



Health Center Research Advisory Council Newsletter



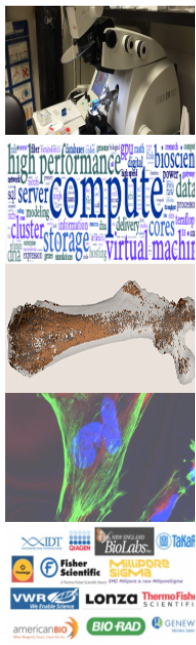
RESEARCH CORE FAIR

HCRAC will be sponsoring a vendor-style Research Core Fair on **Thursday, May 12, 2022 from 1:30-3:30PM in the Academic Rotunda**. The fair will feature our **HCRAC Cores**, as well as other core facilities from UConn Health, UConn Storrs, and The Jackson Laboratory for Genomic Medicine. The fair will provide an opportunity for the UConn Health Community to learn about the resources and services available to them, as well as for our Cores to highlight their expertise and technology.

Facilities represented include:

- CCAM Microscopy Facility
- Cell and Genome Engineering Core
- Center for Genome Innovation
- Center for Mouse Genome Modification
- Clinical Research Center
- Computational Biology Core
- Electron Microscopy Facility
- Flow Cytometry Facility
- Fluorescence Imaging Core
- High Performance Computing Facility
- Microbial Analysis, Resources, and Services
- MicroCT Imaging Facility
- Molecular Core
- Gregory P. Mullen NMR Structural Biology Facility
- Proteomics and Metabolomics Facility
- Research Histology
- Single Cell Genomics Core

Planning the next steps of your research? Looking for a specific expertise or lab equipment on campus? Our Research Core Facilities provide a wealth of services, equipment, and support. Please stop by to learn more!



HCRAC RESOURCES

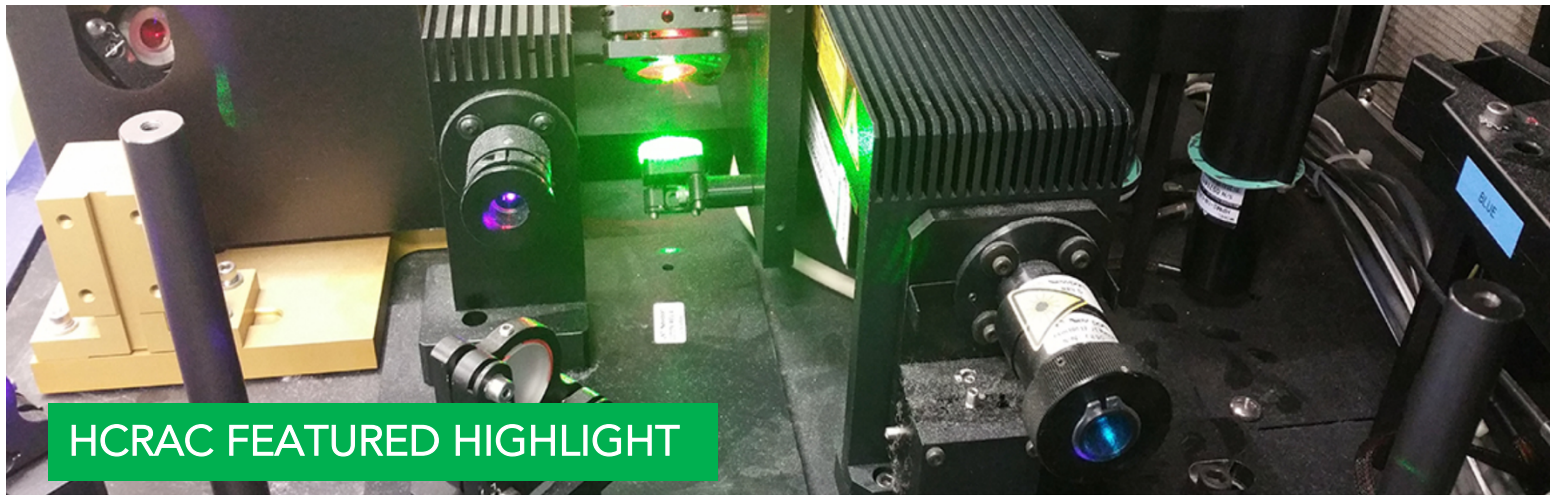
Grants Programs – HCRAC provides support when funding for an ongoing project has been interrupted. Learn more about eligibility and conditions of our **Emergency Grants Program** and our **Exploratory Project Transition Awards**.

