

"If you are brave enough to say **GOODBYE** life will reward you with a new **HELLO**"



Farewell Millington Hall

Article By: Sandra Prior

Millington Hall was named for **John Millington**, a professor of chemistry and natural philosophy from 1836-1848. Construction of Millington Hall was completed in 1968. The building consisted of three large wings, with an auditorium occupying one wing.

Millington contained **teaching and research** labs, a herbarium, six controlled-environment rooms, and a woodworking shop. The botanical lab was built on the roof of the building during the summer of 1969, and a greenhouse complex was added in 1970. This 4,000 square foot area housed a range of plant families.

For many years **Millington Hall** was home to the Biology and Psychology departments. Millington also served as "swing" space for the Physics department during the Small Hall renovation, and it provided much needed research space for Chemistry, Kinesiology and Geology faculty in its final years.

On April 1, 2015, Millington Hall, and more specifically, the Room 150 auditorium, was ranked the **most romantic campus hot-spot** by the student-run National Association of Truly Unknown Romantic Escapes (NATURE) – NOT!!! (April Fools' 2015)

Now it is time to say **Farewell to Millington Hall** as demolition is scheduled to begin in mid-September 2016; with a mid-March 2017 target completion date. The site will be turned into a Green Space and may serve as the site for a future Integrated Science Center 4.



HELLO ISC 3

Article By: Cori Harris

With 113,000 square feet of space distributed over four levels, the science center integrates the Applied Science, Biology, Chemistry, Neuroscience and Psychology Departments. A tour of ISC 3 begins with an open atrium space, the fuel-filling Starbucks Cafe, and see-thru glass labs such as Dr. Del Negro's neuroscience research lab, and Professor Hinders' non-destructive testing lab. A few steps down the hall,



the Psychology Department's new EEG Lab uses non-invasive techniques for measuring electrical brain activity over the human scalp.

Travel upstairs to visit Dr. Orwoll's and Dr. Kiefer's lab, where they are working on ways to make radiation-shielding bricks out of the

regolith of Mars. Continue the tour to view students actively engaged in academic teaching labs such as Physiology and Etymology on the 2nd Floor. The next level of the tour will bring you to the 3rd Floor, where Dr. Burke is excited to display the Methods Room; an area designed for sharing data and information through various computer monitors.

End the tour by visiting Millington's former greenhouse. The research and teaching oriented greenhouse was strategically placed on top of ISC 2, and can be seen from Jamestown Road.

ISC 3 — A must see experience of integrating science.

CLASS Is In SESSION

Safety Lessons Learned

LIQUID NITROGEN



On February 14, 2016, around 1600 hours, the automatic shutoff control for the liquid nitrogen fill station in ISC Room 024, failed to stop the flow of liquid nitrogen (LN₂) into an unattended dewar that was connected to the system for filling. When the automatic shutoff failed, the system continued to pump LN₂ into the dewar, and the dewar's pressure relief valve activated; allowing a continuous flow of LN₂ gas into Room 024. Eventually there was enough LN₂ gas, and likely condensed water droplets in the air, that it activated



the oxygen deficiency, hazardous materials and fire alarms. The oxygen level in the room was at 8% when emergency responders arrived on scene. The cause of the LN₂ release is inconclusive; however, we identified the following **lessons learned** during the incident analysis:

- 1) The emergency notification information on the door sign was ineffective and should be re-evaluated. Emergency responders called the contact numbers which were all university office numbers and the event occurred on a Sunday when the offices were unoccupied;
- 2) Emergency responders need written instruction and familiarization training on how to shut down the LN₂ delivery system and disconnect the dewar;
- 3) The LN₂ distribution system should undergo a routine preventive maintenance and a vendor capable of performing PM on the system has been identified;
- 4) Dewars should undergo a periodic preventive maintenance inspection;
- 5) Dewars should not be left unattended for long periods of time (>15 min) while being refilled;
- 6) Untrained personnel should never open the door or make access to a room when its oxygen deficiency and/or hazardous materials systems are in alarm.

