

Sent: Fri, Oct 26, 2012 8:24 am

Subject: Lessons Learned: Basic safety procedures will prevent science lab accidents. Are you doing what needs to be done?

Lessons Learned: Basic safety procedures will reduce accidents & injuries. Have you done everything to protect yourself and your students? All of the "lessons learned" I've been sending out could have been prevented if these basic safety procedures were followed. None of them are very difficult, take a lot of time or cost a lot of money.

1. Have safety training - geared to teachers, not just the safety training you provide to the students.
2. Know all of the hazards of what you are working with.
3. Each experiment/demo must have a safety protocol - reviewed each year for all safety requirements.
4. Wear your personal protective equipment (PPE) for every demo. Every time.
5. Use splash/explosion shields for demos if you do not have a fume hood. Every time.
6. Practice your demos before you present them to the students.
7. Never re-light an alcohol demo to repeat the experiment. Use a different set up.
8. Test your eyewash/shower/fume hood regularly to make sure they are working.
9. Check the containers weekly in the storage room for leaks, etc. Properly dispose of unused chemicals. Don't hoard.
10. Have an appropriate emergency plan for fires, spills, etc. and pre-plan with your local HAZMAT team and fire department.

PLEASE SHARE THIS EMAIL WITH EVERY OTHER SCIENCE TEACHER YOU KNOW!

As always, contact me if you have any questions or check out my web site:

<http://www.stonybrook.edu/ehs/lab/>

DERRY HIGH SCHOOL TEACHER HURT WHEN CHEMISTRY EXPERIMENT EXPLODES

<http://triblive.com/news/adminpage/2831483-74/clawson-barnhart-students-chemistry-teacher-experiment-explosion-really-student-derry#axzz2AJEPtGaO>

Tags: us_PA, laboratory, explosion, injury, potassium_nitrate

His face and hands burned and shirt collar ablaze, a popular Derry Area High School teacher hurried students away from an explosion in a chemistry lab Wednesday before he thought of himself, a student who witnessed the incident said.

Brian Clawson, 35, of Mt. Pleasant Township, a teacher in the district for about five years, was in fair condition in UPMC Mercy Hospital in Pittsburgh, according to a spokeswoman.

Paul Barnhart, a junior, was standing "4 or 5 feet" from Clawson as he mixed potassium nitrate and table sugar. Clawson was not wearing protective face gear as he stirred the mixture with a rod in a skillet-like container when it exploded about 11:40 a.m., Barnhart said.

"It was really, really startling," Barnhart said. "His shirt collar was on fire, and he was covered in black stuff. After a minute or two, it ignited in his face.

"I was impressed he was more worried about getting the kids out (than about himself)," Barnhart said.

Another teacher ran to help Clawson, who was trying to pat out the flames on his clothing.

"I'm not doing good," Barnhart heard Clawson say.

Clawson suffered burns to his face, neck, chest and hands, said Superintendent David Welling.

The explosion blew a powdery substance onto Barnhart's clothes and skin, and he suffered a minor burn to a leg. He sought medical attention as a precaution but said he and the other three or four students near Clawson were all right.

CHEM LAB MISHAPS IN ACADEMIC SETTINGS HAPPEN FREQUENTLY

<http://triblive.com/news/westmoreland/2834482-74/safety-chemistry-lab-accidents-kaufman-incidents-langerman-students-teacher-based#axzz2AP6q6qnM>

Tags: us_PA, education, follow-up, response

Accidents in academic chemistry labs — like the explosion that injured a Derry Area High School teacher on Wednesday — aren't few and far between.

Based on the news headlines collected over the last few years by the American Chemical Society, based in Washington, such incidents occur quite frequently.

"It just seems like there are several of them a week," said Neal Langerman, an officer with the society's Division of Chemical Health and Safety who works in San Diego, Calif. "We publish those headlines three times a week and there seems to be something always in the K through 12 environment.

"It's disturbing that it's occurring so frequently, and they shouldn't be occurring," he said.

Accidents in school labs typically fall under two categories — runaway reactions and spills, Langerman said.

