May 2026

Research Core Facilities

Newsletter

RCF

News & Announcements

RCF Fee Structure Updates

RFBMS Login Update

Imaging Resources & Tips

NEW Tools in Molecular Bio & Genomics

NEW HORIBA ViewSizer 3000

Histology Core Tips

UltraPur Water

RCF FEE STRUCTURE UPDATE

In 2025, RCF announced a new fee structure, informed by discussions with leadership, research into historical funding, market comparisons, and cost recovery analyses. Principal Investigators with wet bench research projects should have already been contacted, reviewed their personnel lists, and updated their Project-Activity numbers accordingly.

This fee structure reflects Unity Health Toronto's values of excellence and community. To ensure fairness and accountability, RCF is moving to a flat per-person fee rather than an hourly usage-based charge. The following FAQs are intended to help Researchers prepare for Q1.

FREQUENTLY ASKED QUESTIONS

What if people leave mid-year? Will we have to pay for the whole year?

- Billing will be done quarterly, and scientists will have the opportunity to report basic science staffing changes during this time.

What if my staff is only part-time?

- The full rate will still apply. When compared with the average cost of core usage in the GTA, $3,000 equates to approximately 1.6 hours of core usage per week. Relative to comparable services, this represents good value, particularly since it includes training and access to all routine laboratory equipment and cell culture suites.

What if we don't use the core?

- Since the core encompasses extensive routine infrastructure—including fully equipped cell culture, bacterial, and viral suites; analytical instruments such as plate readers, spectrophotometers, centrifugation, and gel imaging systems; water purification and distillation systems; glass washing and sterilization equipment; and cryogenic facilities—there is virtually no scenario in which a basic scientist would not rely on this shared equipment.

Will the yearly price change?

- Fees will be reviewed annually and adjusted as necessary.

! Q1 charges will be posted and processed at the beginning of June.

IF YOU HAVE ANY QUESTIONS, COMMENTS, OR CONCERNS, PLEASE CONTACT RCF MANAGER CATERINA DI CIANO OLIVEIRA OR RESEARCHFACILITIES@UNITYHEALTH.TO

RFBMS LOGIN UPDATE

NEW

Toronto Metropolitan University iBEST

INDUSTRY/ TENANTS

Username:

Alternate Email

Password:

Create your own password

MFA: Authentication App (e.g., Google Authenticator)

NEW

ST. MICHAEL'S UNITY HEALTH TORONTO

Username:

UHT Login/Single Sign On

Password:

UHT Password/Single Sign On

MFA: Microsoft Authenticator

Click here to learn more about Unity Health Toronto's Microsoft changes

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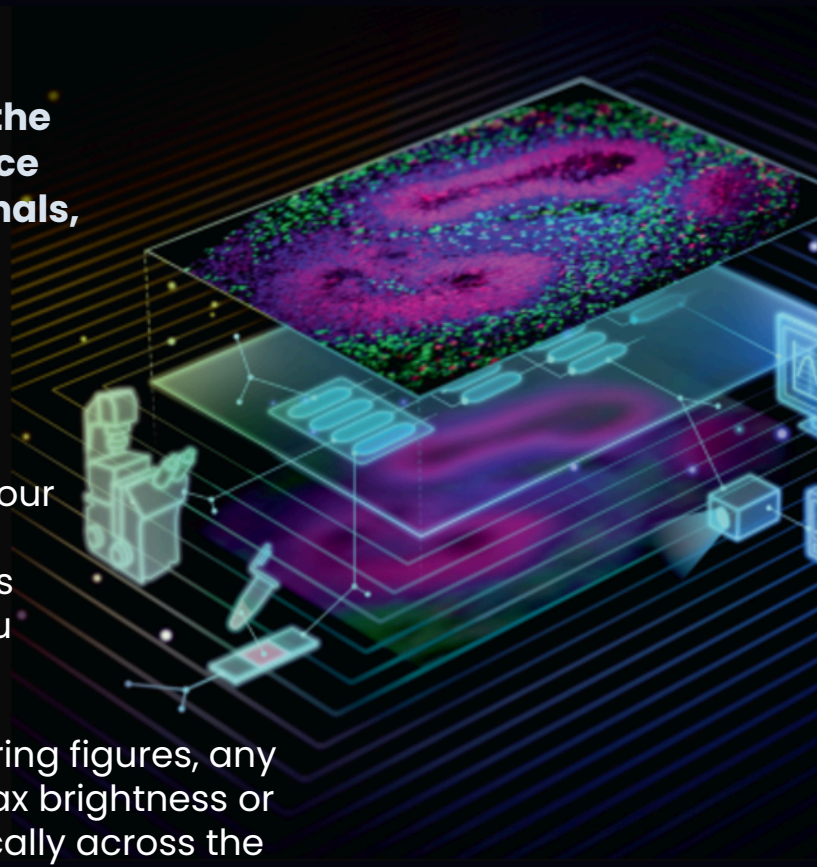
Image taken from Nature Methods 2021 Vol 18, Issue 12 coverpage : https://www.nature.com/nmeth/volumes/18/issues/12

Did You Know?