Article By: Sandra Prior

MOLD & MILDEW



Since May 2016, the EH&S Office has observed an increase in the number of environmental concerns; specifically, visible mold/mildew in office spaces, and living quarters on campus. During inspections, EH&S work with Facilities Maintenance & Operations personnel to determine and eliminate the source contributing to the growth of mold/mildew in areas, and begin corrective actions. As part of the inspection process, the EH&S team educates the community on the origin of mold/mildew. In addition to unforeseen issues such as water intrusion, and HVAC related problems, other conditions contributed to the presence of mold/mildew on campus:

Inspection Findings & Lessons Learned

1. Faculty, staff, and students open windows as a method of improving indoor air quality.

- Opening doors and windows, when it is humid outdoors (60% or higher), can easily cause mold problems that far outweigh the benefits of introducing fresh outdoor air into a space.
- Introducing humid outdoor air while the air conditioner is on, not only fosters mold growth, but consumes electricity and may cause damage to the AC unit.

2. Faculty, staff, and students lower the AC thermostat, in efforts of lowering the humidity in an area.

- Relative humidity increases when the temperature decreases; creating the ideal environment for mold growth.
- Lowering the temperature, decreases the temperature of the materials in walls, floors and ceilings, thereby significantly increasing the potential for actual moisture condensation on these items; the ideal conditions for mold growth.

3. Students need familiarization training on housekeeping tips, that eliminate the sources that contribute to musty odors and the presence of mold/mildew in living quarters.

- Damp clothing and wet towels are great food sources for mold and mildew to live on. Instead of placing these items in a pile, hang them up to dry, or conduct laundry activities more frequently.

Article By: Cori Harris

National Campus Safety Awareness Month

Article By: Sandra Prior

September is National Campus Safety Awareness Month (NCSAM) and everyone is thinking about campus safety - the media, parents, students, and especially our university faculty and staff are working to create a healthy and safe campus environment. William & Mary (W&M) prepares an annual [Campus Security and Fire Safety Report](#) that provides a variety of campus safety statistics, policies and prevention initiatives. This report is available to you on the Compliance and Equity Office's website. Currently, the 2015 report is posted and the 2016 edition of the report will be available after October 1, 2016.



Another great resource for information about the W&M campus is the [Princeton Review](#). This publication provides a rating scale of 60-99 that measures how well prepared colleges and universities are doing with regard to various key aspects of interest to prospective students to include residential fire safety.

Did you know that W&M has a Fire Safety rating of 91? That's a pretty good rating but we would like to do even better with help from university community. So what can you do? Most importantly, our residential students can make a huge contribution towards helping us improve our rating by reducing the number of accidental fire alarms due to cooking. If this is your first time cooking for yourself or you just need some guidance on what to do...the EH&S Office provides you some great [Cooking Safety](#) tips on their website.

For more information and/or training on cooking safety, contact the **EH&S Fire Safety Officer at 1-1745**.

FIRE SAFETY TIPS

Article By: Brad Meirs and Cori Harris

During the second quarter, from April 1, 2016 through June 30, 2016 (91 days), a total of ninety (93) fire alarms were activated, a (3) alarm increase from last quarter which required the Williamsburg Fire Department to arrive and provide response on campus. The private kitchens on campus are the most common activation point in resident halls. Practice these **FIRE SAFETY TIPS** to assist in minimizing the number of fire alarms for this quarter:

- **Always unplug** an appliance when you're done using it, and let it cool completely before storing.
- Keep flammable items, like paper, oven mitts, and clothing, away from the cooking area.
- Pay attention while you're cooking; **STAY IN THE KITCHEN** when cooking or when something is in the microwave.
- Cook only when you are alert, not sleepy or drowsy from medicine or studying.
- **Clean cooking surfaces** on a regular basis to prevent grease buildup.
- Know the location of the nearest **FIRE EXTINGUISHER** in the area; adjacent to the kitchen or under the sink in campus housing.



SAFE WORK PRACTICES

LIFT GATE SAFETY

Article By: Sandra Prior

When used correctly, lift gates are a valuable tool that can save time and reduce the risk of employee injuries. Lift gates are an “add-on” piece of equipment to university trucks. They can be prone to malfunction and/or subject to incorrect use by employees. The key to lift gate safety is in their correct use.



