

Connecticut Science Supervisors Association



Newsletter

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President's Message

I am excited about new beginnings. I am beginning my new term as President of CSSA and I have just begun my new job as K-12 STEM Curriculum Administrator in Danbury. Our organization has new opportunities to make a difference for science education across the state. We have arranged for nationally known speakers to come and inspire us. Speakers like Al Byers at our first dinner meeting; speakers like Ed Buckbee at the CSTA-CSSA Annual Science Conference; and speakers like Ken Miller and Page Keeley at upcoming dinner meetings. Our pre-dinner workshops this year have a theme of professional development. As science supervisors and teacher-leaders, we take responsibility not only for our own professional growth, but also for that of those around us.

Although some things change, like Building A Presence (BAP) now being called Connecticut Science Connection (CSC) and being distributed monthly rather than weekly, other things remain, such as opportunities for us to educate ourselves by taking courses on-line, some that are included with our existing memberships, such as those from NSTA. The location of this year's Annual Science Conference has changed to Hamden Middle School. A dedicated committee developed criteria and made multiple site visits in order to make this the best-ever one-day conference. If you haven't already registered, please use the link from our website (cssa-online.net) to do so today. Please encourage teachers and administrators in your district to attend. I look forward to seeing you there, and I look forward to an excellent year!

Harry rosvah@danbury.k12.ct.us

Pre-Dinner Workshop: What are the elements of effective PD?

In response to a member survey last spring, a committee has organized a series of professional development workshops which start with tonight's pre-dinner workshop, continue next month as one of the sessions at the annual science day, and continue in "off months" (months when we don't have a CSSA dinner meeting) for the remainder of our year. This is an "action research" project in which we try to learn from research and from each other (practitioners) about designing, delivering, and evaluating effective professional development.

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September Dinner Speaker: Al Byers (NSTA)

Mr. Byers currently serves as the Assistant Executive Director of Government Partnerships and e-Learning for the National Science Teachers Association. As a senior executive for NSTA, Mr. Byers successfully executes the management of large-scale professional development and e-learning endeavors and serves as the liaison to mission-based government agencies that desire large scale national science education programs.

Since coming to NSTA part time as a NSF grant project director in 2001, Mr. Byers has increased the scope and depth of his contribution. He now manages a staff of 15 individuals and over 15 million dollars of annual grant-funded and self-sustaining professional development programs, all of which are geared toward significantly increasing the competency and effectiveness of the two million teachers of science in the United States. Mr. Byers is responsible for the design, development, implementation and evaluation of following programs at NSTA

Mr. Byers serves as point for the design, implementation and evaluation of The NLC portal and the tools that appear within it, as well as the project team lead for standardizing the meta-tagging schema and the back-end system that synergistically leverages NSTA's thematic-based and standards-aligned content.

Mr. Byers is also the principal investigator for multiple NASA, NOAA, NSF and FDA cooperative agreements and grants and serves as

primary liaison for foundation partnerships that support the production of PD services for the NLC, i.e., The GE Foundation and William and Flora Hewlett foundation.

Mr. Byers has participated on multiple NSF, NOAA, and NASA grant review panels for curriculum development, professional development and education technology, and served on the young adulthood and science standards review committee for the National Board for Professional Teaching Standards. Finally, Mr. Byers has completed an extensive series of graduate studies, documented by his peer-reviewed publications, in instructional technology and e-learning at Virginia Tech.

Prior to Mr. Byers graduate studies, he worked on the staff of Oklahoma State University as an instructor and Aerospace Education Specialist for the NASA Goddard Space Flight Center and assisted Goddard and the Space Telescope Science Institute in the design, development, implementation and evaluation of NASA education professional development.

Mr. Byers began his career as a physical science educator, holds teaching certificates in secondary science, mathematics and middle school, has taught at the Virginia Governor's School for the Gifted, and received recognition as one of Chesterfield County, Virginia's Teachers of the Year for his service at Robious Middle School.

Source: CSSA Website

Annual Science Day – Saturday, October 17th, 2009

It's not too late to register yourself and your teachers for this year's Science Professional Development Day held at Hamden Middle School from 8am to 4pm. Keynote speaker is Ed Buckbee, author of [The REAL Space Cowboys](#) and former NASA Administrator. Additional details are available from the CSTA website: <http://www.csta-us.org/>

The full program, including over 60 workshop presentations, is accessible on-line. (Make sure that you click on the highlighted link for "Click Here to Check Out the Program".) The exhibit hall features more than 40 commercial and non-profit organizations. Each of the sessions is marked with the appropriate grade level plus the science strand.

EDUCATOR OPENHOUSE

Monday, October 5
3 - 8 PM

Connecticut Science Center

Tour ten galleries that feature 150+ exhibits that align to the CT Science Frameworks. Learn about classroom programs and science demonstrations that are available to you and your students. Discover our professional development opportunities and experience for yourself our 3D theater and unique science movies. The Science Center education team will be on hand to introduce you to our many offerings for educators and students.

Space is limited and reservations are required: RSVP by September 22 online at www.CTScienceCenter.org/October5.



Connecticut
Science Center

SAFE SCIENCE: BE PROTECTED (Eyeing Safety)

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I. THE SCIENCE TEACHER THAT NEVER HAS AN ACCIDENT!

