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THE IRF INSIDER

University of South Carolina School of Medicine
Instrumentation Resource Facility
RRID:SCR_024955

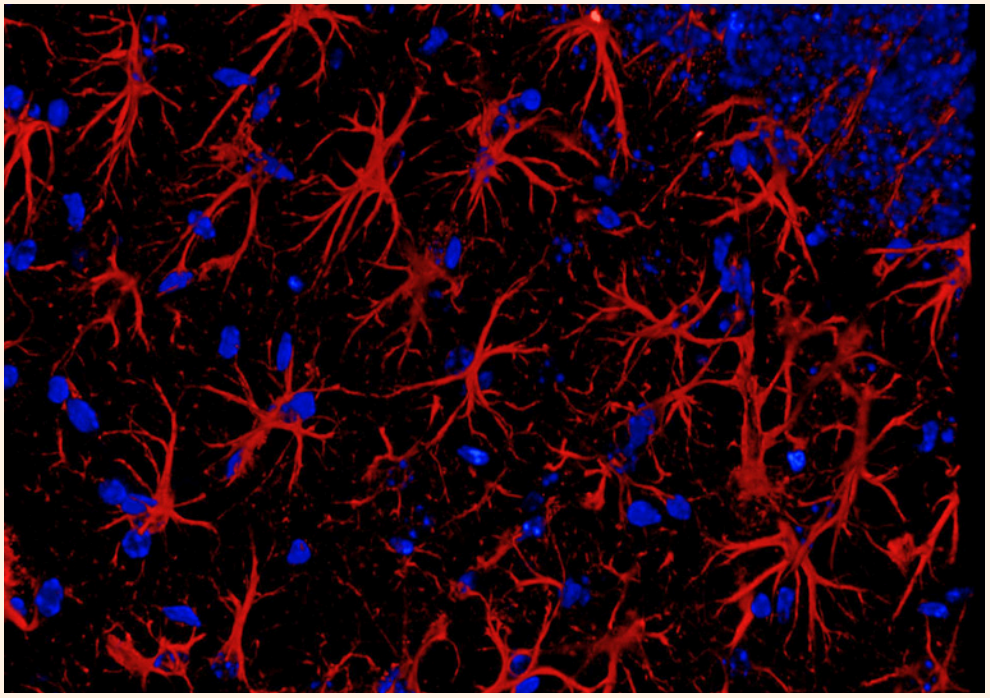
In Case You Missed It

- The IRF is now centralized under the USC Vice President of Research Office. Not only does this help the core as we move forward, this will also help our users seamlessly move from one core to the next to utilize all of USC's great instrumentation!

- The EVOS FL Auto and Discover Revolve widefield microscopes have been relocated from B59D to B59B. Different room, but same great microscopes!

- We have retired one of the longer-standing pieces of equipment in the IRF, the film processor. This was in response to bringing in the new iBright CL1500, an easy-to-use, western blot and stained gel imaging and data analysis system. This system in located in B60.

- In addition to the iBright, we have upgraded a number of system to new, state-of-the-art options. These include the QuantStudio 3 RT-PCR, SimpliAmp Thermal Cycler, Bio-Rad BioPlex 200, and BD FACSDiscover S8 Cell Sorter with cell imaging capabilities. Come by the IRF to take a look and expand your data collection with these awesome new additions!



"Astrocytes" - Anna Harper - Leica Stellaris 5

Be the First to Know!

Welcome to the new, quarterly published, *IRF Insider*, brought to you by the USC Instrumentation Resource Facility. In this newsletter, we will recap what you missed, give updates on upcoming events, highlight our state-of-the-art equipment, and give you bits of knowledge. We hope you enjoy!

- The Southeastern Microscopy Society (SEMS) has chosen Columbia, SC, as the host of their 2025 annual meeting. In collaboration, the IRF will be hosting a number of workshops *for attendees only*. Mark your calendars for May 14-16, 2025 and keep an eye out for more information as the program is created!
- We are excited to announce the creation of the new IRF Travel Grant! This grant is for students in SOMC labs that are presenting data collected in the IRF at a conference as 1st or sole author. For more information about eligibility and application, please visit the "Endowment" tab on our website.
- We are inching closer to the delivery and installation of our new Zeiss Lightsheet 7 microscope. This will be delivered and installed by the end of July. We are hopeful that we will be able to fully unveil it for use by the end of August!

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Have You Used This Yet?

QuantStudio Absolute Q dPCR

SimpliAmp Thermal Cycler

QuantStudio 3 RT-PCR

ThermoFisher QuantStudio PCR Group
IRF Location: B60

- The QuantStudio Absolute Q Digital PCR System is a plate-based dPCR platform powered by proprietary microfluidic array plate (MAP) technology.
  - Enables all the necessary steps for dPCR—compartmentalizing, thermal cycling, and data acquisition—to be conducted on a single instrument.
  - The dPCR workflow is identical to the qPCR workflow you are familiar with to improve ease of use, minimize hands on steps, and maximize consistency.
- The SimpliAmp Thermal Cycler is a small, easy-to-use, and accurate thermal cycler that suits any lab's needs for everyday PCR.
  - Optimize PCR temperature with precision—VeriFlex blocks provide three independent temperature zones for precise temperature control.
  - 8-inch color touchscreen helps save time—the large, responsive, and easy-to-read interface simplifies instrument operation.
- The QuantStudio 3 Real-Time PCR System is designed for users who need an easy-to-use real-time PCR system that doesn't compromise performance and quality.
  - The simplified Design and Analysis software is ideal for both first-time and experienced users.
  - Using proven OptiFlex technology (featuring four coupled channels and white LED) and featuring three independent Veriflex temperature zones, the QuantStudio 3 system enables improved data accuracy and sensitivity for a broad range of genomic applications.

