

## LABORATORY INSPECTION CHEAT SHEET

Researchers should use this cheat sheet to assist with their laboratory inspection. For each inspection item, the Cheat Sheet provides, the safety reason for the item, how to implement the item and resources/sources.

#	Item	Safety Reason	How to Implement	Resources & Sources
<b>ADMINISTRATIVE CONTROLS</b>				
<b>Documentation/Training</b>				
1	Lab has knowledge of the EHS web page to access all necessary lab safety-related documents (policies, forms, templates, etc.) <b>NOTE:</b> it is recommended that the page be bookmarked by lab members. <a href="http://www.ehs.gatech.edu">www.ehs.gatech.edu</a>	All employees working with and around hazardous chemicals must have access to information on how to safely handle such materials as well as training. Access to the EHS homepage will ensure that resources and/or proper contacts can be reached.	Incorporate the EHS web page into SOPs, exterior or interior signage. Show or convey knowledge of access to this page during the course of the lab inspection process.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Hazard Communication. - 1910.1200</a></li> <li>• <a href="#">USG: RTK - Global Harmonized System Training</a></li> </ul>
2	Training documentation is present in the lab or other accessible location: <ul style="list-style-type: none"> <li>• <b>Required:</b> Lab Safety 101 (every 3 years), Right-to-Know (annual)</li> <li>• <b>Process-specific:</b> General Biosafety (every 3 years), Bloodborne Pathogens (annual), Recombinant DNA (every 3 years), Shipment of Dangerous Goods (every 2 years), Using Chematix (one time), and Fire Safety (one time), Receipt of Hazardous Materials (one time) or others as appropriate.</li> </ul> <b>NOTE:</b> Use the <a href="#">EHS Training Tool</a> to determine what trainings are applicable and find links to access or registering for specific classes.	Ensures all employees working in the lab are trained on basic laboratory techniques as well as process specific protocols to ensure people are trained on safety procedures.	Print out all online learning courses. Keep certificates in a three ring binder for easy access. Create a spreadsheet for all staff that lists all courses taken including process specific hands on training. This will be a way to document when a person was trained on a specific process or piece of equipment.	<ul style="list-style-type: none"> <li>• <a href="#">NIH Guidelines for Research Involving Recombinant and Synthetic Nucleic Acid Molecules (NIH Guidelines)</a></li> <li>• <a href="#">Biosafety in Microbiological and Biomedical Laboratories, 5<sup>th</sup> Ed. (BMBL)</a></li> <li>• <a href="#">OSHA BBP Standard, 29 CFR 1910.1030</a></li> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> </ul>

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				<ul style="list-style-type: none"> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">OSHA Lab Standard</a></li> <li>• <a href="#">USG: RTK - Global Harmonized System Training</a></li> <li>• <a href="#">Hazard Communication. - 1910.1200</a></li> </ul>
3	<p>Lab has an up-to-date biosafety approval(s):</p> <ul style="list-style-type: none"> <li>• Biological Materials Safeguards Committee for work with biological/infectious agents or biological toxins and/or;</li> <li>• Institutional Biosafety Committee for research involving recombinant or synthetic nucleic acid molecules).</li> </ul>	<p>Biosafety protocol submission allows for a risk assessment to be conducted prior to the start of a new project. This ensures that the biosafety level is appropriate and the proper controls are in place for worker safety.</p>	<p>Visit the <a href="#">Biosafety Protocol Webpage</a> on the EHS Website to read more about the approval process and access links and forms required for submission.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">Georgia Tech Policies &amp; Procedures for Recombinant/Synthetic Nucleic Acid Molecules</a></li> <li>• <a href="#">NIH Guidelines</a></li> <li>• <a href="#">BMBL</a></li> </ul>
4	<p>Lab maintains an inventory log for <a href="#">Select Agent Toxins</a> in Exempt Quantities and/or <a href="#">DEA Controlled Substances</a>.</p>	<p>The Federal Select Agent Program oversees the possession, use and transfer of biological select agents and toxins, which have the potential to public health. When maintained at quantities below an <a href="#">exemption limit</a> (per PI), some toxins are exempt from the Select Agent Regulations. However, to ensure that you do not go above the limit, you have to keep very accurate inventories.</p> <p>DEA Controlled substances have a high potential for abuse; on-hand quantities</p>	<p>Use an Excel file or lab notebook to keep an accurate inventory of these toxins or controlled substances. Make sure that these materials are under controlled access.</p>	<ul style="list-style-type: none"> <li>• <a href="#">Federal Select Agent Program Website</a></li> <li>• <a href="#">21CFR1304.03</a></li> </ul>

