

## LABORATORY EARTHQUAKE PREPAREDNESS

We live in earthquake country. The San Jacinto Fault is less than six miles from the main campus and is capable of generating a significant earthquake. This University has been damaged by earthquakes in the past, most recently during the Landers earthquake in 1992. CSU Northridge was devastated by the 1994 Northridge disaster, proving that universities are not immune to large-scale loss.

Preparing your laboratory to ride out an earthquake is your *obligation*. You owe it to the people who work with and for you, the science you are conducting in your lab, the University and to those who are funding your research. Luckily, most of what you need to do to secure your lab against seismic hazards is standard lab safety and common sense practices that will help your lab endure all disasters – the small, everyday ones, as well as the life-changing catastrophes.

### BEFORE THE DISASTER

We know there's going to be a major earthquake that will seriously affect the University. We just don't know when – it could be tomorrow or ten years from now. But what you do *today* will determine whether you, your staff and your lab will survive the experience.

#### *Physical Preparedness*

- Do you have backup copies of important data** (both electronic and hardcopy) **stored offsite?**

#### **Chemicals:**

- Are chemicals stored properly and in secondary containment trays or tubs?
- Are chemicals sealed and returned to their storage cabinets immediately after use?
- Are waste chemicals removed regularly?

#### **Equipment**

- Are pressure regulators removed and cylinder caps in place on those not in use?
- Are gas cylinders well secured in an upright position?
- Is each cylinder fastened to the lab wall with *two* straps or chains?
- Are fume hood sashes closed as far as possible while still maintaining adequate ventilation rates?
- Are heavy objects located on or near the floor and secured to reduce hazards and damage?
- Are flexible hose connections used for lab equipment, especially on gas supply lines?
- Do you have equipment or processes that could be damaged or pose a fire/ health hazard if power was suddenly lost? What preparations have you made for backup or emergency power to maintain these critical systems?
- Do you have backup power for freezers or refrigerators?
- Is large or valuable bench top equipment secured to the benches or counters?

#### **Furniture**

- Are storage cabinets closed and latched?
- Look above and around your desk, work table or bench. Are there shelves or cabinets next to or over you? If they should fall or empty out, would they fall on you? Most earthquake injuries are caused by falling objects, *not* falling buildings.
- Are storage shelves equipped with lips or restraints to keep chemicals and glassware in place, and secured to prevent tipping or movement?
- If all the contents of the cabinets or shelves next to the exit door were to fall on the floor (as they would during an earthquake), would you still be able to open the door?

- Is heavy equipment or furniture that may block exit routes secured? Are exits and aisle ways maintained free and clear of obstructions?
- Are animal cages secured to keep them from moving or breaking open?
- Are plant stands or benches secured to prevent tipping or movement?
- Are plants secured to keep them on the stands or benches?

### ***Safety Equipment & Supplies***

- Are safety systems (fire extinguishers, safety showers, eye washes) accessible and in proper operating condition? Does everyone in the laboratory know how to operate them?
- Do you have available extra spill absorbents, berming materials, spill clean-up equipment, heavy gloves, flashlights, radios and batteries?

### ***Personal Preparedness***

For information on personal/family preparedness, see the Red Cross pamphlet "Your Family Disaster Plan" at [www.redcross.org/services/disaster/beprepared/Fdp.pdf](http://www.redcross.org/services/disaster/beprepared/Fdp.pdf).

- Have you discussed earthquake plans with your family and friends? Do you have a plan for contacting each other and reuniting (especially important with children) after the earthquake?
- Locate safe and danger spots in your area. Decide if you would go under a desk or table, in a safe corner, or out of the lab against a corridor wall.
- Consider flying glass hazards from windows, glassware and falling hazards from light fixtures, books, pictures, and equipment when selecting safe spots.
- Do you know the evacuation routes from your home?

### **DURING THE DISASTER**

- Do *not* leave the building until the tremors have stopped! Go to the safe areas you identified and take cover.
  - o For information on evacuation procedures, see [Evacuation of Workplace Procedure](#).
- If you are outside, do *not* attempt to enter a building!
- If you are in your car, stop immediately unless stopping will cause an even greater hazard.

### **AFTER THE DISASTER**

#### ***The First Thirty Minutes***

- Is your short-term evacuation checklist posted near your lab exits? It is a list of essential steps to take before leaving the building.
- Account for everyone who was in the lab with you when the disaster struck.
- Check for injured or physically limited people who might have trouble evacuating the building.
- Turn off gas burners.
- Check quickly for fires, fire hazards, or spilled chemicals.
  - o If you can *safely* extinguish the fire, do so.
  - o If you can *safely* contain the spill, do so; otherwise, make a note of what spilled.
- Return any loose animals to their cages.
- Take emergency supplies (first aid kit, flashlights, etc.) to the emergency assembly area (EAA).
- Close the laboratory door as you leave.
- Report crucial items or hazards to the Building Supervisor for Emergency Conditions at the EAA.
- Go to the EAA for your building, department, or work unit.
  - o Is there an alternate EAA in case your first emergency assembly point happens to be downwind of a chemical or gas release or otherwise unusable?

- *Check the Building Emergency Plan for evacuation routes and EAAs.*

## **Recovery**

Depending on the time and circumstances of the earthquake, you may be asked to stay out of your building for a few minutes to a few days – or indefinitely.

- Do you have a long-term plan in case you can't get back into your laboratory for at least a week?
- Which cell lines/experiments/data are your first priorities?
- Have you made provisions for taking care of laboratory animals or plants?
- How long can your refrigerators and freezers run on their backup power or liquid nitrogen supplies?
  - *Remember that normal distribution systems will not work, so you should have your own supplies.*

## **BOTTOM LINE**

Each of these items could be critical for the health and safety of the people in your laboratory and the viability of your research. While earthquakes are the disaster emphasized here, please remember that building fires and other natural or human-made disasters could have a similar impact on your laboratory space and staff. Please discuss these plans among yourselves and take whatever action is necessary to see that all issues are addressed.

Some researchers at CSU Northridge lost decades of work in a few minutes because they had not prepared for a disaster. Don't let this happen to you. Be secure, be aware, and ***be prepared.***

## **OBTAINING ASSISTANCE AT UCR**

To obtain assistance for attaching your furniture and equipment, contact Physical Plant and request a quotation through their work order system ([www.pplant.ucr.edu](http://www.pplant.ucr.edu)). You may need assistance from your department office to navigate this system.

For more information and advice contact the Emergency Management program at EH&S [www.ehs.ucr.edu/programs/em/](http://www.ehs.ucr.edu/programs/em/) or call 951-827-2609.