Accidents involving lift-gates, generally do not happen that often, but when they do occur, resulting injuries can be painful for the employee and costly for both the employee and the employer. In the last 12 years, I have performed an incident analysis on three lift gate accidents. Two of the accidents resulted in fractures to employees’ hands and one resulted in a fractured leg. All three injuries were preventable.

Of the three injuries, two of the injuries, one to the hand and one to the leg, resulted from a lack of lift gate preventive maintenance. In both cases, the lift gate got stuck while in operation and the employees, noting that “**this had happened in the past,**” used a lug wrench to pry the lift gate platform. In the one instance the lift gate “snapped” back into position and crushed the employee’s finger. In the other, the lift gate resumed its decent to its lowered position rapidly and broke the employee’s leg. The third injury occurred when an employee used the lift gate in a manner for which it was not designed, more specifically, as a ramp from the loading dock to the truck. In order to do so, the lift gate had to be positioned just right so the edge of the platform would catch on the loading dock. The employee received a broken hand while trying to position the lift gate edge against the loading dock surface.

Proper training and equipment maintenance can make a huge difference in lift gate safety. The instructions on all Safety/Warning labels applied to the lift gate as well as all safety and maintenance requirements noted in the Operator’s Manual provide you everything you need to know about lift gate safety. In addition, the EH&S Team prepared some useful lift gate safety tips and an operator inspection checklist for your use. These documents can be accessed at: <http://www.wm.edu/offices/facilities/services/safety/industrial/infosheets/index.php>

PROPER LIFTING TECHNIQUES

Article By: Cori Harris

At sometime in each of our lives, we are called upon to lift heavy and bulky items such as groceries, boxes, weights, children, pets, trash, and equipment. Sometimes we practice proper ergonomic techniques and other times we move with haste. Due to the increase in back injuries, muscle sprains and strains, practicing proper lifting techniques on and off the clock is imperative to maintain our health.

So, the next time you find yourself looking around to see if anyone is watching you carry a load too heavy, or your gait becomes unbalanced while carrying something, STOP, DROP the load slowly, and THINK about the following **PROPER LIFTING TECHNIQUES:**

1. **Keep your back straight!**

Every time you bend over to lift an object of any kind, you are applying a high amount of pressure on your spine.



2. **Bend your knees!**

Move close to the object and bend your knees. Your head should remain above your shoulders and your arms reach down to grasp the object. Once the object is securely in your hands, extend your legs upward while keeping your back straight!

3. **Keep objects raised!**

The lower an object is, the more strain your body endures. Studies show that storing objects at waist-level will reduce the strain on your body.

4. **Know your limits!**

If an object’s weight is not clear, try to push the object with your foot. Don’t assume you can lift everything, ask another person for assistance if the object is too heavy.

The Three F's of **3D PRINTING** – Fun, Futuristic and First in Safety

Article By: Sandra Prior

The use of 3D printers is growing rapidly. And why not? **3D printing is futuristic, fun**, and according to President Obama in his 2013 State of the Union address, “has the potential to revolutionize the way we make almost everything.” Even better, the cost of 3D printers, such as the popular MakerBot, are becoming affordable and can be found in many departments across the W&M campus from the Physics Department to the School of Business.

While 3D printing has many benefits, there are also potential risks. For example, **3D printers can be relatively complex**, incorporating high-voltage power supplies, multiple moving parts, ultraviolet (UV) radiation and hot surfaces from the print head block and UV lamp. Beyond these obvious **safety hazards**, there is also a growing concern with not-so-obvious ones, such as airborne emissions and indoor air quality.



Each 3D printer is designed to use certain types of materials. These materials have inherent hazards and may become more hazardous when they are subjected to the 3D printing process or are inadvertently ignited. Safety concerns regarding 3D printer materials center on nanoparticles, or Ultra Fine Particulate (UFCs), and Volatile Organic Compound (VOCs) hazards associated with the feed material used to create an object.