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		must be monitored properly to ensure that the inventory is accurate. To prevent regulatory fines and other severe consequences, researchers must ensure that inventory logs remain current.		
<b>Signage/Lab Postings</b>				
5	Doors leading into the lab are labeled with appropriate hazard symbols (biohazard, radiation, NFPA diamond, etc.).	Health and chemical hazard signage warn individuals who do not normally work in the lab of higher level hazards that exist in the lab. These also warn first responders who may need to enter the laboratory.	Use the provided <a href="#">signage template</a> to indicate appropriate hazards in the lab. Delete hazard symbols that do not apply.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">OSHA BBP Standard, 29 CFR 1910.1030</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
6	The following are posted near the lab entrance: <ul style="list-style-type: none"> <li>• <a href="#">Pink Emergency Contact Card</a> with current contact info</li> <li>• Chemical Inventory</li> <li>• <a href="#">GT Emergency Procedures Sign</a></li> <li>• <a href="#">SDS Access Information Sign</a></li> </ul>	Laboratory personnel must know what to do in the event of an emergency. Emergency responders cannot dictate the appropriate response for knowing who to contact in an emergency and how to gain information about the hazards in a lab.	Locate signage on EH&S website, print, and post in designated areas which may be close to the door or near lab benches in shared spaces. See the Lab Safety Manual for additional information. Pink cards may be requested from EHS.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">USG: RTK - Global Harmonized System</a></li> <li>• <a href="#">Hazard Communication. - 1910.1200</a></li> </ul>
7	Lab equipment used to manipulate biological materials is labeled with the biohazard symbol.	Biohazard symbols are used to communicate risk and the specific hazard to people working or visiting your lab space.	Request additional biohazard stickers from the Biosafety Office.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">OSHA BBP Standard, 29 CFR 1910.1030</a></li> </ul>
8	Lab freezers and refrigerators are labeled with “No Food or Drink Allowed”, “No Flammables” (if appropriate) and the biohazard symbol (if used to store biological/infectious material).	This is required to ensure that food/drink and materials are not stored together to prevent exposures. Flammable lab materials may not be stored in commercial refrigerators	Purchase a refrigerator designed to store flammables and volatiles. There are no electrical components located in the interior of the refrigerator and the compressor's	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>

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		or freezers. Using an incorrect type is an explosion hazard.	electrical components have been sealed in a vapor-proof enclosure for additional safety. Post appropriate signage on all laboratory refrigerators and/or freezers. A <a href="#">No Food/No Flammables sign</a> is available on the EHS website.	<ul style="list-style-type: none"> <li>• <a href="#">NFPA 30</a></li> </ul>
<b>Occupational Health</b>				
9	All lab members that work with animals and/or biological/infectious material are enrolled in the <a href="#">Biosafety Occupational Health Program</a> .	The Biosafety Occupational Health Program (BOHP) is a subset of the Occupational Health Program, concerned specifically with worker wellbeing and occupational exposures associated with biological materials and animals.	Follow the instructions available on the <a href="#">Biosafety Occupational Health Program Webpage</a> .	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">Georgia Tech IACUC Policies and Procedures</a></li> <li>• <a href="#">Georgia Tech Policies &amp; Procedures for Recombinant/Synthetic Nucleic Acid Molecules</a></li> </ul>
10	All lab members that are required to wear respiratory protection enroll annually into the respiratory protection program.	Respirators can pose safety hazards to individuals if not used appropriately.	Respirator users approved by GT EHS must be enrolled in the Respiratory Protection program and recertified annually. Please contact Lab & Chemical Safety @ lab-chemsafety@gatech.edu with any questions or concerns.	<ul style="list-style-type: none"> <li>• <a href="#">29 CFR 1910.134 – OSHA respiratory protection Standard</a></li> </ul>
<b>ENGINEERING CONTROLS</b>				
<b>Cabinet/ Hood Certification</b>				
11	Chemical Fume Hoods (CFH) have been certified in the past 6 months by the Georgia Tech approved vendor and are functioning properly. The certification label is attached to the CFH.	CFHs need to be periodically certified that they are functioning at an acceptable face velocity and sashes/lights are functioning properly.	Notify EHS if fume hood has not been certified in the past 6 months so the issue may be addressed.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">ASHRAE 110</a></li> </ul>
12	CFHs that have failed certification, have not been certified within the past 6 months or are not	Fume hoods are unsafe to use out of acceptable face	Ensure via EHS and/or Facilities that the fume hood	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>

