



Environmental Health and Safety - EHS

Laboratory Safety Coordinator Meeting



SUMMER 2012

News and Updates



- Welcome Lize!
 - 2, 5, 110 Cummington
 - 648 Beacon
 - 590 Comm. Ave (Undergraduate teaching labs)
 - 635 Comm Ave. (Sargent College)
 - 871 Comm Ave. (CGS)
 - Smooth Transition through accompanied inspections
 - Former DSA's are still resources!
- Actively searching for new associate director of research safety

Agenda



- Quarterly reports
- Safety culture
- New information
- Chemical safety inspections
- Transition of LSC
- Near miss reporting



Quarterly Report



INSPECTION DATA Q2 2012

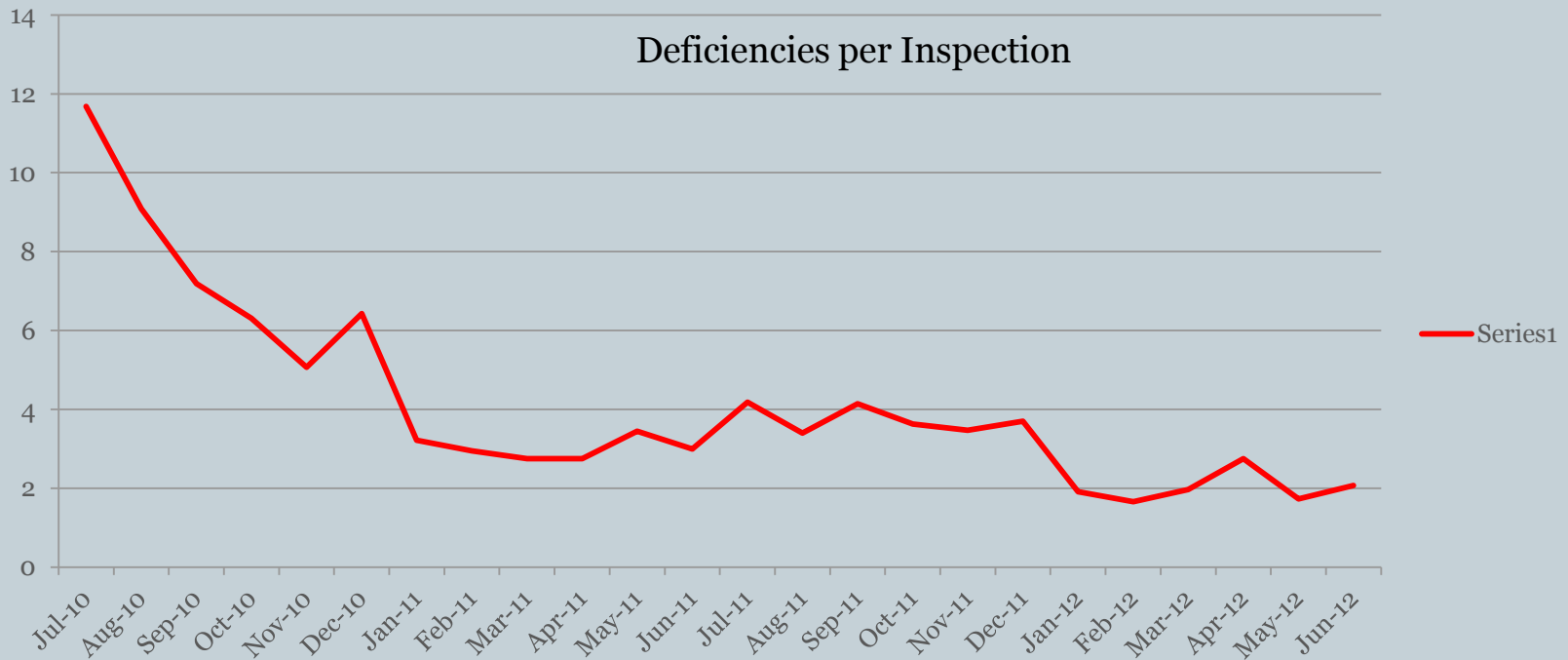
Note: In the following graphs BMC =BUMC

Laboratory Inspection Program



Deficiencies per Inspection

Jul 2010 – Jul 2012



Laboratory Inspection Program



- Inspection Data April – June 2012

- Total number of Inspections

- ✦ 367

- Current # of Deficiencies

- ✦ 765

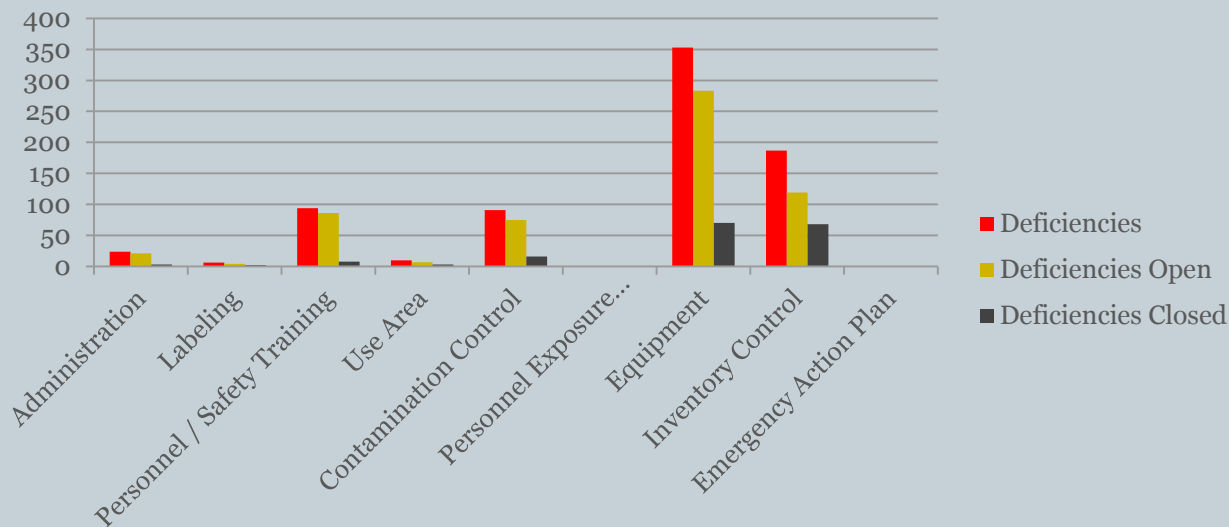
- ✦ 595 open

- ✦ 170 closed

- 100% complete

- Average

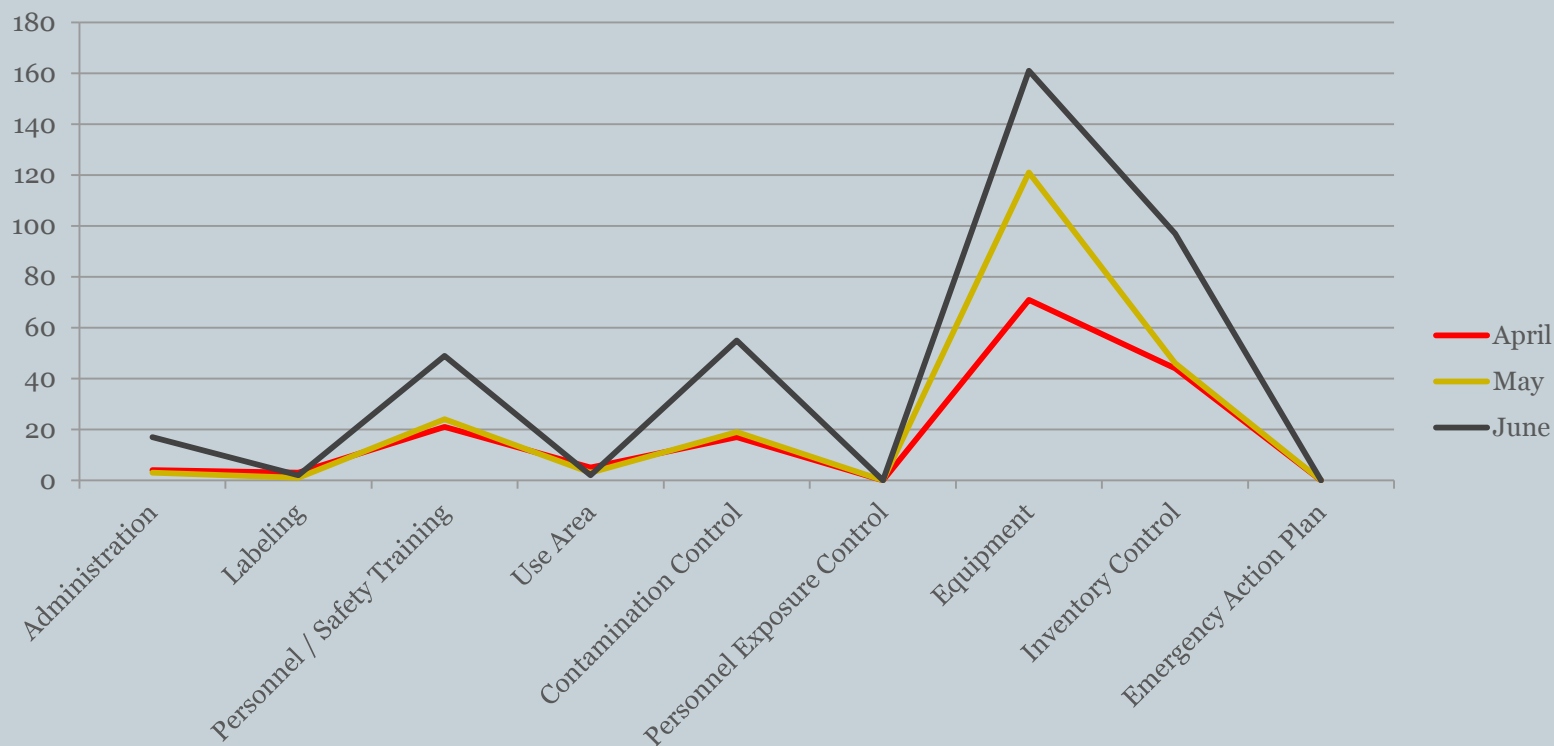
- ✦ 2.18



Laboratory Inspection Program



- Inspection Data April – June 2012



