



UNIVERSITY OF
TEXAS
ARLINGTON

Internal Audit Report
Laboratory Safety
June 2019

Distribution – Laboratory Safety

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Background

Background

Institutions of Higher Education are required to follow the Texas Hazard Communication Act, codified as Chapter 502 of the Texas Health and Safety Code. This act requires the Environmental Health and Safety Office (EH&S) to have a written Hazardous Communication Program that includes expectations for training, safe handling, storage, labeling and disposal of hazardous materials. UT Arlington conducts semi-annual evaluations through the Laboratory Safety Evaluation Program administered by EH&S to help ensure compliance with these regulations. EH&S provides regulatory enforcement and technical expertise concerning hazardous chemicals, radiological, and biological agents exposure in basic science labs, which include clinical, research, and teaching labs. EH&S employs Safety Specialists who provide significant resources to help ensure a safe laboratory environment.

EH&S notifies the department chairs two weeks before the start of their evaluations. An evaluation may take place at any time during the semester after the two-week notification period has ended. EH&S takes a proactive approach to address compliance issues found in laboratories and, in most cases, offers suggestions on how to improve safety practices and assist in the corrective action process. Timelines for corrective actions vary depending upon the severity level of the laboratory deficiencies identified.

Principal Investigators (PIs) have full responsibility to help ensure all laboratory deficiencies are resolved in a timely manner. PIs are required to submit a corrective action plan to EH&S within 10 days for deficiencies deemed as non-compliant and three days for deficiencies deemed critical non-compliant after the initial evaluation memorandum is issued. EH&S conducts the follow-up procedures noted below for critical non-compliant, non-compliant and compliant laboratories. Failure to address laboratories deficiencies on a timely basis may result in cessation of research operations.

Critical Non-Compliant

EH&S conducts a follow-up evaluation for reports with critical deficiencies one to two weeks after the initial evaluation memorandum is issued.

Non-Compliant

The PIs provide evidence to EH&S that the deficiency has been corrected utilizing a photo, email or another acceptable method, which is then documented in the corrective plan.

Compliant

No necessary follow-up procedures.

Audit Objective, Scope & Ranking Criteria

Audit Objective

To determine whether the laboratories at UT Arlington (UTA) are consistently operating in a manner that provides a safe environment for faculty and students. Additionally, to determine whether the EH&S laboratory evaluation process complies with Federal, State & University guidelines by conducting laboratory safety observations, evaluating policies & procedures and internal controls to help ensure safe operation of UTA laboratories. The audit focused on the following areas:

- 1) Laboratory control and handling of hazardous chemicals
- 2) Laboratory evaluations
- 3) Laboratory safety
- 4) Training of laboratory personnel and students

Audit Scope

The scope included a review of the evaluation processes and procedures. Key personnel from EH&S and other departments were interviewed. A sample of evaluation reports and certificates of training were reviewed. The coverage period was from January 1, 2018 to February 28, 2019. Random and judgmental sampling were used.

Ranking Criteria

All findings in this report are ranked based on an assessment of applicable qualitative, operational control and quantitative risk factors, as well as the probability of a negative outcome occurring if the risk is not adequately mitigated. The criteria for these rankings are as follows:

Priority	An issue identified by an internal audit that, if not addressed on a timely basis, could directly impact achievement of a strategic or important operational objective of UTA or the UT System as a whole.
High	A finding identified by an internal audit that is considered to have a medium to high probability of adverse effects to UTA either as a whole or to a significant college/school/unit level.
Medium	A finding identified by an internal audit that is considered to have a low to medium probability of adverse effects to UTA either as a whole or to a college/school/unit level.
Low	A finding identified by an internal audit that is considered to have minimal probability of adverse effects to UTA either as a whole or to a college/school/unit level.

None of the findings from this review are deemed as a “priority finding.”

Summary – Laboratory Safety

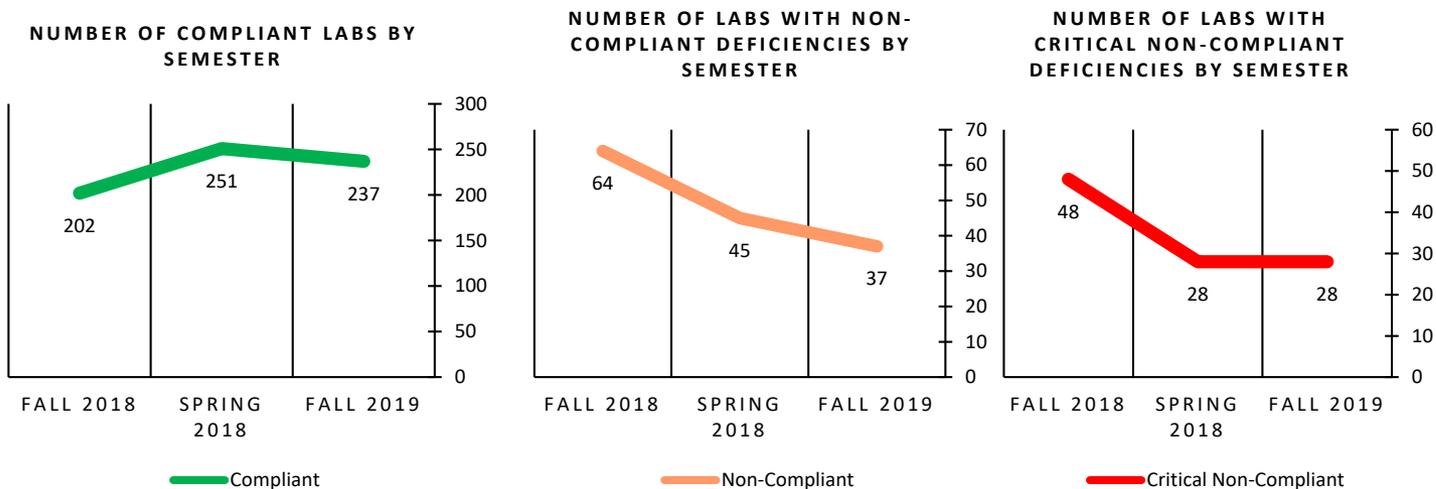
Executive Summary

Internal audit (IA) partnered with EH&S to determine whether the laboratories were complying with the Institution’s established lab safety practices and the requirements of the Texas Hazard Communication Act. Overall, we concluded controls and processes, such as ongoing evaluations and follow-ups, were in place to help mitigate the potential risks certain lab deficiencies may pose for personnel, research, and facilities. However, the following areas were identified as lab safety processes that could be enhanced:

- Tracking and monitoring: repeat deficiencies and non-responses
- Commitment to safety
- Ensuring required laboratory training is provided and documented
- Maintaining laboratory policy and procedure manuals

Further details are outlined in the *Observation* section. Other less significant opportunities for improvement were communicated to management separately.

The following outlines the results of recent EH&S laboratory safety evaluations:



7 Observations	0 High
	7 Medium
	0 Low

Strengths

 Knowledgeable EH&S staff

 Accessibility to training resources and support

 High frequency of lab evaluations

We appreciate the courtesy and cooperation received from the Environmental Health and Safety Office, and laboratory personnel involved throughout this audit.

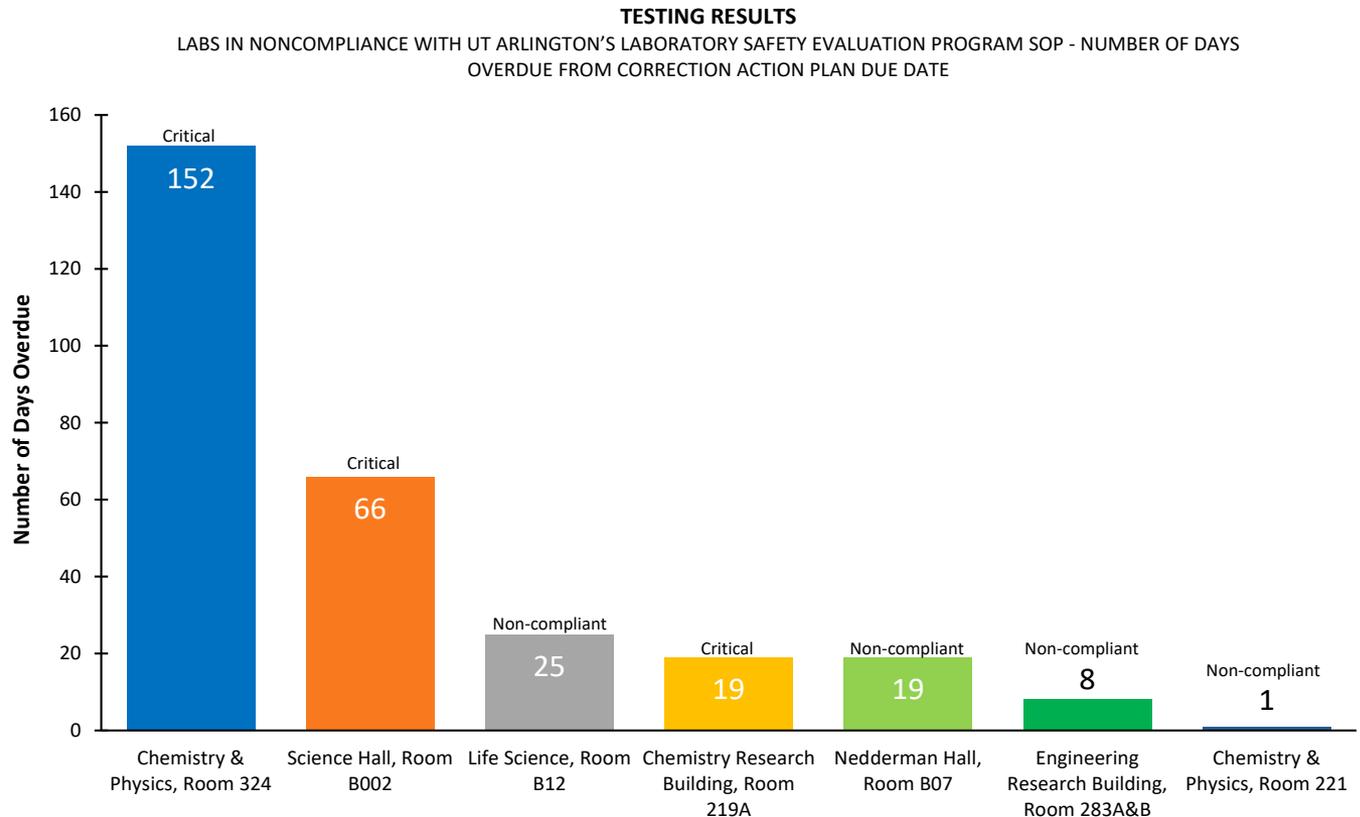
A. Laboratories were not consistently responding promptly to deficiencies reported by EH&S.

IA reviewed 18 of the 65 laboratories which received evaluation reports with noted deficiencies during the fall semester of fiscal year 2019.

Our review focused on non-compliant and critical non-compliant areas based upon the laboratory evaluation results. Labs with non-compliant deficiencies are required to submit a corrective action plan within 10 days after initial evaluation. Labs with critical non-compliant deficiencies are required to submit a corrective action plan within three days per Standard Operating Procedure (SOP) UTA Laboratory Evaluation Program, section 3, subsection 4(c).

We identified 7 out of 18 (39%) laboratories, (with 3 categorized as non-compliant, and 4 considered critical) that did not respond to their evaluation within the prescribed timeframe set by the laboratory safety evaluation program SOP.

When deficiencies occur related to lab safety practices, the safety of employees and the lab environment may be jeopardized. Without regular monitoring and follow-up, the risk that unsafe conditions may not be remedied increases.



B. Higher risk conditions were not consistently reported to Department Chairs and Deans.

We also reviewed the top 10 laboratory evaluations with the highest points due to repeated deficiencies.

EH&S assigns points for repeat deficiencies based on the criteria in the chart to the right.

Number of Occurrences	“Non-Compliant” Finding	“Non-Compliant – Critical” Finding
1 st	1 Point	2 Points
2 nd	2 Points	4 Points
3 rd	4 Points	8 Points

If the cumulative point total for the last three evaluations reaches 20 to 40 points, EH&S warns the responsible individual of potential enforcement action by notifying them in writing and copying the Department Chair and the appropriate dean/vice president.

Based on our review, at the end of the FY19 fall evaluations, a warning letter should have been issued to five out of the 10 laboratories. Our results show a warning letter was not issued in two out of the five instances. This was due to the additional workload involved in manually processing the points and the insufficiency of management’s review.

