



LIFE LINE

VOLUME 27 ISSUE 2

JUNE 2011

By Mike Durham

DIRECTOR'S LOG

Accidents matter...

I have made mention in this column before about my admiration of the astronauts at NASA and others who routinely "*slipped the surly bounds of Earth, and danced the skies on laughter-silvered wings*" as John Gillespie Magee, Jr. wrote in a poem in 1941 while a test pilot in Britain during WWII. He was inspired to write this poem while on a test flight to 30,000 feet in a new version of the Spitfire V, a prop driven fighter plane. He sent the poem, which he named "High Flight" to his parents back in the US. President Ronald Reagan used Gillespie's inspiring words in his memorial tribute following the Challenger disaster.

My fascination with the space program and the men and women who brave that frontier goes back to the early 60's at LSU where, as a member of ROTC and the campus chapter of the Association of the US Army (AUSA), I went on a "field trip" to the space center at Huntsville, AL. There the Saturn V rocket was being built. The Saturn V was later used in the Apollo flights to the moon. At Huntsville, as an electrical engineering major, I marveled at the technology. But I was really astonished at the bravery of the test pilots who would place themselves on the end of a rocket ship and roar off into space. Such brave men and women! As I write this, the space shuttles Discovery and Endeavor are safely on the ground after making their last scheduled flights. They are destined to go to museums. Atlantis is at the launch pad, scheduled to make the last of the shuttle flights in early July. I really hate to see it end...

I write about the space flight program to highlight the fact that accidents matter! We can recall the disastrous accidents that our space program has experienced: the Apollo I fire at the launch platform that killed 3 crew members, the Challenger explosion during its ascension in 1986 that killed 7 (including Christa McAuliffe, the first school teacher astronaut) and the Columbia disaster during reentry in 2003, which killed its seven crewmembers. These "big" accidents will be remembered in history books for all to read. But in the background, other accidents will go unnoticed. For, example, after the terrible massacre in Tucson, Arizona we awaited the decision of Astronaut Mark

Kelly, Congresswoman Gabrielle Giffords' husband, as to whether he would be able to command the Endeavor flight. But lost in the events of the day was the status of one of the Discovery astronauts, Tim Kopra. Tim was forced to miss the final flight of space shuttle Discovery on Feb. 24 because he was injured in a bicycle accident in Houston. NASA had to hurriedly find a replacement, as they do not train backups for the astronauts who perform the space walks. Everything worked out OK, except for Tim, who had to sit this one out on crutches.

Bill Lenoir, a retired astronaut who flew in the shuttle program in the 80s died last year after a bike accident that caused severe head injuries. Edward Givens, a retired astronaut died in an automobile accident in 1967; in that same year, Clifton Williams died in a trainer plane crash; Steven Thorne, who flew on a mission in 1985, died while practicing for an air show in 1986 (a crash caused by pilot error); Pete Conrad, the third man to walk on the moon, died in a motorcycle accident in 1999; and NASA Astronaut Patricia Robertson died in a 2001 accident in her small homebuilt tail-wheel airplane in a non-NASA related training flight.

And John Gillespie Magee, who flew the British Spitfire in WWII was killed in a mid air accident in a trainer plane during a non combat flight.Accidents matter.

Our Laboratory Safety Accreditation Program is up and running under Bob Ardoin, and we have accredited 9 campus labs to date. This process is an excellent vehicle for assuring

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LSU ENVIRONMENTAL, HEALTH AND SAFETY LABORATORY SAFETY ACCREDITATION

At LSU and the LSU Ag Center, the safety of our students and researchers is our paramount consideration in our laboratories, and quality safety programming is vital to our successful operation as a Tier I research institution. Also, safety, security and environmental regulations from a host of governmental agencies must be followed to avoid severe monetary penalties and/or research shutdowns and defunding.

To provide assurance to our researchers that their labs are in compliance with necessary safety, security and environmental rules and regulations, we have instituted a lab safety accreditation process, administered by the Environmental Health and Safety (EHS) Office.

The PIs listed below have been awarded the **LSU Environmental, Health and Safety Laboratory Safety Accreditation**. Certificates were often presented in various meetings by Dr. John Russin, Vice Chancellor of the LSU Ag Center or Dr. Thomas Klei, Vice Chancellor of LSU Research and Graduate Studies. They were assisted by Mr. Mike Durham, Director of LSU EHS.

