

# UC Monthly Safety Spotlight, March 2012

## Avoiding Airborne and Direct Contact Hazards in Your Workplace

### Careless Chris Uses Personal Protective Equipment, but Not in a Good Way ...an Imaginary Scenario

Fictitious employee Careless Chris was a new member of the extraction analysis laboratory staff. She was excited to be part of a campus research project on plant waste. She worked hard at her assigned tasks of receiving samples, preparing reagents and calibrating instruments.

One day, as Chris prepared materials for an upcoming experiment, she noticed that the protocol required pouring some diethyl ether from its original bottle into a smaller container. Ordinarily, Chris did not handle these types of hazardous chemicals. She had completed basic safety training and knew she should wait for an authorized person, equipped with a respirator, to dispense the liquid. But she had seen respirators used in the lab and felt that she could avoid a time delay by dispensing it herself. "This will only take a minute," she said to herself. "It can't be that complicated and after all, don't I deserve the protection of a respirator?"

She had seen a respirator in the hallway cabinet, one that belonged to a graduate student on assignment in the lab. It was an impressive chemical cartridge unit, with a facemask and twin filter cartridges.

Still wearing her latex gloves, she picked up the respirator and tried it on. It felt bulky and heavy, and the face shield was not completely clear. Chris removed the respirator and cleaned the face shield with a damp paper towel, then put it back on. She did her best to tighten the adjustment straps to eliminate the air leaks around the seal edges. Some of the leaks were due to her long hair interfering with the seal. She pulled her hair back but a few strands still managed to stray into the sealed area around her face.

After a few minutes spent adjusting the respirator, Chris felt confident that she was protected from airborne hazards, and returned to the bench. She found it surprisingly hard to see clearly, but she managed to line up the equipment she needed to get the job done. She re-checked the ether label, unscrewed the bottle top and set the bottle back on the bench. She reached for the beaker, but realized it was the wrong one. Looking sideways out of the uncomfortable face shield, she saw the beaker she wanted. But when she reached for it, her sleeve brushed the top of the ether bottle and tipped it over. Horrified, Chris looked down to see the liquid spreading across the bench.

She didn't remember much after that. Because the mask did not fit properly and its filter cartridges were past their capacity, Chris had been hyperventilating and then inhaled enough diethyl ether vapors to render her unconscious. Two co-workers heard her fall and ran to help and called 9-1-1. Fortunately, the exposure Chris received was not enough to cause permanent damage. She felt the consequences of the exposure, however: a splitting headache, nausea and blurred vision. Medical personnel kept her in the hospital overnight for observation.

*Continued*

# UC Monthly Safety Spotlight, March 2012

## Avoiding Airborne and Direct Contact Hazards in Your Workplace

### **Careless Chris Uses Personal Protective Equipment, but Not in a Good Way ...an Imaginary Scenario**

Chris recovered quickly, and soon found herself in meetings with her Principal Investigator, Occupational Health and Workers' Compensation staff and an EH&S staff member. She admitted that she had failed to follow the safe work procedures she had learned in training. She realized that the respirator she had used was not the right size for her face, the seals were damaged and the filter cartridges were expired.

Chris learned a lot about Personal Protective Equipment and especially respirators, during the coming weeks. She learned that she would only be using a respirator in the future under specific circumstances. Chris learned that the first step would be to perform a hazard assessment on the proposed work process. If the hazard assessment indicated that a respirator was needed, she would then need a medical clearance to make sure she worked with EH&S to obtain training, select a respirator and cartridges and receive training. She would be sure to use new cartridges and check to be sure they were not past their expiration date. She would also learn not to allow her hair and other obstacles to stray into the seal area and interfere with its function.

After her recovery, Chris resumed working in the lab and did go on to use respirators as she gained experience and responsibility. She never forgot the importance of using required Personal Protective Equipment – and using it properly – especially the unique respirator safety procedures.