Incidents



- Animal Bites
 - ✦ One incident was 3 reoccurrences with the same researcher
 - Investigated with BUASC (Boston University Animal Science Center)
 - BUASC observed and re-trained individual
- Chemical Exposure / Sensitivity
 - ✦ Two paraformaldehyde exposures
 - One opening damaged packaging
 - One not working in a fume hood
 - Individual shown location of nearest fume hood and instructed not to work on open bench
 - Chemical sensitivity
 - Contact dermatitis possibly formaldehyde
 - Headache from xylene fumes

Incidents



- Spills
 - ✦ Glycol, dilute nitric acid, broken mercury thermometer bulb in water bath
 - All small spills and remediated without issue
- Equipment
 - ✦ Biological Safety Cabinet moved without HEPA decontamination
 - EHS follow up with facilities and lab concerning decontamination procedures
- Facility
 - ✦ Contractor accidentally turned off supply air for W-934
 - ✦ Control Center loss of communication with computer networks
 - Software issue, has been upgraded

Incidents



- Worker injuries
 - ✦ Three Needlesticks
 - Two recapping
 - Recapping tool instituted
 - One puncturing blood pack
 - Alternative techniques introduced
 - ✦ Lacerations
 - Finger laceration using razor
 - Finger laceration cleaning test tube from centrifuge
 - Finger laceration while cleaning scissors
 - Cut resistant gloves recommended for razor incident
 - Lab will use brush to clean scissors
 - ✦ Eye injury
 - Laser exposure - researcher looked over top of goggles while using laser

Safety Culture



How to apply a safety culture



Leadership and Oversight



- Leadership recognition and support of a culture of safety at every level within the institution
 - Presidents letter to commitment
- Commitment and Reinforcement
 - Consideration of safety issues at meetings
 - Part of current job descriptions
 - Evaluation of all faculty, staff and programs across the institution.

Organizational Practices



- Organizational commitment at every level
 - Incorporating safety as an integral aspect of the institution's operations (e.g., experimental design, facility construction, equipment specifications).
 - Creating an environment of collaboration among all stakeholders
 - Organizational learning is not only expected, but is also embraced.