The Exploratory Project Transition Awards have been updated to include career development awards, such as K awards (learn more).

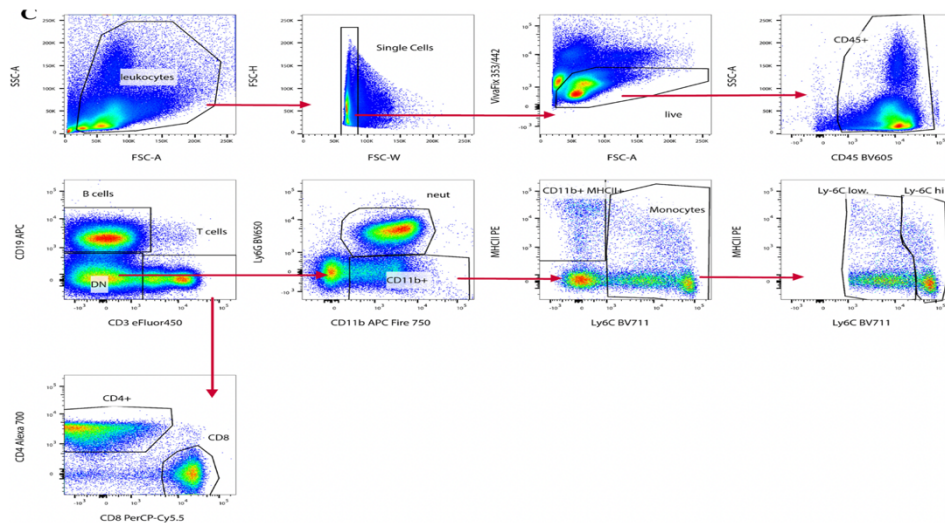
Research Equipment Funds are available to our research core facilities, small groups of investigators, and individual investigators for new capital equipment requests and repair/replacement equipment requests as funding permits.

Travel Grants are available for **graduate students** (PhD, MD/PhD, or DMD/PhD) and **postdoctoral fellows** who present research results at scientific conferences. Note, in FY23, postdoctoral fellows will be eligible for one travel grant per fiscal year instead of every other year.

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A close collaboration between Dr. Joel Pachter's Blood Brain Barrier laboratory and the [flow cytometry core facility](#) in which circulating and CNS-infiltrating leukocytes were examined for the presence of the tight junction protein claudin-5 on their cell surface during a course of experimental autoimmune encephalitis (EAE). The presence of claudin-5 on these cells may represent a novel mechanism to guide leukocytes to sites where they can cross cellular barriers and enter tissues, for better or for worse. Check out the publication in the *Journal of Neuroinflammation* <https://doi.org/10.1186/s12974-021-02328-3>



GRADUATE STUDENT FUNDING DEFERRAL POLICY

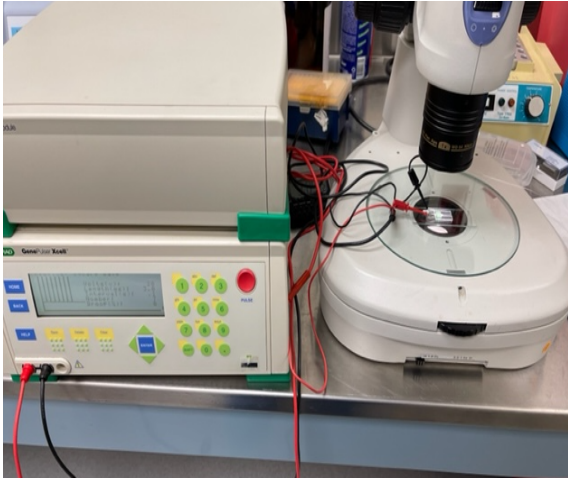
HCRAC provides one additional year of support for all UConn Health Biomedical Science PhD and dual degree students **after** they have completed their year of rotations and selected their thesis advisors. The following policy is designed to allow thesis advisors greater flexibility in using this year of institutional support.

