# Olin Hall 2017 Laboratory Safety Guide

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113 Ho Plaza  
Cornell University, Ithaca NY

## Emergency Phone Numbers for Laboratory Accidents or Personal Threats

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Updated December 1, 2016 and available at [http://www.cheme.cornell.edu/about/facilities/lab_safety.cfm](http://www.cheme.cornell.edu/about/facilities/lab_safety.cfm).
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1. Scope of the Olin Hall Safety Guide

This Safety Guide provides basic laboratory and personal safety information for users of research laboratories in Olin Hall. All faculty, permanent research staff, postdoctoral associates, visiting scientists, graduate students (including M.Eng.), and undergraduate students who work in Olin Hall labs should be familiar with its contents.

It lists:
- Basic regulations that apply to all labs, concerning, for example, dress code and protective clothing, housekeeping, and storage of chemicals.
- Procedures for reporting accidents, emergencies, and spills, and for requesting service to building and safety infrastructure.
- Required, discipline-specific safety-training courses provided by Cornell Environmental Health and Safety (EH&S/EHS).
- References to other resources at Cornell and elsewhere where one can find more detailed safety information about chemicals, biologics, waste-handling, and experimental methods.
- A summary of recommended responses and guidance for cooperating with police when there is a threat to personal safety.

2. Distributing and Updating the Safety Guide

Paper copies of the latest edition of the Safety Guide are distributed to:
- Every research laboratory in Olin Hall (as updated),
- All incoming M.S. or Ph.D. students, and
- Faculty should share a copy (available in 120 Olin) with all new research group members, including permanent research staff, postdoctoral associates, visiting scientists, graduate students (including M.Eng.), and undergraduate students working in laboratories.

If you find typographical errors or substantive omissions in the Safety Guide, send corrections to the Chair of the CBE Safety Committee (page 17). The CBE Safety Committee and Lab Safety Officers (LSOs listed on page 18) meet periodically to update, edit, and improve the Safety Guide; the latest edition is continually available for download at the CBE website at http://www.cheme.cornell.edu/about/facilities/lab_safety.cfm.

3. Safety Personnel and Contact Information

CBE Safety Committee
Brad Anton
375 Olin Hall
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607-255-3629
Tobias Hanrath (Chair)
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Matt Paszek
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Glenn Swan
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Celia Szczepura-McLean
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cs249@cornell.edu
607-255-8590
College of Engineering (COE) Safety Manager
Dan Woodie 344 Duffield Hall daniel.woodie@cornell.edu 607-254-4891

Cornell Environmental Health and Safety (EH&S)
Main Office 395 Pine Tree Road askEH&S@cornell.edu 607-255-8200

Cornell University Police Department (CUPD)
Main Office G2 Barton Hall 607-255-1111

Cornell University Emergency Medical Service (CUEMS)
Main Office 201 Palm Road 607-255-9320

2016-17 CBE Lab Safety Officers (LSOs)
Winston Black Strook Group wlb62@cornell.edu
Neeraj Borker Koch Group ns762@cornell.edu
Joseph Brown Alabi Group jsb432@cornell.edu
Jium-Ruey Chen Engstrom Group jc2642@cornell.edu
Jijao Hao You Group jg2242@cornell.edu
Henry Herbol Clancy Group hch54@cornell.edu
Kevin Kimura Hanrath Group kwk57@cornell.edu
Ngan Le ChemE Car nkl29@cornell.edu
Joseph Mattson Steen Group jwm349@cornell.edu
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Monet Roberts Paszek Group lmr254@cornell.edu
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Ghazal Shoorideh Joo Group ss2927@cornell.edu
Rohit Singh Daniel Group rrs238@cornell.edu
Zhengyuan Tu Archer Group zt64@cornell.edu
Mike Vilkhovoy Varner Group mv396@cornell.edu
Jialun Wang Zia Group jw2277@cornell.edu
Shuya Wei Archer Group sw765@cornell.edu
Kevin Weyant DeLisa Group kbw32@cornell.edu
James Xia Steen Group yx264@cornell.edu

4. How to Report an Incident

Complete an incident report within 24 hours after any physical injury, work-related illness, or exposure to a potentially hazard substance. The incident report form is at https://rmps-prod.hosting.cornell.edu/accinj/. Copy Tobias Hanrath (th358), Paul Pelletier (pap34), Celia Szczepura-McLean (cs249), and Dan Woodie (dpw24) on all electronically submitted reports.
5. Lab Safety

**Lab Preparedness**

The Department of Environmental Health and Safety requires all research laboratories to be registered using the online Hazard Assessment Signage Program (HASP). This Research Area Space Registration describes specific hazards present in rooms to facilitate emergency response, to enable regulatory compliance, and to communicate potential hazards to other people in the building. HASP data must be entered for each room. The HASP signage should be updated yearly using the following link at [http://sp.EH&S.cornell.edu/lab-research-safety/research-safety/space-registration-(hasp)/Pages/default.aspx](http://sp.EH&S.cornell.edu/lab-research-safety/research-safety/space-registration-(hasp)/Pages/default.aspx), or as part of yearly inspections conducted by the COE Safety Manager. It is very important that the contact information is up to date with valid phone numbers and current hazards inside the laboratory.

