

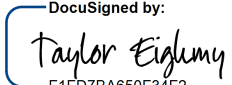
The University of Texas at San Antonio

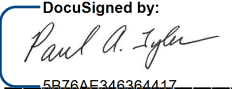
# UTSA Auditing & Consulting Services

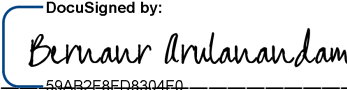
## Research Core Facilities

Project # 2020-40

February 24, 2021

Reviewed by:   
Taylor Eighmy, Ph.D.  
President

Prepared by:   
Paul Tyler  
Chief Audit Executive

Responsible VP:   
Dr. Bernard Arulanandam  
Vice President for Research, Economic  
Development and Knowledge Enterprise

Auditors Assigned: Laura Buchhorn, Assistant Director  
Aaron Sanders, Auditor III  
Jaime Fernandez, Senior Auditor

This engagement was conducted in accordance with The Institute of Internal Auditors' International Standards for the Professional Practice of Internal Auditing and with Government Auditing Standards.

Executive Summary  
Research Core Facilities Internal Audit Report  
Project # 2020-40

**Objectives:**

- Determine if physical access is appropriate for selected Research Core Facilities:
  - Cell Analysis Core,
  - Genomics Core,
  - Biophotonics Core, and
  - Mass Spectrometry and Proteomics Core.
- Determine if users are trained on equipment usage and General Lab Safety for selected Research Core Facilities:
  - Cell Analysis Core,
  - Genomics Core, and
  - Biophotonics Core.

\* Note – During the course of the audit, the Biophotonics Core combined with the Cell Analysis Core.

**Conclusion – Physical Access:**

Employees who are not current Research Core Facilities equipment users have physical access to the Research Core Facilities. Additionally, four terminated employees had access to Research Core Facilities.

**Conclusion – Training:**

All Research Core Facilities equipment users have taken Core equipment training. However, not all Research Core Facilities equipment users have taken the required General Lab Safety training and Research Core Facility specific training. The two General Lab Safety required training courses are not currently listed in the Research Core Facility Operating Procedures.

**Scope:**

As of August 31, 2020, physical security access reports to the Cell Analysis Core, Genomics Core, Biophotonics Core, and the Mass Spectrometry and Proteomics Core Facilities were reviewed. Training records for users authorized to use equipment in Cell Analysis Core, Genomics Core, and Biophotonics Core were reviewed.

**Office of Research Infrastructure Support Action Plans:**

- Review and continually update Research Core Facilities physical security access rights. Remove terminated individuals with access to Research Core Facilities. (High)
- Implement tracking processes to ensure Research Core Facilities users are current with training requirements. Publish Research Core Facilities policies for all lab equipment and UTSA general lab safety course requirements for users. (Medium)

Audit Results  
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## Background

The Office of Research Infrastructure Support provides oversight of the Research Core Facilities to ensure policies and practices are in compliance with [Uniform Guidance 2 CFR § 200.468 - Specialized service facilities](#) and align with university strategic objectives. Within the Vice President for Research, Economic Development, and Knowledge Enterprise, the Director of Research Infrastructure Support reports to the Assistant Vice President of Research Support.

UTSA's [Research Core Facilities](#) offer access to research equipment to UTSA faculty, students, and outside customers to complete analysis for a fee. The Biophotonics Core, Cell Analysis Core, and Genomics Core customers are trained on how to use Core equipment to complete their analysis. The Mass Spectrometry and Proteomics Core Lab Managers complete the analysis for customers. UTSA's Research Core Facilities included in the audit are:

