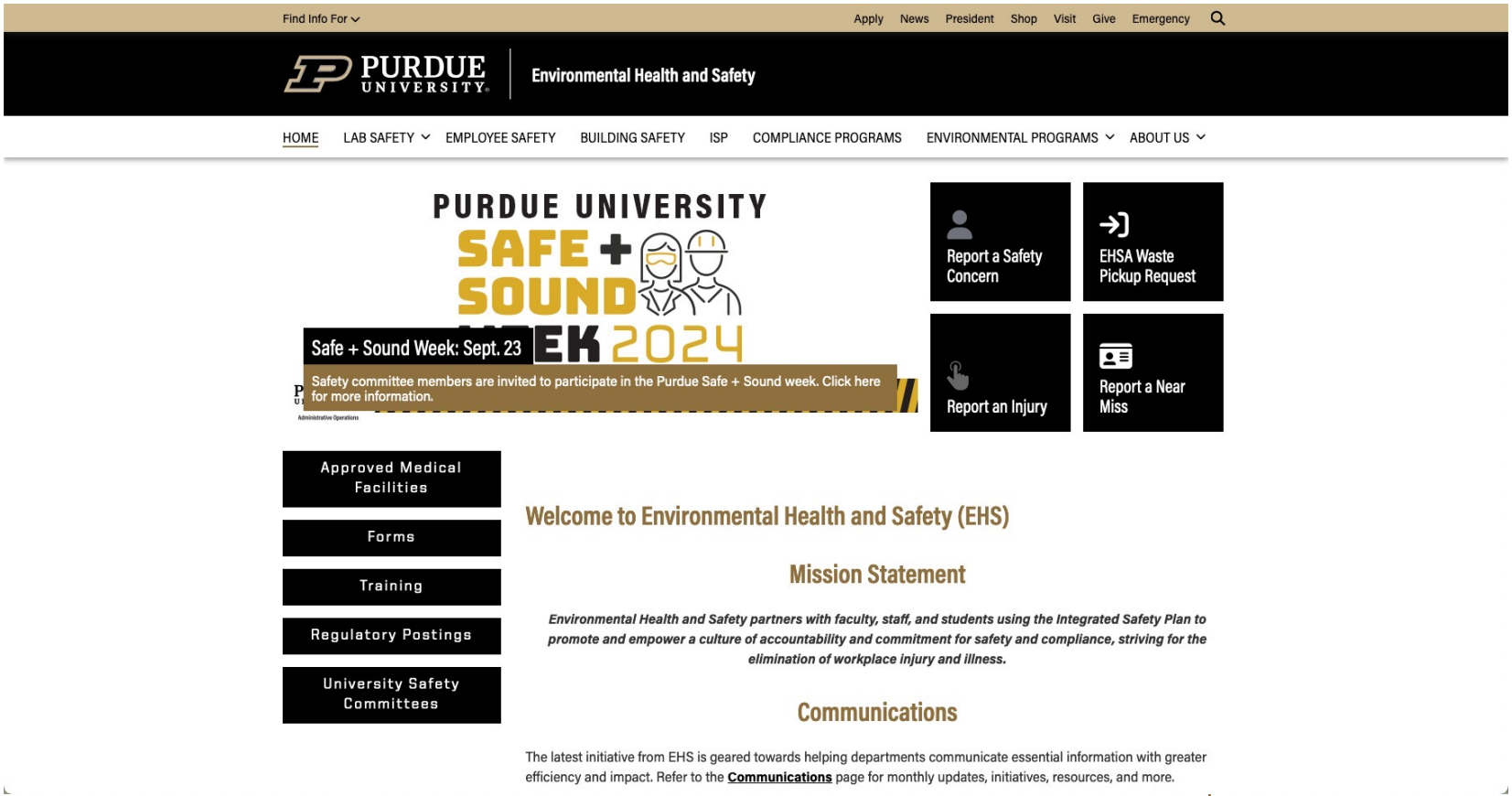
- If you are doing existing Human Subjects Research, you may need to work with Purdue's IRB to migrate your protocol
- New projects with Human Subjects require approved Protocols with the IRB
  - https://www.irb.purdue.edu/

Training Resources

The Purdue EHS Website

Purdue EHS offers a LOT of training

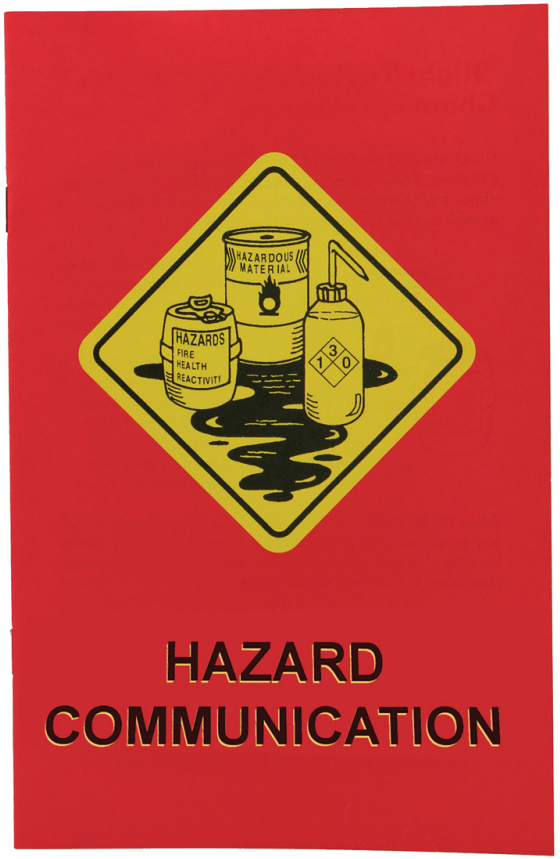
https://www.purdue.edu/ehps/rem/index.html