Olin Hall labs are inspected by COE Safety Manager Dan Woodie as part of the annual update of HASP signage. The fire department also conducts its own yearly building inspection to identify any potential fire hazards. The purpose of these inspections is to encourage safe practices and ensure compliance with EPA and OSHA regulations. Appendix A lists common safety violations and tips for preparing for a safety inspection.

**Lab Access and Safety Training**

Unfettered access to laboratories will be granted to qualified researchers and staff who: (1) have permission from the faculty Principal Investigator (PI); and (2) have completed mandatory, discipline-specific safety training to mitigate risks and prevent accidents.

All lab-users must complete two basic EH&S safety classes: EHS 2555 Laboratory Safety and EHS 2716 Chemical Waste Disposal. These classes are available continually online at [http://culearn.cornell.edu](http://culearn.cornell.edu) and they will be offered once a year in a classroom setting to newly arriving graduate students. In addition to the general courses listed above, members of each lab group must complete other courses dependent on the hazards present in their specific lab. Please check with your PI and LSO for further information on the training courses.

CBE affiliates can request keycard access online using the Door Access Request Form at [http://www.cheme.cornell.edu/cbe/about/facilities/door-access-requests.cfm](http://www.cheme.cornell.edu/cbe/about/facilities/door-access-requests.cfm). Requests for physical keys can also be made using the online Door Access Request Form at [http://www.cheme.cornell.edu/cbe/about/facilities/door-access-requests.cfm](http://www.cheme.cornell.edu/cbe/about/facilities/door-access-requests.cfm) and, if approved, can be signed out from Paul Pelletier in B14 Olin. If Environmental Health and Safety courses are required for the space(s), faculty advisors will receive an email request to attest to the fact that individuals have taken the required training for the spaces in which they are requesting access.
Required safety training by group:

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*Note: Bloodborne Pathogens, Formaldehyde Awareness, and Radiation Producing Equipment Safety are required annually. Laser Safety refresher is required every three years. Email reminders will prompt those affected automatically.*

Always lock your laboratory and any shared facilities when they are not in immediate use. Double-check that they are locked when you leave for the day.

**Personal Protective Equipment (PPE)**

- EH&S specifies the appropriate level of personal protective equipment for a given task at http://sp.EH&S.cornell.edu/lab-research-safety/laboratory-safety-manual/Pages/ch3.aspx.
- Safety glasses or goggles and closed-toe shoes are required at all times. A lab coat and gloves are necessary when working with hazardous chemicals or equipment that could generate flying particles.

- Pants or equivalent skin covering are required. (If wearing shorts or a dress, wear a long lab coat.)

- Protective eyewear or face-shields should be worn when working with potentially hazardous light (e.g., UV, lasers).

- Lab groups can purchase lab coats, safety glasses, etc. through major suppliers like Fisher Scientific or VWR, or on campus at the Chemistry Stockroom in G75 Olin Chemistry Research Wing.

**Olin Hall Safety Fixtures**

- Note the location of the nearest emergency eyewash stations, safety showers, and fire extinguishers in the lab and hallways. *You must be able to use them immediately.*

- Flush eyewashes for 2-3 minutes every week (with a log kept nearby). Use an eyewash or safety shower for a full 15 minutes immediately following exposure to any chemical, with the exception of Hydrofluoric Acid (HF), which should be treated with a 5 minute rinse followed by application of calcium gluconate. In all cases, seek immediate medical attention.

- Floor and bench clutter is dangerous. Maintain three feet of clearance for laboratory corridors.

- Minimize overhead storage, particularly of unwieldy or heavy objects. In areas without sprinklers, do not store combustible items within 24 inches of the ceiling. In areas with sprinklers, no items may block the sprinkler spray or be within 18 inches of the ceiling.

- Keep electrical panels and all emergency equipment clear at all times.

**Fume Hoods**

A fume hood allows one to work safely with toxic or hazardous chemicals by capturing harmful gases, vapors, and fumes from its partially enclosed workspace and exhausting them to outside air. Basic safety guidelines for using fume hoods are given below; more detailed information is available at [http://sp.EH&S.cornell.edu/lab-research-safety/laboratory-safety-manual/Pages/ch2.aspx#2.1](http://sp.EH&S.cornell.edu/lab-research-safety/laboratory-safety-manual/Pages/ch2.aspx#2.1).

Safety guidelines for fume hoods:

- Keep the sash as low as possible to minimize the risk of exposure. The sash acts a safety shield and protects your face; you should be looking through the sash to perform your
work. The green arrows are a good guideline for sash position, but sash height should be adjusted depending on the height of the person using the hood.

