August 2013, Page 1

ENVIRONMENTAL HEALTH & SAFETY

In this issue:

EH&S Training Schedule for Fall Semester 2013	2
Dear EHS	2
On the Lighter Side	2
Laboratory Refrigera- tors: The Importance of the Right One for the Job	3
Glove Allergies to Latex and Nitrile Gloves	3
Behavioral Safety 101: A Little Praise Goes a Long Way	4
Study: Long Work Hours Increases Employees' Risk of Depression	5
Did You Know?	5
What We're Work- ing On	5

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Expanded "Start of School" edition!



EHS On the Web and on Blackboard

In an effort to make information readily accessible, we've been working all summer to construct a meaningful online presence for the department. In the July issue of "The Safety Net" we announced that the departmental website was up and running. This month, we're pleased to announced a revised EHS organizational presence on Blackboard.

The <u>EHS website</u> is full of information concerning health and safety. Lab workers will find a revised <u>lab safety manual</u> that replaces the old manual put out several years ago by Risk Management. That older manual is now obsolete, and the newer one is completely hyperlinked so that you can jump around to the relevant parts without having to wade through things that don't concern your lab.

There are also manuals and guides available for <u>art safety</u>, <u>theatre and stage safety</u>, and <u>laser</u> <u>safety</u>–just to name a few highlights.

Also available on the site is information concerning MSDS, standard operating procedures, and emergency preparedness. Training information is also available on the site, with both descriptions of the training and a link to the EHS calendar.

The EHS organizational site on Blackboard ("Environmental Health & Safety" under My Organizations) works in conjunction with the website by offering a place where you may renew several of the annually required trainings online. Available online refreshers exist for OSHA Lab Safety (the Lab Standard), HazCom (chemical safety for shops and studios), and Hazardous Waste Handling (RCRA).

Also online is a training option for the Globally Harmonized System or GHS that OSHA is currently phasing in (see page 2).

Other useful information you will find on the Blackboard site include copies of the handouts that are given at the classroom trainings, the training matrix to assist you in determining what, when, and how often you need to train, and a training calendar (also available on the EHS website).

For instructors of lab courses using chemicals, you will find lab

safety training materials that you are free to modify and use for your courses. For student lab instructors, you will find teaching lab resources covering lab safety as well as the logistics of running a teaching lab.

It is our hope that the information and resources that we have made available on both our website and our Blackboard organizational site will be useful to you in your work and learning here at Baylor.

We welcome comments and suggestions on how we might continue to improve these sites. Please email: <u>ehs@baylor.edu</u>.

Web Bytes

The EHS website is open to anyone who has an internet connection . The organizational site is open to those who are enrolled in it. If you are not already a part of the organization and need instructions on how to enroll yourself, please send an email to: <u>Karalyn Humphrey@baylor.e</u> <u>du</u> and she will assist you with the process.

EHS Training Schedule for Fall Semester 2013

To assist you in completing the training you need, we have scheduled the following for the semester:*

OSHA Lab Safety Training:

Thursday September 19: 2-3 pm

Thursday October 17: 2-3 pm

Thursday November 21: 2-3 pm

Haz Com Training:

Thursday September 19: 3-4 pm

Thursday October 17: 3-4 pm

Thursday November 21: 3-4 pm

Hazardous Waste Handling:

Thursday September 19: 3-4 pm

Thursday October 17: 3-4 pm

Thursday November 21: 3-4 pm

Bloodborn Pathogen Training

Wednesday August 27: 2-2:45 pm

Wednesday Aug 28: 11:15-12

GHS Training:

Tuesday September 17: 2-3 pm

Wednesday September 18: 2:30-3:30 pm

Tuesday October 15: 2-3 pm

Wednesday October 16: 2:30-3:30 pm

Tuesday November 19: 2-3 pm

Wednesday November 20: 2:30-3:30 pm

WHO NEEDS WHAT?

If you work in a laboratory setting where chemicals are in use, you need to complete the *OSHA Lab Safety Training* every year (online option available after the first year).

