

Questions and Answers

about the Georgia Tech

Personal Protective Equipment and Appropriate Attire Policy

1. Requiring lab coats is fine- but who is going to pay for them?

Students in undergraduate/teaching laboratories are expected to purchase their own lab coats just as they are currently required to purchase their own safety glasses. The purchase of any Personal Protective Equipment (PPE) for students and staff members working in research labs is (and always has been) the responsibility of the Principal Investigator (PI). This includes safety glasses, lab coats, disposable and re-usable gloves, face shields, and any other appropriate form of PPE.

2. Some of our teaching lab experiments subject students to no discernible safety issues - no chemicals, biologicals or physical hazards. Will there be latitude in enforcing eyewear protection, gloves, lab coats, etc. during such labs?

Yes. These rules apply only to wet bench labs

3. Enforcement of all clothing requirements in all teaching labs is going to be difficult to say the least. We already enforce full cover shoes. The long pants during warm months is going to be a constant battle, so how much flexibility do we have here?

These rules do not apply to the labs described in question 2, above. However, for wet bench labs, there are no exceptions.

4. In Section 8.3.4- Why are teaching labs required to use cotton lab coats whereas research labs are allowed to use blends?

Originally this was because undergraduate students were thought to need more protection than graduate students and more likely to use open flames while learning to bend glassware, flame loops, etc. Other things also need to be considered here, however, such as: How are the lab coats to be laundered, and where will the students store them? The general idea is that the undergraduate students will buy the lab coats which will be packaged in a large zip lock bag. Students will be required to carry the lab coats back and forth to class with them. As undergraduates do not generally work with highly hazardous materials, washing the lab coat at home is an option.

5. Would instructors and TAs be permitted to wear blended coats, as allowed in 8.3.5, with the exceptions outlined for open flames and pyrophorics?

Yes. TA's and instructors will be allowed to wear blended fiber lab coats in labs with no open flame hazards. Blended fiber lab coats are not an option for undergraduates, however, as TAs should not be responsible for checking the fiber content of student lab coats before each class.

6. Most serious accidents in academia occur in research labs. That is where the most protection is needed: so why are 100% cotton lab coats not required in research labs?

There are actually two reasons- one involves doing research and the second involves doing laundry: First, keep in mind that most research labs do not use open flames or pyrophorics and therefore have a much lower risk factor for fire than those labs which do.

Second, as there is no laundry service for privately owned lab coats, EHS is encouraging research labs to make arrangements with a uniform service to provide lab coats in order to be able to get them washed. However, please note that none of the uniform services EHS originally contacted could provide 100% cotton lab coats. After some discussion the uniform service GT currently uses (G&K) found a vendor and can now provide us with 100% cotton coats; but they are unable to finish (press) the 100% cotton coats after laundering. Poly-cotton blends can be finished and will therefore come back from the laundry looking much nicer. EHS anticipates that people will want to wear the finished lab coats but may be reluctant to wear the un-pressed 100% cotton lab coats. Hence, blended fiber lab coats are allowed in research labs without open flames.

7. If I buy the lab coats used by my staff, how will we get them laundered?

In the last 9 years, EHS has not been able to identify a single laundry service in the greater Atlanta area that will accept lab coats, except for uniform (rental) services. Bottom line: if you buy the lab coats you will need to find a way to keep them clean, such as a dedicated washer/dryer in your building.

8. My understanding from the training I have received is that it is not recommended to use contact lenses (in laboratories). However, I have heard that they have been determined to be "safe". There had, in the past, been concerns that soft contact lenses, might allow vapors to be trapped inside of the lens. Additionally, soft contact lenses can melt to the eye if exposed to certain solvents or strong acids. Therefore, it should be a requirement that people wearing soft contact lenses be required to use goggles instead of safety glasses, or get prescription safety glasses.

OSHA withdrew most of its objections to contact lenses, originally published in 1978, in 2004, when it removed the rules against wearing them in hazardous atmospheres while wearing full faced respirators. Remaining OSHA recommendations (not rules) against contact lenses apply to a few specific chemicals in industrial situations where workers may not be able to contain the process in a fume hood.

NIOSH (NIOSH Publication No. 2005-139) recommends that workers be allowed to wear contact lenses as long as appropriate safety measures are taken- this would include appropriate protective eyewear and the presence of eyewashes, as required by law. NIOSH also notes that the use of contact lenses allows workers more freedom in choosing protective eyewear. This means that workers can pick eyewear that is lighter and more comfortable than the over-sized over-the-glass models (OTG) and does not fog up, like most goggles do. EHS has repeatedly noted much better compliance with protective eyewear when workers can wear safety glasses that are comfortable, and don't look "dorky"

Throughout the literature (including accident statistics), it is clear that it is the failure to wear protective eyewear that results in most eye injuries. Our emphasis needs to be on finding ways to get people to wear protective eyewear. Banning contact lenses and forcing people into heavy safety glasses or goggles is not the correct approach to laboratory safety.

9. The biggest issue I see with this document is the laundering (lab coats). There needs to be more information concerning laundering, such as:

- a. Can the laundry service handle all types of contaminants?