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	functioning correctly (i.e., flow is not between 80-120 LFM) are tagged out of service and are not in use.	velocity range unless specifically authorized by GA Tech EHS.	problem is being addressed. It them must be re-certified by EHS.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">ASHRAE 110</a></li> </ul>
13	Biosafety Cabinets (BSC) have been certified in the past year by the Georgia Tech approved vendor and are functioning properly. The certification label is attached to the BSC.	Annual certification ensures that the BSC is operating properly so that it can adequately protect the user, product/sample and environment.	Before you start working in your BSC, verify that the certification sticker is in place and indicates certification has occurred in the past year in the location where the BSC is placed. If the certification is out of date, do not use it. <a href="#">Contact</a> the Biosafety Office to schedule certification.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">NSF/ANSI 49: Biosafety Cabinetry Certification</a></li> </ul>
14	BSCs that have failed certification or have not been certified within the past year are tagged out of service and are not in use.	Using failed or non-certified BSCs puts you at risk of laboratory acquired infections, environmental contamination of infectious diseases, and product/sample contamination.	If the certification is out of date or there is an out of service tag on the BSC, do not use it. <a href="#">Contact</a> the Biosafety Office to schedule certification or repairs.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">NSF/ANSI 49: Biosafety Cabinetry Certification</a></li> </ul>
15	All active laminar flow hoods/clean benches have been certified within the past year by the Georgia Tech approved vendor and are functioning properly. The certification label is attached and initialed by the vendor.	Laminar flow hoods/clean benches use HEPA filtered, laminar airflow to maintain a clean work space. Annual certification ensures that the equipment is properly functioning.	Before you start working in your laminar flow hood/clean bench, verify that the certification sticker is in place and indicates certification has occurred in the past year. If the certification is out of date, <a href="#">contact</a> the Biosafety Office to schedule certification.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> </ul>
<b>Cabinet/Hood Use</b>				
16	CFH and BSC sashes are functioning properly, set to appropriate heights, not cracked, and alarms are not muted.	The sash helps protect the worker from splashes of hazardous material. If it is cracked or not set at the appropriate height, the worker may not be	<a href="#">Contact</a> EHS to schedule repairs to broken CFH or BSC sashes. Never work in the equipment with a broken sash or with silenced alarms.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">Georgia Tech Lab Safety Manual</a></li> <li>• <a href="#">BMBL</a></li> </ul>

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		protected. A broken sash propped open with lab supplies or other support device is a hazard to individuals working in the cabinet. If the support device falls out, the sash could slam shut, injuring the person working with their hands in the cabinet.		<ul style="list-style-type: none"> <li>• <a href="#">NSF/ANSI 49: Biosafety Cabinetry Certification</a></li> </ul>
17	Items are not stored on top of the BSC.	Items stored on top of the cabinet may fall onto and damage the BSC's HEPA filter, leading to loss of environmental protection and costly repairs.	Double check that you don't store any equipment, boxes or supplies on top your BSC.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> </ul>
18	Bunsen burners and/or open flames are not used in the BSC. Flammable gas is not used or connected to BSC gas lines (i.e., natural gas).	The flame creates turbulence within the BSC which disrupts airflow inside the unit causing convection rather than intended laminar air flow patterns. Cabinets are not designed for high heat; heat that can disrupt electrical equipment within the unit itself and grossly damage the HEPA filter leading to a loss of containment. Most BSCs recirculate a percentage of air, so were the flame to go out, flammable gas would collect within the cabinet and reach explosive concentrations.	Use an electric microincinerator or bactoincinerator instead of a Bunsen burner to sterilize metal inoculation loops and heat fix bacterial smears onto microscope slides.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">NSF/ANSI 49: Biosafety Cabinetry Certification</a></li> </ul>
19	Items stored in CFHs and BSCs do not disrupt normal use and/or airflow. Specifically, BSC grills are free from obstructions.	Overcrowding of the CFH/BSC can interfere with the airflow inside the equipment. It can also make	Plan your work before you start experiments in the CFH or BSC so you use only necessary equipment and	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">Georgia Tech Lab Safety Manual</a></li> </ul>