- * Dr. Prasanta Subudhi, Associate Professor, Plant, Environmental & Soil Sciences, LSU AgCenter, Laboratories in Sturgis Hall
- * Dr. Niranjana Baisakh, Assistant Professor, Plant, Environmental & Soil Sciences LSU AgCenter, Laboratories in Sturgis Hall
- * Dr. Ying Wang, Assistant Professor, Mechanical Engineering, LSU College of Engineering, Laboratory in Patrick Taylor Hall
- * Dr. Julia Y. Chan, Professor, Department of Chemistry, LSU College of Science, Laboratories in Choppin Hall

- * Dr. Shengmin Guo, Associate Professor, Mechanical Engineering, LSU College of Engineering, Laboratory in Patrick Taylor Hall
- * Dr. Carol Taylor, Associate Professor, Department of Chemistry, LSU College of Science, Laboratories in Choppin Hall
- * Dr. Carrie Knott, Assistant Professor, Plant, Environmental & Soil Sciences, LSU AgCenter, Laboratories in Sturgis Hall
- * Dr. Jayne Garno, Associate Professor, Department of Chemistry, LSU College of Science, Laboratories in Choppin Hall
- * Dr. George Strain, Professor and Interim Head, Department of Comparative Biomedical Sciences, LSU School of Veterinary Medicine, Laboratories in the School of Veterinary Medicine.

Accreditation is a joint effort between the laboratory groups, various disciplines of the EHS department with assistance from the Radiation Safety Office.

We congratulate these professors, their groups and their department heads as they took steps to make their laboratories safer places in which to work. All laboratories at LSU will be asked to participate in the accreditation process.

Many more laboratories in several departments have already begun the process and are moving towards their accreditation audits. More information can be found on our new web site at <https://sites01.lsu.edu/wp/ehs/laboratory-safety-audits-and-accreditation/>. Please give us a call when you are ready.

Hurricane season: Prepare and Pre-Plan

Recalling Baton Rouge's experience with the storms of 2005 and 2008, we need to pre-plan and get ready for the next storm season by remembering the lessons learned.

Communication plans should include:

- Establish a Contact person outside of the potential storm affected area.
- Maintain supervisor's, and co-workers', neighbors' telephone and contact numbers

Assemble clothing, medications, critical papers in one duffel bag. Give friends and family members your plans and telephone numbers. Take phone book of numbers and addresses with you, along with critical papers such as insurance policies, birth certificates, social security cards, and "last month's" utility bill receipts.

Make sure your vehicle is ready for a trip, check fluids, tire pressure, proper operation of lights, windshield wipers. Copy paperwork for each vehicle to include insurance, ownership title, and registration in each vehicle

Loss of Electricity:

"Remote or cordless" phones will not work since their base unit needs electricity, Telephones should be "hard-wired" to telephone system, get telephone extension cords to allow moving the "land-line telephone around to convenient parts of the house.

If you are out of town, your answering machine at your home would indicate whether your house has electricity
Cell phone charger for use in vehicle?

Stock up on ice

Use separate "day-use" ice chest to store food for the day rather than continuously opening/closing freezer and refrigerator

Freeze plastic milk jugs with water prior to storm, can be used as source of water and also keep in ice chest to keep cool

Medications needing refrigeration?

Frozen meats serve as good "ice cubes" in "Day-chest" then cook that night

Fill propane bottles for grills, and camp stoves, for cooking

Have cash available

Obtain battery powered radios, lanterns, and flashlights. Remember the spare batteries

Know proper use of electrical generator, follow manufacturers instructions

Generators can "back-feed" into the electrical grid causing a serious danger for electric company employees.

Separate generator electrical feed from your house electrical system.

Traffic: remember we may be involved with Contra-flow of evacuees through town, causing massive demand on roads

Be a "good Samaritan" to evacuees as they pass through town

"Car-pool" with co-workers or neighbors, minimize traffic and save **gas**,

Avoid major roads and interstates, consider providing spare maps of town to evacuees

Use only approved containers for gas/fuel storage. Store away from ignition sources

Fill vehicle tanks prior to the storm or early in the morning

Stock up beverages, snacks, be a good neighbor and provide to evacuees

Stop-lights without power should be treated as a 4-way stop

BEWARE of Carbon Monoxide:

Carbon monoxide is a silent killer, no smell, no taste, one cannot detect.

CO is generated when something burns. i.e.: Generators' exhaust, vehicle exhaust, propane and natural gas stoves. Keep area ventilated when using these devices.

