Lab Safety Officer Meeting Agenda
April 16, 2015

• Welcome & Lab Safety Partners Awards
• Centrifuge Safety
• Ultraviolet Radiation
• Faculty, Supervision, & Leave
• What to Expect When You’re Inspected
• Updates and Reminders
• Open Forum Q&A
Centrifuge Safety
Thomas Egan, Thermo Fisher
Ultraviolet Radiation Safety

Tom Kellogg
Radiation and Laser Safety Officer
Risk Management & Safety
Radiation Safety Office
We could all use a little UV exposure, right? -- It’s all about the dose --

- UV radiation causes 90% of all skin cancers
- Skin cancer is the most common cancer in the U.S.
- One in five Americans will get skin cancer
- UV radiation burns skin and causes it to wrinkle
- UV radiation causes eye damage;
  - acute exposures produce photokeratitis
  - chronic exposures lead to cataracts
UV Overexposure Events at UVM

• Two persons in separate occurrences, were exposure to damaging levels of UV radiation to their eyes. This occurred from not wearing UV protective eyewear while cutting gels placed on transilluminator light boxes.
Short Intro to UV Radiation

- Electromagnetic radiation, invisible – easy to attenuate!
- Biological effects depend on wavelength, intensity, and duration of exposure.
- UV radiation is categorized into UVA, UVB, and UVC
  - **UVA** – 95% of the UV solar radiation reaches earth.
    - 315-400 nm
    - Cataracts, retinal burns, darkening of skin, wrinkles, skin cancer
  - **UVB** - 5% of UV solar radiation reaching us and causes sunburns.
    - 280-315 nm
    - Photo-keratitis, photo-conjunctivitis, erythema, skin cancer
  - **UVC** – most dangerous but is absorbed in ozone layer.
    - 100-280 nm
    - Photo-keratitis
Popular Sources of UV Radiation in Labs

- Transilluminator light boxes
  - Mostly UVB but can be UVA

- UV germicidal lamps
  - UVC

- Hand-held UV devices
  - Mostly UVC but also UVB and UVA

- Crosslinkers
  - Mostly UVC but can be UVB and UVA

- **UV bulbs can be disposed in the same manor as other fluorescent bulbs at UVM** (email safety@uvm.edu).
How to protect ourselves?

• Cover up. Wear proper PPE
  • Skin Protection -- Lab coats, latex or nitrile gloves – check for exposed skin
  • Eye Protection -- UV protective glasses/googles, UV protective face shield

• Training and following equipment manufacturer’s guidelines
  • Don’t assume everyone knows about UV protection…. Make it known!

• Limit the amount of time UV equipment is used

• Signs and Labels
Have Questions or Concern?

- Visit uvm.edu/safety for more info regarding UV safety
- Contact ESF (656-3242) or RSO (656-2570) to if you want more info or to schedule a time for some UV measurements.
  - We have a UV radiometer with two different detectors calibrated to measure:
    1. UVB range (310 nm) – most transilluminators
    2. UVC range (254 nm) – germicidal bulbs
- Remember, protection from UV radiation can be done without much difficulty.
Supervision & Leave

• A PI was traveling when an emergency occurred in his lab. A graduate student was surprised to realize that she was in charge in dealing with responders.
• A 10-month faculty accepted a non-UVM researcher into the lab when he was not on campus.
• A faculty on extended medical leave and not allowed to take on work stress still had graduate students trying to complete their work. RM&S asked them to respond to Lab safety & Compliance issues.
• Faculty Advisor to student group left on sabbatical in Europe and was unavailable to those students whose work involved hazardous materials and operations.
Supervision & Leave
Supervision & Leave

• Absences must be arranged with the Department Chair or Dean and an acceptable plan for carrying on the work during the absence must be made.