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		<p>it difficult to work inside, increasing the potential for spills, accidents, etc. When the front and/or rear grills of the BSC are blocked:</p> <ul style="list-style-type: none"> <li>Contaminated room air may blow across your work surface (contaminating your sample); and/or</li> <li>Contaminated cabinet air may blow towards you and contaminate the lab or expose you.</li> </ul>	<p>materials to reduce overcrowding. Avoid storing materials (broken equipment, surplus chemicals, large containers, etc.) inside the CFH/BSC where possible.</p>	<ul style="list-style-type: none"> <li><a href="#">BMBL</a></li> <li><a href="#">NSF/ANSI 49: Biosafety Cabinetry Certification</a></li> </ul>
20	Laminar flow hoods/clean benches are not used to work with hazardous material.	Laminar flow hoods/clean benches do not offer environmental or personnel protection.	Double check to make sure that the cabinet/hood you are working in is appropriate for what you plan to work with before you start.	<ul style="list-style-type: none"> <li><a href="#">Georgia Tech Biosafety Manual</a></li> <li><a href="#">Video</a> on the difference between BSC and laminar flow hood/clean bench airflow patterns.</li> </ul>
<b>Centrifuges</b>				
21	Centrifuges have door interlocks (mechanism to keep lid closed during operation).	Interlocks are important because they prevent the operator from opening the lid while contents are spinning. This prevents occupational injuries (i.e., broken or caught fingers) and releases of aerosols or spills.	Only purchase centrifuges that are fitted with interlocks. Surplus centrifuges that are broken or do not have interlocks.	<ul style="list-style-type: none"> <li><a href="#">Georgia Tech Biosafety Manual</a></li> <li><a href="#">OSHA's April 14, 1993 Letter of Interpretation: 29 CFR 1910.212</a></li> </ul>
22	Secondary containment (i.e., centrifuge safety caps, buckets, sealed rotors) is available and used when centrifuging infectious samples.	Using centrifuge safety cups or sealed rotors protects the user from being exposed to infectious aerosols in case a spill occurs during the centrifuge cycle. Always load and unload safety buckets and rotors inside a BSC to insure that you are	Surplus broken centrifuges or ones that do not have safety buckets.	<ul style="list-style-type: none"> <li><a href="#">Georgia Tech Biosafety Manual</a></li> <li><a href="#">BMBL</a></li> </ul>

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		protected from any produced aerosols.		
Emergency Equipment				
23	A double ocular eyewash is available within 10 second access.	Time is critical in reducing potential eye/sight damage in the event of an eye-splash.	A sink-mount or floor-mount eyewash shall be obtained and installed.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
24	A safety shower is available within 10 second access.	Time is crucial in reducing risk of adverse health effects associated with dermal exposures.	An emergency safety shower must be purchased and installed.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
25	Eyewashes and safety showers are free of obstruction for easy access during an emergency.	Life/Health-critical safety equipment cannot be blocked and must be available for immediate use in the event of an emergency where use is applicable.	Ensure unobstructed access to all applicable equipment by physical means and administrative means.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
26	Eyewashes are tested weekly by lab members and the test is documented. <b>NOTE:</b> Eyewashes equipped with safety caps have them in place.	Regular testing ensures it is working properly and that sediments do not accumulate in water lines that spend the majority of time being idle. Safety caps reduce likelihood of clogged pores in the eyewash heads.	Assign personnel to test these weekly by running them $\geq 10$ seconds into a receptacle or localized drain. Document testing in some manner; either on tags or a check list.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
27	Safety showers are tested annually by GT Facilities and the test is documented.	Annual certification verifies the proper functionality of an emergency safety shower.	Notify EHS and/or Facilities to test any safety shower that has not been checked within the last 12 months.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
28	Fire extinguishers are appropriate for the hazards in the lab, visible and accessible in the lab.	Fire extinguishers present must be appropriate to treat fires based upon materials	Notify EHS of inappropriate fire extinguisher so the appropriate	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> </ul>