Vice President for Research, Economic Development, and Knowledge Enterprise

Dr. Bernard Arulanandam

Senior Associate Vice President for Research

Dr. Can Saygin

Assistant Vice President Research Support

Dr. Cristian Botez

Director of Research Infrastructure Support

Desiree Porter

- The *Cell Analysis Core Facility* provides centralized services, training, access, and support to researchers in the usage of flow cytometry equipment and related services including technical training opportunities.
- The *Genomics Core Facility* performs fee-for-service sample processing for any nucleic acid Next Generation Sequencing (NGS) application (genome, transcriptomes, epigenome, etc.). Particular expertise in bacterial genome assembly and mammalian single-cell genomics. The core also maintains instruments for unassisted use by the researchers.
- The *Biophotonics Core Facility* provides cutting edge technology for the study and manipulation of biological samples using light, including long-term in-depth imaging of live tissues and the technology to probe at the molecular level for protein-protein interactions within live samples. Biophotonics has since merged with Cell Analysis Core.
- The *Mass Spectrometry and Proteomics Core Facility* is focused on capillary liquid chromatography-mass spectrometry (LC/MS) and tandem mass spectrometry (LC/MS/MS) to identify, characterize, and quantify proteins. The Mass Spectrometry and Proteomics Core develops novel methods, while the Protein Biomarkers Core applies these methods to discover and validate novel protein biomarkers of disease.

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**Objective:** Determine if physical access is appropriate for selected Research Core Facilities:

- Cell Analysis Core,
- Genomics Core,
- Biophotonics Core, and
- Mass Spectrometry and Proteomics Core.

Inappropriate  
Physical Access

Terminated individuals and employees lacking required General Lab Safety Training and Core Facility Equipment Training have physical access to the Research Core Facilities.

[HOP 8.04 Physical Access Control to University Facilities](#) states employees with the authority to approve access privileges have the responsibility to periodically review physical access to ensure that individuals without a business need to access the spaces have those privileges removed.

Physical access to the Research Core Facilities was analyzed by employee position:

- Academic Employees: includes Chairs, Directors, Academic Managers, Coordinators, Researcher, Professors, Associate Professors, Assistant Professors, and Fellows.
- Non-Academic Employees: includes employees in Facilities, Housekeeping, Public Safety, Risk Management, University Planning, Housing, or Vice Presidents.

Training Records for Core Facilities equipment users were reviewed. Training records for Academic Employees who are not current Core Facilities equipment users and the training records for Non-Academic Employees were not reviewed.

Cell Analysis Core\Genomics Core Facilities Shared Space:

- 344 Employees have access to the BSE 3.108 Main Door:
  - 73 are Academic Employees:
    - 7 have Cell Analysis Core or Genomics Core Equipment Training.
    - 4 are terminated employees.
  - 271 are Non-Academic Employees.
- 339 Employees have access to the BSE 3.108-1 Door:
  - 73 are Academic Employees:
    - 6 have Cell Analysis Core or Genomics Core Equipment Training.
    - 4 are terminated employees.
  - 266 are Non-Academic Employees.

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Biophotonics Core:

- 293 Employees have access to the BSE 3.108D Door:
  - 24 are Academic Employees:
    - 6 have Biophotonics Core Equipment Training.
  - 269 are Non-Academic Employees.
  
- 288 Employees have access to the BSE 3.108E Door:
  - 19 are Academic Employees:
    - 5 have Biophotonics Core Equipment Training.
  - 269 are Non-Academic Employees.

Mass Spectrometry and Proteomics Core:

- 287 Employees have access to the BSE 3.108A Door:
  - 20 are Academic Employees:
    - 1 is a terminated employee.
  - 267 are Non-Academic Employees.

<b>Observation:</b>	Many employees who are not current Research Core Facilities equipment users have physical access to the Research Core Facilities. Some terminated employees have physical access to the Research Core Facilities.
<b>Risk Level:</b>	A high number of individuals with physical access to the Research Core Facilities without specific equipment or General Lab Safety training presents a HIGH probability of loss of Research Core Facilities equipment and a threat to personal safety.
<b>Management Action Plan:</b>	<p>The Office of Research Infrastructure Support (ORIS) does not have access to review persons with physical access to core space. Therefore, ORIS will contact Security Services once per semester to request a list of persons with physical access to Research Core Facilities space. Since many UTSA staff have access to the Card/Key Request system and may request access to doors across campus, it is important that ORIS receive an updated list regularly. Others across campus may grant access to core space without the knowledge or approval of either ORIS staff or core staff.</p> <p>If/when the list from Security Services is received, ORIS will compare this list against the list of core users (excluding non-academic employees). Discrepancies will be identified and reported to any joint space owners with a request for justification of access and/or removal of access. All valid written justifications</p>