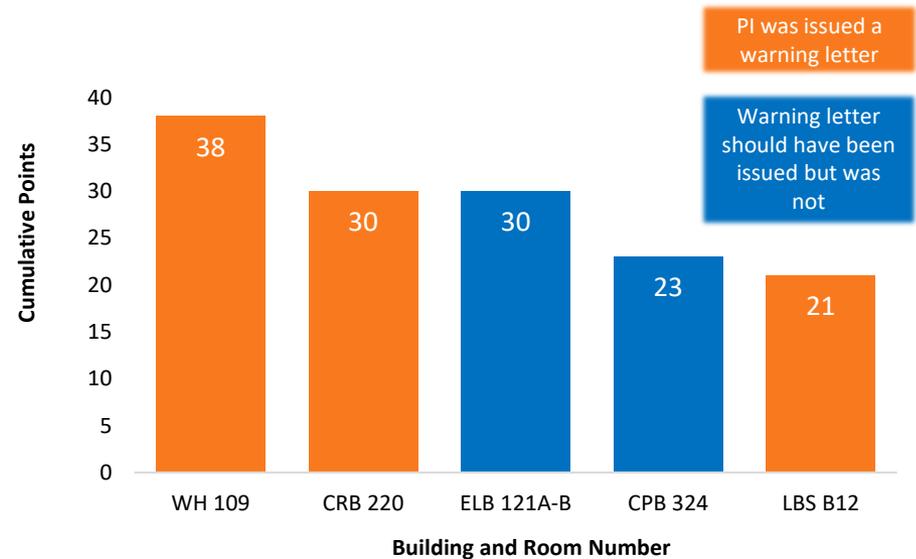
C. Summary reporting provided to UTA leadership is limited.

Each year, a summary report is provided to UTA leadership. However, this report only includes basic information such as the top three reasons for critical and non-compliant deficiencies, as well as the compliance percentage change semester over semester.

Providing the following additional information would help ensure institutional awareness:

- Specific labs and/or PIs with repeat issues
- Specific labs and/or PIs with significant critical deficiencies
- Specific labs and/or PIs that did not respond to reported deficiencies on a timely basis
- Summarized results by building and/or college
- Year-over-year safety trends and analysis
- Specific labs that were using best practices to help ensure student and faculty safety.

Top Ten Laboratories Instances of Noncompliance (Based on EH&S Deficiency Points System for Critical Non-Complaint & Non-Compliant Findings)



Recommendations:

1) We recommend EH&S enhance the monitoring and scoring for repeat deficiencies and non-responses. In addition, they should develop a comprehensive annual report for the VP for Administration and Campus Operations and other leadership that identifies trends in laboratories that continue to violate safety requirements, ranking these laboratory based on their risk.

Management Response:

The Environmental Health & Safety Office (EH&S) would like to take this opportunity to thank the Office of Internal Audit (IA) for reviewing the University's Laboratory Evaluation Program. EH&S is appreciative of their recommendations for improvement, as we share the same goal; to maximize safety and compliance in campus laboratories. EH&S will strive to improve the identified gaps in processes and procedures.

The following information is offered to provide background information as well as context to afford a better understanding of the audit results. The nature of an internal audit necessitates putting the focus on the negative findings, in this case, the examination of laboratories with non-compliant and critical non-compliant deficiencies. While there is a brief mention of improvements in the report, this process doesn't completely tell the story of the approximately one hundred and ninety laboratories that EH&S has supported in the improvement process from having many deficiencies to now having a compliant status.

During the two-year period of FY17 and FY18, the number of compliant laboratories increased from 24% to 75% and the number of critical non-compliant laboratories decreased from 38% to 10%. A deficiency of even one item, from a list of up to eighty questions addressed during an evaluation, will place a laboratory into either the non-compliant or critical non-compliant category.

Further, it was not within the scope of this audit to compare the UTA Laboratory Safety Program with other like University programs with regards to its robustness, comprehensiveness, completeness, and/or efficiency. EH&S is not aware of any similar University that has implemented a point system of this nature as a deterrent for repeat deficiencies and most universities do not perform evaluations more than once per year. UTA utilizes the web-based software Chemical Environmental Management System (CEMS) to maintain a campus-wide chemical inventory, which at present consists of over 55,000 chemical containers. CEMS eliminates unnecessary chemical purchases, reduces chemical waste and related costs, provides easy access to chemical Safety Data Sheets (SDS), decreases response time in emergencies, enables more efficient regulatory reporting, etc. UTA was the first, and remains one of the few, universities in UT System to maintain a comprehensive bar-code based chemical inventory system.

Management Response: (continued)

At the request of upper administration, over the past four years EH&S has worked to create a complete and comprehensive laboratory evaluation program that includes not only deterrents, but educational and other processes that encourage a better relationship between the research faculty and EH&S. The goal is to achieve long lasting results that will have a permanent positive effect on the safety culture of the University's research environment. The request included doubling the number of laboratory evaluations from one per year to two each year -- once each fall and spring semester. EH&S was also asked to develop a Chemical-free Area Policy for Laboratories. Upon receiving the request, EH&S set about the process of writing a new Laboratory Evaluation Program Standard Operation Procedure (SOP), creating an informational rubric explaining non-compliant and critical non-compliant deficiencies, developing a Laboratory Chemical Free Area Policy, revising our electronic handheld laboratory evaluation form for ensured efficiency, creating laboratory evaluation checklists for the laboratory users and educational information to be included on the reports for each deficiency noted, and developing a point system to deter repeat deficiencies. Please see the following attachments for additional information:

- Attachment A – UTA Laboratory Safety Evaluation SOP
- Attachment B – UTA Laboratory Evaluation Rubric
- Attachment C – UTA Laboratory Evaluation Checklist – Biological
- Attachment D – UTA Laboratory Evaluation Checklist – Chemical
- Attachment E – UTA Laboratory Evaluation Report – Sample
- Attachment F – Chemical-free Areas in UTA Laboratories SOP
- Attachment G – FY17-FY18 UTA Laboratory Evaluation Results Summary

Foreseeing the immense increase in workload and oversight that would be required to properly implement the Laboratory Evaluation Program in this format, with double the number of evaluations, multiple due date requirements for responses, a point system encompassing the most recent three evaluations for each PI's laboratory, etc., EH&S began requesting additional personnel resources for FY17. The request included a Laboratory Safety Manager position to manage all aspects of the new Laboratory Evaluation Program as well as an additional Safety Specialist to support the anticipated opening of a new laboratory research (SEIR) building. Due to budgetary constraints, neither of these positions have been approved to date. Further, EH&S lost an existing Safety Specialist position from the laboratory safety group when an employee retired, and the position funding was transferred to the Office of Facilities Management.

Management Response: (continued)

Conducting evaluations, providing reports within three days, managing and maintaining the multitude of due dates and point information for over three hundred laboratories each semester has been challenging given the limited personnel resources available. However, EH&S is supportive and in agreement with the above recommendations from IA. EH&S will work to enhance our monitoring of repeat deficiencies and non-responses. To ensure this occurs, EH&S will continue to request a new position of Laboratory Safety Manager as well as the Safety Specialist position that was lost due to retirement. Laboratories that require repeated reminders and follow-up due to non-timely response only serve to exacerbate the problem of limited EH&S personnel resources. To curtail this, EH&S will revise the point system to include assessment of points for non-responses. Additionally, EH&S will collect the necessary laboratory evaluation data during FY20, develop an annual report like that described, and submit it to the VP for Administration and Campus Operations to be shared with upper administration to increase institutional awareness.

Target Implementation Date: 08/01/2020

Responsible Party: Director of EH&S

Recommendations: (continued)

2) Management should establish an adequate cumulative point review process for laboratories to help ensure prompt issuance of warning letters.

Management Response:

EH&S is in the process of exploring the possibilities for programming the inspection software to automate the maintenance of laboratory evaluation points, but at the current time points are maintained manually on excel spreadsheets. To date, EH&S has been piloting the laboratory evaluation point system, and as such, no other model exists. We are continually monitoring the current system for effectiveness through a continuous-improvement process. The warning letters noted were not sent due to an oversight. In addition to the limited personnel resources described above, the position normally responsible for maintaining the points happened to be vacant at that time. The points were therefore reviewed by someone unfamiliar with the spreadsheets. The vacant position has since been filled and the new employee assigned to this task has received training. It is not expected that this oversight will occur again. However, EH&S will implement an additional layer of oversight by the EH&S Director to be implemented by the date listed below as we work toward potentially automating the point process. Ideally, if the position is approved, a Laboratory Safety Manager will take on this responsibility and provide closer oversight and timelier follow-up for all aspects of the Laboratory Evaluation Program.

Target Implementation Date: 11/01/2019

Responsible Party: Director of EH&S

Significant opportunities to improve the commitment of departments to raise awareness and interest in safety.

Laboratory Observation:

IA accompanied an EH&S Lab Safety Specialist on 12 scheduled laboratory evaluations located across the UTA campus. These assessments are intended to review compliance with laboratory safety standards. The sites visited included the Engineering Research Building, Chemistry & Physics Building, Chemistry Research Building, Science Hall, Life Science Building, and Engineering Lab Building.

During the evaluations, we noted fifty-eight deficiencies. Also, one laboratory contained a poster and whiteboard with an excessive amount of offensive language and profanity (non-safety related deficiency). The identified deficiencies were associated with the areas listed below.

Deficiency + Number of Occurrences		Deficiency + Number of Occurrences	
Secondary containers for chemicals, compressed gas, and flammable materials were not properly labeled.	32	Workbenches/sinks soiled or hallway cluttered	2
Gloves left out for multiple uses	4	Power cords were blocking walkways	2
Hazardous Waste or Sharps Containers were not correctly stored and/or labeled	3	Food and drinks in the lab	2
Electrical hazards included damaged equipment cords, and electrical circuit breaker box blocked	3	Containers in the refrigerators were leaking fluid	1
Chemical containers with broken caps leaking in cabinets / Open Container left out	3	Laboratory signage (i.e., Notice to Employees) required by the Texas Hazard Communication Act was missing	1
Spills left on the floor, or fume hood	3	Cardboard boxes stored on top of flammable cabinets	1
		Glass containers stored on the ground	1

Observations 2-5: Commitment to Safety

See Next Page

When deficiencies arise in connection with laboratory safety practices, the safety of employees and the laboratory environment may be jeopardized, leading to an increased risk of the University's failure to comply with regulatory requirements, fines, and adverse public relations.

The following are picture from recent lab safety evaluations.

LIFE SCIENCE BUILDING
Room B14/B17/B17A
Open Container/No Label



SCIENCE HALL
Room 208/204
Poor Housekeeping



ENGINEERING LAB BUILDING
Room 227

Unorganized & cluttered + containers missing barcoding

CHEMISTRY & PHYSICS BUILDING
Room 221

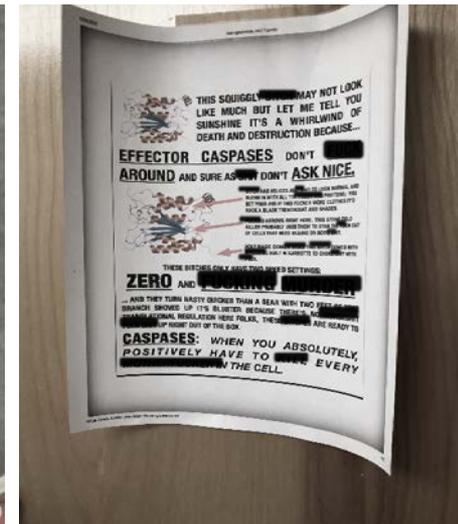
Circuit breaker box blocked

CHEMISTRY & PHYSICS BUILDING
Room 119

Damaged electrical cord

LIFE SCIENCE BUILDING
Room B14/B17/B17A

Offensive language posted on the door
(Non-safety related)



Unannounced Walkthrough of SEIR:

IA also accompanied an EH&S Lab Safety Specialist on an unannounced walkthrough of the Science & Engineering Innovation & Research (SEIR) building. This walkthrough was an informal version of the standard EH&S evaluation and was initiated by IA. The purpose was to gain insight into the compliance of laboratory workers with University safety standards outside the official evaluation period.

We noted 31 deficiencies during the walkthrough of SEIR. The identified deficiencies were related to the following areas.

