



# Research and Radiation Safety Newsletter

Cornell University Environmental Health & Safety

395 Pine Tree Rd, Suite 210. Ithaca, NY 14853 Phone: 255-8200

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## Engineering Control: The Glove Box

Submitted by: Joanna Lynch (JL72)



Photo by Joanna Lynch

### Special points of interest:



• Glove boxes are engineering controls to protect lab workers.

- Glove boxes can also be experimental controls to protect the research.
- Glove boxes should be tested to ensure they are working properly.
- For more information visit: <http://www.gloveboxsociety.org/>

*Glove boxes are sealed enclosures designed to protect the user, the process or both.* They are usually equipped with at least one pair of gloves attached to the enclosure. The user manipulates the materials inside using the gloves. Typically, a glove box has an antechamber that is used to take materials in and out of the box.

The topic of glove boxes can be confusing because their configuration depends on the application. Glove boxes can be under negative or positive pressure. Glove boxes under negative pressure are designed to protect the operator and ambient environment from the materials or processes (i.e. prevent hazardous materials from getting out of the glove box); glove boxes under positive pressure are intended to protect the materials or processes from the operator and/or the ambient environment (i.e. prevent room contaminants from entering the glove

box). The atmosphere in the glove box may be inert (e.g. nitrogen, argon, helium), sterile, dry, or otherwise controlled. Some glove boxes are equipped with filters (e.g. HEPA) while others vent to a fume hood or a dedicated duct. Glove boxes can have various controls, sensors and equipment such as pressure gauges, oxygen sensors, temperature controllers and purifiers.

The term "glove box" is most often applied to enclosures used in research laboratories and the defense industry. Similar apparatus' exist in pharmaceutical and

biological applications. Regular maintenance and inspection is essential to ensure that a glove box is adequately protecting the user, the environment and/or the product or process. Routine maintenance procedures

and the frequency of inspection (or certification) should follow the manufacturers and regulatory recommendations.

Glove boxes used for work with hazardous chemicals or processes currently do not have a required frequency of inspection but annual certification by the manufacturer or an industrial hygienist is strongly encouraged. This is especially important if the consequences of a glove box failure represent a significant hazard. If the manufacturer does not offer an inspection program, contact EH&S for information on qualified industrial hygienists in the area.

The integrity of the glove box is key to successful containment. The gloves of a glove box are particularly vulnerable. Gloves should be regularly inspected for cuts, tears, cracking and pin hole leaks. If defects are found, the gloves should be replaced. Choose the correct glove for the glove box and application.

*For an in-depth discussion of glove boxes and testing, see: AGS (American Glove Box Society). 2007. Guide for Gloveboxes - Third Edition. AGS-G001-2007. <http://www.gloveboxsociety.org/>. This guide is offered for sale or you can borrow a copy from EH&S.*

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**THANK YOU**

*Environmental Health and Safety* would like to say thank you to the following EH&S employees as recognition for years of dedicated service to the Cornell community:

**Charles Guyett** — Retired after 50 years  
**Al Snyder** — Retired after 40 years  
**Jon Smith** — Retired after 25 years

along with **Tom McGiff** who after 20 years is pursuing new career opportunities and **Tom Shelly** who most recently was a consultant with the Energy Conservation Program.

**It has been our great pleasure working with you and we wish you the best for your future!!**



**CHECK ALL THAT APPLY**

- I cannot use a commercially available product to kill weeds at work
- I cannot use chemicals to kill bugs at work
- I can contact CALS Occupational and Environmental Health at 255-0485 if I have any questions about pesticide use at Cornell
- If I search <http://oeh.cals.cornell.edu/pestmain.html> I can find out information on the Pesticide Program at Cornell

**Did you check ALL the above?**

*They are all true!*



**Pesticide Use at Cornell Did You Know...**

Submitted by Eric Harrington (eh22)

*Did you know* that it is illegal to use an over-the-counter general use pesticide at Cornell University without being a commercially certified pesticide applicator? It's true. The New York State Department of Environmental Conservation (NYS DEC) requires anyone using pesticides in the work place or as part of their job responsibilities be a certified pesticide applicator. Some people think that since they can go to a home garden center (such as Lowe's, Home Depot or Agway) and purchase it without a license for home

use, it is okay to do the same thing for their place of employment. *It is not!* The regulations for homeowner use of pesticides are much different than those for individuals in the work place. Homeowners can purchase and use general use pesticides without a license at home on property they own or lease.

chase and use general use pesticides without a license at home on property they own or lease.