Do NOT place electrical generator next to open windows

[LINK to Hurricane Preparedness](#)



Director's Log

(continued)

our PIs that their labs are "up to snuff" in safety and environmental requirements, and we look forward to having every lab on campus accredited. We just have several hundred to go... My thanks to Bob for making this activity a very positive part of our EHS program. Please look on our website for more information about the accreditation process.

In this edition of the Life Line Newsletter, you will find accident statistics that go into considerable detail about the accidents and where they are occurring. If you have ideas about how we might better raise awareness on accident prevention, please give us a call at 578 8507.

In last quarter's newsletter, I discussed the terrible consequences of the Fukushima sunami. If you wish to have more information on that incident, the website at MIT dedicated to the incident has additional information. Go to <http://mitnse.com/> to get the updated information. When we have a tragic thing like that happen, we must learn from it, otherwise it is a *total* loss.

Recent incidents

This spring several incidents involving hazardous materials occurred on campus. The following are brief descriptions of the incidents and examples of the corrective actions taken.

CYLINDER ACCIDENT

On Thursday, March 10th, at approximately 2:50 pm, in the 6th Floor Hallway of Choppin Hall; a Chemistry graduate student was carrying a pressurized stainless steel 1 liter cylinder with a pressure gage and valve assemblies when the gas mixture inside the tank exploded.

The Graduate Student was carrying the cylinder by the pressure gage. Inspection of the cylinder revealed that the explosion caused the bottom valve assembly on the tank to blow out completely. The hot pressurized gas mixture blew the tank completely out of his hand and flashed part of his long sleeve cotton shirt away, particularly on the lower part of his left arm. The bottom valve assembly disintegrated causing severe shrapnel wounds to his left hand. The Student was taken to Baton Rouge General mid-city emergency room for treatment. Doctors found first and second degree burns to his left arm and hand. The Student also required an operation to remove the metal fragments from his arm and hand. Some metal was left in his hand and the large laceration to his hand was left open to heal properly. There was no nerve or tendon damage. The Student was released that night and is expected to make a full recovery.

There was no active fire aside from the initial detonation, although the smoke from his shirt set off the fire alarm.

After Interviews with the student and his major professor and

inspections of the cylinder; it is believed that there was an accidental mixing of hydrogen and oxygen gas in the tank. The detonation could have been triggered by the compressive heating that took place on recharging the tank. The tank was labeled as containing oxygen and had a partial pressure of gas already in it. The Student recharged it without releasing the existing gas and flushing the tank out. Although the tank was labeled for oxygen it may have had a partial pressure of hydrogen in it. Given the repetitive nature of this particular task EHS recommended that the following corrective procedure changes be implemented:

1. When cylinders are returned they should be emptied and the label removed. New labels should not be attached until the cylinder is full.
2. Written procedures should be developed for filling and emptying cylinders with warning points.

NEW CHEMICAL SHIPMENT REACTION

On May 18, at approximately 4:00pm an assistant professor of Chemistry was opening a new 800 ml container of n-butyllithium in hexane when he noticed the fire retardant packing inside the container was smoldering and hot to the touch. N-butyllithium is a reagent chemical widely used in the synthesis of organic molecules and is normally supplied as a solution of n-butyllithium in an organic solvent. The material is pyrophoric. (It will ignite spontaneously when exposed to air.) and is normally shipped in small amounts in a double packed container made up of a sealed glass bottle inside a sealed metal can.

Realizing that a reaction was taking place; the professor filled the metal outer container with sand to contain the reaction and seal out oxygen. This action smothered the reactants and stopped any further reaction with air. No material was spilled into the laboratory. The professor contacted LSUPD and notified them of the incident. LSUPD notified EHS at 4:15pm after arriving at Choppin Hall. Before EHS arrived LSUPD activated the fire alarms by pull station and the building was evacuated. BRC Fire and Hazmat was notified and met with EHS and the professor, and established and implemented removal of the container. A waste contractor, removed the container from campus and transported it to a disposal facility for incineration at a cost of \$1800.00.

The chemical supplier, Sigma Aldrich, has been contacted and a complaint has been registered. Sigma will notify the transport company as well.