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		used or equipment present in the laboratory.	accommodations can made to obtain the most applicable fire extinguishing media.	<ul style="list-style-type: none"> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">GA Tech Fire Extinguisher Request</a></li> </ul>
29	Fire extinguishers are visually inspected monthly by lab members. This is documented on the tag affixed to the equipment.	Visual inspection helps ensure that fire extinguisher will work properly if needed.	Conduct visual inspections verifying existence of pin, proper charge level (if unit has a gauge, certification within last 12 months, and general good physical condition of extinguisher) and document on the bag of the tag with initials.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
<b>PERSONAL PROTECTIVE EQUIPMENT &amp; LAB ATTIRE</b>				
30	Lab coats are worn while working in the lab.	Lab coats are the first line of defense in working in a potentially hazardous environment.	Lab coats (made of appropriate material) are required when working in wet-bench laboratories. Flame-retardant coats are required when working with highly reactive chemicals. Purchase a new lab coat if current coat is unavailable or explore rental programs.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
31	Reusable coats are laundered on a regular basis by an approved method.	Clean coats are more likely to be worn than dirty coats. Also, personnel should not where contaminated coats due to the risk of personnel exposure.	Please contact Chemical Safety at <a href="mailto:lab-chemsafety@gatech.edu">lab-chemsafety@gatech.edu</a> for an approved vendor.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
32	Safety glasses/goggles or another type of face protection are worn at all times in the lab.	Eye injuries are painful and may cause permanent damage	ANSI approved safety glasses/goggles must be donned upon entry to the lab and while working in the lab.	<ul style="list-style-type: none"> <li>• <a href="#">OSHA 1910.132</a></li> <li>• <a href="#">OSHA 1910.133</a></li> <li>• <a href="#">ANSI Z87.1-1984</a></li> </ul>
33	Gloves are worn while working in the lab and appropriate for the experiment (examples: thermal protection for -80°C freezers/liquid nitrogen, nitrile	Proper glove usage reduces the risk for exposure. If disposable gloves are re-	Nitrile gloves are recommended for all-purpose gloves. If you need	<ul style="list-style-type: none"> <li>• <a href="#">OSHA 1910.132</a></li> <li>• <a href="#">ANSI 105</a></li> </ul>

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	gloves for chemicals, etc.) Disposable gloves are not reused.	used, the risk of exposure greatly increases.	guidance on process specific gloves, please contact Chemical Safety at <a href="mailto:lab-chemsafety@gatech.edu">lab-chemsafety@gatech.edu</a>	
34	Lab members remove gloves before leaving the lab and opening doors.	Not removing gloves increases the risk for potential contamination on door handles.	Remove all personal protective equipment (PPE), including gloves and lab coats, when leaving areas where any hazardous materials (chemicals, biologicals, radiation, nanoparticles, etc.), which may have contaminated the PPE, are in use.	<ul style="list-style-type: none"> <li>• <a href="#">BMBL</a></li> </ul>
35	Closed toed shoes and long pants/skirts are worn at all times in the lab. Examples of inappropriate attire include: sandals, torn jeans, and ballet flats.	Appropriate lab attire decrease the level of exposure and risk of injury.	Closed toed shoes, long pants, and tops that cover the torso are required in all GT laboratories. Examples of inappropriate attire include: shorts, skirts, sandals, torn jeans, leggings, ballet flats, crop tops, tank tops, etc.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
<b>HAZARDOUS MATERIAL STORAGE</b>				
36	NFPA/Right-To-Know compliant labels are affixed to in house made containers of solutions.	Labels ensure that personnel and first responders are able to determine the contents of the container.	All secondary chemical containers, including in-house made solutions/mixtures in use for longer than 1 shift/1 day, must have RTK/NFPA hazard class information on them	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">GA Tech Right to Know Plan</a></li> </ul>
<b>Chemicals</b>				
37	Chematix barcode labels are present on all primary chemical containers (including gas cylinders).	The barcode labels ensure that investigators are able to track a specific container to its location. This is a regulatory compliance issue to meet the Board of Regents requirements of semi-annual reconciliation.	All chemical reagent bottles or chemicals directly purchased from a vendor must be entered into the Chematix inventory database and have a bar code label affixed. Contact	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Right to Know Plan</a></li> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>

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			<a href="mailto:Chematix@gatech.edu">Chematix@gatech.edu</a> for information and assistance.	
38	Acids are segregated by type (inorganic and organic).	Organic acids may react violently with inorganic acids potentially resulting in dangerous fumes and fires.	Chemicals need to be separated by hazard class types (flammables, pyrophorics, organic solvents, inorganic solvents, corrosives, acids, and bases, and oxidizers, etc. separated). Contact <a href="mailto:Chematix@gatech.edu">Chematix@gatech.edu</a> for information and assistance.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">NFPA 45 7-2.3.4</a></li> </ul>
39	Hazardous liquids are stored no higher than shoulder height.	Solutions, mixtures, and other liquid chemicals stored on high shelves increases the chances that a spill or fallen containers can occur, putting yourself or other people at risk of exposure and/or injury.	EHS requires all hazardous liquids to be stored no higher than shoulder height.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> </ul>
40	Chemical containers are in good condition (i.e., no bulging, leaking, cracked caps or crystal formation).	Compromised chemical containers can fail and result in injury, accidental releases, explosions, etc.	Contact EHS for disposal of chemicals containers in poor condition. Do not attempt to move compromised containers without EHS assistance.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
41	Secondary containment is present for all hazardous liquids. <b>Note:</b> squirt bottles and working solutions (i.e., flasks beakers, etc.) are exempt from this requirement.	In case of container failure or human error, secondary containment keeps spilled material contained until further action can be taken	All hazardous liquids must be kept in some type of secondary containment.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">OSHA 1910.1450 (b)</a></li> </ul>
42	Lab members extract chemicals from one stock container until the container is empty.	Multiple open containers of the same chemical is viewed as “storage in lieu of disposal” and is EPA fineable offense.	Exceptions to having more than one container of the same chemical open include different grades of the same chemical (difference in molarity, strength, etc.) or multiple owners of the same chemical.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> </ul>