No, the service cannot accept lab coats on to which heavy metals, nano-powders, or NFPA health hazard 4 chemicals have been spilled.

- b. How should lab coats be labeled when sent out for cleaning?

The laundry service will tell you what they need.

- c. Do lab coats need to be "pre-cleaned" if any contamination is present?

No

- d. How do we handle different types of contamination on lab cats, such as heavy metals, organics, halogenated organics, and biologicals?

See sub section a, above, regarding heavy metals. The laundry service representative has assured EHS that solvents are not a problem unless grossly contaminated (see sub section e). This same information would also apply to biological contamination.

- e. At what level of contamination should the lab coat be considered hazardous waste and no longer laundered?

Lab coats which are grossly contaminated by over use or because of a spill (on to the lab coat) should not be turned in for laundering if the contaminates include heavy metals, nano materials, NFPA health hazard 4 chemicals, biologically hazardous materials, or flammable solvents. In such a case, the laundry service should be informed that the lab coat has been disposed of as hazardous waste

through GT EHS. The laundry service will assess a replacement charge for the lab coat.

- f. What is the vendor's policy to protect their workers against contaminated lab coats?

The vendor is in the business of laundering potentially contaminated clothing and maintaining compliance with OSHA and EPA regulations. It will be up to us to let the vendor know when there is something unusual in the laundry and find out how they would like us to label/bag or dispose of it.

- g. If we send a contaminated lab coat to a laundry service and they dispose of the waste improperly, what is our liability? What type of policy needs to be in place to limit our liability for improper waste disposal?

Again, the vendor is in the business of dealing with this type of material. They have certified to EHS that all materials will be disposed of appropriately.

- h. The Institute needs to verify that the vendors currently laundering coats are actually capable of handling the types of contamination we send to them.

EHS has discussed this with the current service provider, G&K, and is satisfied that the service has made their limitations clear, as outlined in sub sections a-h, above.

- i. If the Institute desires to require lab coats and to require that they be cleaned, a list of acceptable vendors should be published.

The current recommended vendor is G&K Services. Contact 404-349-2863 for more information.

- 10. Item 3.3.2 "students who are found to be in non-compliance...will be subject to disciplinary action, up to and including an unsatisfactory rating for their lab grade." It seems outside of the scope of a safety document to specify grading policy, as that is the prerogative of the faculty member. This statement should be removed.

A number of other departments would disagree with you. The CESC exists, in part, to make sure that any rules regarding safety are applied fairly and equally across all departments. A student who repeatedly breaks safety rules in Chemistry should be subject to the same disciplinary action as student who breaks the same rule in Physics. Faculty members who fail to enforce laboratory safety rules are putting the institute at risk and are themselves subject to disciplinary action (GT Human Resources Manual Section 5.9)

- 11. Item 5: Regarding appropriate lab attire, it may be better to have fewer rules that are more generally stated, as they will cause less confusion. For example, it is fine to require complete leg and foot coverage and tied back hair, but everything else can be removed and should be replaced by a blanket statement, for example, something like "Clothing that minimizes skin exposure should be worn. Loose fitting clothing is a

hazard." There is no real need to cover what sort of shirts and pants people wear, as it can create confusion, particularly in the context of lab coat use.

Our experience from inspecting hundreds of labs is that the best way to prevent confusion and “individual-selective interpretations” is by being very clear that there are specific standards that must be met.

12. Item 5: Use of I-pods, MP3 players,...is not allowed in laboratories. This seems too draconian. The prescription "laboratorians must be aware of their surroundings...including being able to hear alarms" automatically excludes the hearing impaired from working in laboratories. In fact, flashing lights on the fire alarm are specifically meant for the hearing impaired. In general, laboratories are loud places where in some cases ear plugs might be required. Is there a reason to require people to hear something in order to work safely in a chemical laboratory?

Yes. For example, the hissing of an open gas valve or someone screaming for help.

13. Item 7: The document should also include a statement to the effect that no visitors to labs should be allowed without the supervision of a faculty member or PI.

This would disallow maintenance, custodial services, EHS, and rescue workers from labs.

14. Item 8.2 Regarding lab coats. They are a good idea, but:
- a. Their use should be delineated. For example, item 8.3.1 seems to suggest that even rooms containing alcohol in a squirt bottle might require one to wear lab coats.

Technically, this is correct, however, a certain level of common sense must be applied in the enforcement of any policy.
 - b. Lab coats may not be compatible with rooms containing machinery since some of them are loose fitting.

Here again, common sense applies: in such a case the PI would be expected to contact EHS for help in choosing a more appropriate form of protective garment.
 - c. What about clean rooms, which require their own attire, which may have different composition than a standard lab coat. This might be incompatible with 8.3.5.

This is a very good point: A change has been made to Section 2 to exclude clean rooms, but with a note that they are expected to furnish appropriate alternative protective garments for working with hazardous chemicals in the clean room.
 - d. Item 8.3.2 specifies that lab coats should be "reasonably clean" which is too vague and unenforceable.

This actually says “reasonably clean so as not to create a hazard”. This is visually assessable and enforceable: A lab supervisor should be able to ascertain if someone is wearing a lab coat that is covered in hazardous material to such an extent as to put the wearer at risk.