EHS recommends the following corrective actions:

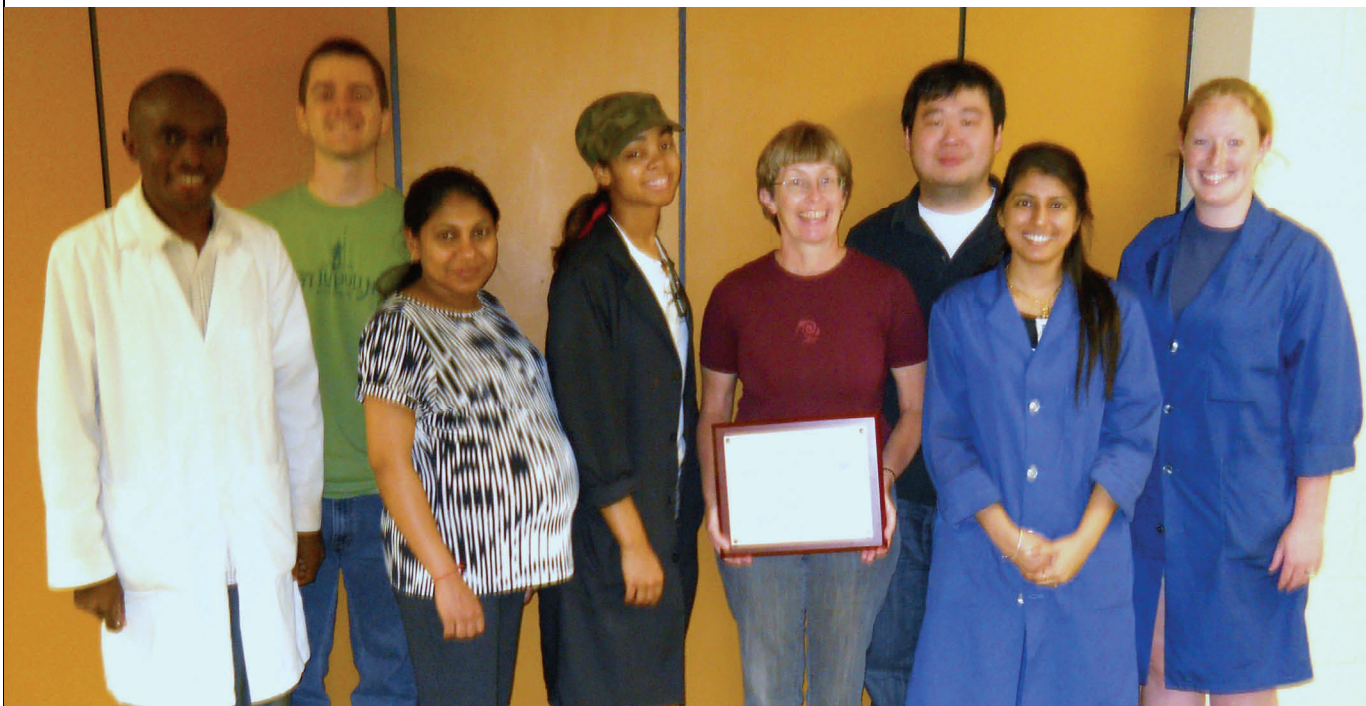
1. Reactives should be opened in a fume hood in the event that a release occurs.
2. Laboratories shall have proper spill kits and small containers of sand which can be used for quenching and sealing reactive compounds.
3. All Choppin Hall occupants shall be reminded that they must evacuate the building when the fire alarm is activated.*

*It was observed that some building occupants did not leave the building when the alarm sounded.

Lab Safety Accreditation Certificate Presentations (from page 2)



Dr. Julia Y. Chan, Professor, Department of Chemistry, LSU College of Science, Laboratories in Choppin Hall



Dr. Carol Taylor, Associate Professor, Department of Chemistry, LSU College of Science, Laboratories in Choppin Hall

Lab Safety Accreditations Certificate Presentations (continued from page 5)



Dr. Carrie Knott, Assistant Professor, Plant, Environmental & Soil Sciences, LSU AgCenter, Laboratories in Sturgis Hall



Dr. Ying Wang, Assistant Professor, Mechanical Engineering, LSU College of Engineering, Laboratory in Patrick Taylor Hall



Dr. Shengmin Guo, Associate Professor, Mechanical Engineering, LSU College of Engineering Laboratory in Patrick Taylor Hall

Do you work with rDNA?
 Microorganisms?
 Human, Animal or Plant
 Pathogens?
 Human or Primate Cells or
 Tissues?
 Biological Toxins?
 If so... **Are YOU registered!?!?**