- Conserve energy by keeping the sash closed when the fume hood is not in use: a fume hood uses the same amount of energy as 2-3 average homes!
- Work at least 6 inches into the hood from the plane of the sash.
- Always use an airflow indicator. This is a small piece of crepe paper (or similar) attached to the bottom of the sash that blows with the air current; it should be blowing inward if the hood is operating properly.
- Minimize clutter and do not store large amounts of chemicals in the hood. Excess clutter and chemicals can impede airflow, especially to the lower openings, so keep only the chemicals you need for the work at hand in the hood.
- Maintain 1-2 inches opening for the rear lower baffle (at the back of the hood) for exhausting vapors that are denser than air.
- Keep lab doors and windows closed. Extra sources of inlet air can adversely affect the performance of the hood.
- If hoses or cords must be inserted through the face of the hood, run them underneath the airfoil so the sash can close completely.
- Use special shielding in addition to the sash if there is an explosion hazard for the chemicals you are using or the experiment you are conducting.
- Protect against blockage of ducts.
- In a power outage, lower the sash to a 1-2 inch gap.
- Other than sash height and baffle adjustment, never make changes to the hood without consulting EH&S.
- If another apparatus requires venting, the exhaust should not be injected into the face of a hood, but rather should be ducted directly into the ventilation system. Such modifications to the ventilation system must be cleared through Cornell Infrastructure Properties and Planning (IPP).
- Evaporations and digestions using perchloric acid should only be done in a specially designed perchloric acid fume hood.

Fume hoods that will not be used for more than a month and are not storing any waste or chemicals can be put into “hibernation,” where the fume hood is closed off and the air flow stopped to reduce energy usage. To hibernate a fume hood, go to
To reactivate a fume hood, contact Ellen Sweet (ems325@cornell.edu or 607-254-8644); the hood will be turned on within 2 business days.

If your fume hood malfunctions or needs repairs, contact Paul Pelletier (pap34).

**Chemical Labeling, Hazards, and Storage**

**Labeling:**

All chemicals must be clearly labeled, with the meaning of any abbreviations or acronyms posted in the lab.

**Hazards information:**

Cornell uses the Global Harmonized System (GHS) for Material Safety Data Sheets (MSDS). The data sheets offer detailed information on the specific hazards posed by a particular chemical and must be accessible to all lab members. More information on obtaining GHS MSDS is at [https://www.msdsonline.com/msds-search](https://www.msdsonline.com/msds-search).

**Right to know:**

New York State law requires employers to notify workers that they may request written information from their supervisor on hazards associated with toxic substances to which they may be exposed. Requested material must be presented within three working days or the employee may refuse to work with the substance without fear of disciplinary or discriminatory action. The form for requesting this information is in Appendix B.

**Chemical storage:**

- Avoid storing chemicals on benches. Use designated cabinets and shelves with anti-roll lips to prevent chemicals from falling off.

- Date chemicals when they arrive. Check regularly for expired chemicals, and dispose of them properly.

- Segregate chemicals by hazard class and compatibility; for example, store acids and bases separately.

- Use special-purpose storage cabinets when appropriate; for example, store corrosive chemicals in a corrosives-compatible cabinet and flammable liquids in an approved flammable liquids cabinet.

- Consult EH&S for more details on proper chemical storage at [https://sp.ehs.cornell.edu/lab-research-safety/chemical-safety/Pages/default.aspx](https://sp.ehs.cornell.edu/lab-research-safety/chemical-safety/Pages/default.aspx).
Gas cylinder storage and transport:

- Store gas cylinders upright in a wall mount with restraining chain or straps, and transport them on wheeled carts with restraining straps or chains.
- Keep caps on gas cylinders during transport or when not in use.
- Store gas cylinders in dry, well-ventilated areas away from sparks or heat/ignition sources and possible sources of mechanical damage.
- Store oxygen tanks at least 20 feet away from flammable gases, liquids or solids unless separated by an appropriate fire barrier (e.g., carts for acetylene and oxygen with a metal barrier between them).
- The tag on a gas cylinder must be torn to show the cylinder’s status as Full/In Use/Empty. Extra tags can be acquired from Airgas when procuring cylinders and extras may sometimes be found in B50 Olin Hall.
- Pick up full tanks from B50 Olin Hall upon delivery, and leave empty tanks for pick-up in the designated part of the loading dock.

Waste Disposal and Storage

Chemical hazardous waste:

- Knowing how to properly deal with waste items from labs can be a challenge. EH&S has produced a waste guidance poster to assist researchers in knowing how to dispose of commonly used lab items. It can be found at: https://sp.ehs.cornell.edu/lab-research-safety/waste/regulated-medical-waste/Documents/Poster_Waste_Guide.pdf or you can request a hard copy for your lab from the Department Safety Representative (DSR).
- Store hazardous waste in sealed containers in a designated and labeled hazardous waste satellite accumulation area.
- Segregate waste by chemical hazards, and do not mix incompatible chemicals in a waste container.
- Keep waste in the room where it was generated.
- Label all hazardous waste clearly with the words “Hazardous Waste” and a properly completed hazardous waste tag, detailing the names (full chemical name, no abbreviations) and amounts of component chemicals. (See example waste tag in Appendix C.)
- Contact EH&S via email at waste.tech@cornell.edu or by phone at 607-255-8200 to obtain hazardous waste tags.
To have EH&S pick up full waste containers, pack them inside a DOT box (found on the Olin Hall loading dock), and fill-out a “Request for Chemical Waste Removal Form” at https://rmps-prod.hosting.cornell.edu/access/rad/ChemWasteForm.cfm.