Institutional Structure



- Creating an environment
 - All personnel understands their role in the research enterprise and conducts their activities in a responsible manner.
 - All personnel are empowered to recognize and to report errors or near misses without fear of reprimand or punishment.
- Continuous review and examination of the support infrastructure

Shared Core Values and Beliefs



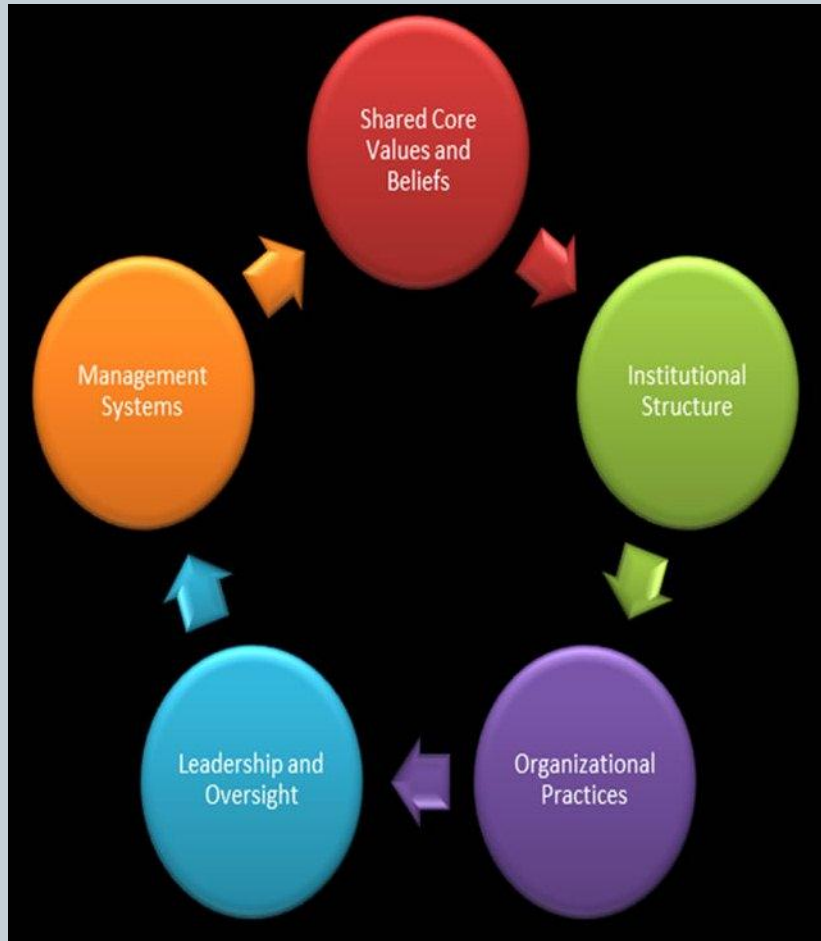
- Empowering all members of the research community to accept their critical role in protecting their own safety as well as that of others.
- Emphasizing personal responsibility to safety and ethical conduct of research.

Management Systems



- Investigating incidents or near misses, identifying “lessons learned,” and modifying programs, as appropriate, to incorporate any enhancements identified during the investigation.
- Committing resources to address safety concerns

How a safety culture makes a change:



- Management System Data Review
 - lab incidents, inspection trends, benchmarking with other institutions
- Leadership and oversight committees decide that were benefits from following best practices and procedures.
- By applying them to our shared core values in the laboratory setting we hope to see improvements in our professional appearance and safety.
- In this manner the university created the following policy changes :
 - **Requirements of Lab coats for BSL-1 work**
 - **Streamlining our high hazard chemical list.**

Changes into practice

- Biological Safety Manual (BSM) changes
 - Chapter 4- Biosafety Principles (p.27)
 - Best practices based off CDC/NIH recommendations
 - Policy was accepted during BSM review by IBC
- PPE manual
- Exposures involving BSL-1 work where lab coat would have made a difference

BU/BMC
Biosafety Manual
Revised: May 2012

Biosafety Level	Agents	Practices	Safety Equip.	Facilities
1	Not known to cause disease in healthy adults; RG1	Standard microbiological practices	Use basic personal protective equipment including laboratory coats, disposable gloves and as necessary eye protection	Open bench top, sink required
2	Associated with human disease, which is rarely serious and for which preventive	BSL-1 practice plus: Limited access Biohazard warning signs	<i>Primary barriers:</i> Class I or II BSCs or other containment used for manipulations of agents that cause splashes or	BSL-1 plus: Autoclave available