It is amazing how many science teachers work in academic laboratories and are under the belief that they will never have an accident – especially involving their eyes! This is based on anecdotal observations of middle and high school laboratory activities dealing with hazards where students should be required to wear chemical splash goggles but as for their teachers – they have decided either safety glasses will do the trick or worst of all – no eye protection will be needed. The science teacher is not only breaking the law, but equally important – is not modeling professional standards of best safety practice for students. The second issue is when science teachers incorrectly select the wrong eye protection not only for themselves but for their students. The purpose of this article is to set the record straight about eye protection. Please – read on and understand the importance of protecting your eyes and those of your students!

II. OSHA SAYS!

The Occupational Safety & Health Administration (OSHA) requires employee personal protective equipment (PPE) for protection against workplace hazards. PPE for eye and face protection is found under OSHA's General Industry safety standard 29 CFR §1910.133. In addition, Hazard assessment and equipment selection requirements are under OSHA's 29 CFR §1910.132 standard. Below are several of the standard's sections which assign responsibility of PPE to the employer:

§1910.132(d)

Hazard assessment and equipment selection

§1910.132(d) (1)

The employer shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment.

§1910.132(d) (2)

The employer shall verify the required workplace hazard assessment has been performed through written certification.

§1910.133(a) (1)

The employer shall ensure that each affected employee uses appropriate eye or face protection when exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation.

§1910.133(b)

Criteria for protective eye and face devices.

§1910.133(b) (1)

Protective eye and face devices purchased after July 5, 1994 shall comply with ANSI Z87.1-1989, "American National Standard Practice for Occupational and Educational Eye and Face Protection," which is incorporated by reference as specified in Sec. 1910.6.

§1910.133(b) (2)

Eye and face protective devices purchased before July 5, 1994 shall comply with the ANSI "USA standard for Occupational and Educational Eye and Face Protection," Z87.1-1968, which is incorporated by reference as specified in Sec. 1910.6, or shall be demonstrated by the employer to be equally effective.

Clearly, academic laboratories in middle and high schools fall under this OSHA standard. In addition, most states have goggle statutes which apply to students in the academic laboratory.

The following basic criteria must be met by all protective devices – including eye protectors. Protectors shall:

- A. Provide adequate protection against the particular hazards for which they are designed
- B. Be of safe design and construction for the work to be performed
- C. Be reasonably comfortable when worn under the designated conditions
- D. Fit snugly and not unduly interfere with the movements of the wearer
- E. Be durable
- F. Be capable of being disinfected
- G. Be easily cleanable
- H. Be distinctly marked to facilitate identification only of the manufacturer

Each of the basic science laboratory hazards is to be reviewed and a determination made as to the type, level of risk, and seriousness of potential injury. Consideration should be given to the possibility of exposure to several hazards at once. The general procedure for determining appropriate eye protective equipment is to:

1. Evaluate the level of risk and seriousness of potential injury.
2. Identify the type of protective equipment that is available, and what protection it provides.
3. Compare the capabilities of various types of PPE to the exposure of hazards by employees.
4. Select the PPE that provides a greater level of protection than the minimum required to protect employees from the hazards.
5. Select PPE that will fit each employee properly and provides protection from the hazard.

If an employee is allowed to furnish their own PPE, the employer is still responsible for its condition and appropriateness.

III. THE PROOF IS IN THE PAINT BALL!

The science teacher is charged under “duty of care” to determine the appropriate eye protectors for him/her self and for students. This decision can be made by identifying the PPE available and determining the protection provided. One valuable resource is a chart titled *Comparison of Eye Protection Options* developed by safety consultant Linda Stroud of Science & Safety Consulting Services (<http://www.sciencesafetyconsulting.com/links.html>). This chart graphically summarizes the effectiveness of each type of eye protectors found in middle and high school science labs. The results in a few cases are a real “eye opener” to many science teachers. On the following page is a copy of the chart for the reader to review as provided with permission from Dr. Linda Stroud.

Chemical splash safety goggles with impact/splash protection wins hands down when it comes to working with hazardous liquids in the lab! Of course, any of the eye protectors shown which are impact resistant in compliance with ANSI Z87.1 are acceptable in working with solid hazards. Remember all chemicals have hazards; hazards cannot be removed; however risks can be minimized with appropriate protection.

IV. FINAL THOUGHTS!

In summary, science teachers must be prepared to make appropriate judgments for eye protectors – for themselves and their students. It is the law and carries liability for the teacher should an accident occur and the parents of the injured student goes for litigation. One picture is worth 1000 words as they say. Don’t make the mistake of underrating the laboratory hazard and having a safety incident. One final thought, remember OSHA’s hierarchy of approach to safety – Consider use of engineering controls (e.g. fume hoods) first, engage administrative work practices second and lastly, address PPE issues!

Live Long & Prosper Safely!

Resources:

Occupation Safety & Health Administration Eye & Face Protection - 29 CFR 1910.133:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9778

American Chemical Society Video - ***Safety In The Academic Chemistry Lab - Eye Protection:***

http://www.youtube.com/watch?v=r8RD_sn4GIE

Special thanks go to safety consultant Dr. Linda Stroud for her permission to use the *Comparison of Eye Protection Options* chart and review of this article.

Comparison of Eye Protection Options

*Safety Glasses With Vented
Side Shields* (Impact Only)



*Safety Glasses With
Nonvented Side Shields*
(Impact Only)



Visorgogs® (Impact Only)



Impact Safety Goggles
(Impact Only)



*Chemical Splash Safety
Goggles* (Impact and Splash Protection)



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Building A Presence

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