Other waste:

- Dispose of non-biologically hazardous sharps (syringes, razor blades) in a designated sharps bin. Needles (regardless of usage) and all biologically hazardous sharps must be disposed of in a red medical waste sharps bin and sent out as Regulated Medical Waste. There is a bin on the loading dock and two bins at the far end of second floor of the east wing in Olin Hall.

- Place glass waste, broken or not and already emptied of fluids, in one of the designated glass-waste cardboard boxes. Do not put broken glass (or anything else that could puncture the trash bag) in the regular trash. When the glass-waste box is full, tie the plastic liner closed, and seal the box completely with tape. Olin Hall building care will dispose of it as non-hazardous waste.

- Dispose of any biological waste (i.e. animal carcasses, animal or plant tissues and cells, and any waste containing synthetic or recombinant nucleic acids) according to the EH&S Biological Waste Disposal Guide at http://sp.ehs.cornell.edu/lab-research-safety/waste/regulated-medical-waste/Documents/BioWasteDisposalGuide.pdf (reproduced in Appendix D).

- Cornell R5 Operations handles materials and equipment that can be reused or recycled (furniture, electronics, appliances, etc.). Items can be left on the east side of the loading dock, opposite cylinder storage, with a R5 label on them. Pick-ups occur routinely several times each week. It is helpful to notify the facility coordinator when you are leaving things on the loading dock, or if you need assistance moving them to the pick-up location.

- Used pump oil is not considered hazardous waste unless it is contaminated with a hazardous chemical. Non-contaminated used pump oil is recyclable and should go to R5. The oil should be placed in a sealed container labeled “Used Pump Oil” and placed on the table in B52 Olin Hall, the chemical storage room. Contact the facility coordinator who will facilitate recycling of the oil with R5 Operations. If the used pump oil is contaminated with a hazardous chemical then it should be treated as chemical hazardous waste (above).

Spills

Procedures for cleaning up chemical spills can be found at http://sp.ehs.cornell.edu/lab-research-safety/laboratory-safety-manual/Pages/ch5.aspx#5.4.
EH&S strongly encourages all laboratories to obtain a spill kit for their use. Spillkit recommendations and guidelines can be found at https://sp.ehs.cornell.edu/lab-research-safety/laboratory-safety-manual/Pages/ch5.aspx#543.

Response to chemical spills:

- Take immediate and appropriate action whenever a chemical spill occurs.
- Notify other people in the area that a spill has occurred, and prevent anyone from coming in contact with the spill.

- You can clean-up the chemical spill if the following are true:
  - You understand the hazards posed by the spilled chemical.
  - You are trained in the proper manner to clean up the spill.
  - You have the materials and equipment needed to clean up the spill including the proper personal protective (PPE) equipment (i.e. goggles, gloves, etc.).
  [NOTE: If a chemical normally used in a fume hood is spilled outside of the hood, you may need a respirator for cleanup. Respirator use requires previous training and medical certification (OSHA requirement), so for many spills bigger than palm size outside of a hood, you must call EH&S for clean-up.]
  - You feel comfortable cleaning up the spill.
  - You can ensure that you are not exposed during cleanup.

- If you determine that you cannot safely clean up a spill or have any doubts about your ability to safely clean up a spill:
  - Alert people in the immediate area of the spill and evacuate the room and any nearby rooms that may be affected.
  - Confine the hazard by closing doors as you leave the room.
  - Notify the Cornell University Police Department (CUPD) of the spill by calling from one of the red phones located in the Olin Hall east wing corridors, 911 from a campus phone, or 607-255-1111 from a cell phone or off-campus phone.

**Fire Safety/Emergency Reporting**

Cornell’s Emergency Action Guide, available at https://emergency.cornell.edu/files/2015/01/Emergency-Action-Guide-v10-1d6pfoz.pdf, gives instructions for responding to various emergencies, including fire, earthquake, severe weather, and personal threats. The Cornell Fire Emergency Plan, a concise, one page summary of emergency responses, is posted next to the Red Emergency Phones in the east wing hallways of Olin Hall and is duplicated in Appendix E. The CBE Safety Committee recommends posting a plastic-laminated copy of it in your laboratory. (The CBE Main office at 120 Olin Hall has a tool for laminating documents.)

Fire Safety and Evacuation:
Develop procedures for suspending experiments and shutting down equipment in your laboratory quickly and safely, so you can leave your lab in a hazard-free condition when there is a building-wide fire alarm. Share these procedures with all members of your group, and update them frequently.

Acquaint yourself with the proper use and location of the fire extinguishers and fire alarm boxes. Use fire alarm boxes to report all fires. Always be aware of the closest fire exit.

Verify that the proper fire extinguisher (see fire extinguisher types in Appendix F) is available when conducting work involving a fire hazard. If you have been trained and it is safe to do so, you may attempt to extinguish the fire with a portable fire extinguisher. Attempt to extinguish only small fires, and make sure you have a clear escape path. If you have not been trained to use a fire extinguisher, evacuate the area and seek help.