Read This Today!

In subsequent newsletters, this section will feature a paper focused on an advanced technique or emerging technology. For this edition, however, I am providing an article from the most recent edition of *Microscopy Today* that *Editor-in-Chief* Bob Price has stated "…provided a new perspective for me and made me realize how trivial some of my 'major' obstacles really are" [1]. With this statement, I could not agree more. Read this today and realize how lucky we truly are to work in Columbia, SC. Enjoy!

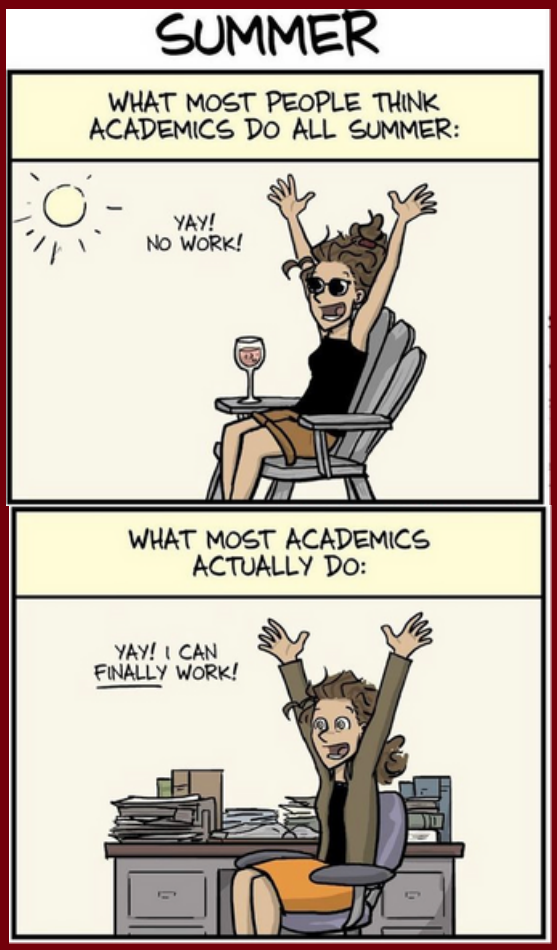
Roman A Moskalenko, Life And Science Go On No Matter What…, *Microscopy Today*, Volume 32, Issue 3, May 2024, Pages 30–31, https://doi.org/10.1093/mictod/qaae028

[1] Keeping Life in Perspective, *Microscopy Today*, Volume 32, Issue 3, May 2024, Page 7, https://doi.org/10.1093/mictod/qaae030

Quote Corner

The gift of microscopes to our understanding of cells and organisms is so profound that one has to ask: What are the gifts of the microscopist? Here is my opinion. The gift of the great microscopist is the ability to THINK WITH THE EYES AND SEE WITH THE BRAIN.

-Daniel Mazia, U.C.Berkeley cell biologist



Microscopy History

1590: Two Dutch spectacle-makers and father-and-son team, Hans and Zacharias Janssen, create the first microscope. While the original microscope did not survive, a letter from a family friend to the French King Louis XIV in 1650 described a device that rose vertically from a brass tripod almost two and a half feet long. The main tube was an inch or two in diameter and contained an ebony disk at its base, with a concave lens at one end and a convex lens at the other; the combination of lenses enabled the instrument to bend light and enlarge images between three and nine times the size of the original specimen. A Middleburg museum has a microscope from 1595 bearing the Janssen name, but the design is slightly different. It consists of three tubes, two of which are draw tubes that can slide into the third, which acts as an outer casing. The microscope is handheld and can be focused by sliding the draw tube in or out while observing the sample, and is capable of magnifying images up to ten times their original size when extended to the maximum.

https://micro.magnet.fsu.edu/primer/museum/janssen.html

One More Page

In Other News

- Update on IRF poster printing:
  - Our previous 'satin cloth' media type has been discontinued and replaced with a ‘poly vinyl’ cloth that is very similar, still foldable, with a roll width of 42 inches.
  - Our paper option remains with a roll width of 44 inches.
  - Please submit requests 48 hours ahead of the expected pickup time to ensure the poster will be printed. Last minute requests will no longer be guaranteed.
- IRF Acknowledgements:
  - We kindly ask that publications and presentations that incorporate data collected within the IRF, acknowledge the core facility using the guide on our website. By using one of our pre-formed RRID statements, any publication will automatically populate in our system which allows us to better track IRF use. For presentations, if you only have one SOMC logo, please use the IRF sub-unit logo which can be found at the bottom of our guide. Please visit our website or scan the QR code below.
- IRF core usage prices will be updated for the 2024-25 fiscal year. These prices will be updated in iLab and and comprehensive list can be found under the “Resources” tab on our website. Have no fear as the IRF will still offer the best equipment for the best prices around!

Want more information? Scan here!

IRF Website

IRF ListServ

Acknowledgement Guide

IRF Resources

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