Deficiency + Number of Occurrences	
Secondary containers for chemicals, compressed gas, and flammable materials were not properly labeled.	11
Gloves left out for multiple uses	4
Door locks bypassed using duct tape or propped open using a doorstop or a trash can	4
Workbenches and/or hallway cluttered & unorganized	3
Food and drinks in the lab	2

Deficiency + Number of Occurrences	
Hazardous Waste or Sharps Containers were not correctly stored and/or labeled	2
Compressed gas cylinders were missing barcoding and/or not securely fastened	2
Containers in the refrigerators were leaking fluid	1
Corrosive materials were stored higher than 5 feet	1
Researchers not wearing personal protective equipment;	1

Based on the number and frequency of deficiencies noted in each laboratory, there appears to a significant opportunity to improve safety.

When deficiencies arise in connection with laboratory safety practices, the safety of employees and the laboratory environment may be jeopardized, leading to an increased risk of the University's failure to comply with regulatory requirements, fines, and adverse public relations.

Door locked bypassed using duct tape



Compressed gas container - missing barcoding



Researcher not wearing proper safety equipment



Drinks in the labs



Spill in refrigerator



Unannounced Walkthrough of SEIR: (Continued)

EH&S currently conducts semi-annual announced laboratory evaluations. Two weeks before the start of the evaluations, EH&S notifies the department chairs of the evaluations. An evaluation may take place at any time during the semester after the two-week notification period has ended.

EH&S does not conduct evaluations in which no prior notice is given to the Department Chair. Based on our limited review, unannounced visits appeared to disclose more deficiencies and may be a more accurate reflection of daily operating conditions. Adding unannounced visits as an adjunct to the traditionally announced evaluations may bolster UTA's understanding of commonly overlooked opportunities, as well as better utilizing limited inspection resources. Additionally, performing both types of inspections may also enhance internal and external confidence in reported results.

Summary results:

Based on the information provided in the previous three slides, IA makes the following observations. Corresponding audit recommendations are on the subsequent pages.

- Observation 2 – Opportunities to Raise Awareness and Interest in Safety;
- Observation 3 – Opportunities to Enhance the Laboratory Evaluation Process;
- Observation 4 – Development of Formal Consequences for Substandard Behavior;
- Observation 5 – Enhance Day-To-Day Oversight of Safety Activities

Recommendation:

Annual and long term safety goals should be established to increase the focus on eliminating commonly reported deficiencies. Additionally, we recommend the inclusion of a commitment to safety as a condition of employment for all those engaged in research and as a factor in annual performance appraisals.

Management Response:

This recommendation should be integrated into the plan to be developed under the next item. The plan should articulate a commitment to safety at the beginning of employment for faculty and other researchers. The plan should also articulate a means to communicate safety performance to the Deans, Department Chairs, and other supervisors responsible for performance evaluation, for the ongoing monitoring of safety performance. It will be important that this regular performance monitoring is combined with additional plans to address substandard behavior beyond the performance evaluation, because performance reviews of researchers will always be multidimensional and address many matters other than safety. The input and cooperation of the Provost, Deans, Department Chairs, and other supervisors responsible for researcher performance evaluation will be essential to implementing this recommendation. The Office of the VPR can act as liaison among these stakeholders and EH&S, but much of the information flow will need to be directly between the parties involved. A guiding framework can be developed to articulate what safety performance information should be communicated and how it should be incorporated into researcher performance evaluation.

Target Implementation Date: 12/31/2019

Responsible Party: VP for Research in collaboration with the Provost and College Deans

Recommendation:

Consideration should be given to having EH&S conduct unannounced visits on a portion of its semi-annual safety evaluations.

Management Response:

When EH&S developed the new Laboratory Evaluation Program SOP it included conducting unannounced laboratory evaluations. At the end of FY16 based on feedback from the research faculty, who were vehemently against unannounced evaluations, and at the request of the administration, the SOP was revised. The faculty requested that EH&S notify them of the specific day and time of each upcoming evaluation. Obviously, from a logistical standpoint alone, this was not possible. EH&S sought a compromise by agreeing to provide a two-week advance notification to the department chairs prior to starting evaluations in each building. One school of thought is that unannounced evaluations may provide a truer picture of the day-to-day activities. Another school of thought is that the goal is to ensure that deficiencies are corrected, and if giving a notice provides the impetus for the laboratory occupants to make improvements, then it has the desired effect. Knowing that EH&S will be conducting upcoming evaluations often prompts a laboratory to take advantage of the pre-evaluation service that EH&S offers, or to utilize the rubric that EH&S provides. Both provide educational opportunities with regards to laboratory safety and compliance. In general, this approach has fostered a more collegial and collaborative relationship between EH&S and the research community. EH&S feels confident that the two-week notification is a satisfactory compromise for the majority of campus laboratories. However, based on the recommendation above, EH&S will revise the Laboratory Safety Evaluation SOP to include potential unannounced evaluations for laboratories that have reached 20 plus points due to excess deficiencies.

Target Implementation Date: 11/01/2019

Responsible Party: Director of EH&S

Recommendation:

We recommend that the VP for Research develop and communicate a formal plan to address substandard safety behavior and conditions. Time should be allocated during faculty meetings to discuss best practices in the field of laboratory safety and to communicate the importance of safety in their laboratories.

Management Response:

This plan should be developed in consultation with EH&S, who provide information of safety behavior, and the Provost and Deans responsible for the academic units where faculty and research personnel are appointed. Communication of best practices should be included in the plan, which should also recognize that there are differences among academic units in the manner and frequency of faculty meetings. Sanctions for substandard behavior have been briefly discussed and need more attention. A possibility is that persistent substandard behavior could trigger enhanced monitoring of an individual's facilities (e.g. unannounced inspections). Other sanctions could be discussed with the Deans. Appropriate consideration should be given to the resources available to EH&S for any enhanced monitoring and the possible impact of sanctions on collegiality among EH&S and research personnel.

Target Implementation Date: 12/31/2019

Responsible Party: VP for Research in collaboration with the Provost, College Deans, and VP for Administration and Campus Operations

Recommendation:

We recommend that each laboratory be required to designate a “Laboratory Safety Coordinator” (LSC) who along with the principal investigator will be responsible for day-to-day oversight and implementation of safety activities and communication in the laboratory.

Management Response:

There are some situations where designating an LSC would be helpful: large research groups under a single PI, or facilities shared by multiple PI’s, including perhaps some of the SEIR neighborhoods. For smaller research groups, an LSC would likely be unnecessary. EH&S was concerned that their contacts list not grow beyond their capacity to manage communications, and that any LSC’s not be transient personnel. The Office of the VPR could assist in identifying facilities where the number of investigators and the diffusion of responsibilities might warrant designating an LSC.

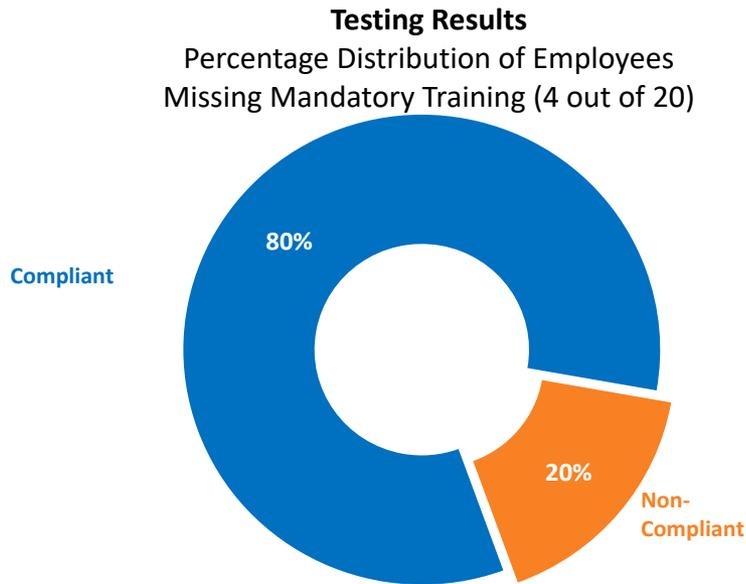
Target Implementation Date: 11/30/19

Responsible Party: VP for Research in collaboration with the College Deans and VP for Administration and Campus Operations

Not all personnel working in UTA laboratories have undergone required laboratory training

Ensuring Required Laboratory Training is Provided and Documented:

It is the responsibility of the departments to notify EH&S on the initial assignment of an employee. Once EH&S receives the notification, they start the process of having the employee complete the required hazard communication and site-specific training required by UTA Procedures 8-10 (Biological Safety), 8-11 (Chemical Safety) and Laboratory Safety Manual. It also requires completion of the Bloodborne Pathogen training for employees on the initial assignment and every year thereafter assigned to work in a BSL-2 (Biosafety Level 2) lab. These courses provide employees with information about the identification of hazardous materials, control measures to avoid potential exposure, standardized protective equipment, and practices. During our testing, we noted the following:



2 out of 20 – Employees had not undergone the required annual training for bloodborne pathogens per Section 9.2 of the EH&S Biosafety Manual, but did complete the training during their initial onboarding.

1 out of 20 – Employee had not undergone the required initial onboarding and annual recertification of the bloodborne pathogens training required by Section 9.2 of the EH&S Biosafety Manual.

1 out of 20 – Employee had not undergone the initial Hazard Communication and Waste Management training required by Title 6, Subtitle D, Chapter 502.009 of the Texas Hazard Communication Act.

The risk associated with potentially untrained lab employees includes injury to themselves and other lab workers, exposure to various health and safety hazards without adequate training, noncompliance with regulatory requirements, fines and adverse public relations for the University. Employees who are knowledgeable and adequately trained are better able to identify and minimize hazards and unhealthful exposure for themselves and their peers.

Observation 6 – Ensuring Required Laboratory Training is Completed

Medium

Recommendation:

We recommend that EH&S develop a system that assists in keeping people informed about their training status and will automatically send out recertification reminders.

Management Response:

EH&S houses its online training site with the Division of Enterprise Development (DED). EH&S will explore the possibilities with DED training site programmers of incorporating automatic reminders for recurring training, such as Bloodborne Pathogen Training. Currently, users of the training system can log into the system at any time and view a comprehensive list of all the EH&S training that they have completed. EH&S will send out general reminders each semester to the laboratory Principal Investigators prompting them to have their laboratory users review their training status on the EH&S training site to ensure they are up-to-date on all required trainings.

Target Implementation Date: 11/01/2019

Responsible Party: Director of EH&S

Two laboratory safety manuals on the EH&S website have not been updated to reflect regulatory changes.

Maintaining Laboratory Policy and Procedure Manuals:

The Chemical Hygiene Plan is part of UTA’s compliance to regulations set forth by the Texas Hazard Communication Act (Chapter 502 of the Texas Health and Safety Code).

The Hazard Communication Standard is designed to protect against chemical source illnesses and injuries by ensuring employers and workers are provided with sufficient information to recognize, evaluate and control chemical hazards and take appropriate protective measures. Several steps are required to comply with this standard including: a) the development and maintenance of a written hazard communication program; b) ensuring that Safety Data Sheets (SDS) for chemicals that workers may be exposed to are made available; and c) the development and implementation of training programs regarding hazards of chemicals.

EH&S has successfully implemented a written hazard communication program, a compulsory training course for all laboratory employees and also checked to ensure SDS are readily available during laboratory evaluations. However, we noted during testing that the following two EH&S policy and procedure manuals have not been reviewed and updated recently to reflect recent regulatory changes.

Policy & Procedure Manual	Date of Last Revision	Number of Fiscal Years Since Last Revision
Laboratory Safety Manual (Chemical Hygiene Plan)	October 2011	8
Hazard Communication Program	January 2014	5

The risk of injury or illness to campus staff and/or damage to university property in laboratories may increase due to a lack of adequate guidance.

Recommendation:

We recommend that EH&S ensure that safety policies and procedures are reviewed and evaluated for effectiveness and updated at least once a year or more often if necessary.

Management Response:

EH&S strives to review all program documents annually and revise when needed. EH&S is comprised of a multitude of environmental and safety programs which include: Fire and Life Safety, Chemical Safety and Inventory, Laboratory Evaluation Program, Biological Safety, Radiation Safety, Occupational and Construction Safety, Storm Water, Indoor Air Quality, Workers' Compensation Insurance, etc. At last count the department was responsible for 12 University Policies/Procedures, 55 forms, 25 manuals/guidelines, 77 standard operating procedures, 23 online training courses, and the department website pages. Review dates are not typically incorporated onto EH&S documents. This is due to the amount of work that would be required to re-publish documents annually with the only change being to alter the review date. When revisions to content are needed, the revised date will be changed, and the updated document published to the EH&S website. To ensure proper documentation of the annual document review process, EH&S will establish staff task assignments for each item and management will monitor these tasks until completion.