The process of **3D printing**, also known as *additive manufacturing*, **creates or replicates an object** by using successive layers of material (usually plastics) to create an object. Objects can be of any shape or geometry and are produced from a 3D model or from a design fed into the 3D printer by a computer. The



most common type of desktop 3D printer technology joins thin strands, or filaments, made of ABS (Acrylonitrile Butadiene Styrene) or compostable materials, such as [PLA](#) (polylactic acid) a biodegradable thermoplastic aliphatic polyester derived from starches found in foods, like potatoes, corn, grain, or even beets.

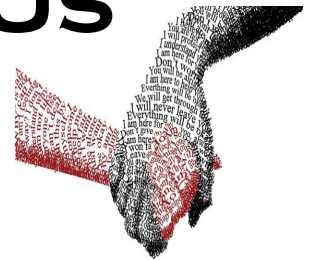
A January 2016 [study](#) evaluated the hazards associated with 9 different types of filaments including ABS and PLA. According to the study, “Results from a screening analysis of potential exposure to these products in a typical small office environment suggest caution should be used when operating many of the printer and filament combinations in poorly ventilated spaces or without the aid of combined gas and particle filtration systems.” And, while PLA is biodegradable and thus appears to be the safest of the filament types, it too has the potential to emit particulates and cause skin, eyes and/or respiratory irritation.

The majority of the **3D printers on the W&M campus are consumer-grade 3D printers** and should be installed and maintained according to the manufacturer’s instructions. And, since most 3D printers do not have exhaust ventilation or filtration accessories, both placement of the printer and selection of printing materials must be carefully considered. It is also important that users consult Safety Data Sheets for product-specific information.



IT TAKES US, TO BUILD US

EH&S Office Participates in the Suffolk Boys and Girls Club Science Fair



On July 13, 2016, EH&S Team members provided fire safety, CPR, choking response, and germ protection stations at the Suffolk Boys and Girls Club Science Fair. This is the third year that the EH&S Office has supported the science fair and each year, the EH&S Office stations have been rated by the science fair participants as among their favorites! Our thanks to **Amy Wilkerson, Applied Research Center Laboratory and Research Manager**, for inviting us to share in her dream to bring science to the community by organizing this annual event and inviting us!

For more info: <http://www.wm.edu/sites/arc/documents/newsletter/2016/finalboysgirlsclubsciencefair2016newsletterRevised.pdf>

Facilities Management Values

click it!

An organization's **Values**, when emulated by every one of an organization's employees, are the key to transitioning a good organization into an exceptional organization. The William & Mary Facilities Management Department undertook a recent initiative to market their department Values among FM employees by providing each employee a message pen containing FM's Five Values and key words associated with each value.

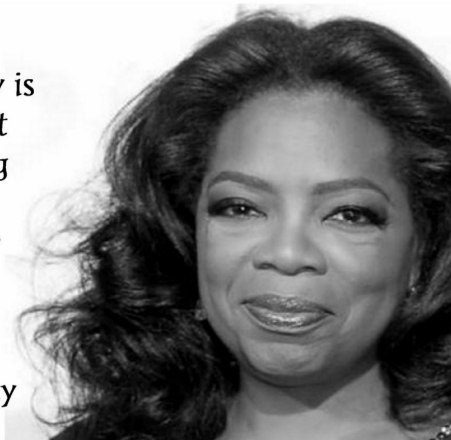
The FM Values are - **Service, Integrity, Professionalism, Teamwork and Safety**. Would anyone like to take a guess at which value is a favorite of the EH&S Office? Let me get my pen and spell it out for you...they ALL are!!!



Article By: Sandra Prior

"Real integrity is doing the right thing, knowing that nobody's going to know whether you did it or not."

Oprah Winfrey



*Ask yourself,
'how can I increase the
quality of my service
today?'*

MakeTheRightCall

EHS Office	Phone
Director, EH&S	(757) 221-2146
Fire Safety Officer	(757) 221-1745
Safety Specialist	(757) 221-6450



We Believe in Keeping YOU SAFE!!!