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	for access to core space will be stored in a shared folder available to core staff and the Office of Research Infrastructure Support. If a user is unknown to any joint space owners, a good faith effort will be made to identify who granted that person access and why. If no valid reason is found, ORIS staff will request removal of their access. All removal of access requests will be submitted to Security Services, as ORIS does not have direct access to manage physical access lists.
<b>Responsible Person:</b>	Desiree Porter, Director - Office of Research Infrastructure Support
<b>Implementation Date:</b>	April 30, 2021

**Objective:** Determine if users are trained on equipment usage and UTSA general lab safety for selected Research Core Facilities:

- Cell Analysis Core,
- Genomics Core, and
- Biophotonics Core.

Lab Equipment Training

Research Core Facility users are required to be trained on how to use Research Core Facility equipment before they may make reservations in iLabs to use the equipment.

General Lab Safety Training

UTSA requires two General Lab Safety Trainings on identifying and handling hazardous waste:

- SA401 Hazardous Waste Generator
- SA443.01 Hazardous Communication and Lab Safety

The Cell Analysis Core and the Genomics Core require two additional trainings:

- SA483 - Researcher Biological Safety and Bloodborne Pathogens
- SA483R - Researcher Biological Safety and Bloodborne Pathogens Refresher

The Biophotonics Core requires an additional training:

- SA465 - Laser Safety training

Cell Analysis Core – all 19 equipment users have been trained on how to use the Cell Analysis Core equipment. However:

- 13 users did not have evidence of SA0443.01 training.

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- 3 users did not have evidence of SA483 training.
- 1 user did not have evidence of SA483R training.

Genomics Core – all 12 equipment users have been trained on how to use the Genomics Core equipment. However:

- 5 users did not have evidence of SA0401 training.
- 12 users did not have evidence of SA0443.01 training.
- 7 users did not have evidence of SA483 training.
- 4 users did not have evidence of SA483R training.

Biophotonics Core – all 57 equipment users have been trained on how to use the Biophotonics Core equipment. However:

- 31 users did not have evidence of SA401 training.
- 45 users did not have evidence of SA433.01 training.
- 35 users did not have evidence of SA465 training.

The Research Core Facilities currently utilize iLab software for equipment management, reservations, project tracking, billing, invoicing, and reporting. The Research Core Facilities plan to implement a web based platform called BioRAFT to assist in tracking training, inspections and maintenance histories.

<b>Observation:</b>	<p>Not all Research Core Facilities equipment users are taking the required General Lab Safety training and Research Core Facility specific training.</p> <p>The two General Lab Safety required training courses are not currently listed in the Research Core Facility Operating Procedures.</p>
<b>Risk Level:</b>	<p>There is a MEDIUM probability Research Core Facilities users could inappropriately handle hazardous waste, lasers, or bloodborne pathogens.</p>
<b>Management Action Plan:</b>	<p>Lab Safety Training requirements for each Research Core Facility will be added to iLab user view and Operating Procedures.</p> <p>The Office of Research Infrastructure Support (ORIS) does not have access to view or report on safety training. Therefore, ORIS will e-mail a list of iLab users with scheduling privileges (“trained users”) to the Lab Safety team or another individual with adequate reporting access a minimum of twice per year requesting confirmation of their lab safety training in SA401-</p>

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	<p>Hazardous Waste Generator and SA443.01 – Hazard Waste Communication and Laboratory Safety. If/when written confirmation of training completion from the Lab Safety Office is received, it will be stored in a shared folder available to Research Core Facilities staff and the Office of Research Infrastructure Support. Users who are known to not be up-to-date or in compliance will be given notice to complete required trainings. Any user not in compliance after the communicated deadline will have their scheduling privileges in iLab revoked.</p> <p>ORIS will seek to implement the BioRAFT lab safety and risk management platform if/when it becomes available through the Lab Safety office. The use of BioRAFT would revise and improve the above workflow.</p>
<b>Responsible Person:</b>	Desiree Porter, Director - Office of Research Infrastructure Support
<b>Implementation Date:</b>	April 30, 2021