If you work in a shop or studio or other non-lab area where chemicals are in use, or if you work in a lab where the chemicals are used for cleaning and not for experimenting (like some physics or psychology labs), you need to complete the *Haz Com Training* every year (online option available after the first year).

If you work in an area where hazardous waste is generated, you need to complete the *Hazardous Waste Handling Training* every year (online option available after the first year).

If you work in any type of setting where you are exposed to blood or tissue containing blood, you will need to complete *Bloodborn Pathogen Training* every year.

If you work with chemicals in any setting, in a lab or outside of a lab, you will need to complete the *GHS Training* one time, before December first of 2013. Training may be completed either in person or online.

*All classroom trainings will be held in Baylor Sciences room D.110. Online options available through EHS organizational site on Blackboard (see page 1).

Dear EHS

Dear EHS,

Now that you've got a new lab safety manual online, what do we do with the old one that's referenced in our Chemical Hygiene Plan?

~Random Lab Safety Officer

Dear Random,

The old lab safety manual is now defunct. If you printed any part or whole of it out, the paper can now be recycled or used for origami.

If you used an older Chemical Hygiene Plan template that referenced the lab safety manual, you can insert a note that the safety manual can be found online at the EHS website.

If your lab has not yet completed a CHP, the newer templates available on the EHS site have removed the reference to the lab safety manual.

On The Lighter Side



Laboratory Refrigerators: The Importance of the Right One for the Job

There are two types of refrigerators approved for use in the storage of flammable liquids or gases.

Explosion proof refrigerators are designed for use in an area where flammable vapors or gases may be present in the environment around the unit. They have explosion-proof electrical equipment and junction boxes and must be hard-wired into the building's electrical system using approved methods. These units are usually quite expensive.

Flammable-safe refrigerators have specially designed interior parts to prevent flammable vapors or gases from contacting internal ignition sources. They are not approved for use in an environment where flammable vapors or gases may be present, because ignition sources on the exterior of the refrigerator may not be vaportight. These units are connected to an electrical outlet using a standard cord and plug assembly.

Flammable-safe refrigerators are usually much less expensive than explosion-proof models. Specifying an explosion-proof refrigerator in a lab where flammable vapors won't be present in ignitable quantities may be a waste of funds that may be applied elsewhere. Specifying a flammablesafe refrigerator in a lab where flammable vapors are present may result in an ignition, fire, or explosion.

Laboratory personnel frequently ask for an explosion-proof refrigerator when only a flammable-safe model is needed. Of course, all lab refrigerators should be labeled as to suitability for flammable storage.

Using a household refrigerator to store flammable materials creates an unsafe condition. An incident from the University of Virginia illustrates this point. About two and a half years ago there was an explosion involving a household refrigerator. Vapor from stored chemicals exploded inside the refrigerator, ripping off the door and activating the sprinkler system. They believe the explosion occurred when the volatile gases came in contact with the electrical arc in the normal operation of the defrost timer housing. They were lucky that no one was hurt. The university had claims in excess of \$100,000.

If you need assistance is choosing the correct storage options for your lab, please contact Environmental Health & Safety at 710-2900.





Pictures from U. Virginia incident

Glove Allergies to Latex & Nitrile Gloves

Gloves are common in laboratories. The selection of the glove material and type of glove is generally determined by the hazards in the lab. For a small percentage of people, exposure to certain glove materials can itself pose a hazard. The use of gloves can cause irritant contact dermatitis, a non-immune reaction that should not be confused with an allergy. However, exposure to glove materials can also cause an immune or allergic reaction. Allergic reactions can be triggered by exposure to natural rubber latex proteins and/or synthetic chemicals in the glove material.

While allergies to latex are well documented and known, a small but growing number of people are beginning to exhibit allergies to nitrile gloves—which in large part have replaced latex gloves in many areas.

Studies have shown that the chemical accelerators and other additives commonly used in the production of nitrile gloves can cause a type IV allergy. The type IV response begins when residual chemicals leach from the glove and penetrate the skin, triggering the formation of Tcells sensitized to the specific antigen. Patients often present with a chronic dermatitis on their wrists or the back of their hands. In rare cases of allergic individuals, systemic reactions may develop and potentially progress to anaphylactic reactions.