Inspect the seals on fire extinguishers. If any seal is broken, report it immediately to Paul Pelletier (pap34). Used fire extinguishers must be inspected/replaced by EH&S.

Report all fires, regardless of size and even if already put out, immediately by emergency phone, by calling 911 or by a fire pull station. After this, please notify Paul Pelletier (pap34@cornell.edu 607-255-3540) or Celia Szczepura-McLean (cs249@cornell.edu or 607-255-8590) for investigation by the CBE Safety Committee and EH&S.

In the event of a fire or non-fire related evacuation, proceed calmly to the nearest exit and remain at a safe distance from the building. Refer to the Olin Hall floor plans in Appendix G to determine the nearest building exits for your lab and your office. Commit these to memory.

Assemble, maintain, and share a list of cell-phone numbers for all members of your research group, so that any group member can contact and account for all others in an emergency.

Emergency Reporting:

A Red Emergency Phone is located on each floor in the east wing of Olin Hall, they connect directly to CUPD, and if available should be used because the dispatcher will automatically know where the call is coming from. If a red phone is not available, call 911 from a campus phone or 607-255-1111 from your cell phone.

When reporting an emergency, be prepared to provide:

- Location of the emergency – building, room, directions.
- Type and severity of the emergency.
  - Fire – type and size of fire.
  - Medical – type of illness or injury, cause, number of patients.
  - Police – type of crime, description of suspects and direction of travel.
  - Hazardous Material – materials involved, quantity, hazards and injuries.
- When the incident occurred.
- Your name, location and phone number so responders can find you.

**First Aid/CPR Training**

Students matriculated in the field of Chemical Engineering must complete CPR/First Aid training in addition to the online lab safety requirements of the department and individual lab groups.

First Aid/CPR training is provided by Cornell’s Emergency Medical Service (CUEMS) in small classes that meet throughout the academic year. The schedule of available classes will be posted at [https://sp.ehs.cornell.edu/training/Pages/Training-Calendar.aspx](https://sp.ehs.cornell.edu/training/Pages/Training-Calendar.aspx). Completing the First Aid/CPR training as soon as is reasonably possible after starting lab work in Olin Hall is recommended. Sign-up for classes through CULearn at [https://sp.ehs.cornell.edu/training/Pages/Training-Access.aspx](https://sp.ehs.cornell.edu/training/Pages/Training-Access.aspx). **Please note that CBE is not notified of when students sign up for classes or complete them. In order to show you have completed the training, you must bring your completion card or scan/email it to Johanna Tuttle in 358 Olin Hall/jft65@cornell.edu.**

First Aid/CPR training is **required** for degree conferral for:

- All Chemical Engineering Field graduate students who work in Olin Hall laboratories, and

First Aid/CPR training is **highly recommended** (though not required) for all CBE affiliates, including:

- Non Chemical Engineering graduate students whose primary lab is in Olin Hall,
- Professors and Lecturers,
- Postdocs and permanent research staff,
- Visiting professors, scientists, graduate students, and
- Undergraduate students (from any department) working in any CBE research group.

First Aid Kits:

- First aid kits with contents suitable to the work environment should be readily accessible in all Olin Hall labs.


**Facility Repairs**

- If your lab space or office requires maintenance, submit a ticket through the COE/CIS Ticket System at [https://help.coecis.cornell.edu/index.php?/Default](https://help.coecis.cornell.edu/index.php?/Default).
• Be sure to indicate the building (Olin Hall – building code 2024) and room number, and select the appropriate type of request (Custodial, Electrical, Leaks, etc.) from the drop down list. The COE/CIS help website can also be used to request IT assistance.

• Equipment repairs can also be requested from COE/CIS at https://help.coecis.cornell.edu/index.php/?/Default. For equipment repairs, you and your PI decide whether you should submit a ticket for in-house repair, or contact the manufacturer of the unit directly.

6. Personal Safety

There is a chance that someone will enter Olin Hall with the intent to hurt people, possibly with a deadly weapon. CUPD divides these immediate personal threats into two categories: “Active Shooter” and “Workplace Violence.” Following is a summary of CUPD’s recommendations for action in these scenarios. Their recommendations for other emergencies, for example bomb threats and suspicious packages, are given at http://emergency.cornell.edu/.

An active shooter may try to use firearms, other weapons, or even explosives to injure people wantonly and to impede law enforcement or emergency services. These scenarios evolve rapidly and require quick thinking. Your safety in an active shooter scenario will benefit from a good plan, devised long in advance.

Workplace violence describes threats that evolve slowly and target specific people, for example when a disgruntled employee (student) confronts a supervisor (instructor), or a romantic relationship ends poorly. Your safety in these circumstances will benefit from recognizing hostility and having a thoughtful strategy for defusing it.