YOUR IMAGE DATA IS MORE THAN JUST A PRETTY PICTURE!



To ensure your research meets the latest Data Reporting Compliance standards for high-impact journals, keep these four pillars in mind:

- **Metadata is King:** Most journals now require specific instrument specifications and acquisition settings. Always keep a copy of your RAW, unmodified data—the metadata saved within those files contains the "digital footprint" you need for your methods section.
- **Consistency is Key:** When preparing figures, any display adjustments (like min/max brightness or gamma) must be applied identically across the entire experimental data set to maintain scientific integrity.
- **Ditch the "Refer to Past Papers" Habit:** Modern compliance requires a fresh, detailed experimental protocol for every submission, including specific catalog and lot numbers for your reagents.
- **Show Your Work:** If you use open-source software like FiJi, you must include your specific workflow steps and code. For licensed software, check for a "Methods Export" feature to easily document your processing steps.

Pro Tip: Use the MicCheck website to quickly determine exactly which parameters you need to report for your specific imaging system!

Want to learn more? Check out these gold-standard resources:

- *Nature Methods* (2021) – Llopis et al.
- *PLOS Biology* (2021) – Jambor et al.
- *Journal of Cell Science* (2021) – Heddleston et al.

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MOLECULAR BIOLOGY & GENOMICS CORE

GET YOUR SAMPLES READY FOR YOUR MOLECULAR BIOLOGY EXPERIMENT WITH THE NEW TOOLS AVAILABLE AT THE CORE.

TISSUE & CELL HOMOGENIZATION

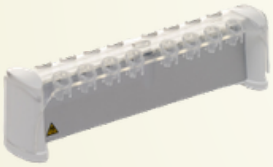
POLYTRON PT 2100

- Lysate volume: 0.1 - 2000ml
- Speed 11000 - 30000 rpm
- 3 exchangeable probes
- Ideal for hard/frozen tissues

PORTABLE TISSUE GRINDER

- Small volumes
- Speed 1500 rpm
- Disposable pestles
- Ideal for cell pellets or soft tissue

MAGNET RACKS



DynaMag-2

ThermoScientific Catalog # 12321D

Holds 16 standard 1.5 ml or 2ml microcentrifuge tubes
Working volume 10-1500ul

DynaMag-15

ThermoScientific Catalog # 12301D

Holds 4 standard 15 ml tubes
Working volume 4-15ml

NEBNext® Magnetic Separation Rack

Catalog # S1515S

Holds 24 standard 0.2 ml PCR tubes
Fits 8- and 12-strips or individual tubes

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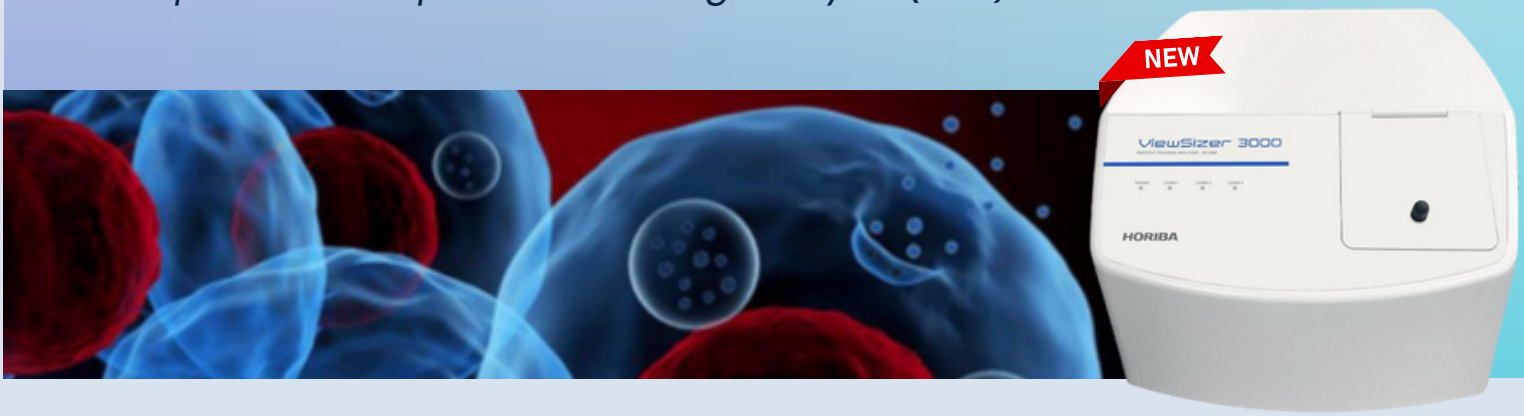
HORIBA VIEWSIZER 3000

Multispectral Nanoparticle Tracking Analysis (NTA)



Room 779
Analytical Lab
7th Floor

We are pleased to announce the latest addition to the RCF instrumentation suite for nanoparticle analysis.