• Faculty shall also notify other individuals who need to be aware of the faculty member’s absence for operational purposes, (e.g. the principal investigator of a sponsored project).
Indemnification

Tom Mercurio, Office of General Counsel
Defense and/or payment under this policy shall be available only if all of the following conditions are met to the satisfaction of the 
University, in its sole discretion:
1) The action must have been brought against a current or former employee by reason of his/her being or having been an 
employee of the University at the time of the acts or omissions (“conduct”) giving rise to the action. In addition, the conduct must 
have occurred:
a) Within the scope of University employment; and
b) In good faith. “Good faith” means in a manner reasonably believed to be lawful and without gross negligence.
c) Indemnification shall be unavailable if an employee willfully engages in misconduct or acts with the intention of causing harm 
or damage to person or property. In its sole discretion, the University may elect to provide indemnification under this policy to 
employees charged with conduct constituting a violation of criminal laws or which is subject to criminal penalties (such as 
conduct in violation of compliance requirements under health and safety or environmental laws), provided that the criteria 
established in the policy are otherwise met.
I WOULD MAKE ANOTHER CHEMISTRY JOKE

BUT ALL THE GOOD ONES ARGON
What to Expect When You’re Inspected

• EPA/DEC: LQG – every 5 yrs
  – Main campus inspected 2010
• EPA/DEC: TSDF – every 2 years
  – ESF inspected 2013
• DOT: whenever rise to level of notice
  – 2014, DOT/FAA stopped 2 UVM shipments that were improperly shipped.
• VOSHA:
  a. Imminent hazard (scaffolding, trenches)
  b. A workplace death,
  c. A single incident resulting in 3 injuries,
  d. Complaints & Referrals,
  e. Programmed inspections for high hazard work – such as construction.
  – Lots of construction expected at UVM beginning in May
What to Expect When You’re Inspected

1. Be polite and ask for credentials.
2. Be inclusive - Involve RM&S.
3. Answer questions and requests specifically – Don’t volunteer.
4. Be truthful - “I don’t know” is acceptable.
5. Be thankful
6. Be patient
Legislation Watch

• S.139 An act relating to pharmacy benefit managers and hospital observation status
  – Broadens the authority of Commissioner of Health to regulate the sale of “chemicals of high concern to children.”
  – Passed Senate 4/10/15

• UVM CHP
Enforcement Watch

• Last fall, a Denver teacher, Daniel Powell, was charged with four counts of misdemeanor assault after a classroom fire seriously burned a student. Powell had lit a small pool of methanol to demonstrate its flame properties, then tried to add more methanol from a 4 L container. The fire flashed back into the container, then jetted out to hit the student in the chest. Other students sitting nearby were also injured.

• This (along with a few similar cases) has led to increased scrutiny of demonstration procedures.
RM&S Information Systems

- Lab Registry/HCOC
- Training delivery & Tracking for lab safety
- Training delivery & tracking for general (driver, respirators, etc)
- ChemSource Ordering
- Incident Reporting & tracking
- Respirator request, assessment, fit test, etc
- Occ health screening and follow-up
Upcoming Construction
Updates & Reminders

• New Webpages!
Updates & Reminders

• New Webpages!
• Lab Cliq Action Items
Updates & Reminders

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• Summer Lab Workers
Updates & Reminders

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• Training Reminders
• Custodial Survey

The Custodial Services Department is actively working to improve services to university research labs. In order to accomplish this we would appreciate your feedback. Please take a few minutes to answer this short survey so that we can better meet your cleaning needs in a safe and effective manner. Your input will not only enable us to provide better service but it will help ensure the integrity of your research and the safety of all lab occupants.
Updates & Reminders

- New Webpages!
- LabCliq Action Items
- Summer Lab Workers
- Training Reminders
- Custodial Survey
- Lab Incidents & Injuries

Lab Related Injuries 10/14-4/15

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• New Webpages!
• LabCliq Action Items
• Summer Lab Workers
• Training Reminders
• Custodial Survey
• Lab Incidents & Injuries
• Critical Equipment on Emergency Power
Open Forum Q&A

I'm not ducking the question!
I'm a duck, this is how I talk!