Active Shooter – Run, Hide, Fight

1. Run if you can.
   • Know the escape routes from your building.
   • Evacuate whether others agree to or not.
   • Leave your belongings behind.
   • Help others escape if possible.
   • Prevent others from entering the area.
   • Meet at a predetermined area. Do not leave campus.
   • Call 911 [or 607-255-1111] when you are safe.

2. Hide if you cannot run.
   • Lock and/or blockade the door.
   • Remain very quiet. Silence your cell phone.
   • Hide behind large objects, favoring cover over concealment. (Cover meaning objects that can stop a bullet.)

3. Fight only if you cannot run or hide.
• Attempt to incapacitate the shooter.
• Improvise weapons.
• Act with physical aggression, and commit to your actions.

**Workplace Violence – Prepare, Recognize, Defuse**

1. **Prepare** your workspace:
   • Remove objects that could be used as weapons.
   • Schedule appointments when others will be present.
   • Arrange desk and chairs to allow unobstructed egress for all, so that a hostile visitor does not feel trapped, and so you can escape if you need to.

2. **Recognize** a hostile visitor:
   • Opening and closing hands.
   • Rocking on feet.
   • Arms crossed, fists clenched.
   • Red face, muscle tension, twitching.
   • Pacing.
   • Mood swings.

3. **Defuse** anger:
   • Sit down.
   • Be calm, patient, helpful, reassuring, and empathetic.
   • Make limited eye contact.
   • Take notes.
   • Offer refreshment - coffee or a drink of water.

4. Avoid these behaviors that escalate hostility:
   • Patronizing.
   • Arguing/threatening.
   • Being sarcastic.
   • Hurrying.
   • Touching.

**Cooperating with CUPD**

When police arrive at the scene of a violent altercation, their objectives are:
• To immediately engage or contain the active shooter.
• To identify threats such as improvised explosive devices.
• To identify victims to facilitate medical care, interviews, and counseling.
• To investigate the crime scene.

To help them engage an active shooter:
• Do exactly as the officers instruct.
• Keep your hands visible and empty, and your fingers spread.
- Do not approach the officers.

To help them identify threats and victims:
- Describe the offenders if you can – sex, race, height, weight, age, eye color, clothing, weapon(s), location last seen, direction of travel, etc.
- Tell them the location, description, and number of victims.
- If you heard any explosions or saw any suspicious, possibly explosive devices, tell them what you observed and where.

To help them investigate the crime scene:
- Stay still until the action is over, and do not disturb the scene.
- Leave when they tell you.

**Weapons on Campus**

It is a crime in New York State to possess a rifle, a shotgun, a BB gun, an air gun, a spring gun, or other firearm in the buildings or on the grounds of any school, college, or university, even if you have a valid New York State firearm permit. This prohibition includes while dropping off or picking up someone or just driving through the campus. It is also a crime to possess nunchaku, daggers, switchblades, locking butterfly knives, stun guns, and any other instruments deemed unlawful by section 265.01 of the New York State Penal Law. Furthermore, it is a violation of Cornell's Campus Code of Conduct to possess, carry, or use firearms - including ammunition or explosives - or other dangerous weapons, instruments, or substances on university premises without special permission.
7. Appendices

A. Common Lab Safety Violations
B. Right to Know Law Information Request Form
C. Sample Hazardous Waste Disposal Tag
D. Biological Waste Disposal Guide
E. Cornell Fire Safety Plan
F. Types of Fire Extinguishers
G. Olin Hall Floor Plans
Appendix A: Common Safety Violations

Top Ten Violations (NYS OFPC and Ithaca Fire Department, 2011):

- Improper use of extension cords (82)
- Swinging fire doors do not close & latch (57)
- Exposed wiring, open junction boxes (50)
- Electrical hazards - frayed cords, etc. (34)
- Curtain/draperies not flame resistant (35)
- Fire resistant construction not maintained (35)
- Illegal electrical power taps (35)
- Exit, exit access and/or discharge obstructed (18)
- Illegal use of multi-plug adapters (17)
- Elevators, lifts and platforms not properly maintained (16)

Pre-Inspection Walk-Through Tips:

- Remove extension cords and replace them with a power strips.
- No power strips plugged into power strips.
- Repair electric hazards (loose or frayed wires and open junction boxes).
- No propping or chocking of fire doors.
- Secure gas cylinders properly.
- Mechanical rooms clear of combustibles and clutter.
- Check flame retardant requirements on curtains/drapes in assembly areas and labs.
- Clear hallways and stairwells of combustible materials and clutter.
- Exit signs in good working order.
- All ceiling tiles in place.
- Safety equipment (eye wash stations, fire extinguishers) accessible.
- Maintain clear and unobstructed exits.
Appendix B: Right to Know Law Information Request Form

"Right-to-Know"
Chemical Information Request Form

Information requests may be submitted by phone or in writing at any time. This form is provided to assist employees in requesting information concerning the health and safety hazards of hazardous materials found in the workplace. Use this form or, for your convenience, the version found on our Web site. If you have questions, call Environmental Health and Safety at 255-8200. Send your written requests to Environmental Health and Safety, 125 Humphreys Service Building, Ithaca, NY, 14853.