If allergic reactions or chemical sensitivities are present, avoidance and substitution is imperative. Most cases of adverse response to glove material can be controlled once the offending irritant or allergen is identified and eliminated. In response to the growing interest in allergic reactions to glove materials, several manufacturers have introduced accelerator-free products.

If you suspect that you or one of your students has an allergy to a glove material, please contact Environmental Health & Safety for assistance in finding a solution to the situation.

If it is a medical emergency, call Baylor Police at 710-2222.

Behavioral Safety 101: A Little Praise Goes a Long Way

We probably have all heard the old adage: "You catch more flies with honey than with vinegar." Well, there's plenty of science to support it.

Psychological research has shown us time and again that positive reinforcement is the single most powerful tool in our arsenal for eliciting and maintaining desired behavior. It's true when it comes to parenting children and it's true when it comes to creating safe work environments. Strategic use of positive reinforcement is effective and highly costefficient.

Positive reinforcement is defined as any action that follows a behavior and makes it more likely that the behavior will occur again. In the workplace, acknowledging employees for adhering to safe practices is an easy and powerful form of positive reinforcement. When the boss says, "thank you," it matters. Someone else's silent gratitude isn't worth much to us. As human beings, we crave and respond to positive feedback.

Safety can be defined as a dynamic nonevent. As such, word spreads quickly when a big safety mishap occurs but not when minor safety errors are committed without incident. So, our knowledge can be limited when it comes to understanding the current risk for error among employees.

To monitor risk, we must have awareness of how people are performing with respect to many discrete and routine tasks. Staying safe depends on doing the right thing all day every day, even when nobody is looking. Staying focused on the "little things" requires frequent reminders and reinforcements. In the absence of such feedback, human beings naturally drift away from safe practices and use of error prevention tools. To stay safe, we need others to notice and reinforce proper adherence to safety expectations.

Genuine praise has tremendous value for employees: A national survey of over 2,000 people once documented that more than two-thirds of the workers said that praise and recognition from their bosses was more motivating than money. This Gallup Poll indicated that 80 percent reported that praise and recognition motivated them to do a better job. Praising people haphazardly doesn't work. In fact, false praise can be discouraging. People know when others are shining them on and wonder what's wrong with them to warrant disingenuous acts. As the proverbial saying goes, "False praise stinketh." In contrast, positive reinforcement builds confidence when it is:

- Tied to observation and fact.
- Occurs close in time to the act.
- Spells out what was observed and why the action is worthy of praise.

In proper measure, praise generates openness to change. Noticing and praising safe behavior doesn't just happen. It doesn't even come naturally. As human beings, we are conditioned to scan the environment for things that are wrong or out-of-place. Our natural tendency is to criticize or punish. We're prone to give negative or corrective feedback. There is a time and place for both positive reinforcement and corrective feedback. However, it is important to understand that:

• Positive reinforcement is more powerful than punishment for influencing or shaping behavior.

• Corrective feedback is most effective when there is a history of ample positive reinforcement.

• The necessary ratio involves at least five positive interactions for every corrective one (5:1).

Positive reinforcement builds a relationship of respect and trust between supervisors and supervisees. It affects coworkers in the same way. The trust that builds is like money in the bank because it enables people to more effectively receive corrective feedback. People are more willing to believe and respond favorably to corrective feedback that is delivered by people who have a history of noticing what they do well.

Regardless of the industry – public education, daycare, healthcare, manufacturing, construction or motor repair – supervisors invariably resist the use of positive reinforcement. It's common to hear comments like, "I shouldn't have to reinforce employees for doing their job."

It is helpful to have real-world evidence to make the case. For example, groups respond

positively to learning that compared to their peers, teachers who use positive reinforcement in proper measure have students who exhibit fewer disruptive behaviors and achieve higher on standardized test scores.

It also is important to be prepared for the reality that managers face when they initiate systematic use of positive reinforcement. Most managers will find the process to be more challenging than expected. Initially, they will uncover a host of behaviors that need to be corrected. The process of looking for the positive also is likely to reveal that some employees are unfamiliar with the company's safety standards, haven't had sufficient training to appreciate their importance or don't have the resources to perform as expected. Having a plan of action is critical.