This advanced multispectral NTA system enables simultaneous measurement of particle size, concentration, and fluorescence across an exceptionally broad size range.

Key Features

- Multispectral NTA (405, 488, 642 nm) for analysis of heterogeneous particle populations
- Wide particle size range: ~10 nm to ~15 µm
- Simultaneous size, concentration, and fluorescence measurements

Applications

The system is well-suited for the characterization of:

- Exosomes and extracellular vesicles (EVs)
- Viruses and virus-like particles (VLPs)
- Lipid-based drug delivery systems (LNPs, liposomes, nanobubbles)
- Protein aggregates
- Engineered polymeric and inorganic nanoparticles

This instrument is ideal for researchers working with nanoparticles or biotherapeutics, or using NTA, DLS, or flow-based nanoparticle analysis methods.

For more information and to request training, please contact Dario at:

Dario.Bogojevic@unityhealth.to

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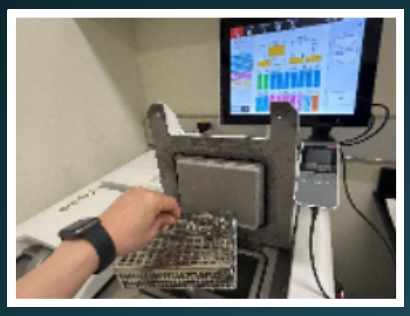
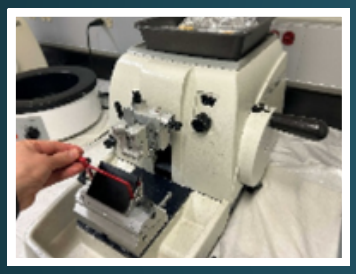
HISTOLOGY CORE FACILITY EQUIPMENT USE TIPS



1. Pegasus Tissue Processor (Room 666)
To process tissues using the Pegasus Tissue Processor, two protocols must be run. After processing tissues with the standard protocol, return the empty cage to the retort and run the "Quick Clean" protocol. This ensures the processor is properly prepared for the next user.

2**. Paraffin Embedding Center (Room 666)**
Please set up this instrument one day prior to making paraffin blocks to allow sufficient time for the paraffin to melt.



3. Microtomes (Room 643)
When mounting or removing a paraffin block on microtomes, always engage the knife guard and lock the handwheel to prevent accidental injury to your fingers.

34. 37 °C Oven (Room 666)
After mounting sections onto slides, place the slides vertically in a slide rack and incubate them in the 37 °C oven for several hours, but no longer than 24 hours. Slides should not be stored in the oven for extended periods.

35. AutoStainer XL (Room 666)
After placing the slide rack into the loading container, firmly push the load drawer closed to ensure the internal switch is engaged. Then press the "Load" button to begin staining.

USER GUIDE FOR LAB WATER

ULTRAPURE WATER

For sensitive experiments and reagents

- Reagent preparation
- Antibody solutions
- Immunoassays
- Enzyme assays
- Cleanroom/microfabrication

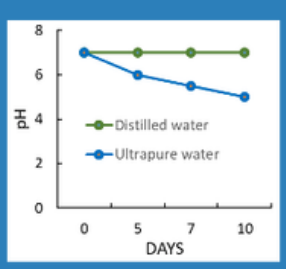
DO NOT store ultrapure water. The pH changes within 7 days

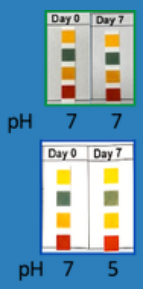
DO NOT STORE ULTRAPURE WATER IN PLASTIC CARBOYS

CONSEQUENCES

Ultrapure water leaches ions from plastic carboys

Ion leaching makes the pH acidic





Low pH results in inconsistent SDS gels, buffer precipitation, unstable antibody prep, etc.

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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

- Project Manager: April Murray — April.Murray@unityhealth.to

Biosafety

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

Research Core Facilities (RCF)

- Manager: 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

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:

- **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.

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.