Name____________________________________ Department___________________________

Campus Phone_______________ Campus Address____________________________________

List chemicals for which you would like us to send Material Safety Data Sheets. If a trade product, or if the substance is uncommon, please provide manufacturer's name.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

List chemicals for which you would like more detailed information or list specific questions you have. Include pertinent details such as physical form of substance, amount used, and conditions of use.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

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Appendix C: Sample Hazardous Waste Disposal Tag

**Steps for Chemical “Hazardous Waste” Removal**

1. Complete a Green Hazardous Waste tag and attach to waste container. This is required for each individual item to be removed. (Labels can be requested by calling 5-8200 or by e-mailing waste_tech@cornell.edu)

   ![Image of a hazardous waste disposal tag]

   - **Read for disposal date**
   - **Contents and amount**
   - **Place waste bottles capped tightly in box**
   - **Place top copy in box**
   - **Stick completed green waste tag to bottle**

2. Place all Hazardous Waste containers into a UN rated box with proper inserts

**DOT boxes for your use are located at:**

- **Bard/Kimball/Thurston:** B60a Bard Hall
- **Biotech/Welli/Corson Mudd:** Biotech G43
- **Baker Lab / ST Olin Baker Lab 358
- **Clark Hall / Physical Sciences:** Stock rm G20
  Physical Sciences
- **Emerson Bradfield:** Bradfield Mail room G03
- **JA Baker Institute:** Room B18
- **Martha Van Rensselaer:** SB Loading dock yellow cage
- **Olin Hall:** Basement hall
- **Plant Science:** Loading dock
- **Vet College Complex:** VMC Loading dock C1-053.

- **If there is no DOT Box storage location listed in your area,** please indicate that you need a DOT box and how many in the “note” section when you submit your on-line waste pickup request. NOTE: DOT boxes will hold four 4 liter bottles.

3. Leave top copy of Hazardous Waste tag in the box with the items to be removed

4. Submit a request for pickup online at [http://www.ehs.cornell.edu/rad/ChemWasteForm.cfm](http://www.ehs.cornell.edu/rad/ChemWasteForm.cfm)

5. Chemical hazardous waste pickups are generally done weekly Wednesdays and Fridays. Online requests received prior to 7am Wed & Fri will be picked up that same day. Please use the online system vs campus mail to eliminate pickup delays
# Appendix D: Biological Waste Disposal Guide

## Biological Waste Disposal Guide

**For use in Department Outside the College of Veterinary Medicine**

<table>
<thead>
<tr>
<th>Contaminated with:</th>
<th>Biohazardous Substance (1)</th>
<th>Recombinant or Synthetic Nucleic Acid (r/vNA) (2)</th>
<th>Other Biological (3)</th>
<th>Chemo therapeutic (4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syringes with attached needles (HPLC, GC, GC) Needles Scalpels Glass blood vials Plastic tapes</td>
<td>Sharps Disposal Container into Regulated Medical Waste (RMW)</td>
<td></td>
<td></td>
<td>Yellow Sharps Disposal Container into RMW</td>
</tr>
<tr>
<td>Serological pipettes Micropipette tips Swabs, sticks Glass slides and cover slips Glass tubes and other glassware Broken plasticware Razor blades Syringe barrels (5)</td>
<td>Sharps Disposal Container into RMW (6)</td>
<td>Puncture Resistant Container into Regular Trash After Autoclaving</td>
<td>Puncture Resistant Container into Regular Trash</td>
<td>Yellow Sharps Disposal Container into RMW</td>
</tr>
<tr>
<td>Plastic Petri dishes Plastic tubes, flasks, plates Gloves and disposable gowns Bench paper and towels Animal bedding</td>
<td>Red Biohazard Bag into RMW</td>
<td>Clear Bag into Regular Trash After Autoclaving</td>
<td>Clear Bag into Regular Trash</td>
<td>Yellow Biohazard Bag into RMW</td>
</tr>
<tr>
<td>Cell culture wastes Body fluids</td>
<td>Chemically Treat or Autoclave, then drain dispose (Sanitary Sewer only)</td>
<td></td>
<td></td>
<td>Contact EHS</td>
</tr>
<tr>
<td>Animal carcasses (7) Animal and human tissues (do not mix with other waste or heavy metal objects)</td>
<td>Red Biohazard Bag into RMW or Tissue Digester</td>
<td>Clear Bag to CVM Waste Management</td>
<td>Clear Bag to CVM Waste Management</td>
<td>Yellow Biohazard Bag into RMW</td>
</tr>
<tr>
<td>Mixed wastes (e.g., aldehydes and bar, radiotopes and bar)</td>
<td>Contact EHS before generating such waste</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant materials</td>
<td>Red Biohazard Bag into RMW</td>
<td>Regular Trash or Compost After Autoclaving</td>
<td>Regular Trash or Compost</td>
<td>Yellow Biohazard Bag into RMW</td>
</tr>
</tbody>
</table>