**Cornell requires that all individuals handling pesticides as a part of university programs must be certified pesticide applicators.** See policy at [http://www.policy.cornell.edu/vol2\\_4.cfm](http://www.policy.cornell.edu/vol2_4.cfm)

For additional information on pesticides and pesticide use requirements, please contact the CALS Occupational and Environmental Health Program at 255-0485, [pesticides@cornell.edu](mailto:pesticides@cornell.edu) or <http://oeh.cals.cornell.edu/pestmain.html>



**Radiation Safety Eagle Awards**



Submitted by Kevin Fitch (kif4)

**EH&S is pleased to recognize the following laboratories for receiving radiation safety awards:**

**February '08**

- P. Stover—Nutritional Science
- M. Stipanuk—Nutritional Science
- P. Soloway—Nutritional Science
- A. Bensadoun—Nutritional Science
- R. Cerione—Vet Molecular Medicine
- \*M. Jahn—Plant Breeding
- W. DeJong—Plant Breeding
- J. Peters—Microbiology
- A. Hay—Microbiology
- T. Setter—Microbiology
- T. Begley—Chemistry
- R. Spanswick—Biology & Environmental Engin.

**March '08**

- D. Bauman—Animal Science
- Y. Boisclair—Animal Science
- R. Butler—Animal Science

- P. Johnson—Animal Science
- T. Overton—Animal Science
- S. Gan—Horticulture
- \*S. Tanksley—Plant Breeding
- J. Rose—Plant Biology
- M. Scanlon—Plant Biology
- J. Nasrallah—Plant Biology
- A. Lal—Electrical & Computer Engineering

**April '08**

- T. Fox—Molecular Biology & Genetics
- \*W. Brown—Molecular Biology & Genetics
- M. Hanson—Molecular Biology & Genetics
- A. Bass—Neurobiology & Behavior
- R. Harrison—Ecology & Evolutionary Biology
- R. Turgeon—Plant Biology
- N. Place—Diagnostic Lab
- R. Kay—Earth & Atmospheric Sciences

\* Winner of Meal Deal from Pizza Hut

**EH&S Training Programs** East Hill Shuttle Information: <http://www.parking.cornell.edu/pdf/>


Pre-Register for Trainings through Safety Base: <http://dataworks.fcs.cornell.edu/sb/>

Take online on Blackboard: <http://blackboard.cornell.edu>



**\*LABORATORY SAFETY**  
 REQUIRED FOR ALL LABORATORY PERSONNEL

Friday, July 11 - 9:00 am **140 East Hill Office Build.**  
 Wednesday, August 6 - 9:00 am **140 East Hill Office Build.**



**\*Chemical Waste Disposal**  
 REQUIRED FOR ALL LABORATORY PERSONNEL

Fri, July 11 - 11:15 am **140 East Hill Office Build.**  
 Wed, August 6 - 11:15 am **140 East Hill Office Build.**

*\* These classes are scheduled consecutively, so why not take them both together and satisfy 2 requirements!!*



**LASER SAFETY:** Pre-registration is required

*The purpose of this training is to help protect students and employees from the potential hazards associated with laser devices and systems used to conduct laboratory educational or research activities.*

- Tuesday, June 10 - 9:00 am-10:30 am, **140 East Hill Office Bldg.**
- Tuesday, June 17 - 9:00 am - 10:30 am, **G01 Biotechnology Bldg.**
- Monday, June 23 - 9:00 am - 10:30 am, **G01 Biotechnology Bldg.**
- Wednesday, July 23 - 9:00 am -10:30 am, **140 East Hill Office Bldg.**
- Tuesday, August 27 - 9:00 am -10:30 am, **140 East Hill Office Bldg.**