IBRDSC Registration

Registration with the Inter-Institutional Biological and Recombinant DNA Safety Committee (IBRDSC) is an essential element in assuring compliance with federal, state, and local regulations and guidelines, including:

- NIH Guidelines for Research Involving Recombinant DNA Molecules
- CDC-NIH Guidelines for Biosafety in Microbiological and Biomedical Laboratories
- OSHA Bloodborne Pathogen Standard (29 CFR 1910.1030)
- Select Agent Regulations (42 CFR 73) or USDA (9 CFR 121)

Materials That Require Registration:

1. **Microorganisms** (including those considered low risk to healthy humans and that are contained at Biosafety Level 1 (**BSL-1**)*.
2. **Human Derived Materials** including blood, blood components, fluids, unfixed organs, tissues and cell lines (primary and established).
3. **Non-Human Primate Derived Materials** (including established cell lines).
4. **Biological Toxins** with an LD50 of less than 100 micrograms per kilogram of body weight in vertebrates.
5. **Recombinant DNA** activities as required by the NIH Guidelines for Research Involving Recombinant DNA Molecules http://oba.od.nih.gov/rdna/nih_guidelines_oba.html
6. **Select Agents** as defined by CDC (42 CFR 73) or USDA (9 CFR 121).

***NOTE:** The Committee will evaluate the research and determine if the work is EXEMPT.

The IBRDSC Approval Process

Principal Investigators (PIs) seeking initial IBRDSC registration or approval are required to complete the online registration accessed via the EHS Biosafety website at www.ehs.lsu.edu.

The registration process prompts PIs to identify all biological agents he or she intends to acquire as well as the nature of the experiments to be completed.

IBRDSC meetings are generally held once a month with the date, time, and location listed on the EHS Biological Safety website. Meetings are open to interested members of the University community and to the public. Committee requests for proposal modifications or additional information will be communicated to the PI through the Biosafety Office, which will coordinate subsequent review of requested modifications. After completion of all requirements, a formal letter of approval from the IBRDSC is sent to the PI. Approval is valid for three years. Modifications to existing approvals are subject to review.

If you have any questions about the registration and/or approval process, contact [Gregory Hayes](#) or [Quinesha Morgan](#) at 225-578-5640.

Year-To Date Accidents

During the first 5 months of 2011, there have been 94 accidents reported to Risk Management

[Link to Summary of Accidents](#)

FDA ISSUES NEW TOUGHER SUNSCREEN REGULATIONS

The final regulations, which become effective in one year, establish a standard test for over-the-counter sunscreen products.

Products that pass this test will provide protection against both ultraviolet B radiation (UVB) and ultraviolet A radiation (UVA). Sunburn is primarily caused by UVB. Both UVB and UVA can cause sunburn, skin cancer, and premature skin aging. A certain percentage of a broad spectrum product's total protection is against UVA.

Under the new regulations, sunscreen products that protect against all types of sun-induced skin damage will be labeled "Broad Spectrum" and "SPF 15" (or higher) on the front.

The new labeling will also tell consumers on the back of the product that sunscreens labeled as both "Broad Spectrum" and "SPF 15" (or higher) not only protect against sunburn, but, if used as directed with other sun protection measures, can reduce the risk of skin cancer and early skin aging. For these broad spectrum products, higher SPF (Sun Protection Factor) values also indicate higher levels of overall protection

Sunscreen products that are not broad spectrum, or that are broad spectrum with SPF values from 2 to 14, will be labeled with a warning that reads: "Skin Cancer/Skin Aging Alert: Spending time in the sun increases your risk of skin cancer and early skin aging. This product has been shown only to help prevent sunburn, NOT skin cancer or early skin aging."

Water resistance claims on the product's front label must tell how much time a user can expect to get the declared SPF level of protection while swimming or sweating, based on standard testing.

Manufacturers cannot make claims that sunscreens are "water-proof" or "sweat-proof, or identify their products as "sunblocks." Also, sunscreens cannot claim protection immediately on application (for example, "instant protection") or protection for more than two hours without reapplication, unless they submit data and get approval from FDA.

Free Paint

Facility Services has surplus paint in various colors that cannot go to state surplus, but can be used for University business. If you would like to pick up paint, contact David Perault at 578-5567.

++++ Safety Meetings +++++

As a minimum, Department Safety meetings should be conducted Quarterly. This newsletter can be used as safety meeting material. Please route through your department via e-mail and request a "return receipt," or circulate with "sign-in" sheet containing printed name/date/ and initial.

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