Types of Lab coats



Example*	Type	Characteristics	Applications
	Disposable Lab Coat	Static Free, Fluid resistant, breathable, snap front, knit cuffs	General Bench Work
	Lab Coat - (Poly/Cotton Blend)	Acts as outer barrier from hazardous materials	General Bench Work
	Fire Resistant (FR -Nomex) Lab Coat	Flame resistant	Working with water reactive, air reactive (pyrophoric), potentially explosive materials
	Tyvek Clothing - Suits or Gowns	Excellent barrier against dirt and other dry particulates, lightweight and highly resistant to tears and punctures	Working in Clean Rooms
	Vinyl Apron	Resistant to chemicals, abrasion, punctures	Working with corrosive or high splash potential materials

*Colors and styles available may vary depending on manufacturer.

Services provided



- Churchill Linen serves the
 - X-6
- North Star linen services the:
 - School of Dental Medicine on BUMC
 - Pathology/ Hospital/ BUASC
- Disposable lab coats
 - Fisher Scientific
 - Grainger

Chemical Inspections



Chemical Inspections



- Chemical Inventory
- Segregation
- Labeling: OSHA HazCom Standard 1910.1200
- High hazard chemical list: 10 Categories
- Flammable chemicals per floor

Chemical Inspections Cont.



- Chemical Inventory:
 - How does your lab keep track of chemicals in the lab?
 - RIMS (likes/dislikes?)
 - What would be easiest approach?

We need YOUR feed back!

Chemical Inspection Cont.

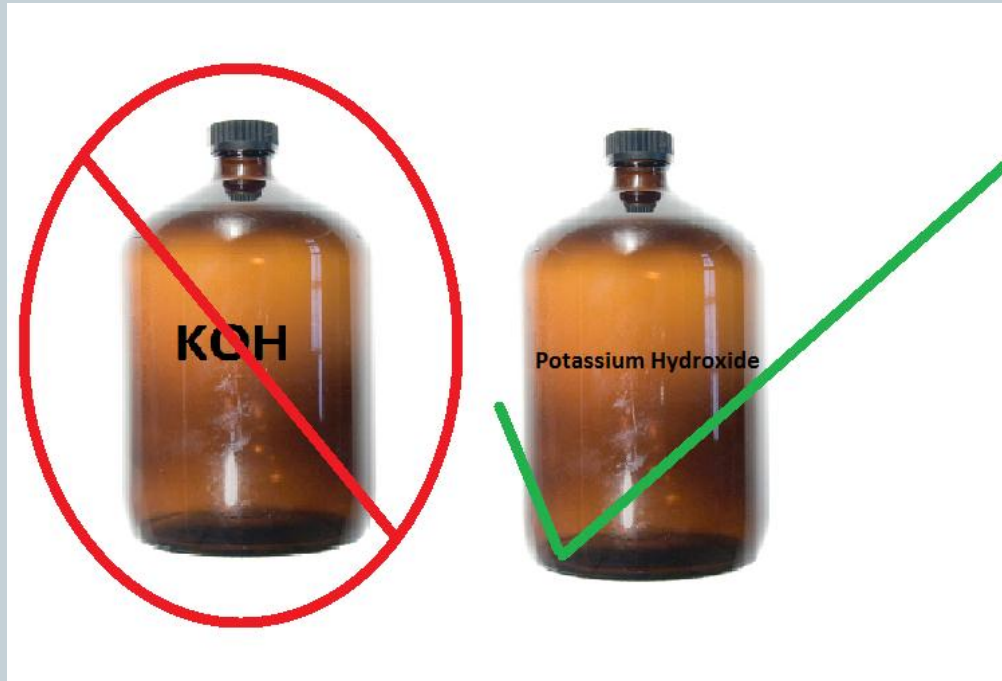


- Based on compatibility (not alphabetical)
 - Using alphabet is fine, unless non-compatible chemicals are being stored together
 - Remember we have a chemical segregation and storage guideline on the LSC toolkit.
 - Any questions on segregation, please let us know!!

Chemical Inspection Cont.



- Labeling: OSHA HazCom Standard 1910.1200



Chemical Inspection Cont.