Hazard Communication

Labs using Hazard Communication must do Specific Training

- Each lab requires a 'Designated Trained Individual' or DTI. DTI's can provide in person training for the lab
  - EHS provides specific DTI training online each month
- EHS provides online Awareness and Comprehensive training. This is an annual requirement
- DTI's must still provide lab specific training for the specific spaces
  - Hazard Assessments
  - SOPs



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Chemical Hygiene Plan

Labs using the Chemical Hygiene Plan must do training

- EHS provides online Initial and Refresher training. This is an annual requirement
  - Laboratory Safety Fundamentals training is a requirement
- PI's must still provide lab specific training for the specific spaces
  - Hazard Assessments
  - SOP's

Laboratory Safety Fundamentals

This is basic training for individuals working in research labs

- This is required for labs under the CHP and recommended for labs under the Hazcom standard
- This is 100% online self-paced training
- Renewed annually

PPE Training

Training for PPE can be extremely varied

- EHS provides some training online
- PI's/DTI's may provide some training locally
- Some PPE may require fitting to the end user
- If you are using Respiratory Protection (N95, APR etc), you MUST be part of the Purdue Respiratory protection program

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Compressed Gas Training

Use of Compressed gas cylinders requires specific Training

- EHS has a training program
- You may need additional training for hazardous gases in addition to the cylinder training
- Training is available here: https://www.purdue.edu/ehps/rem/training/index.html#C

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Laser Safety Training

Labs with Lasers require all users to have some level of laser training. Even those not using lasers

- Users of Class 3B or Class 4 Lasers must have an approved laser project from the Purdue Laser Safety Committee
- There must be an approved Laser Principal Investigator, an approved Laser SOP, and Laser facility
- EHS provides Training for all users from affected individual to unrestricted users
- If you use lasers, please talk with Mike Logan to help coordinate the migration

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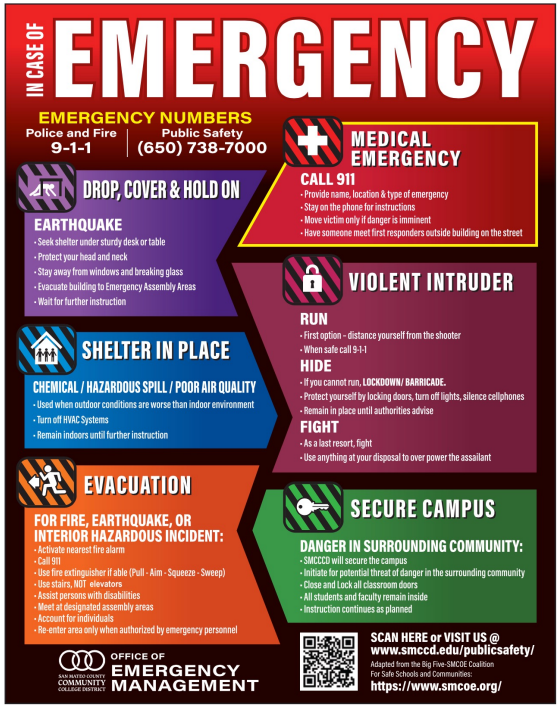
Building Emergency Plans

There are Emergency Plans for all Purdue Buildings. These are part of the ME Safety Program

- As the PI, you are responsible for ensuring your users are familiar with the emergency plan for the building your lab is located in
- Building emergency plans are online and maintained by individuals overseeing the entire building operations
- https://www.purdue.edu/ehps/emergency-preparedness/emergency-plans/bep/



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Additional Training

EHS is only one source for potential required trainings

- EHS offers a comprehensive list of training they provide
- You, as the PI, have an obligation to provide training on SOP's and equipment for your lab
- Some equipment manufacturers provide safety and user training

The ISP Self Audit

Purdue EHS provides an Audit form to help the PI ensure they are meeting all safety expectations

Self Audit Information

This is a tool used to help the Lab meet safety Requirements

- Completed at least once a year
- Self Audit must be signed by the PI for the space
- Research labs are NOT Office/Administrative space. You have to complete the full form
- Some sections will not apply. That is OK. Simply answer and follow the form directions

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Facility Responsibilities

The School will provide basic research facilities. PI's are responsible for research specific requirements

Typical School Provided Resources

The School will try to match PI to spaces based on needs

- 120V Power
- Most – 208/220/240V power, single or three phase
- Most - Sink w/ tap water
- Most - Compressed Air
- Some – Fume Hood
- HVAC
  - Recirculated (office)
  - 3 ACH (Shops)
  - 6 ACH (Wet Lab)

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Examples of items PI's are responsible for

This is a non-exhaustive list of items PI's are required to fund the install and maintenance

- Lasers
  - Safety Barriers
  - Laser signs/Laser indicators
- Hoods/Ventilation
  - Glove Boxes
  - BioSafety Cabinets
  - Exhaust Connections
  - Gas Sensors
- Power
  - Specialized power above and beyond typical
  - Hard connection to specific research apparatus
- Furniture
  - Lab Benches
  - Tables/chairs
- Filtered Air/Gases
  - Filtered Air
  - Gas Cabinets
  - Pre-plumbed Gas
  - Vacuum
- Water
  - DI/RO Water
  - Distilled Water

THANK YOU

If you have questions, please contact Jun Chen, Mike Logan or Pam Graf. Contact details located at the beginning of this presentation.

Questions?

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