

Sent: Mon, Aug 25, 2014 8:32 am
Subject: Lessons Learned: Lab Safety Resources for K-12 Teachers

Lessons Learned: A recent incident in a HS lab that I sent out to this list (<http://www.tennessean.com/story/news/local/robertson/2014/08/12/chemical-spill-closes-greenbrier-high-tuesday/13943343/>) sparked a conversation in the Chemical Hygiene elist. Several resources were provided by the list members that are put together specifically for K-12 science teachers.

If you have any questions on these resources, send me an email!

ACS regional meetings are incorporating a session of Ask Dr. Safety during the Regional Meeting's Teacher Day. Additionally, the ACS Committee on Chemical Safety has many resources for secondary school educators.

(<http://www.acs.org/content/acs/en/about/governance/committees/chemicalsafety.html> and <http://dchas.org/>)

The "American Association of Chemistry Teachers" (AACT) is now allied w/ ACS and AACT members get lots of input, guidance and support from ACS. CHAS has made an initial outreach to this group and there will be a proposal made to CHAS this quarter to extend that outreach.

The Society of Toxicology (SOT) has a great program for teachers K-12 that addresses all of our concerns, and it is free to teachers. Look at <http://www.toxicology.org>.

A university has found ways to introduce concepts that rarely get taught to future chemists and future educators by guest lecturing in the Secondary Science Ed Methods course for future High School teachers and in the Chemistry Capstone Course. Last semester (for the first time) I spoke in the methods course about chemical management/organization and hazard recognition. Maybe you could see what your university offers future teachers and see if you can incorporate some chemical hygiene into a course?

Here is an outline of what we did in that 3 hour period. She needed to incorporate liability issues into her discussion as part of course requirements. Of course there was not enough time and these students should have much more, but baby steps...

- I'd start with the YouTube video from USCSB called "After the Rainbow" (<https://www.youtube.com/watch?v=g6vR0BdRCNY>). Then I will ask them a question to get their reactions to the video and their perspective on whether they think the teacher should be liable and to what extent she was responsible.

- Then I would give them some snippets of paper with cases involving accidents in the science classroom, and they have to determine whether an act of negligence was committed by the teacher or not.
- Before the class discussion in which we go over their answers, they would read "Legal Aspects of Laboratory Safety" handout. Then we would refer to the snippets again and discuss them as a class.
- At this point, it would be great if you could talk about main laboratory hazards and how to organize chemicals in the lab. We could pass around some of the SDS sheets and GHS pictograms and ask them some questions about them.
- The last part of the lesson would involve brainstorming ways to introduce lab safety rules to students, how to remind them of them and how to enforce them.
- I will also have them write down any question they have regarding laboratory safety prior to the lesson, so you can address them during the discussion. If you want to meet, let me know. Otherwise, I will send you the cases I will have for them to discuss and any other materials I will give them.

As far as resources - please see the ACS pages for available resources.

<http://www.acs.org/content/acs/en/education/policies/safety.html>

<http://www.acs.org/content/acs/en/about/governance/committees/chemicalsafety.html>

DCHAS has a reduced rate for HS Science Teachers and the Laboratory Safety Institute offers scholarships for them so that they can attend the LSI Laboratory Safety Workshop at ACS National Meetings for free.

The LSI's website has many free resources which would help K-12 science teachers.

LSI is giving away it's Model Chemical Hygiene Plan (school edition) to all K-12 schools and two-year colleges. Please tell your teachers to contact me for more information:

The Laboratory Safety Institute (LSI)

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The (U.S.) National Library of Medicine's collection of "selected links to information on environmental health and toxicology, disasters, chemicals, drugs, and special populations" includes one on "Laboratory Safety." One of the sections is on "K-12 School Laboratory Safety."

<http://sis.nlm.nih.gov/enviro/labsafety.html>

The complete set of sections includes:

- * Overview<<http://sis.nlm.nih.gov/enviro/labsafety.html#a0>>
- * Chemical Laboratory Safety<<http://sis.nlm.nih.gov/enviro/labsafety.html#a1>>
- * Biological Laboratory Safety<<http://sis.nlm.nih.gov/enviro/labsafety.html#a2>>
- * Nanomaterials in the Laboratory<<http://sis.nlm.nih.gov/enviro/labsafety.html#a3>>
- * K-12 School Laboratory Safety<<http://sis.nlm.nih.gov/enviro/labsafety.html#a4>>
- * Hazard Analysis<<http://sis.nlm.nih.gov/enviro/labsafety.html#a5>>
- * Material Safety Data Sheets
(MSDS)<<http://sis.nlm.nih.gov/enviro/labsafety.html#a6>>
- * Regulations and Standards<<http://sis.nlm.nih.gov/enviro/labsafety.html#a7>>
- * Laboratory Waste Management<<http://sis.nlm.nih.gov/enviro/labsafety.html#a8>>
- * Blogs, News, Podcasts, and Videos<<http://sis.nlm.nih.gov/enviro/labsafety.html#a9>>
- * Organizations<<http://sis.nlm.nih.gov/enviro/labsafety.html#a10>>
- * Topic-related Searches of National Library of Medicine
Resources<<http://sis.nlm.nih.gov/enviro/labsafety.html#a11>>

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