- *Chemical Information Sheets (CIS) on each:*
 - *Cyanide*
 - *Ethidium Bromide*
 - *Hydrogen Fluoride (HF)*
 - *Organic Peroxides*
 - *Osmium Tetroxide*
 - *Perchloric Acid*
 - *Piranha Etch Solution*
 - *Pyrophorics and Other Highly Reactive Chemicals*
 - *Sodium Azide*
 - *Trinitrophenol (Picric Acid)*

Chemical Inspection Cont.



- Strict regulations on how many flammables that can be stored per floor.
- Once above the 6th floor, the regulations gets more strict.
- If you have questions, please ASK!

Transitioning LSC and New Members!



Transition of the LSC Role



- Thank you for all the work you have done with EHS and your laboratory!
- Who's next? What to expect?
- Set up a meeting with your Department Safety Advisors
- Take on line module
- Tools available!

Transitioning LSC, New LSCs



- Over the past few years we have built great relationships with the lab through the LSC program
- We still maintain great relationships with past LSCs
 - Communication
 - Trainings
 - Assistance in building the safety culture
- A great way to encourage responsibility of others in the lab
- A way to bring your initiatives to light!
- Great resume builder!

Transitioning new LSCs



- Set up a meeting with your Department Safety Advisor
 - Roles, past experiences, what is on the horizon, how you can help
- Visit the Lab Safety Coordinator toolkit
 - www.bu.edu/ehs/lsc-toolkit
- Training modules available on-line for Lab Safety Coordinators
- www.bu.edu/rims

Tools available!



Environmental Health & Safety



New Lab Personnel – A Guide to Get Started

This guide is for Principal Investigators and Lab Safety Coordinators to use as a tool to onboard and orient new laboratory personnel, with the mutual goal of leading our new personnel on the path to safe research at Boston University. Please consult your Department Safety Advisor for assistance if needed. 638-8830 (BUMC EHS) 353-4094 (CRC EHS)

Trainee/New Lab Member Name	
Principal Investigator Name	
Lab Safety Coordinator Name	
Date of Hire	
Administrative Items <i>These are items that you can do on the "first day" in the lab.</i>	Notes



Boston University Environmental Health & Safety

New Lab Safety Coordinators, New Lab Members

What to do When You're Passing the Torch **(First know your fire extinguisher locations!)**

Winter is over and the semester is winding down. You need to prepare for those leaving the lab, especially if it is you, and those about to join it in the upcoming months. Environmental Health and Safety would like to thank you for all your effort and participation in our Lab Safety Coordinator Program over the past few months. We have

Near Miss Reporting



Examples of a Near Miss



- **Examples**

- Small spill of non-hazardous chemicals
- spike on gas detection equipment that does not trigger an alarm
- Slip or trip that does not result in an injury
- A small spill of biological material that is confined within BSC

- **Items to Consider**

- How the near miss was resolved, or solutions
- Provides assistance to EHS when looking at laboratory trends and areas for improvement with training.

Near -Misses Reported



- Drop of IPA splashed on to goggles, no skin contact, eye wash used as a precaution.
- Researcher spilled large flask of non-pathogenic bacteria during transport
 - Cart should have been used for transport
 - Look at the “what ifs”
 - ✦ if it was biohazardous?
 - ✦ if it spilled while transported outside of lab (could have spread from corridor to non lab areas)

Near Miss Reporting



Near Miss Reporting

A near miss is a potential hazard or incident that has not resulted in any personal injury, illness, or damage. Unsafe working conditions, unsafe employee work habits, improper use of equipment, and use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and/or make the necessary corrections, immediately, to the unsafe environment and/or practice.

This Near Miss Reporting System is a voluntary, confidential, non-punitive, and secure reporting system. It has been created with the goal of improving safety at Boston University (BU) and Boston Medical Center (BMC). Submitted reports will be reviewed by Environmental Health and Safety (EHS) staff. You may submit reports anonymously if desired. As appropriate, near misses will be investigated to the extent possible with findings and any corrective actions being posted on the EHS website for other BU and BMC community members to use as a learning tool.

Upcoming items



Guidance documents



- New Chemical Information Sheets
- New Biological Use Guidance Documents
 - Centrifuge
 - Biological Safety Cabinets
 - Sonicators, vortex
 - Microtome
 - Cryostat
 - Laboratory Ergonomics