**RADIATION SAFETY TRAINING**

REQUIRED: Class 1 AND Class 2

Monday, June 16 - 1:00 pm  
 Tuesday, July 8 - 9:00 am  
 Monday, August 11 - 1:00 pm  
 Tuesday, August 19 - 9:00 am

*CLASS 1*

• Wednesday, June 18 - 1:00 pm  
 • Thursday, July 10 - 9:00 am  
 • Wednesday, August 13 - 1:00 pm  
 • Thursday, August 21 - 9:00 am



*CLASS 2*

**All classes at 140 East Hill Office Building**

**Respiratory Protection**

Tues , June 3 - 3:00 pm - **140 East Hill Office Bldg.**  
 Fri, August 5 - 3:00 pm - **140 East Hill Office Bldg.**



**HAZARD COMMUNICATION STANDARD**

Thursday, June 5 - 9:30 am  
 Thursday, August 7 - 9:30 am  
**140 East Hill Office Building**



TO ENCOURAGE AND PROMOTE OUR VALUE OF SUSTAINABILITY PLEASE SHARE THIS NEWSLETTER ELECTRONICALLY.



## CHANGES IN THE EH&S BIOSAFETY SECTION

EH&S is pleased to announce that **Ms. Keane Leitch** is now working with Frank Cantone in the Biosafety program.

Keane holds a B.S. in Biochemistry and has worked in the pharmaceutical and environmental sectors. In her prior role at EH&S, Keane served as a Safety and Health Consultant for the Laboratory Consultation Program.

In her new role, Keane will be assisting Frank with *development of program requirements, risk assessments, workplace injury follow-ups, site visits, emergency response, and managing the biosafety web page.*



Photo by Brenda Coolbaugh

**Keane Leitch**  
254-2225  
kjl44@cornell.edu

Submitted by Frank Cantone (fac2)

## Ask Dr. Frank



Photo by Brenda Coolbaugh

Dr. Frank Cantone (fac2) is a member of the Department of Environmental Health & Safety and serves as the University's Biological Safety Officer (BSO). He is a standing member of the IBC, IACUC and IRB at Cornell University.

Submitted by Keane Leitch (kjl44)

**Dear Dr. Frank:** I use hypodermic needles for routine procedures in my laboratory and I am always concerned about needle stick injuries. What should one do in the event of a needle stick? Are there needles and sharps available with built-in injury prevention systems?

*E. Coli, Cornell U*

Dear E.,

I strongly recommend that users avoid using hypodermic needles for procedures where they are not absolutely necessary. Blunt tip needles are a nice alternative. Additionally, it is best to avoid risky activities such as recapping the needle. Use needles with injury prevention features. The latest edition of the [Biological Safety Information Bulletin](#) provides some examples.

### **SHOULD YOU EXPERIENCE A NEEDLE STICK OR OTHER INJURY INVOLVING SHARPS**

- 1) **IMMEDIATELY** wash skin injuries thoroughly with soap and water. Under running water, apply pressure to the wound to encourage bleeding.
- 2) Flush mucous membranes (such as eyes or mouth) with running water.
- 3) Use alcohol-based sanitizing agents on skin if water is not available. Follow-up with soap and water as soon as possible.
- 4) Notify your supervisor or person in charge.
- 5) Obtain medical evaluation, counseling, and preventive treatment, especially if the incident involved a hazardous substance or if you are immunocompromised.
- 6) Complete CU injury and illness report <http://cfp-isca.cit.cornell.edu/accinj/> which will ensure proper incident follow up with the Biosafety Officer, Dr. Frank.

Have you had your annual lab biosafety check-up?  
Why not schedule a visit with [Dr. Frank](#) today?



Any ideas for future newsletter topics or to subscribe to the newsletter mailing list please email [blc32@cornell.edu](mailto:blc32@cornell.edu)

THANKS!