Both manuals noted in the report have been updated. The main substantive updates to the manuals involved terminology and labeling due to the adoption of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). For example, using the old system, documents that listed information regarding a chemical's safe handling and use were called Material Safety Data Sheets (MSDS), under the GHS system they are referred to as Safety Data Sheets (SDS).

Target Implementation Date: 8/01/2019

Responsible Party: Director of EH&S

Standard Operating Procedure UT Arlington Laboratory Evaluation Program

Purpose

The purpose of the Laboratory Evaluation Program is to promote safe laboratory practices and assist campus laboratories in complying with federal, state, local and institutional requirements. The Environmental Health & Safety Office (EH&S) will conduct laboratory evaluations in each laboratory area at UT Arlington in support of this goal.

Throughout this SOP the term laboratory means all facilities covered by the EH&S Laboratory Evaluation Program at UT Arlington, which include the following:

- Research and teaching laboratories such as chemistry, biology, engineering, physics, geology, biomedical engineering, kinesiology etc.
- Animal and plant facilities such as animal holding rooms, surgical suites, greenhouses, etc.
- Environmental laboratories such as ecology outdoor nature laboratory, etc.
- Other facilities posing similar risks that are routinely surveyed by EH&S, such as ceramics and art studios, academic shops, and non-academic shops.

Background

Research/teaching laboratories and academic/non-academic shops use a variety of hazardous materials (e.g., chemical, biological, radiological) and potentially hazardous equipment (e.g., centrifuges, x-rays, lasers) that carry the potential for causing physical injuries (e.g., via pressurized vessels, vacuum systems) or general fire or life safety hazards (e.g., via flammable materials, electrical/electronic equipment). These substances, equipment, and activities are governed by an array of local, state, and/or federal regulations.

Procedures

1. Frequency

EH&S will conduct evaluations in each laboratory at least once per calendar year. Evaluations may be conducted more frequently as deemed necessary by EH&S based on risk factors, laboratory conditions, compliance history, etc. Laboratories that have approved chemical-free areas per [SOP – Chemical-free Areas in UT Arlington Laboratories](#) may be evaluated more frequently.

2. Scheduling

EH&S will notify department chairs at least two weeks prior to evaluations on a building-by-building basis. The department chairs are responsible for notifying responsible individuals in their department that have a laboratory assignment in each building.

3. Evaluation Preparation

Laboratory evaluations are based on the [UT Arlington Laboratory Safety Evaluation Checklist – Chemical](#), [Biological Laboratory Safety Evaluation Checklist](#), and [Shop Safety Evaluation Checklist](#). These documents may be used to assist the laboratory users in preparing for laboratory evaluations.

4. Evaluation Process

a. Initial Evaluation

An EH&S staff member will conduct a comprehensive safety evaluation of the laboratory. While performing the evaluation each laboratory user-related item reviewed will be determined to be one of the following:

- Compliant

- Non-compliant
- Non-compliant – Critical

More information regarding these determinations can be found in the [Laboratory Evaluation Rubric](#). EH&S will assist the responsible individual (i.e., the PI, shop supervisor, etc.) in determining how to address and correct findings identified during the evaluation, and will also provide information regarding potentially hazardous situations and assist in mitigating these hazards.

b. Reporting

EH&S will issue a report outlining any findings within three (3) business days after the date of evaluation. The report will be provided to the responsible individual. For academic/research laboratories, if “Non-compliant – Critical” deficiencies are noted, the department chair/head will also be provided a copy of the evaluation report.

c. Response to Findings

The responsible individual must correct any deficiencies and document the correction by responding in writing. This response should include the actions taken to remedy the findings and outline steps taken to prevent their reoccurrence. The response requirements will be dictated by the severity of the findings as described below.

- The evaluation report notes all findings as “Compliant”.
 - No response from the responsible individual is required.

Or

- The evaluation report contains at least one finding that is “Non-compliant”.
 - The responsible individual must respond in writing within ten (10) business days of receiving the laboratory evaluation report. The response must be in writing and sent to EH&S.

Or

- The evaluation report contains at least one finding that is “Non-compliant - Critical”.
 - The responsible individual must respond in writing within three (3) business days of receiving the laboratory evaluation report. The response must be in writing and sent to EH&S with copies to the department chair/head.

If the responsible individual does not provide a response within the prescribed time, EH&S will send a reminder email to the responsible individual and copy their department chair and appropriate dean.

d. Follow-up Visit

If “Non-compliant – Critical” deficiencies are identified during the laboratory evaluation, EH&S will schedule a follow-up visit with the responsible individual 1-2 weeks after the laboratory evaluation report is issued. An immediate follow-up visit may be requested by EH&S if the situation dictates. The follow-up visit allows EH&S staff to consult with the responsible individual and confirm that corrective actions have been implemented.

5. Repeat Deficiencies

EH&S will monitor laboratories and report laboratories that continuously conduct unsafe practices or have continued items of noncompliance. Laboratory user-related findings will be tracked by EH&S for a period of three (3) laboratory evaluations. Each laboratory evaluation finding of “Non-compliant” and “Non-compliant – Critical” will be assigned points per the table below.

Occurrence	“Non-compliant” Finding	“Non-compliant – Critical” Finding
1 st	1 point	2 points
2 nd	2 points	4 points
3 rd	4 points	8 points

If the cumulative point total for the three (3) most recent laboratory evaluations reaches 20 to 40 points, EH&S will warn the responsible individual of potential enforcement actions by notifying them in writing via email and copying the department head/chair and appropriate dean/vice president.

If the cumulative point total for the three (3) most recent laboratory evaluations exceeds 40 points, EH&S will refer the issue to the Vice President for Research and the Vice President for University Administration and Campus Operations. They will make a determination regarding any enforcement action for the responsible individual on a case-by-case basis. Enforcement actions may include the suspension of access to the laboratory, suspension of access to funds, fine to the department, etc.

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UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Hazard Communication Act/General Safety			
There is no evidence of lab personnel eating, drinking, or applying cosmetics in lab.	Eating, drinking, handling contact lenses, applying cosmetics, and storing food for human consumption was not evident in the laboratory. An exception to this is when food is used as a part of the lab process – these items must be clearly labeled "not for human consumption".	This item will only be a critical violation.	Food or drink found in the laboratory.
Principal Investigator has completed annual chemical inventory – chemical list is maintained/current.	Annual chemical inventory has been completed and is up to date.	Annual chemical inventory is less than 6 months past due.	Annual chemical inventory is more than 6 months past due.
All chemicals containers and gas cylinders are barcoded.	All chemicals containers and/or gas cylinders are barcoded.	Some chemicals containers and/or gas cylinders were not barcoded or found in an incorrect location.	The majority of chemicals containers and/or gas cylinders were not barcoded, found in an incorrect location, or no attempt to participate in the chemical inventory program.
Peroxide forming chemicals are dated when received and opened, and not stored beyond their expiration date.	Peroxide forming chemical containers are dated when received and opened. Additionally, they are not past their expiration date.	This item will only be a critical violation.	Peroxide forming chemical containers are not dated when received and opened or they are past their expiration date.
Controlled substance security is adequate to prevent unauthorized use, access, or diversion.	Controlled substance security is adequate to prevent unauthorized use, access, or diversion.	This item will only be a critical violation.	Controlled substances are not secured and are accessible to unauthorized use, access, or diversion.
The Class D fire extinguisher is unobstructed.	Class D fire extinguisher is available and not obstructed in any direction.	Class D fire extinguisher obstructed by small light weight items, trash cans, boxes, etc..	Class D fire extinguisher obstructed by heavy/large/hard to move items. The fire extinguisher is not visible.
Secondary containers, other than ones for immediate use, are labeled with the identity of their contents and the hazards associated with their contents.	Secondary containers, other than those for immediate use, are labeled with the identity of their chemical contents and associated hazards.	Some secondary containers were not labeled with the identity of the chemical contents and the hazards present.	The majority of secondary containers were not labeled properly.
Breakable chemical containers should not be stored on the floor outside of a secondary container.	No breakable chemical containers stored on the floor outside of a secondary container.	One or two breakable chemical containers stored on the floor outside of a secondary container.	Several containers, or any highly hazardous chemicals such as corrosives in glass bottles, are stored on the floor without a secondary container.
Chemical containers are kept closed if not in use.	Chemical containers are kept closed if not in use.	A few chemical containers were found open when not in use.	Several containers or any highly hazardous chemical containers such as Hg found open when not in use, creating possible exposure to lab users.
Original container labels on chemical containers are legible and not removed or defaced.	Original labels with the identifying hazards on chemical containers are not removed or defaced.	A few original labels on chemical containers were not legible.	Original labels of several containers or any highly hazardous chemical containers such as HF were not legible.
Flammable storage cabinets being used in the laboratory are approved and labeled properly.	Flammable storage cabinet being used in the laboratory is approved per NFPA code and labeled properly.	Flammable storage cabinet being used in the laboratory is not approved per NFPA code and/or not labeled properly.	This item will only be a non-compliant violation.
Flammable solvents requiring refrigeration are properly stored in flammable storage or explosion proof refrigerators.	Flammable solvents requiring refrigeration are properly stored in a properly labeled and approved flammable or explosion proof refrigerator.	Flammable solvents requiring refrigeration are properly stored in an approved flammable or explosion proof refrigerator that is not properly labeled.	Flammable solvents requiring refrigeration stored in household refrigerator.

UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
The amount of flammables outside of approved flammable storage cabinets/refrigerators is minimized.	No more than 10 gallons of flammable chemicals were located outside of approved flammable storage cabinets.	More than 10 gallons of flammable chemicals were located outside of flammable storage cabinets.	More than 20 gallons of flammable chemicals were located outside of flammable storage cabinets.
Chemicals are stored by hazard class, based on compatibility, and in accordance with SDS.	Chemicals are well organized. Incompatible materials are not stored together. While a few bottles may be present on the benchtop, an obvious effort is given to make sure chemicals not in use are put away.	Chemicals are poorly organized or no organization is employed. Incompatible materials stored together such as acids and bases or no segregation strategy is employed.	Incompatible chemicals such as heavy metals (lithium, zinc, tin, magnesium, copper, chromium, nickel, mercury) stored by oxidizers or corrosives, creating possible violent reaction with a potential fire and explosion hazard.
Liquid corrosives are stored below eye level (5 ft.)	Liquid corrosive containers stored below eye level (5 ft.)	This item will only be a critical violation.	Open corrosive containers stored on high shelves creating possible exposure to eyes and skin if spilled.
Glassware used at pressures other than ambient is taped or shielded.	Glassware used at pressures other than ambient are taped or shielded.	Glassware used at high temperature/pressures such as flasks, dewers, and desiccators found with no tape, mesh or shield.	Glassware not rated by the manufacturer for pressure should not be used as pressure vessels.
Compressed gas cylinders are secured with the safety cap in place when cylinders are not in use.	All gas cylinders are secured and safety cap in place.	One or two gas cylinder(s) found not secured, safety cap missing and/ or regulator on cylinder not in use.	Multiple cylinders secured with inadequate strap or chain, missing safety caps and/or regulators on cylinders not in use.
Is the Spill Kit completely stocked?	The Spill Kit is completely stocked.	The Spill Kit is not completely stocked.	This item will only be a non-compliant violation.
Questions for approved laboratories with "Chemical-free Area" designation.			
Evidence of eating, drinking, handling contact lenses, applying cosmetics, storing food for human consumption, food preparation, and/or dish washing was not found in the "Hazardous Area".	Evidence of eating, drinking, handling contact lenses, applying cosmetics, storing food for human consumption, food preparation, and/or dish washing was not found in the "Hazardous Area".	This item will only be a critical violation.	Evidence of Eating, drinking, handling contact lenses, applying cosmetics and/or storing food for human consumption was found in designated "Hazardous Area" locations. This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.
"Chemical-free Area" signs and "Hazardous Area" signs are posted to clearly identify these areas of the laboratory.	"Chemical-free Area" signs and "Hazardous Area" signs are posted to clearly identify these areas of the laboratory.	This item will only be a critical violation.	"Chemical-free Area" signs and "Hazardous Area" signs were not posted to clearly identify these areas of the laboratory. This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.
Borders for the Designated "Chemical-free Area" are clearly marked with tape or other appropriate means.	Borders for the Designated "Chemical-free Area" are clearly marked with tape or other appropriate means.	This item will only be a critical violation.	Borders for the designated "Chemical-free Area" were not clearly marked with tape or other appropriate means. This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.
Evidence of chemical use/storage in the "Chemical-free Area" is not found.	Evidence of chemical use/storage in the "Chemical-free Area" is not found.	This item will only be a critical violation.	Evidence of chemical use and/or storage was found in the "Chemical-free Area". This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.

UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Waste receptacle marked for "non-laboratory trash only" is present in the "Chemical-free Area".	Waste receptacle marked for "non-laboratory trash only" is present in the "Chemical-free Area".	This item will only be a critical violation.	Waste receptacle marked for "non-laboratory trash only" was not present in the "Chemical-free Area". This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.
If any small appliances (microwaves, coffee makers, etc.) are present in the "Chemical-free Area", written permission in accordance with Handbook of Operating Procedure 5-310 is available.	If any small appliances (microwaves, coffee makers, etc.) are present in the "Chemical-free Area", written permission in accordance with Handbook of Operating Procedure 5-310 is available.	This item will only be a critical violation.	Small appliances (microwaves, coffee makers, etc.) were present in the "Chemical-free Area", written permission in accordance with Handbook of Operating Procedure 5-310 was not available. This item must be in compliance to maintain approval for the laboratory "Chemical-free Area" designation.
Chemical Waste			
Chemical waste is located in the immediate vicinity of generation and under supervision of the person who generated it.	Chemical waste is located in the immediate vicinity of generation and under supervision of the person who generated it.	Chemical waste is generated in one laboratory and taken to a different laboratory for storage.	This item will only be a non-compliant violation.
Each waste container has a properly filled out EH&S waste tag attached to it or a log sheet.	All waste containers are properly labeled and constituents of waste are listed on the EH&S waste tag.	Incomplete or inaccurate tag attached to the container.	No tag found on waste container(s) or blank tag attached to the container.
Containers are clearly labeled with the words "Hazardous Waste"	All waste containers are properly labeled with the words "Hazardous Waste".	No hazardous waste label found on waste container(s) but has a waste tag attached.	Containers found that are "inherently waste-like" (appear abandoned or appear to contain waste but not labeled).
Original labels on containers used for waste are defaced.	Original labels on containers used for waste are defaced.	Container used for waste with original chemical label intact and not defaced.	This item will only be a non-compliant violation.
Waste containers are compatible with their contents.	Waste containers are compatible with their contents.	This item will only be a critical violation.	Waste containers are not compatible with the waste it contains, such as HF is placed in glass containers.
Waste containers are closed unless actively receiving waste.	All waste container lids are closed unless actively receiving waste.	This item will only be a critical violation.	Hazardous waste containers lids are not tightened or are missing.
Waste containers are leak proof (no signs of leaks).	Container is not leaking. Container is neat with only minor evidence of previous contamination on the outside.	Container has visible outside contamination but is not actively leaking.	Container is leaking and hazardous waste is found in secondary containment.
Liquid waste containers are properly stored in secondary containment.	All liquid hazardous waste is in secondary containment.	This item will only be a critical violation.	Liquid hazardous waste is not in secondary containment.
Waste secondary containment is appropriate and in good condition.	Waste secondary containment is appropriate and in good condition.	This item will only be a critical violation.	Waste secondary containment is either not appropriate or not in good condition such as container cracked, spills present.
Waste is properly managed (no evidence of drain disposal, waste found in regular trash, etc.)	Waste is properly managed (no evidence of drain disposal, waste found in regular trash, etc.)	This item will only be a critical violation.	Evidence of hazardous waste drain disposal. Hazardous waste disposed of in broken glass boxes, biological waste boxes and/or regular trash.
Waste containers are not in need of pickup.	Waste is not in need of pickup or EH&S has been contacted for hazardous waste pick-up via CEMS.	A few full chemical waste containers found in the lab and no request for removal has been submitted to EH&S via CEMS.	Several full chemical waste containers found in the lab and no request for removal has been submitted to EH&S via CEMS.

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Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Incompatible waste stored in separate secondary containers – if leaking, the wastes could not react.	Waste properly segregated; no incompatibles stored together.	Incompatible wastes, though secondarily contained, stored in the same area.	Incompatible waste stored in such a way that, if leaking, the wastes could comele.
Broken glassware is deposited into puncture resistant containers and only broken glass is present.	Broken glass is deposited into puncture resistant containers. Only broken glass is present in the broken glass box. No chemicals or unapproved items found in the broken glass box.	This item will only be a critical violation.	Broken glass is in a non-puncture resistant box or unapproved items found in the broken glass box, such as containers (including vials) that still have liquid in them.
Special Waste			
Biological and non-biological sharps containers must be available and appropriately labeled when sharps are being utilized in the laboratory.	Biological and non-biological sharps containers are available and labeled properly.	Biological and non-biological sharps containers not available or not labeled properly.	This item will only be a non-compliant violation.
There is no evidence of bent, re-capped, or clipped needles.	There is no evidence of bent, re-capped, or clipped needles.	This item will only be a critical violation.	Evidence of bent, re-capped, or clipped needles found in the lab.
Sharps containers are not more than 3/4 full.	Sharps containers are not more than 3/4 full.	Sharps container(s) is overfilled.	This item will only be a non-compliant violation.
Requests for sharps removal are submitted to EH&S via CEMS.	Sharps removal requests are submitted to EH&S via CEMS. Containers not more than 3/4 full.	Sharps containers found are 3/4 full or several closed containers need to be disposed of and no request for removal has been submitted to EH&S via CEMS.	This item will only be a non-compliant violation.
Personal Protective Equipment			
Questions for Personal Protective Equipment - no users in the laboratory.			
The appropriate personal protective equipment (PPE) is available in the laboratory.	The appropriate personal protective equipment was available in the laboratory.	Not all required PPE could be found the laboratory.	This item will only be a non-compliant violation.
Questions for Personal Protective Equipment - laboratory users present in the laboratory.			
Appropriate PPE is being worn by occupants (lab coat, safety glasses, gloves; no open-toed shoes, sandals, flip-flops,etc.)	Appropriate PPE being worn by occupants (lab coat, safety glasses, gloves, no open-toed shoes, sandals, flip-flops,etc.)	This item will only be a critical violation.	Lab personnel not wearing any PPE or wearing inappropriate PPE, such as wearing safety glasses instead of chemical splash goggles if working with corrosives. PPE being worn is in poor condition.
The appropriate personal protective equipment in good condition and being stored properly.	The personal protective equipment was in good condition.	PPE was found to be in poor condition and needs to be replaced.	This item will only be a non-compliant violation.
Engineering Controls			
Questions for Biological Safety Cabinets present in the laboratory.			
Biological Safety Cabinet (BSC) is being used at a proper sash height.	BSC sash at proper height.	Sash not at required height when used in a passive manner.	Sash not at required height when used in an active manner.
Ultraviolet (UV) light is turned off while BSC is in use.	Ultraviolet (UV) light is turned off while BSC is in use.	Ultraviolet (UV) light is not turned off while BSC is in use.	This item will only be a non-compliant violation.
Waste container is located inside BSC to minimize movement through air barrier during use.	Waste container is located inside BSC when in use to minimize movement through air barrier.	Waste container not located or not found inside BSC when work is being performed.	This item will only be a non-compliant violation.

UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Objects stored inside Biological Safety Cabinet must be minimized and kept away from air-intake grilles to ensure proper airflow to protect the user.	Objects stored inside BSC are minimized and kept away from air-intake grilles to ensure proper airflow.	Objects found in BSC on or near the air-intake grilles, such as pipette tip holders, paper towels, lab glassware, etc.	Objects found in BSC are completely blocking the air-intake grilles and user is not protected.
Activities around BSC that will disturb cabinet's airflow are restricted (e.g entry, egress, walking traffic)?	Activities around BSC that will disturb cabinet's airflow are restricted (e.g., entry, egress, walking traffic).	BSC airflow impacted by location (exit doors, walkways, air vents).	This item will only be a non-compliant violation.
Interior work surface decontamination chemical(s) are present (70% alcohol is usually suitable).	Interior work surfaces decontamination chemical(s) present (70% alcohol is usually suitable).	No disinfectants were found/located in or near the BSC where work is being done with biohazards.	This item will only be a non-compliant violation.
Emergency showers are unobstructed and easily accessible.	Emergency showers not obstructed.	Emergency showers obstructed by small light weight items, trash cans, boxes, etc.	Emergency showers obstructed by heavy/large/hard to move items.
Eyewashes are unobstructed and easily accessible.	Eyewash not obstructed in any direction.	Eyewash is obstructed by small light weight items, trash cans, boxes, etc.	Eyewash is obstructed by heavy/large/hard to move items.
Physical Hazards			
Belt driven vacuum pumps are protected with belt guards, properly maintained and stored away from flammable chemicals and combustible material.	Belt driven vacuum pumps are protected with belt guards, properly maintained and stored away from flammable chemicals and combustible material.	Belt driven vacuum pump found unprotected and/or with no belt guards. Vacuum pump not properly maintained or located near flammable or combustible materials.	This item will only be a non-compliant violation.
Biological Questions			
Incineration			
Pathological waste is incinerated. Pathological waste includes animal carcasses, body parts, organs, tissue.	Pathological waste is incinerated. Pathological waste includes animal carcasses, body parts, organs, tissue.	Pathological waste has not been incinerated. Pathological waste includes animal carcasses, body parts, organs, tissue.	This item will only be a non-compliant violation.
Pathological waste is kept frozen or refrigerated and double-bagged until incinerated.	Pathological waste is kept frozen or refrigerated and double-bagged until incinerated.	Pathological waste is not incinerated and has not been kept frozen or refrigerated and double-bagged.	This item will only be a non-compliant violation.
Autoclave Monitoring			
Biohazardous waste is being stored in an appropriate waste container and labeled properly.	The biohazardous waste is stored in an appropriate waste container and labeled properly.	This item will only be a critical violation.	Untreated biohazardous waste/pathological waste found not managed properly, such as disposed of in the regular trash.
Microbiological waste treated in autoclaves is logged on the "Autoclave Waste Treatment Log" form supplied by EH&S, including date of treatment, amount, method, name, and initials of person treating waste.	Microbiological waste treated in autoclaves is logged on the "Autoclave Waste Treatment Log" form supplied by EH&S, including date of treatment, amount, method, name, and initials of person treating waste.	Microbiological waste treated in autoclaves is not logged on the "Autoclave Waste Treatment Log" form supplied by EH&S.	This item will only be a non-compliant violation.
Steam Chemical Integrator is placed inside each waste load to be autoclaved.	Steam Chemical Integrator is placed inside each waste load to be autoclaved.	Steam Chemical Integrator is not placed inside each waste load to be autoclaved.	This item will only be a non-compliant violation.
Thermal autoclave tape is placed across the biohazard symbol on the autoclave bag before treatment.	Thermal autoclave tape is being placed across the biohazard symbol on the autoclave bag before treatment.	Thermal autoclave tape is not placed across the biohazard symbol on the autoclave bag before treatment.	This item will only be a non-compliant violation.

