

Introduction to EH&S for New MSD Staff & Students

MSD0010

Safety Is a Top Priority

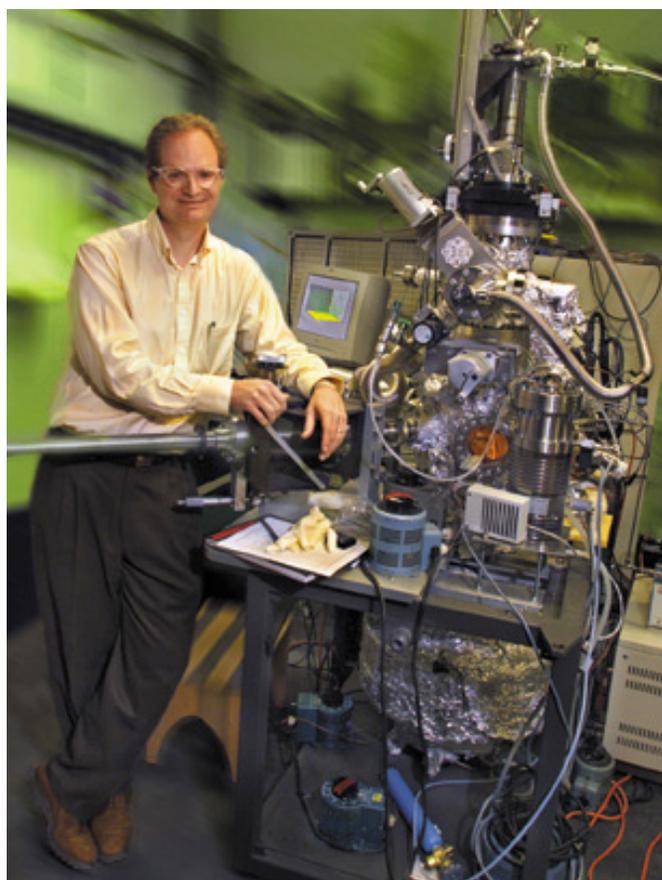


We have a collective responsibility to work safely. If we work together and help each other we can...continue on our path of great science performed safely every day.

--Steven Chu

Materials Sciences is Committed to a Safe Research Environment

Paul Alivisatos, Division Director



Safety is a key priority of the Materials Sciences Division.



Mark Alper, Deputy Director

MSD Safety Resources

Rick



John

Division EH&S Resources

Rick Kelly, EH&S Manager

John Seabury, EH&S Liaison

Paul Johnson, EH&S Technician

Bob Schoenlein, Chair, Laser Safety Committee

Jim Severns, Electrical Safety and Repair

Jeff Kortright, Radiation Safety Committee

Building Managers

Carmen Bates Ross, EH&S Admin

Paul



Scientific Research at LBNL May Involve Many Exotic Hazards

- Toxic, flammable or reactive chemicals
- Powerful lasers
- X-rays
- High voltage electricity
- Infectious organisms
- High pressure gases and cryogenic liquids
- Superconducting magnets
- Radiofrequency or microwave sources

But Most Injuries Are Not Exotic

- Ergonomic injuries from improper computer use
- Slips, trips and falls
- Overexertion injuries
- Chemical spills or splashes

You must attend to EH&S precautions at all times!

Everyone is Responsible for Safety at LBNL

- **YOU** are responsible for conducting your work safely and in accordance with LBNL EH&S requirements!
- **YOUR SUPERVISOR/ADVISOR** is responsible for your safety performance!
- You are **REQUIRED** to **STOP WORK** if you are not sure it is safe!

The “Integrated Safety Management” Process

▪ Safety in MSD is managed in accordance with the LBNL Integrated Safety Management Plan which is described at:

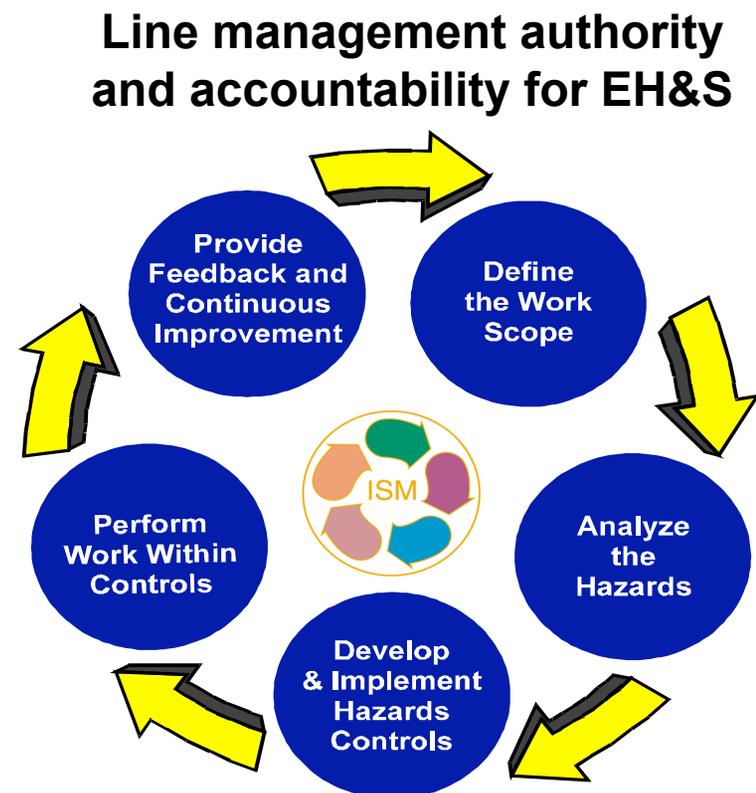
<http://www.lbl.gov/ehs/pub811/>

▪ Most LBNL EH&S requirements are detailed in the EH&S Manual, available at:

<http://www.lbl.gov/ehs/pub3000/>

▪ Additional materials specific to MSD are available at:

http://www.lbl.gov/msd/Internal/MSD_Internal.html



Take a few moments to look through these documents!

Nuts and Bolts of EH&S

1. Ask your supervisor to explain safety practices in his/her lab
2. Determine if you will work under a “Formal Authorization”
3. Fill out your Job Hazards Questionnaire (JHQ)
4. Complete all required training/retraining
5. Manage chemicals properly
6. Manage hazardous waste properly
7. Attend to housekeeping
8. Use personal protective equipment
9. Know your limitations
10. Report injuries
11. Be prepared to respond in an emergency
12. Report safety issues

Each topic is covered in detail in subsequent slides!

1) Safety Practices In Your Lab

- You should expect your supervisor to:
 - ◆ Describe his/her safety expectations and safety procedures for the lab
 - ◆ Discuss safety issues regularly at group meetings
 - ◆ Introduce you to staff or students assigned as EH&S Coordinators or representatives to the Division Safety Committee
 - ◆ Inspect the lab and review your work to verify that it is being performed safely
 - ◆ Answer safety questions you may have

If these things do not happen, there may be a problem!

2) Formal Work Authorization

- **Some work requires formal review and authorization which must be approved by the Division Director or EH&S. Examples of such documents are:**
 - ◆ Activity Hazard Document (AHDs)
 - Biological Use Authorization (BUA)
 - Vertebrate animal research approval
 - Human Subjects Committee approval
 - Radiological Work Authorization (RWA)
 - Radiological Work Permit (RWP)
 - Sealed Source Authorization (SSA)
 - X-ray Authorization (XA)

Work can only proceed when the formal authorization document is approved!

2a) Formal Work Authorization

- **Triggers for Formal Authorization Documents:**
 - ◆ Activity Hazard Document: Work with new toxic gases, class 3b or 4 lasers, very toxic or reactive chemicals, large quantities of stored energy
 - ◆ Biological Use Authorization:
 - Risk group 2 or higher pathogens; human tissue or cell lines; recombinant DNA work
 - ◆ Human/Animal Regulatory Committee: Human or vertebrate materials or samples
 - ◆ X-ray authorization: Some X-ray generating equipment

This list of triggers and document types is not comprehensive!

2b) Formal Work Authorization

- You must read and follow the instructions in all applicable authorization documents:
 - ◆ Many AHDs are available for review on-line at: <https://ehswprod.lbl.gov/AHD/login.aspx>
 - Your name should be added to the AHD prior to starting work under the AHD
 - ◆ Your supervisor must provide you with copies of other formal authorization documents for your work.
 - ◆ If you may need to to prepare a new formal authorization document, contact Rick Kelly (x4088) for guidance.