All PhD and dual degree students in the UConn Health Biomedical Science PhD program will receive 26 pay periods (1 year) of HCRAC support following completion of their rotation year(s) and selection of their thesis advisors (i.e., after year G1 for PhD students and year M2 for dual degree students). This support may be used by the thesis advisor to fund that student at any time during the tenure of that student. Any questions, please contact [Chris Heinen](#) or [Stephanie Holden](#).

FACILITIES AND OTHER RESOURCES

The School of Medicine worked with all core directors to compile language to help researchers complete the [Facilities and Other Resources](#) section on NIH and NSF grant applications. This document describes resources available and can be used based on an individual research needs.

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The [Center for Mouse Genome Modification](#) has successfully used electroporation to deliver Cas9/sgRNA ribonucleoprotein and ssDNA donor directly into one-cell embryos to generate simple knockin and knockout mouse models since 2018. This technique is efficient, and the cost to generate a new mouse model could be as low as \$9,000 with our improved efficiency.

We continue using pronuclear microinjection to generate more complex mouse models such as multiple point mutations, protein tags, precision insertion of large DNA fragment, PiggyBac and conventional transgenesis, as well as using mES cells to generate conditional knockin. We also provide services for cryopreservation, rederivation, in vitro fertilization, colony management, PCR genotyping and consultation on various aspects of using mouse models for research. We help with all aspects of using novel mouse models for your studies to facilitate your research program.

The [Center for Genome Innovation](#) would like to congratulate Lu Li on her well-deserved retirement from UConn! For over two decades, Lu worked alongside several faculty members helping facilitate molecular biology and genomics research. Her dedication to her work and genuine love of learning helped the Center for Genome Innovation become what it is today. We wish her nothing but the best in this new chapter in life!

While the CGI is actively looking for a research assistant to complete our team, we continue to work with labs across all UCONN campuses on a diverse portfolio of genomics projects! We encourage you to reach out to us if you are thinking of future submissions that might require faster processing so that we can give you an accurate timeline

RECENT PUBLICATIONS SUPPORTED BY OUR CORES

Hoyt S, Hartley G, Grady P, Storer J, Gershman A, de Lima L, Limouse C, Halabian R, Wojenski L, Rodriguez M, Altemose N, Core L, Gerton J, Makalowski W, Olson D, Rosen J, Smit A, Straight A, Vollger M, Wheeler T, Schatz M, Eichler E, Phillippy A, Timp W, Miga K, O'Neill R.J. 2021. From telomere to telomere: the transcriptional and epigenetic state of human repeat elements. doi: 10.1101/2021.07.12.451456. *Science* (COVER). [link](#)

Golebiowska A and Nukavarapu SP. Bio-inspired zonal-structured matrices for bone-cartilage interface engineering. *Biofabrication* (2022). [link](#)

Kraus J, Giovannone D, Rydzik R, Balsbaugh J, Moss I, Schwedler J, Bertrand J, Traver D, Hankenson K, Crump JG, Youngstrom D. Notch signaling enhances bone regeneration in the zebrafish mandible. *Development* (2022). [link](#)

Lee SJ, Lehar A, Rydzik R, Youngstrom D, Bhasin S, Liu Y, Germain-Lee E. Functional replacement of myostatin with GDF-11 in the germline of mice. *Skelet Muscle* (2022). [link](#)

Millington G, Joseph J, Xiao L, Vijaykumar A, Mina M, Hurley M. Fibroblast growth factor 2 high molecular weight isoforms in dentoalveolar mineralization. *Calcif Tissue Int* (2022). [link](#)

