

May 2025

Research Core Facilities  
**Newsletter**



# What We Do

The Research Facilities Department plays a vital role in supporting the scientific community at our institution by enabling safe, efficient, and cutting-edge research.

Reporting to the Chief Operating Officer, the department is structured around four key areas that together uphold the infrastructure, compliance, and services essential to research excellence:

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- **Space and Construction Projects:** Planning, development, and allocation of research spaces, ensuring they are optimized for evolving scientific needs.
  - **Biosafety:** Provides expert guidance and oversight to ensure compliance with national biosafety regulations and institutional policies, protecting both staff and research integrity.
  - **Research Core Facilities (RCF):** Operates advanced shared platforms across disciplines such as cell culture, genomics, histology, imaging, microfabrication, and flow cytometry. These facilities are staffed by highly skilled specialists who provide expert consultation, training, and hands-on support for experiment planning and execution. Their deep knowledge of cutting-edge equipment enables researchers to produce high-quality, reliable data.
  - **Vivarium:** Manages the care, housing, procurement, and welfare of research animals while ensuring ethical standards and regulatory compliance are maintained.

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Together, these teams deliver foundational support, technical services, and regulatory leadership that enable wet bench researchers throughout the institution to focus on innovation and discovery.

# Our Structure

## Research Facilities Department Structure

The Research Facilities unit supports research staff across the institution and operates under the direction of the Chief Operating Officer, Mani Kang. It is comprised of four key areas:

### Space and Construction Projects

- Contact: April Murray —  
April.Murray@unityhealth.to

### Biosafety

- Biosafety Officer: Neha Chauhan —  
Biosafety@unityhealth.to

### Research Core Facilities (RCF)

- Managed by: Caterina Di Ciano-Oliveira —  
cat.diciano@unityhealth.to
- For Access, Billing, Communications  
Project Administrator:  
Rachel Dimiskovska  
Rachel.Dimiskovska@unityhealth.to

For specific scientific applications, please contact the relevant specialist:

- Cell Culture – Neha Chauhan  
Neha.Chauhan@unityhealth.to
- Cytometry – Monika Lodyga  
Monika.Lodyga@unityhealth.to
- Genomics – Teresa Ciudad  
MTeresa.Ciudad@unityhealth.to
- Histology – Xiaogeng Lu  
Xiaofeng.Lu@unityhealth.to
- Imaging – Caterina Di Ciano-Oliveira  
cat.diciano@unityhealth.to
- Microfabrication – Dario Bogojevic  
Dario.Bogojevic@unityhealth.to

### Vivarium

- Managed by: Melanie Gracias  
Melanie.Gracias@unityhealth.to

# News & Announcements

ProteinSimple Jess

ddPCR QX600

Bio-Rad ChemiDoc

Emergency -80 Freezers

# PROTEINSIMPLE JESS

**Do you feel overwhelmed by the time, effort, and hassle of traditional Western blots?**

We are pleased to introduce a new solution for protein analysis available in the RCF, ProteinSimple Jess, that eliminates many of the tedious, error-prone steps! Just load your samples and reagents into the microplate, and Jess does the rest.

The instrument separates your protein by size and precisely manages antibody additions, incubations, washes and even the detection steps. Come back to fully analyzed and quantitated results in just 3 hours. With Jess's chemiluminescent detection, you'll get picogram-level sensitivity, allowing you to maximize the data you get from your sample. Go further with high sensitivity—best-in-class fluorescence detection gets all the information you need in one shot. You get reliable and reproducible results with target normalization to the amount of protein loaded.



The equipment was funded through Dr. Dos Santos's CFI IF award.

It is located in the analytical lab on the 6th floor. It comes with free software for analysis available at the Bio-Techne website.

**For use, training and consumables required to run the instrument, please get in touch with Dario Bogojevic.**

✉ [Dario.Bogojevic@unityhealth.to](mailto:Dario.Bogojevic@unityhealth.to)

▶ **MEET JESS**



# QX600

DROPLET DIGITAL PCR SYSTEM



**WE ARE PLEASED TO ANNOUNCE THAT  
THE QX600 DDPCR SYSTEM IS NOW  
FULLY OPERATIVE IN ROOM 553A.**

**THIS UNIT WAS FUNDED THROUGH DR. DOS SANTOS'S CFI AWARD  
AND REPLACES THE QX200 SYSTEM.**

The QX600 enables six-colour multiplexing, offering enhanced capabilities over the previous system. The QX200 service has now been phased out, and the unit has been removed from the RFBMS. We strongly encourage all existing users to transition to the new QX600 instrument. If you still require access to the QX200, please contact the specialist directly.

ALL NEW AND  
EXISTING  
USERS MUST  
CONTACT THE  
CORE  
SPECIALIST  
FOR  
ACCOUNT  
SETUP, AND  
TRAINING OR  
REFRESHERS.