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Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Waste to be autoclaved is treated at a minimum of 121 degrees C, 15 psi pressure for 30 minutes for liquid waste or 55-60 minutes for solid waste.	Waste to be autoclaved is treated at a minimum of 121 degrees C, 15 psi pressure for 30 minutes for liquid waste or 55-60 minutes for solid waste.	This item will only be a critical violation.	Waste to be autoclaved is not treated at a minimum of 121 degrees C, 15 psi pressure for 30 minutes for liquid waste or 55-60 minutes for solid waste.
Special Waste Instructions			
Disinfecting and Disposing of Biohazardous Liquids within the Lab.			
The waste is being stored in an appropriate waste container and labeled properly.	The waste is being stored in an appropriate waste container and labeled properly.	This item will only be a critical violation.	The waste is not being stored in an appropriate waste container and labeled properly.
Liquid microbiological waste is decontaminated with an appropriate chemical disinfectant for a sufficient contact time before disposed of by pouring to the sanitary sewer.	Container of disinfectant-waste mixture is appropriately marked and stored in a secondary containment.	Container of disinfectant-waste mixture is not appropriately marked and/or stored in a secondary containment.	This item will only be a non-compliant violation.
Container of disinfectant-waste mixture is appropriately marked and stored in a secondary containment.	Container of disinfectant-waste mixture is appropriately marked and stored in a secondary containment.	Container of disinfectant-waste mixture is not appropriately marked and/or stored in a secondary containment.	This item will only be a non-compliant violation.
Proper chemicals for disinfection are used such as EPA registered disinfectants (following manufacturer's instructions for use) and/or a fresh 1:10 solution of bleach in water, or a solution of 70% by volume 2-propanol.	Proper chemicals for disinfection are used such as EPA registered disinfectants (following manufacturer's instructions for use). E.g., a fresh 1:10 solution of bleach in water, or a solution of 70% by volume 2-propanol.	No disinfectants were able to be located in the laboratory, no active work with biohazardous materials.	No disinfectants were able to be located in the laboratory and research work was being conducted with biohazardous materials.
Stericycle: Disposing of Biohazardous Solids within the Lab			
Stericycle boxes are used for solid biohazardous waste: used gloves, paper towels, unbroken disposable materials.	Stericycle boxes are used for solid biohazardous waste: used gloves, paper towels, unbroken disposable materials.	Stericycle boxes are used for regular non-biohazardous waste.	Stericycle boxes are used for disposal of sharps or biohazardous liquids.
Stericycle box should not be filled more than 3/4 full or exceed 43 LBS.	Stericycle boxes are not filled more than 3/4 full or do not exceed 43 LBS.	Stericycle box exceeds 3/4 full or 43 LBS.	This item will only be a non-compliant violation.
Stericycle box is properly closed with the red plastic liner not visible when ready for disposal.	Stericycle box is properly closed with the red plastic liner not visible when ready for disposal.	This item will only be a critical violation.	Stericycle box is not properly closed and/or the red plastic liner is visible when ready for disposal.
BSL-2 questions			
Laboratory must have lockable doors and/or card reader access when human blood/OPIM/tissue/cells are studied.	Laboratory has lockable doors and/or card reader access when human blood/OPIM/tissue/cells are studied.	This item will only be a critical violation.	Laboratory does not have lockable doors and/or card reader access when human blood/OPIM/tissue/cells are studied.
Registration of work involving potentially infectious biological agent(s) has been done by completing the Human Pathogen Registration (HPR) and submitting it to EH&S.	HPR has been submitted to EH&S. BSL-2 commissioning is done/in progress.	This item will only be a critical violation.	HPR has not been submitted to EH&S and there is evidence of BSL-2 materials being worked with in the laboratory.
The Human Pathogen Registration Update (HPRU) form has been completed to update any existing HPR registration by describing any changes to a project and HPRU has been submitted to EH&S.	HPRU has been submitted to EH&S. Appropriate changes have been included in HPR.	This item will only be a critical violation.	Information on the HPR has changed and the HPRU has not been submitted to EH&S.
Access to the laboratory is limited when experiments are in progress.	Access to laboratory is limited when experiments are in progress.	This item will only be a critical violation.	Access to laboratory is not limited when experiments are in progress
Liquid biohazardous waste (e.g., human blood, body fluids, tissue/cell cultures) containers have biohazard sign attached and are stored in secondary containment.	Liquid biohazardous waste containers have biohazard sign attached and are stored in secondary containment.	Liquid biohazardous waste containers found with no biohazard sign.	This item will only be a non-compliant violation.

UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Shop Questions			
LOTO procedures are being followed and LOTO records are up to date.	LOTO procedures are being followed and LOTO records are up to date.	LOTO records are not up to date.	LOTO procedures are not being followed to isolate or control hazardous energies.
Every employee performing LOTO has a color coded lock and tag.	Each employee performing LOTO has a color coded lock and tag.	Not all employees performing LOTO have a color coded lock and tag.	This item will only be a non-compliant violation.
Confined Space Entry procedures are being followed and confined space entry records are up to date.	Confined space Entry procedures are being followed and confined space entry records are up to date.	Not all Confined Space Entry records are up to date.	Confined Space procedures are not being followed when entering confined space.
Fall protection procedures are being followed and monthly equipment inspection records are up to date.	Fall protection procedures are being followed and monthly equipment inspection records are up to date.	Fall protection equipment monthly equipment inspection records are not up to date.	Fall protection procedures are not being followed.
Powered Industrial Truck/Forklift daily inspections are documented and up to date.	Powered Industrial Truck/Forklift daily inspections are documented and up to date.	Powered Industrial Truck/Forklift daily inspections are not up to date.	A person is operating a Powered Industrial Truck/Forklift without current training.
Indoor air quality issues (i.e. odors, standing water, microbial growth, inadequate ventilation, excessive dust, air pollutants etc.)	There are no indoor air quality issues (i.e. odors, standing water, microbial growth, inadequate ventilation, excessive dust, air pollutants etc.)	There are indoor air quality issues that need to be corrected.	This item will only be a non-compliant violation.
Fire/Life Safety			
Good housekeeping practices are followed in the laboratory, storage of combustibles such as cardboard boxes and paper are kept to a minimum.	Majority of items are put away unless currently in use. Equipment is regularly cleaned, floors and aisle spaces are well maintained with no obvious evidence of spills.	Very cluttered bench top with little or no room to put items down. Items near the edge where they can be knocked off the bench. Equipment and/or floors dirty.	Evidence of spills of hazardous materials. Benchtops full of glassware and chemicals causing an imminent threat of an incident or injury.
Lab doors are kept closed to provide a fire and smoke barrier.	Lab doors are kept closed to provide a fire and smoke barrier.	People were present and the laboratory doors were found open or propped open during inspection. This is a fire life safety issue.	No one was present and the laboratory doors were found open or propped open during inspection. Any Biological Safety Level II, Radiation X-ray or Laser lab found open or propped open at any time. This is a fire life safety issue and a security issue.
Exits and walkways must be kept clear to ensure means of egress. There needs to be a clear path of 36 inches.	Exits and walkways in the lab are free of obstructions and tripping hazards. There is a clear path of 36 inches.	Exits and walkways were found obstructed, i.e. by equipment, furniture, trash cans, etc.	Exits and walkways completely blocked and or door locked, preventing egress.
Ceiling tiles are in place and undamaged.	Ceiling tiles are in place and undamaged.	Laboratory users have damaged, removed or displaced ceiling tiles.	This item will only be a non-compliant violation.
Combustibles are not stored within 24" of the ceiling in non-sprinklered buildings or within 18" of the sprinkler head drop distance from the ceiling.	Storage of combustibles are not stored within 24" of the ceiling in non-sprinklered buildings or within 18" of the sprinkler head drop distance from the ceiling.	Storage of combustibles are stored within 24" of the ceiling in non-sprinklered buildings or within 18" of the sprinkler head drop distance from the ceiling.	This item will only be a non-compliant violation.
Fire extinguisher is not obstructed.	Fire extinguisher is unobstructed and easily accessible.	Fire extinguisher obstructed by small light weight items, trash cans, boxes, etc..	Fire extinguisher obstructed by heavy/large/hard to move items. The fire extinguisher is not visible.
Electrical Safety			
Permanent use of extension cords has been eliminated. No multi-plug adapters are used or power strips plugged into other power strips.	Permanent use of extension cords has been eliminated. No multi-plug adapters are used or power strips plugged into other power strips.	Extension cords, multi-plug adaptors, or power strips plugged into other power strips found.	Extension cords, multi-plug adaptors, or power strips plugged into other power strips found with signs of burn marks/melting.

UTA Laboratory Evaluation Rubric

Item Inspected	Compliant	Non-compliant	Critical Non-compliant
Electrical cords are appropriately used (i.e. none are routed above the ceiling tiles or across the floor where they could be a tripping hazard).	Electrical cords are appropriately used (i.e. none are routed above the ceiling tiles or across the floor where they could be a tripping hazard).	Electrical cords found routed above the ceiling tiles or across the walkways.	This item will only be a non-compliant violation.
Electrical cords are in good condition (i.e. none have exposed wiring or cracked, brittle, or frayed insulation).	Electrical cords are in good condition. (i.e. none have exposed wiring or cracked, brittle, or frayed insulation).	This item will only be a critical violation.	Electrical cords found with exposed wiring or cracked, brittle, or frayed insulation.
There is clear access to the electrical breaker panel.	There is clear access to the electrical breaker panel. (Yes, No, No electrical panel)	Access to electrical breaker panel is obstructed by small light weight items, trash cans, boxes, etc.	Access to electrical breaker panel is obstructed by heavy/large hard to move items.

**The University of Texas at Arlington
Environmental Health & Safety (EH&S)
272-2185**

Laboratory Safety Evaluation Checklist - Biological

Date:		EH&S Personnel:	
Department:		Building:	
Principal Investigator:		Room:	
Contact:		Phone:	

C = Compliant NC = Non-Compliant NCC = Non-Compliant Critical
Requirements that must be met to ensure regulatory compliance.

General Safety - "Chemical-Free Area"	C	NC	NCC	Comments/Notes
1. Evidence of eating, drinking, handling contact lenses, applying cosmetics, storing food for human consumption, food preparation, and/or dish washing was not found in the "Hazardous Area".				
2. "Chemical-Free Area" signs and "Hazardous Area" signs are posted to clearly identify these areas of the laboratory.				
3. Borders for the Designated "Chemical-Free Area" are clearly marked with tape or other appropriate means.				
4. Evidence of chemical use/storage in the "Chemical-Free Area" is not found.				
5. Waste receptacle marked for "non-laboratory trash only" is present in the "Chemical-Free Area".				
6. If any small appliances (microwaves, coffee makers, etc.) are present in the "Chemical-Free Area", written permission in accordance with Handbook of Operating Procedure 5-310 is available.				

Chemicals	C	NC	NCC	Comments/Notes
1. There is no evidence of lab personnel eating, drinking or applying cosmetics in the lab.				
2. Principal Investigator has completed annual chemical inventory - chemical list is maintained/current.				
3. All chemicals containers and gas cylinders barcoded.				
4. Peroxide forming chemicals are dated when received and opened, and not stored beyond their expiration date.				
5. Controlled substance security is adequate to prevent unauthorized use, access or diversion.				
6. The Class D fire extinguisher is unobstructed.				
7. Secondary containers, other than ones for immediate use, are labeled with the identity of their contents and the hazards associated with their contents.				
8. Breakable chemical containers should not be stored on the floor outside of a secondary container.				
9. Chemical containers are kept closed if not in use.				
10. Original container labels on chemical containers are not removed or defaced.				
11. Flammable storage cabinets being used in the laboratory are approved and labeled properly.				
12. Flammable solvents requiring refrigeration are properly stored in flammable storage or explosion proof refrigerators.				
13. The amount of flammables outside of approved flammable storage cabinets/refrigerators is minimized.				
14. Chemicals are stored by hazard class, based on compatibility, and in accordance with SDS.				
15. Liquid Corrosives are stored below eye level (5ft.)				
16. Glassware used at pressures other than ambient are taped or shielded.				
17. Compressed gas cylinders are secured with the safety cap in place when cylinders are not in use.				

Chemical Waste	C	NC	NCC	Comments/Notes
1. Chemical waste is located in the immediate vicinity of generation and under supervision of the person who generated it.				
2. Each waste container has a properly filled out EH&S waste tag attached.				
3. Containers are clearly labeled with the contents of the container and the words "Hazardous Waste".				
4. Original labels on containers used for waste are defaced.				
5. Waste Containers are compatible with their contents.				
6. Waste Containers are closed unless actively receiving waste.				
7. Waste Containers are leak proof (no signs of leaks).				
8. Liquid waste containers are properly stored in secondary containment.				
9. Waste secondary containment is appropriate and in good condition.				
10. Waste is properly managed (no evidence of drain disposal, waste found in regular trash, etc.)				
11. Waste containers are not in need of pickup.				
12. Incompatible waste stored in separate secondary containers—if leaking, the wastes could not react.				
13. Broken glassware is deposited into puncture resistant containers and only broken glass is present.				

Sharps	C	NC	NCC	Comments/Notes
1. Biological and non-biological sharp containers labeled properly.				
2. There is no evidence of bent, re-capped, or clipped needles.				
3. Sharps containers are not more than ¾ full.				
4. Requests for sharps removal are submitted to EH&S via CEMS				

Personal Protective Equipment	C	NC	NCC	Comments/Notes
1. The appropriate personal protective equipment (PPE) is available in the laboratory.				
2. Appropriate PPE is being worn by occupants (lab coat, safety glasses, gloves. No open-toed shoes, sandals, flip-flops, etc.)				
3. The appropriate personal protective equipment in good condition and being stored properly.				