**Footnotes:**
1. Includes human infectious agents, viral vectors, biological toxins, human blood and body fluids, all human and animal cell cultures, or substances from infected animals. Contact EHS (http://ehs.cornell.edu/lab-research-safety/waste-waste-pickup/Pages/default.aspx) For pickup.
2. Per NIH Guidelines all waste containing or contaminated with r/vNA must be treated (Autoclave or Regulated Medical Waste) prior to disposal. Nucleic acids or genetically modified microorganisms. If infectious, refer to Biohazardous Substance column.
3. Includes environmental microorganisms, plant and insect pathogens, and plant tissue cultures. Not infectious to humans or animals, nor r/vNA. Carcinogenic and antineoplastic compounds (e.g., BrDu, etc.), and any disposable materials (e.g., animal bedding) contaminated with these chemicals. Please contact EHS for other chemically-contaminated waste.
4. Syringes that have not come into contact with biological material and do not have a needle attached, may be disposed of in a puncture resistant container (e.g. cardboard box) and taken to the regular trash by the user.
5. Non-glass items that can puncture bags, such as plastic pipettes, micropipette tips, hands and sticks, may be placed in a puncture resistant container (e.g. cardboard box) and then placed in a red biohazard bag, or placed in “burn bin” labeled with biohazard symbol and lined with a biohazard bag.
6. Separate carcasses and tissues from plastic and paper items whenever possible. Mixtures of carcasses or tissues with other items (e.g. gloves, plastic, paper, heavy metal objects) cannot be disposed of in the Tissue Digester. Place this waste in red biohazard bags and dispose of as RMW—clearly identify on label. Coordinate with animal facility manager where appropriate, especially with large mammal carcasses. Please contact EHS if you need guidance to select the proper bag for disposal.

**Questions about Waste Disposal?**

Call EHS: 255-8200

www.ehs.cornell.edu

visit askEHS.cornell.edu/askEHS
Appendix E: Cornell University Fire Safety Plan

IN CASE OF EMERGENCY
Cornell University Fire Safety Plan (September 2009)

Fire Emergency

1. REPORT
   • Alert others in the immediate area and evacuate the room.
   • Activate fire alarm pull boxes to sound the alarm.
   • The fire department is automatically notified.
   • CALL 911 from a safe location
   • Report the location and size of the fire

2. CONFINE THE FIRE BY CLOSING THE DOOR TO THE ROOM.

3. EXIT VIA THE NEAREST SAFE ESCAPE ROUTE
   • Feel the upper part of the door – do not open it if it is hot.
   • Open door slowly if it is cool, be ready to close it if smoke or heat is present.
   • Walk, do not run to exits. Use stairways to exit, do not use elevators.

4. MOVE TO YOUR EMERGENCY MEETING SITE
   • Report any missing or trapped people to the emergency responders
   • Move away from the building

Medical Emergency

1. PROTECT VICTIM FROM FURTHER INJURY
   • Remove any persistent threat to the victim.
   • Do not move the victim unnecessarily.

2. CALL 911 TO OBTAIN EMERGENCY MEDICAL CARE
   • Report the location of the person and the nature and extent of injuries.
   • Call from a safe location.

3. PROVIDE FIRST AID IF YOU HAVE APPROPRIATE TRAINING

Police Emergency

1. PROTECT YOURSELF FROM HARM
   • Attempt to remove yourself from any danger.

2. CALL 911 TO OBTAIN POLICE ASSISTANCE
   • If possible, call from a safe location.

3. PROVIDE THE FOLLOWING INFORMATION TO THE POLICE:
   • Location of Crime
   • Nature of crime & specifics
   • Description of suspects
   • Direction of travel of suspects
   • Any injuries
   • Description of vehicles involved

4. DO NOT PURSUE OR ATTEMPT TO DETAIN SUSPECTS

Other Emergencies

1. EVACUATE IF NEEDED and CALL 911 TO REPORT OTHER EMERGENCIES

For more information on Fire Prevention: www.ehs.cornell.edu/fire
Appendix F: Types of Fire Extinguishers

Class A
For Class A fires in ordinary combustibles, such as wood, paper, cloth, upholstery, plastics, and similar materials, use a water or dry chemical extinguisher with either of these symbols on the label.

The numerical rating for this class of fire extinguisher refers to the amount of water the fire extinguisher holds and the amount of fire it will extinguish.

Class B
For Class B fires fueled by flammable liquids and gasses, such as kitchen greases, paint, oil, kerosene and gasoline, use a dry chemical or carbon dioxide extinguisher with either of these symbols on the label. Never use water.

The numerical rating for this class of fire extinguisher states the approximate number of square feet of a flammable liquid fire that a non-expert person can expect to extinguish.

Class C
For Class C fires involving live electrical equipment or wires, use a dry chemical or carbon dioxide extinguisher with either of these symbols on the label. If possible, cut off power first. Once the power is turned off, the fire becomes Class A or B. Never use water.

The presence of the letter "C" indicates that the extinguishing agent is non-conductive.

Class D
Class D Extinguishers are designed for use on flammable metals and are often specific for the type of metal in question. There is no picture designator for Class D extinguishers. These extinguishers generally have no rating nor are they given a multi-purpose rating for use on other types of fires.