The new system comes with **QX Manager**, an upgraded software platform. The software is also free to use in PC computers and can be downloaded here ([QX Software | Bio-Rad](#)) upon registration. Data generated in QX200 with Quantasoft is compatible with QX Manager for re-analysis.

For more information about the system and new software please refer to [QX600 Droplet Digital PCR System - Bio-Rad and QX200 Droplet Reader](#) and [QX Manager Software, Standard Edition, User Guide](#).

As a reminder, ddPCR is used for a wide variety of applications, including:

- **Oncology Research:** Structural variant analysis, rare variant detection, copy number variation, methylation detection, loss of heterozygosity
- **Gene Expression:** Quantify small-fold changes in low abundance RNA molecules
- **Cell and Gene Therapy:** Residual DNA detection in biologics, genome edit confirmation

**NEW**

# BIO-RAD CHEMIDOC MP IMAGING SYSTEM

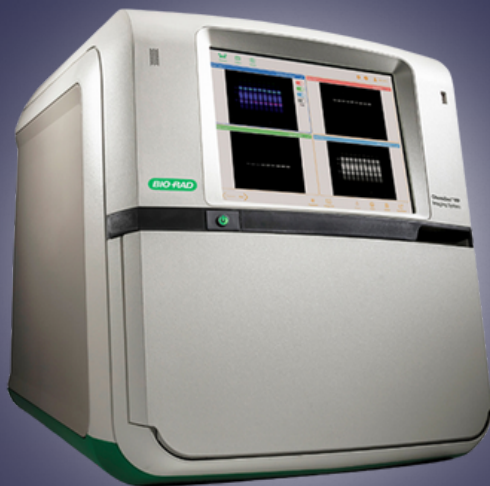
The ChemiDoc MP is a high-performance imaging platform designed for the detection of fluorescence and chemiluminescence. It supports a wide range of applications, including:

- Multiplex fluorescent Western blots (RGB, far-red, near-IR)
- Chemiluminescent Western blots
- Common nucleic acid and protein gel stains
- Bio-Rad stain-free gels

Please note: The use of Ethidium Bromide is strictly prohibited in all units.

A training session is currently being planned. If you require training, a refresher session, or have any questions:

✉ [researchfacilities@unityhealth.to](mailto:researchfacilities@unityhealth.to)



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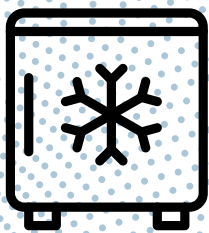
**This new system resides in  
the Analytical Laboratory  
Rm. 549 on the 5<sup>th</sup> floor.**

**This unit was funded by Dr.  
Kelsie Thu's CFI award.**

## THERE ARE CURRENTLY FOUR CHEMIDOC IMAGING SYSTEMS AVAILABLE IN THE BUILDING, LOCATED AT THE FOLLOWING SITES:

Floor	Room	Model	Features
4	<b>458</b>	ChemiDoc (Belong to Dr. Branch Lab)	Fluorescent Western blots (limited) Chemiluminescent Western blots Nucleic acid and protein gel stains Bio-Rad Stain-free gels
5	<b>549</b>	ChemiDoc MP (New)	Fluorescence (Full RGB, far red, near infrared) Multiplex Fluorescence Chemiluminescent Western blots Nucleic acid and protein gel stains Bio-Rad Stain-free gels
6	<b>654</b>	ChemiDoc Touch	Chemiluminescent Western blots
6	<b>654</b>	ChemiDoc MP	Fluorescence (Full RGB, far red, near infrared) Multiplex Fluorescence Chemiluminescent Western blots Nucleic acid and protein gel stains Bio-Rad Stain-free gels





# -80 BACKUP FREEZERS

We have four -80°C freezers available in the basement (B107 back room), all of which can be booked through the RFBMS. These freezers are intended for short-term use—up to one week—for either defrosting your own freezer or as emergency backup in the event of a freezer failure.

Please note that they are strictly for thawing or emergency purposes and should not be used for long-term storage. Here are the steps to access the freezers:

## 1. Book a -80°C Freezer

- Reserve a freezer through RFBMS and make sure to note the assigned freezer number.

## 2. Pick Up Your Freezer Kit at Desk 711.29

- The kit includes an access card for the -80°C backup freezer room as well as some supplies.
- Be sure to fill out the Emergency Access Kit Sign-Out Sheet when collecting the kit.

## 3. Return the Freezer Kit to Desk 711.29

- Once you're done using the freezer, return the access card and kit promptly.
- Don't forget to record the return date and time on the sign-out sheet.



NOTE: EACH FREEZER HAS A QR CODE WHICH LINKS YOU TO THE RFBMS BOOKING PAGE, AND LISTS THE APPROPRIATE RCF CONTACT PERSON IN CASE YOU NEED ASSISTANCE.



Book a Freezer:  
[www.rfbms.com](http://www.rfbms.com)