Engineering Controls	C	NC	NCC	Comments/Notes
1. Ultraviolet (UV) light is turned off while Biological Safety Cabinet (BSC) is in use.				
2. Waste container is located inside BSC to minimize movement through air barrier during use.				
3. Objects stored inside Biological Safety Cabinet must be minimized and kept away from air-intake grilles to ensure proper airflow to protect the user.				
4. Activities around BSC that will disturb cabinet's airflow are restricted (e.g. entry, egress, walking traffic?)				
5. Interior work surface decontamination chemical(s) present (70% alcohol is usually suitable).				
6. Fume hood is being used at a proper sash height.				
7. Emergency showers are unobstructed and easily accessible.				
8. Eyewashes are unobstructed and easily accessible.				

Physical Hazards	C	NC	NCC	Comments/Notes
1. Belt driven vacuum pumps are protected with belt guards, properly maintained, and stored away from flammable chemicals and combustible material.				

Autoclave	C	NC	NCC	Comments/Notes
1. Proper chemicals for disinfection are used such as EPA registered disinfectants (following manufacturer's				

instructions for use) and/or a fresh 1:10 solution of bleach in water, or a solution of 70% by volume 2-propanol).				
2. Biohazardous waste is being stored in an appropriate waste container and labeled properly.				
3. Microbiological waste treated in autoclaves is logged on the "Autoclave Waste Treatment Log" form supplied by EH&S including date of treatment, amount, method, name, and initials of person treating waste.				
4. Steam Chemical Integrator is placed with each waste load to be autoclaved.				
5. Thermal autoclave tape is placed across the biohazard symbol on the autoclave bag before treatment.				
6. Waste to be autoclaved is treated at a minimum of 121 degrees C, 15 psi pressure for 30 minutes for liquid waste or 55-60 minutes for solid waste.				
7. Label is affixed to autoclaved waste that states, "Treated in accordance with the provisions of 25 TAC § 1.136(a)" and placed inside another opaque bag to be placed in regular trash.				
Special Waste				
1. Liquid biohazardous waste (e.g. human blood, body fluids, tissue/cell cultures) containers have biohazard sign attached.				
2. Liquid microbiological waste is decontaminated with an appropriate chemical disinfectant for a sufficient contact time before disposed of by pouring to the sanitary sewer.				
3. Pathological waste is incinerated. Pathological waste includes animal carcasses, body parts, organs, tissue.				
4. Pathological waste is kept frozen and double-bagged until incinerated.				
Stericycle				
1. Stericycle boxes are used for solid biohazardous waste: used gloves, paper towels, unbroken disposable materials.				
2. Stericycle box should not be filled more than 3/4 full or exceed 43 LBS.				
3. Stericycle box is properly closed with the red plastic liner not visible when ready for disposal.				
BSL-2				
1. Access to laboratory is limited when experiments are in progress.				
2. Registration of work involving potentially infectious biological agent(s) has been done by completing the Human Pathogen Registration (HPR) and submitting it to EH&S.				
3. The Human Pathogen Registration Update (HPRU) form has been completed to update any existing HPR registration by describing any changes to a project and HPRU has been submitted to EH&S.				

Fire/Life Safety	C	NC	NCC	Comments/Notes
1. Good housekeeping practices are followed in the laboratory, storage of combustibles such as cardboard boxes and paper are kept to a minimum.				
2. Lab doors are kept closed to provide a fire and smoke barrier.				
3. Exits and walkways must be kept clear to ensure means of egress. There needs to be a clear path of 36 inches.				
4. Ceiling tiles are in place and undamaged				
5. Combustibles are not stored within 24" of the ceiling in non-sprinklered buildings or within 18" of the sprinkler head drop distance from the ceiling.				
6. Fire extinguisher is not obstructed.				

Electrical Safety	C	NC	NCC	Comments/Notes
1. Permanent use of extension cords has been eliminated. No multi-plug adapters are used or power strips plugged into other power strips.				
2. Electrical cords are appropriately used (i.e. none are routed above the ceiling tiles or across the floor where				

	they could be a tripping hazard).				
3.	Electrical cords are in good condition. (i.e. none have exposed wiring or cracked, brittle, or frayed insulation).				
4.	There is clear access to the electrical breaker panel.				

Comments

Revised 8-5-2016

**The University of Texas at Arlington
Environmental Health & Safety (EH&S)
272-2185**

Laboratory Safety Evaluation Checklist - Chemical

Date:		EH&S Personnel:	
Department:		Building:	
Principal Investigator:		Room:	
Contact:		Phone:	

**C = Compliant NC = Non-Compliant NCC = Non-Compliant Critical
Requirements that must be met to ensure regulatory compliance.**

General Safety – "Chemical-Free Area"	C	NC	NCC	Comments/Notes
1. Evidence of eating, drinking, handling contact lenses, applying cosmetics, storing food for human consumption, food preparation, and/or dish washing was not found in the "Hazardous Area".				
2. "Chemical-free Area" signs and "Hazardous Area" signs are posted to clearly identify these areas of the laboratory.				
3. Borders for the Designated "Chemical-Free Area" are clearly marked with tape or other appropriate means.				
4. Evidence of chemical use/storage in the "Chemical-Free Area" is not found.				
5. Waste receptacle marked for "non-laboratory trash only" is present in the "Chemical-Free Area".				
6. If any small appliances (microwaves, coffee makers, etc.) are present in the "Chemical-Free Area", written permission in accordance with Handbook of Operating Procedure 5-310 is available.				
Chemicals				
1. There is no evidence of lab personnel eating, drinking or applying cosmetics in the lab.				
2. Principal Investigator has completed annual chemical inventory - chemical list is maintained/current				
3. All chemicals containers and gas cylinders barcoded.				
4. Peroxide forming chemicals are dated when received and opened, and not stored beyond their expiration date.				
5. Controlled substance security is adequate to prevent unauthorized use, access or diversion.				
6. The Class D fire extinguisher is unobstructed.				
7. Secondary containers, other than ones for immediate use, are labeled with the identity of their contents and the hazards associated with their contents.				
8. Breakable chemical containers should not be stored on the floor outside of a secondary container.				
9. Chemical containers are kept closed if not in use.				
10. Original container labels on chemical containers are not removed or defaced.				
11. Flammable storage cabinets being used in the laboratory are approved and labeled properly.				
12. Flammable solvents requiring refrigeration are properly stored in flammable storage or explosion proof refrigerators.				
13. The amount of flammables outside of approved flammable storage cabinets/refrigerators is minimized.				
14. Chemicals are stored by hazard class, based on compatibility, and in accordance with SDS.				
15. Liquid Corrosives are stored below eye level (5ft.)				
16. Glassware used at pressures other than ambient are taped or shielded.				
17. Compressed gas cylinders are secured with the safety cap in place when cylinders are not in use.				

Chemical Waste	C	NC	NCC	Comments/Notes
1. Chemical waste is located in the immediate vicinity of generation and under supervision of the person who generated it.				
2. Each waste container has a properly filled out EH&S waste tag attached.				
3. Containers are clearly labeled with the contents of the container and the words "Hazardous Waste".				
4. Original labels on containers used for waste are defaced.				
5. Waste containers are compatible with their contents.				
6. Waste containers are closed unless actively receiving waste.				
7. Waste containers are leak proof (no signs of leaks).				
8. Liquid waste containers are properly stored in secondary containment.				
9. Waste secondary containment is appropriate and in good condition.				
10. Waste is properly managed (no evidence of drain disposal, waste found in regular trash, etc.)				
11. Waste containers are not in need of pickup.				
12. Incompatible waste stored in separate secondary containers – if leaking, the wastes could not react.				
13. Broken glassware is deposited into puncture resistant containers and only broken glass is present.				

Sharps	C	NC	NCC	Comments/Notes
1. Biological and non-biological sharps containers are labeled properly.				
2. There is no evidence of bent, re-capped, or clipped needles.				
3. Sharps containers are not more than ¾ full.				
4. Requests for sharp removal are submitted to EH&S via CEMS.				

Personal Protective Equipment	C	NC	NCC	Comments/Notes
1. The appropriate personal protective equipment (PPE) is available in the laboratory.				
2. Appropriate PPE is being worn by occupants (lab coat, safety glasses, gloves. No open-toed shoes, sandals, flip-flops, etc.)				
3. The appropriate personal protective equipment in good condition and being stored properly.				

Engineering Controls	C	NC	NCC	Comments/Notes
1. Emergency showers are unobstructed and easily accessible.				
2. Eyewashes are unobstructed and easily accessible.				

Physical Hazards	C	NC	NCC	Comments/Notes
1. Belt driven vacuum pumps are protected with belt guards, properly maintained, and stored away from flammable chemicals and combustible material.				

Fire/Life Safety	C	NC	NCC	Comments/Notes
1. Good housekeeping practices are followed in the laboratory, storage of combustibles such as cardboard boxes and paper are kept to a minimum.				
2. Lab doors are kept closed to provide a fire and smoke barrier.				
3. Exits and walkways must be kept clear to ensure means of egress. There needs to be a clear path of 36 inches.				
4. Ceiling tiles are in place and undamaged				
5. Combustibles are not stored within 24" of the ceiling in non-sprinklered buildings or within 18" of the sprinkler head drop distance from the ceiling.				
6. Fire extinguisher is not obstructed.				

Electrical Safety		C	NC	NCC	Comments/Notes
1.	Permanent use of extension cords has been eliminated. No multi-plug adapters are used or power strips plugged into other power strips.				
2.	Electrical cords are appropriately used (i.e. none are routed above the ceiling tiles or across the floor where they could be a tripping hazard).				
3.	Electrical cords are in good condition. (i.e. none have exposed wiring or cracked, brittle, or frayed insulation).				
4.	There is clear access to the electrical breaker panel.				

Comments

Revised 8-5-2016



Laboratory Safety Evaluation

Created by [EH&S Staff Member Name]

On [Month Day, Year]

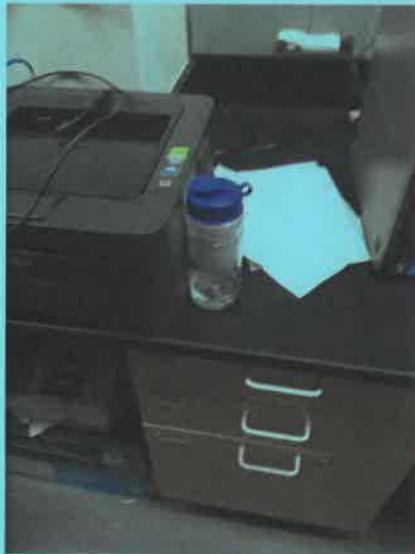
Building Name	[Building Name]	Room Number	[Room Number]
Barcode	[XXXXXX]	Department	[Dept Name]
Principal Investigator	[PI Name]	Phone	[XXX-XXXX]
Contact	[Other Lab Contact Name]	Biological Safety Level	[BSL Level]

Q#1:	Are individuals working in the laboratory at the time of the inspection?
ANSWER:	Yes

Q#2:	There is no evidence of lab personnel eating, drinking or applying cosmetics in the lab.
ANSWER:	No- Critical Noncompliant

Informational
Eating, drinking, handling contact lenses, applying cosmetics, and storing food for human consumption is not permitted in laboratory areas where chemicals are used. An exception to this is when food is used as a part of the lab process, these items must be clearly labeled "not for human consumption".

Comments
Food present in laboratory during animal experimentation.





Q#3:	Are all chemicals containers and gas cylinders barcoded?
ANSWER:	No- Noncompliant

Informational
EH&S should be contacted via CEMS to request barcoding of chemicals and/or gas cylinders when they are received.





Q#4:	Secondary containers, other than ones for immediate use, are labeled with the identity of their contents and the hazards associated with their contents.
ANSWER:	No- Noncompliant

Informational

The Hazard Communication Standard and NFPA 45 require that labels for secondary containers must contain two key pieces of information: the identity of the hazardous chemical(s) in the container (e.g., chemical name) and the hazards present. No abbreviations or chemical formulas unless listed on a posted cross reference sheet.



Q#5:	Sharp containers are not more than 3/4 full?
ANSWER:	No- Noncompliant

Informational

EH&S should be contacted via CEMS to request pickup of sharps container(s).



Q#6: Respirators are not present and are not being used in the laboratory?

ANSWER: No

Informational

If it has not already been established, EH&S will contact the PI to determine if respirator use is required for the work being conducted and if medical clearance and fit testing is required.