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Flammables				
43	Flammables are stored in flammable safety cabinets when not in use.	During a fire, the cabinet contains the flammable materials from contact with the flame which would accelerate the fire.	Read OSHA 1910.106(d)(3)(ii)(a) for specific requirements for flammable cabinets. If you have any concerns or questions contact EH&S.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> <li>• <a href="#">NFPA 30</a></li> <li>• <a href="#">OSHA 1910.106</a></li> <li>• <a href="#">NFPA 45</a></li> </ul>
44	Flammable materials are limited to 10 gallons/100 ft <sup>2</sup> of lab space.	This is the maximum amount of flammable material allowed as per OSHA and NFPA.	Do not exceed the maximum allowable quantity.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">GA Tech Right to Know Plan</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> <li>• <a href="#">NFPA 30</a></li> <li>• <a href="#">OSHA 1910.106</a></li> </ul>
45	Flammables are stored in flammable safe or explosion proof refrigerators/freezers as necessary.	Flammable lab materials may not be stored in a commercial refrigerators or freezers. Using an incorrect type of refrigerators or freeze is an explosion hazard because the electrical components are exposed. There are no electrical components located in the interior of the refrigerator and the compressor's electrical components have been sealed in a vapor-proof enclosure for additional safety.	Purchase a refrigerator designed to store flammables and volatiles.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> <li>• <a href="#">NFPA 30</a></li> <li>• <a href="#">OSHA 1910.106</a></li> </ul>
Compressed Gases				
46	Gas cylinders are secured between the middle and shoulder of cylinder. <b>NOTE:</b> No more than two gas cylinders are secured with on restraint.	Securing compressed gas cylinders in this manner follows recommended best practice for ensuring that	Purchase an appropriate mounting bracket with straps and install. Ensure that the bracket is installed	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> </ul>

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		the cylinders cannot be easily tipped or knocked over and converted to a rocket.	in an appropriate location in the laboratory.	<ul style="list-style-type: none"> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">Air Cylinder Rocket Video</a></li> </ul>
47	Gas cylinders without a regulator attached have safety caps in place.	This is an OSHA and DOT requirement in place to protect employees from serious injury in the event of a regulator failure.	Attach safety cap when cylinder not in use, especially when moving the cylinder.	<ul style="list-style-type: none"> <li>• <a href="#">OSHA 1910.253</a></li> </ul>
48	Toxic or flammable gases present in the lab are compliant with the <a href="#">GT Dangerous Gas Safety Program</a> .	Monitoring when applicable, of dangerous gases protects lives and property from serious harm due to accidental release of a dangerous gas.	Follow the appropriate process when incorporating a new dangerous gas into the lab. If applicable fill out necessary EH&S documentation, review the <a href="#">GT Dangerous Gas Safety Program</a> , and contact EH&S to initiate the monitoring process.	<ul style="list-style-type: none"> <li>• <a href="#">GT Dangerous Gas Safety Program</a></li> </ul>
<b>WASTE MANAGEMENT</b>				
<b>Sharps</b>				
49	Unprotected sharps are not left unattended, lying out on bench tops.	Unprotected sharps left unattended can be inadvertent hazards when working in their vicinity.	Place disposable sharps in sharps bins after use. Protect reusable sharps.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">OSHA 1910.1030</a></li> </ul>
50	Disposable sharps are properly disposed of in hard walled sharps container labeled with the principal investigator's name and containers are no greater than ¾ full.	Sharps disposed inappropriately pose a significant risk for exposure to those picking up trash from the labs.	Sharps bins should be located within close proximity of the site of work. The sharps container must be replaced once it is 3/4 <sup>ths</sup> full to prevent overfilling.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">BMBL</a></li> <li>• <a href="#">OSHA 1910.1030</a></li> </ul>
51	Needles are not bent, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.	Exposure to needles is most likely to occur during inappropriate manipulations such as recapping.	To prevent accidental exposure, the needle should be placed into the sharps container following use with no effort to recap or	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">OSHA 1910.1030</a></li> </ul>

