

Undergraduate Students Working in Hazardous Materials Laboratories

Carnegie Mellon University

Laboratory Safety Committee and Environmental Health and Safety

Introduction and Purpose

In the Carnegie Mellon University Chemical Hygiene Plan (CHP), Principal Investigators (PIs) and Laboratory Instructors are responsible for the safety of the personnel in their laboratories, as well as for compliance with the CHP. The Carnegie Mellon Laboratory Safety Committee prepares and amends the CHP and also supports the PIs and Lab Instructors in their safety responsibilities.

Undergraduate students often work under different circumstances than other laboratory personnel, in that they are often more heavily supervised or may only be permitted to work with limited-amount or low-hazard materials, but are also often less thoroughly trained. As a result, this document has been prepared to help guide PIs in the assurance of safety of undergraduate students in their hazardous materials areas.

Undergraduate Students *Employees*

All laboratory personnel who receive compensation from the University for laboratory work are covered by the requirements of the OSHA Laboratory Standard, for which our CHP has been prepared, including students *at any level*. Such personnel are required to successfully attend the full EH&S Lab Safety and Hazardous Waste training classes. The PIs are free to consider other restrictions as described in this document for such personnel.

Undergraduate Students *Non-employees*

PIs or laboratory Instructors responsible for *non-employee* undergraduate personnel working in their labs, should consider certain restrictions based on the student and the work to be performed.

Training

The PI or Lab Instructor should strongly consider the level of safety training necessary for undergraduate students. The LSC recommends students attend the full **EH&S Lab Safety and Hazardous Waste Training**, along with receiving lab specific safety training provided by the PI or his or her staff for the any one or more of the following circumstances:

- The student has intermittent or minimal direct supervision by a safety-trained staff member
- The student will be working with or near Particularly Hazardous Substances (PHS) or other higher hazard materials

EH&S and some Lab Instructors often provide a less rigorous overview of the University's safety procedures and practices as training for these circumstances:

- The student will have direct, constant supervision by a safety-trained staff member
- The student will be working with low hazard materials

Supervision

The PI or Lab Instructor should strongly consider the level of supervision (by experienced, safety-trained staff) appropriate for undergraduate students. Direct, continual supervision is strongly recommended when one or more of the following are present:

- The activity has been shown to have produced safety issues, questions or incidents
- The student has demonstrated poor safety practices in the past
- The student will be working with PHS materials or other high hazard items
- The student will be working with or near expensive or unique equipment or research, or other areas where adverse safety incidents may have a significant impact on the lab or the University

A lower level of supervision may be appropriate when any of the following occur:

- The activity is of low-level hazard or risk
- Safety-trained personnel are within easy and speedy access should a problem occur
- The student has demonstrated excellent safety attitudes and practices

Other Administrative Actions

The PI or Lab Instructor should consider whether any other administrative controls may be warranted, such as the following:

- Limiting laboratory access to certain hours of the day
- Ensuring that written SOPs are prepared and followed for particular activities (especially PHS work)
- Demonstrating proper laboratory technique prior to approving an activity
- Requiring written approval for certain activities, including specific work and/or scheduling of work
- General prohibition of specific tasks and activities

Conclusions

PIs and Lab Instructors must accept responsibility for the safety of all personnel in their laboratories. Assistance in achieving this may be obtained from any staff member of the Environmental Health and Safety Department, or from one's department representative on the University Laboratory Safety Committee.

EH&S may be reached at 8-8182 or www.cmu.edu/ehs

One's departmental representative on the LSC may be found at <http://www.cmu.edu/ehs/chemical/program-management/lsc.html>