Q#7:	Good housekeeping practices are followed in the laboratory, storage of combustibles such as cardboard boxes and paper are kept to a minimum.
ANSWER:	No- Noncompliant

Informational
Spilled and residual chemicals should be cleaned up immediately. Storage of combustibles should be kept to a minimum. Fire, property loss, or injuries can result from excessive clutter, poor housekeeping and improper storage in the lab.





Q#8:

[Evaluator Signature]



Standard Operating Procedure Chemical-free Areas in UT Arlington Laboratories

Purpose

The purpose of this SOP is to describe the eligibility requirements and application process for obtaining a Chemical-free Area designation in UT Arlington laboratories where potential biological, chemical, or physical hazard exposure risks exist and facility space limitations require a break area be designated in the active laboratory work area.

For the purposes of this SOP the term laboratory means all facilities covered by the EH&S Laboratory Evaluation Program at UT Arlington, which include the following:

- Research and teaching laboratories such as chemistry, biology, engineering, physics, geology, biomedical engineering, kinesiology etc.
- Animal and plant facilities such as animal holding rooms, surgical suites, greenhouses, etc.
- Environmental laboratories such as ecology outdoor nature laboratory, etc.
- Other facilities posing similar risks that are routinely surveyed by EH&S, such as ceramics and art studios and academic/non-academic shops.

Principal Investigators (PIs) may use this document to determine if their laboratory is eligible for a Chemical-free Area designation and, if eligible, the process for obtaining a Chemical-free Area designation.

Background

Eating, drinking, handling contact lenses, applying cosmetics, and storing of food for human consumption is not permitted in University laboratory work areas. In cases where the need is justified (i.e. existing break facilities are not reasonably accessible) and it can be demonstrated that proposed locations are sufficiently separated from actual laboratory work areas, Environmental Health & Safety (EH&S) will consider and review for approval a designated Chemical-free Area where laboratory staff may eat, drink, apply cosmetics, and conduct other personal activities not related to laboratory operations.

Restrictions and Eligibility

The following type of laboratories are not eligible for Chemical-free Area designations. Eating, drinking, handling contact lenses, applying cosmetics and storing food for human consumption is strictly prohibited in these laboratories:

- Biological laboratories designated as BSL-2 or greater.
- Radioactive material laboratories.
- Laboratories where OSHA regulated carcinogens are used/stored.
- Laboratories where research animals are housed and/or procedures with research animals take place, to include satellite locations.
- Shared laboratory spaces where there is no primary responsible PI.
- Laboratories located within reasonable access to an existing break room.

Eligible laboratories which may qualify for chemical-free area designation include laboratories operating under BSL-1 and/or laboratories whose operations involve hazardous chemicals that meet the following conditions:

1. If present, the Chemical-free Area should be located in a separate room/anteroom with a door. If a separate room is not present, the laboratory must have ample space available to provide sufficient separation from laboratory work areas where active use/storage of the biological/chemical hazards is taking place. The room shall be large enough with adequate counter/desk space to provide complete physical separation of the food area and laboratory use area. Adequacy of sufficient separation will be determined by EH&S staff during their hazard assessment and facility inspection.
2. The laboratory PI must have conducted a physical inventory of the laboratory in the CEMS system within the previous three months to ensure the accuracy of information during the review process.
3. The lab must possess suitable engineering controls for minimizing contamination (biological safety cabinets and/or fume hoods, properly placed sinks for hand washing, nonporous chemical resistant and readily cleanable lab/equipment surfaces, etc.)
4. The PI provides a hazard assessment identifying potential chemical/biological hazard exposure routes, potential for exposure, potential hazards associated with exposures, and means for minimizing potential exposure through personal protective equipment, engineering controls, administrative controls, and staff training.
5. The PI provides justification for establishing a Chemical-free Area within the space under their charge. Only applications which clearly demonstrate that existing facilities do not provide a reasonably accessible break area for laboratory staff will be considered.

Application Process

1. If the laboratory meets the eligibility requirements, the PI may complete and submit Form 8-106, Chemical-free Area Designation Application to EH&S for approval.
2. EH&S will review the application and contact the applicant to schedule a facility inspection.
3. Upon completion of the review and facility inspection, if EH&S approves of the Chemical-free Area designation, they will submit the application to the Vice President of Research and Vice President of Administration and Campus Operations for final approval.

Post Approval

1. Following notification of approval, the PI must clearly mark the floor areas forming the borders of the designated chemical-free area with tape or other appropriate means.
2. The PI must post "Chemical-free Area" signs, as well as "Hazardous Area" signs to clearly identify these areas of the laboratory.
3. The PI must provide and document training to all laboratory users regarding the implementation of the Chemical-free Area.

4. EH&S will conduct periodic inspections of laboratories authorized to have a Chemical-free Area to ensure continued compliance by verifying that the conditions of the Chemical-free Area designation are being followed and that the laboratory and Chemical-free Areas are being maintained appropriately.
5. Reevaluation of designated Chemical-free Areas may be conducted at any time to ensure adequacy of the space, controls, and hazardous material use. Reevaluation may also occur if there is a significant change in laboratory use or practices.
6. Chemical-free Area designations must be renewed every three years.
7. There will be a zero tolerance policy and Chemical-free Area designations will be revoked by EH&S for any violation of the Chemical-free Area requirements and report the revocation to the VP of Research and/or VP of Administration and Campus Operations.
8. If the PI fails to uphold the conditions of the annual physical chemical inventory requirement, or significant compliance or safety violations are noted during laboratory assessments, EH&S will suspend the Chemical-free Area designation and report the suspension to the VP of Research and/or VP of Administration and Campus Operations.

General Rules

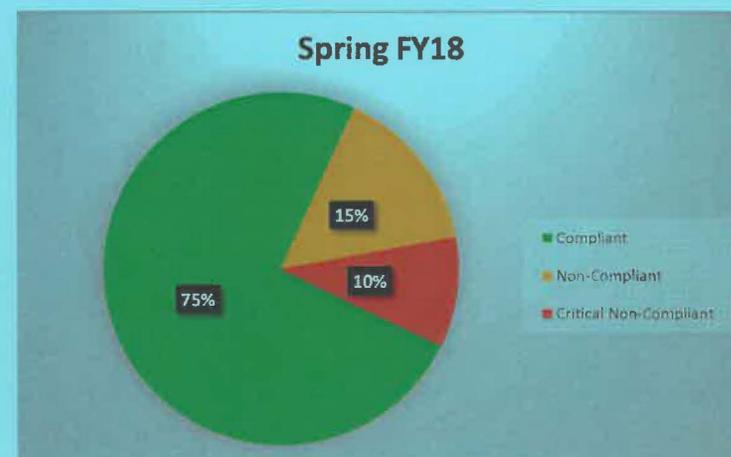
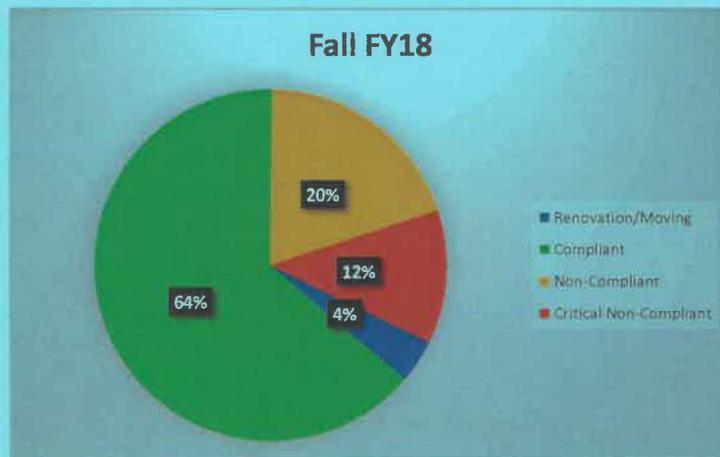
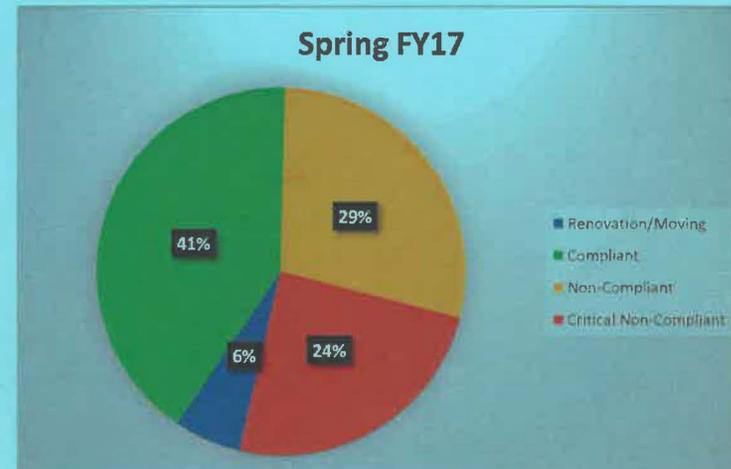
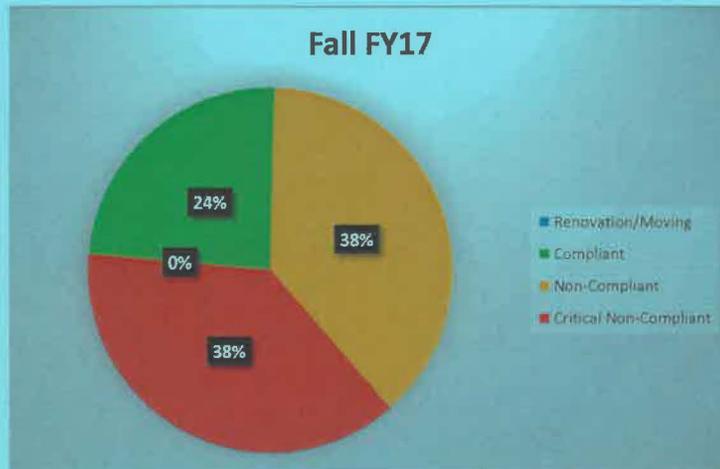
The following general rules must be observed in laboratories with an approved Chemical-free Area designation:

1. Laboratory cleanliness must be maintained at a very high level to ensure no inadvertent contamination of laboratory and food areas.
2. Gloves must be removed and hands washed with soap and water after working with hazardous materials and before working in a Chemical-free Area.
3. The Chemical-free Area must be equipped with a waste receptacle marked for non-laboratory trash only.
4. Glassware and other equipment/supplies used for laboratory operations should not be used to prepare or consume food or beverages.
5. If there is a sink located in the Chemical-free Area it must be designated as sanitary use only (hand and dish washing, etc.) If a sink is needed for laboratory operations, a second sink must be available outside of the Chemical-free Area. Sinks located outside the Chemical-free Area may not be used for dishwashing, food preparation etc.
6. Laboratory refrigerators, ice chests, cold rooms, microwaves, and ovens should not be used for food storage or preparation.
7. The use of any small appliances (microwaves, coffee makers, etc.) for food preparation in the Chemical-free Area must be in accordance with Handbook of Operating Procedure 5-310, Space Heaters and High-Current Small Appliances Use in UT Arlington Facilities. If present, the written permission allowing these appliances must be available in the laboratory for review by EH&S staff.

FY17 - FY18 UTA Laboratory Evaluation Results Summary

Attachment G

Evaluation Results	Fall FY17		Spring FY17		Fall FY18		Spring FY18	
	# Labs	% of Total	# Labs	% of Total	# Labs	% of Total	# Labs	% of Total
Renovation/Moving	0	0%	23	6%	16	4%	0	0%
Compliant	91	24%	158	41%	249	64%	287	75%
Non-Compliant	145	38%	111	29%	77	20%	59	15%
Critical Non-Compliant	143	38%	95	24%	48	12%	39	10%
Total Labs Evaluated	379		387		390		385	



Spring FY 18

Most Common "Non-Compliant" Deficiencies

- Secondary containers, other than ones for immediate use, are not labeled with the identity of their contents and the hazards associated with their contents.
- Each waste container does not have a properly filled out waste tag or a log sheet attached to it.
- Good housekeeping practices are not followed in the laboratory, storage of combustibles such as cardboard boxes and paper are not kept to a minimum.

Most Common "Critical Non-Compliant" Deficiencies

- There is evidence of lab personnel eating, drinking or applying cosmetics in the lab.
- Peroxide forming chemicals are not dated when received and opened, and are stored beyond their expiration date.
- Waste is properly managed (no evidence of drain disposal or waste found in regular trash etc.)