Companies with great safety records follow a defined process for building and sustaining a culture of safety. They:

• Set expectations – Tell people what you want to see.

• Educate – Give people the information and tools they need to be successful.

• Build accountability – Prepare managers and leaders to incorporate a proper measure of positive reinforcement into daily safety rounds.

Following this process is markedly different from holding people accountable. The latter is an approach that rests on constant supervision and punishment of undesirable behavior. It is a losing proposition that involves daily grind that isn't easy or rewarding. In contrast, building and sustaining a culture of safety includes a purposeful focus on the positive that is a daily priority. Over time, it becomes easy and fun.

Relentless use of the 5:1 positive reinforcement rule maintains widespread attention on safe and desirable actions. It may be your company's key to getting employees to mindfully do the right thing, even when nobody is watching. As the chief nursing executive of a large healthcare system once said to me about building accountability, "It's not about leaders being seen, but about what leaders are seen doing."

Study: Long Work Hours Increases Employees' Risk of Depression

Employees who work long hours with high job demands are more likely to develop depression, a study in the August <u>Journal of</u> <u>Occupational and Environmental Medicine</u> concludes.

Researchers analyzed job and workplace factors affecting depression risk in a group of 218 Japanese clerical workers. They found that employees who worked long hours (at least 60 per week) and had high job demands (defined as "usually" having too much work) were at higher risk of depression.

Workers who initially had the combination of long hours and overwork were 15 times more likely to have depression when reevaluated one to three years later. When adjusting for other factors, workers who went from long hours-overworked (LHO) status to non-LHO status were at a lower risk of depression, while those who moved from non-LHO to LHO were at an increased risk.

The risk of depression in LHO workers seemed to increase over time, according to the researchers.

"By targeting LHO, especially changes in LHO status, mental-health measures that effectively reduce the occurrence of major depressive disorder will become possible by controlling factors in the occupational environment," conclude lead researchers Takahashi Amagasa and Takeo Nakayama of



Kyoto University School of Public Health.

Previous studies have reported mixed results regarding the physical and mental health effects of long work hours. The new study highlights the importance of high job demands and feeling overworked – combined with long work hours – as a risk factor for depression in employees, the researchers assert.

Did You Know?

Fatigue has a measurable effect on safety. The average annual injury rate per 100 workers, according to a study from the American College of Occupational and Environmental Medicine, is 7.89 for persons getting less than 5 hours of sleep a night. It drops to a low of 2.27 for persons getting 7.8 hours of sleep a night.

Research has also shown that the number of hours awake can effect you in a way similar to blood alcohol concentration (BAC). Being awake 21 hours is equivalent to a BAL of 0.08 (the legal limit in Texas), while being awake 24-25 hours is equivalent to a BAL of 0.10.

What We're Working On

The department is currently advertising for a person to fill the position of *general OSHA safety.* This person would be involved with general regulations such as ergonomics, hearing preservation, and other general health and welfare concerns. Applications for the position are coming in, and we hope to have it filled soon. EPA regulations stipulate that each waste stream must have a *hazardous waste determination form* completed for it. EHS personnel are phasing in enforcement of this regulation and working to streamline the process for generators. They are also working to educate generators about the process and procedures. Do you ship lab materials or samples? The Department of Transportation (DOT) and The International Air Transport Association (IATA) have regulations concerning that. EHS is in the process of developing a training program and identifying those individuals who will be in need of this training. EHS is working to develop *centralized chemical inventory tracking for the entire campus.* At the present time, only the Baylor Sciences Building has a centralized inventory tracking system, while other areas track their inventories locally. Possibilities for how to track chemicals across the rest of campus are currently being explored.

"The Safety Net" is a monthly electronic newsletter published by the Department of Environmental Health & Safety and intended to share information with the Baylor community, promote transparency within the university's safety program, and encourage the continued development of a culture of safety among university employees and students.

Comments, questions, and ideas for future stories are welcomed. Email: ehs@baylor.edu