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			otherwise manipulate needles. Needles must not be recapped unless procedures for doing so have been approved by the Biosafety Office on the corresponding protocol.	
<b>Broken Glass</b>				
52	Broken glass containers with plastic liners are available and no greater than $\frac{3}{4}$ full. Lab does not use broken glass containers for the disposal of sharps, biohazard-contaminated glass, gloves, used bulbs, etc.	Inappropriate disposal poses a significant risk for exposure to those picking up trash from the labs.	Supply the lab with broken glass containers are designated for the disposal of non-contaminated broken glass and sharps containers for biohazard glass.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> <li>• <a href="#">OSHA 1910.1030</a></li> </ul>
<b>Chemical Waste</b>				
53	Chemical Waste is stored in an easily accessible location.	Waste must be in the control of the generating entity at all times as a security measure and for ease of addition to the container.	Move waste to an easily accessible location that is secure. This is usually within the confines of the laboratory in an approved area.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> </ul>
54	Chemical waste is properly labeled with a description of the contents, fill start date and owner's name. <b>NOTE:</b> Chematix waste cards are filled out and fixed to containers ready for pick up by EHS.	Unidentified/unlabeled waste can cause serious safety issues involving compatibility and disposal.	Add labels, either manually or generated via the CMIS Waste Module (Chematix) with the appropriate information.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> <li>• <a href="#">GA Tech Right to Know Plan</a></li> </ul>
55	Chemical waste is stored in compatible containers (i.e., no acid in metal, no HF in glass, etc.).	Incompatibility of waste and container material can cause leaks, container instability, and other serious safety issues.	Transfer waste to appropriate container. Ask for EHS assistance, if needed.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> </ul>
56	Chemical disposal containers are closed when not in use.	The EPA requires all hazardous waste containers to remain closed unless a person is depositing waste into the container. This will prevent unnecessary vapors	An easy solution is to purchase a small closed head funnel for larger size waste containers. When using a bottle for waste	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> </ul>

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		from entering the laboratory and spills.	collection ensure it is capped.	
57	Liquid chemical waste is in secondary containment.	This allows for containment of spills or leaks from the waste container and reduces the risk of exposure.	Purchase small plastic totes or tubes to provide secondary containment.	<ul style="list-style-type: none"> <li>• <a href="#">GA Tech Lab Safety Manual</a></li> <li>• <a href="#">Resource Conservation and Recovery Act (RCRA)</a></li> </ul>
<b>Biological Waste</b>				
58	Animal carcasses are double bagged in biohazard bags and refrigerated/frozen until pick-up by EHS.	Carcasses must be disposed of discreetly and appropriately to ensure that hazardous waste laws are followed.	Double bag carcasses and store them in a freezer until removal by EHS.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> </ul>
59	Solid, non-sharp, biological waste is disposed of in biomedical waste boxes lined with biohazard bags (provided by EHS). These are packed for EHS pick up.	Inappropriate disposal poses a significant risk for exposure to those picking up trash from the labs.	Biological waste must be placed in EHS provided red biohazard bags then placed in EHS provided biohazard waste boxes for pickup and disposal by EHS Hazardous waste department.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> </ul>
60	Liquid biological waste is disinfected prior to disposal down the drain using the chemical disinfectant and contact time indicated on the lab's Biological Hygiene Plan.	To protect the environment and the water supply, liquid biomedical waste must be decontaminated with a chemical treated prior to disposal into the sanitary sewer. Not all chemical disinfectants can be legally poured down the drain, ensure that your required disinfectant does not require disposal as chemical waste.	Liquid waste is to be decontaminated with a 10% bleach solution for 30 minutes and then disposed of down the sanitary sewer. For chemicals other than bleach, ensure that your required disinfectant does not require disposal as chemical waste.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> </ul>
<b>ELECTRICAL SAFETY</b>				
61	Electrical panels are unobstructed (i.e., 3 ft of clearance in front of panels).	In the event of an emergency, accessibility to the electrical panel is critical	Remove any items within 3 feet of the electrical panels in your lab.	<ul style="list-style-type: none"> <li>• <a href="#">NFPA 45</a></li> </ul>