Both have occurred at high schools in the region this month.

At Derry Area, teacher Brian Clawson, 35, was injured while conducting a demonstration in front of a group of students Wednesday. While school officials have declined to provide details of the chemicals Clawson was using, one student said he was heating a mixture of potassium nitrate and table sugar when an explosion occurred.

The student said Clawson was not wearing protective goggles while he mixed the chemicals in a skillet-like container.

Clawson suffered burns to his face, neck, chest and hands. He was listed in fair condition Thursday at UPMC Mercy Hospital in Pittsburgh and could not be reached for comment.

Derry Area Assistant Superintendent Cheryl Walters said the laboratory has been sealed as the district and outside agencies conduct investigations.

"We're not prepared to release any information regarding those investigations until they are complete," Walter said. "We've not had an opportunity to talk with the teacher yet and that is a major part of our investigation internally."

Walters said the district will be revisiting safety protocols as part of the investigation.

"Anytime anything occurs that is out of the ordinary we like to take that as an opportunity to re-examine everything we do because we are on a constant quest to improve the way we do business," she said.

The other incident occurred when Albert Gallatin High School teacher Bethany Herman suffered burns to her hands in an accident on Oct. 10 as chemicals spilled in a lab closet.

The container that held the acid-based chemical apparently had a leak, according to school officials. That accident occurred before school and no students were involved.

Langerman and other experts say proper training of science educators and following safety protocols, including the use of safety gear, can go a long way in preventing or minimizing such incidents.

"Chemistry is all about reactivity. Safe chemistry is all about controlling reactivity safely," Langerman said. Science lab demonstrations should always be practiced ahead of time when students aren't around. And the instructor and all students should wear proper eye and face protection, at a minimum, Langerman said.

“When you are doing reactive chemistry, a small change in the quantity can result in an otherwise safe experiment running away and causing an event such as this,” he said.

James Kaufman, director and founder of the Laboratory Safety Institute, a Massachusetts-based nonprofit for safety in science and science education, said that’s why such demonstrations should be conducted under a safety hood.

Kaufman said while nobody has solid numbers on laboratory accidents in schools, anecdotally they are frequent.

“One of the things that we find is that in many places the frequency of safety training is very low,” Kaufman said.

At one school where he provided training, a teacher said it was the first time it had been offered in 38 years.

“Unfortunately it takes something really bad like this happening, and we try to encourage people to do something before it happens,” Kaufman said.

Ralph W. Wheeler, professor and chair of the Department of Chemistry and Biochemistry at Duquesne University, said accidents do happen in laboratories, but his staff does their best to minimize such incidents.

Nobody steps foot in a chemistry lab at Duquesne without wearing safety goggles and a lab coat. And he makes sure students and faculty are aware of incidents elsewhere.

“I try to keep my faculty and staff aware of incidents like this so we can continually be conscious of safety and learn from other people’s mistakes,” he said.

His lab is inspected weekly. Chemicals that are out of date or no longer needed are disposed of during a spring clean-up. And safety protocols are written for experiments to look out for the potential hazards.

“It’s making sure people are conscious of safety and they understand the best practices for whatever (experiment) they are running,” Wheeler said.

Increasingly, criminal charges are being brought against schools and universities where people have died in lab accidents, Kaufman said.

It’s happened in California, Canada and India in the past year.

“That is something going on that’s new, and hopefully it’s making people be more painfully aware that if you don’t follow the rules and something bad happens, you could be in big trouble,” Kaufman said.

Read more: <http://triblive.com/news/westmoreland/2834482-74/safety-chemistry-lab-accidents-kaufman-incidents-langerman-students-teacher-based#ixzz2APFBhbU>

Kim Gates Auletta
Laboratory Safety Specialist
Environmental Health & Safety
Stony Brook University
Stony Brook, NY 11794-6200
kim.auletta@stonybrook.edu

[631-632-3032](tel:631-632-3032)

FAX: [631-632-9683](tel:631-632-9683)

EH&S Web site: <http://www.stonybrook.edu/ehs/lab/>