3) Job Hazard Questionnaire

- The Job Hazard Questionnaire (JHQ) system facilitates the identification of necessary EH&S training.
 - ◆ Complete your JHQ within 30 days of starting work in MSD.
 - ◆ Review the JHQ with your supervisor.
 - ◆ Update your JHQ whenever the types of hazards to which you are exposed change, at a minimum annually.
 - ◆ JHQ is available at:
<https://ehswprod.lbl.gov/EHSTraining/Jhq/EHSLogin.asp>

4) Complete Required Training

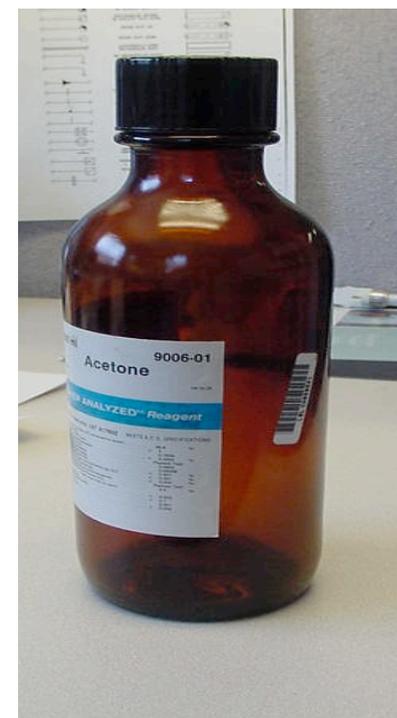
- You must complete all of the “required” training classes identified by the JHQ system.
 - ◆ You may perform work that requires training for up to 7 days under the direct supervision of a trained individual with your supervisors approval.
 - ◆ Many classes are available on-line at http://www.lbl.gov/ehs/training/web_courses.shtml

4a) Complete Required Training

- Commonly required training in MSD:
 - ◆ EHS0348: Chemical Hygiene Safety
 - ◆ EHS0231: Pressure and Cryogen Safety
 - ◆ MSD0010: Integrating Safety Into Science in the Molecular Foundry
 - ◆ EHS0604: Hazardous Waste Generation
 - ◆ EHS0405: General Employee Radiation Training (all people working at LBNL)
 - ◆ EHS0280: Laser Safety

5) Manage Chemicals Properly

- All chemicals must be tracked in the “Chemical Management system” database:
 - ◆ New containers must be labeled and entered into the database
 - ◆ Empty containers must be removed from the database
 - ◆ Training: EHS0346 (or contact Paul Johnson at x5810)



6) Manage Hazardous Waste Properly

- If you generate hazardous waste, you must follow very specific procedures.
- Training: EHS0604 or EHS0623 (for visitors)



Chemical waste handling rules at LBNL are different from those on the UCB campus and many other locations!

7) Attend to Housekeeping

- All labs should be maintained in good order with good housekeeping:
 - ◆ Chemicals should be properly sealed and stored
 - ◆ Waste should be identified and placed in the satellite waste accumulation area promptly
 - ◆ Walkways should be kept free of clutter or gas/electrical lines
 - ◆ Safety equipment must be available and functional

Poor housekeeping increases the risk of accidents and is a visible indicator of poor safety practices!

8) Use Personal Protective Equipment

- Choose equipment with care (gloves, respirators, safety glasses, face shields, lab coats, etc.)
- Ensure you know how to use equipment properly
- Inspect and replace worn or damaged equipment
- Properly store equipment when not in use.



Available Training:
EHS 0348 Chemical Hygiene
Safety
EHS 0310 Respirator Training

Selection of some types of personal protective equipment is quite complex—ask for help if you are unsure!

9) Know Your Limitations

- Ask for help when:
 - ◆ You need to lift a heavy item
 - ◆ You are working with equipment or chemicals with which you are unfamiliar
 - ◆ When you are unsure what type of safety equipment is most appropriate
 - ◆ You have any safety questions

10) Report Injuries

- All injuries must be reported to your supervisor immediately.
- Incidents that do not result in injuries should be also be reported to your supervisor.

11) Be prepared to Respond in an Emergency

- Know the location of emergency equipment
 - ◆ Emergency eyewashes, emergency showers, fire extinguishers, chemical spill clean up supplies)
- Dial 7911 from lab phones for emergency support
- Know the emergency exit routes and assembly points for the building in which you work

Be prepared, physically and psychologically, to use the emergency response resources!

12) Report Safety Issues

- Report safety issues to your supervisor
- Resolve safety issues immediately when possible
- For problems which can not be immediately corrected, report the issue to Rick Kelly at x4088, who will enter it into the Corrective Action Tracking System (CATS)

Closing Remarks

- LBNL and the Materials Sciences Division are committed to providing a safe workplace and preventing injuries.
- You are a key part of the safety program!
- You have many available EH&S resources—use them!

Thank you for your support of the MSD EH&S program!