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62	Ignition sources are segregated from flammables/combustibles.	These must be segregated to greatly reduce chances of fire or explosion by these items being located too close to one another.	Separate flammable materials as far away as possible from ignition sources.	<ul style="list-style-type: none"> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> <li>• <a href="#">NFPA 45</a></li> </ul>
63	Permanent equipment is plugged directly into an outlet (no extension cords).	Equipment in place $\geq$ 6 months is considered permanent and must be hard-wired by an electrician. Extension cords are only meant to be temporary conduits of power.	Contact Facilities and make a work/project request to have your permanent equipment hard-wired properly.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>
64	Electrical cords are not frayed or damaged.	Frayed wires can provide open sources of ignition and can provide electrical shock to people coming in contact with them.	Any frayed extension cord or hard-wire cord shall be disposed of and replaced.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>
<b>EMERGENCY PREPAREDNESS</b>				
65	Lab is equipped with a spill kit.	This is essential in the event of a spill in order to efficiently and safely clean-up spilled material.	Purchase an appropriate spill kit. Contact EHS to discuss what spill kit(s) is/are best suited for your lab.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
66	Lab members have been trained on how to clean up a minor spill.	Knowing proper methods on how to clean up a spill can be just as important as having the tools available to clean it up. Improper cleaning methods can leave the cleaning incomplete and/or harm the person cleaning it up.	Contact EHS regarding proper methodologies for cleaning up spills of applicable materials in your lab.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>
67	Lab members know how to report incidents and injuries.	For worker's compensation and proper follow up from the lab group and/or EHS, incidents and injuries must be reported per the	Contact your PI, safety representative for your department, and/or EHS to learn about how to notify all necessary parties in the	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>



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		established protocol of your department, PI, and/or EHS.	event of an accident/emergency.	
<b>HOUSEKEEPING</b>				
68	Lab sinks are equipped with soap and paper towels for handwashing.	After handling any materials (even with gloves on), hands shall be washed before touching door knobs and leaving the laboratory to prevent cross-contamination of non-lab surfaces.	Notify building manager and/or GT Building Services if your paper towel dispenser and/or soap dispenser needs to be refilled.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>
69	Lab floor, bench tops and furniture are easily cleanable (i.e., can be wiped down) and can handle the anticipated loads.	Lab surfaces must be non-porous to be adequately cleaned/decontaminated due to regular use and in the event of spills. Carpet flooring is not recommended in wet-bench laboratories.	Replace all porous fabric furniture with furniture that can easily be wiped clean. If the lab is carpeted, projects should be initiated to get the carpet removed and a more suitable flooring installed.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
70	Lab is under restricted access (i.e., doors are lockable, doors are kept closed).	A security measure to ensure that folks do not enter the lab who do not belong there.	Ensure all lab personnel have keys and/or Buzz Card access to the lab and that the lab remains locked at all times.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
71	Food/drinks/cosmetics/lotions are not present in the lab.	Applying cosmetics and/or eating/drinking in the lab greatly increases risk of consumption/absorption of unwanted materials into the body that are present in the lab.	Ensure via signage and/or administrative controls that this protocol is followed in the lab.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Prudent Practices in the Laboratory (National Research Council)</a></li> </ul>
72	Work surfaces are disinfected with or an appropriate disinfectant after each use and are visibly clean. Bench papers are changed on a regular basis.	Laboratories, especially those handling biological materials, need to be disinfected per established schedule so that biological contamination is not allowed to foster over a large period of time, posing	Use a 10% bleach solution and/or 70% ethanol solution (per established Biosafety Hygiene Plan) to disinfect surfaces as necessary.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">Georgia Tech Biosafety Manual</a></li> </ul>

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		a safety hazard to the personnel as well as potential cross-contamination of other lab processes.		
73	Work surfaces and aisle ways are uncluttered to allow space for safe work practices.	Unnecessary clutter/obstructions on work surfaces increase the risk of broken glass, spills, and other preventable lab accidents.	Clean work surfaces of clutter after each process has ended and/or have established protocol in which work surfaces are to be cleaned and de-cluttered.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> </ul>
74	Items are not stored within 18" of the ceiling to allow for safe function of building sprinkler systems.	Fire sprinkler systems installed can only function properly if given the proper distance between the sprinkler head and areas where a fire may be occurring.	Move items closer than 18" to ceiling down to a lower level and/or store items on high shelves that will not physically obstruct this clearance.	<ul style="list-style-type: none"> <li>• <a href="#">Georgia Tech EHS</a></li> <li>• <a href="#">NFPA 45</a></li> </ul>