

Shared RESOURCES

www.roswellpark.org

NEWSLETTER



A Message from our Director of Bioinformatics Shared Resource

Our mission at the Bioinformatics Shared Resource is to provide exceptional bioinformatics support and resources to investigators across the spectrum of basic, translational, clinical, and population sciences at Roswell Park. Housed within the Department of Biostatistics and Bioinformatics, we work closely with the Biostatistics and Statistical Genomics Shared Resource to offer a cohesive and united team, ensuring comprehensive support from clinical and preclinical biostatistics to statistical genomics and translational bioinformatics.

Over the past five years, our collaborative efforts have significantly contributed to the success of the CCSG programs. Together, the Bioinformatics and Biostatistics Shared Resources have co-authored more than 400 peer-reviewed publications and supported over 250 NIH grants. These achievements underscore our commitment to delivering exceptional analytical services that add substantial value to our research community.

The strength and vitality of the Bioinformatics Shared Resource are fundamental to the translational research endeavors at Roswell Park. What sets us apart is our ability to go beyond the use of existing tools; we excel in developing customized solutions tailored to the unique needs of various research projects. This capability ensures that our investigators have access to innovative and precise tools that drive their research forward. Moreover, the Bioinformatics Shared Resource is distinguished by its active and reputable track record in consortium coordination and data management on a national level.

As we continue to advance our mission, we remain committed to fostering a collaborative environment where cutting-edge bioinformatics solutions propel our research to new heights. I look forward to the continued success of our shared endeavors.

Best,



Song Liu, PhD
Director & Professor of Oncology, Bioinformatics Shared Resource

In This Issue
.....

Leadership Message P1
.....

Shared Resources Highlights P2 - 6
.....

Roswell Park Shared Resources

[Bioanalytics, Metabolomics & Pharmacokinetics Shared Resource \(BMPK\)](#)

[Bioinformatics Shared Resource \(BIOINF\)](#)

[Biomedical Research Informatics Shared Resource \(BRISR\)](#)

[Biostatistics & Statistical Genomics Shared Resource \(BSGSR\)](#)

[Comparative Oncology Shared Resource \(COSR\)](#)

[Drug Discovery Core Shared Resource \(DDCSR\)](#)

[Experimental Tumor Model Shared Resource \(ETM\)](#)

[Flow & Immune Analysis Shared Resource \(FIASR\)](#)

[Gene Modulation Services Shared Resource \(GMSR\)](#)

[Gene Targeting & Transgenic Shared Resource \(GeTT\)](#)

[Genomics Shared Resource \(GSR\)](#)

[GMP Engineering & Cell Manufacturing Facility \(GEM\)](#)

[Health Communications Shared Resource \(HCR\)](#)

[Investigational Drug Service Shared Resource \(IDS\)](#)

[Nicotine & Tobacco Product Assessment Shared Resource \(NICOTAR\)](#)

[One Biorepository & Lab Services Shared Resource \(BLS\)](#)

[On-site Research Supply Center Shared Resource \(ORSC\)](#)

[Pathology Network Shared Resource \(PNSR\)](#)

[Scientific Editing & Research Communication Core Resource \(SERCC\)](#)

[Translational Imaging Shared Resource \(TISR\)](#)

SHARED RESOURCES HIGHLIGHTS

Congratulations!

Genomics Shared Resource (GSR)



Dr. Prashant Singh received an NCI R50 grant. This R50 is a core-scientist-based grant which will cover his efforts in supporting peer reviewed investigator studies for 5 years. Dr. Singh has worked in the Genomics Shared Resource since 2015. As the Director of the GSR, Dr. Singh's efforts are dedicated to support the mission of the GSR, which is to provide state-of-the-art instrumentation and expertise that enables CCSG members to acquire and analyze genomic data sets across basic, translational, clinical and population studies. The GSR is a vital resource to Roswell Park's CCSG programs and this R50 award to Dr. Singh will enhance continued growth of the GSR and allow him to dedicate his time for novel technology development.

Genomics Shared Resource (GSR)

New Service

Mouse Cell line authentication

The GSR is pleased to announce that Mouse Cell line authentication services will be available in September 2024. The cell line authentication will be performed using STR profiling as described in [Almeida et al., PLoS One 20;14\(6\):e0218412](#). These cell lines are important research tools for basic biomedical and pre-clinical research. However, contamination and misidentification of cell lines is a major problem leading to spurious results and irreproducibility of data. Recent changes in NIH grant submission guidelines require all cell lines to be authenticated by chromosomal analysis or STR profiling.

The GSR has been performing human cell line authentication for a long time using STR profiling and now mouse cell line authentication service will be available to all Roswell Park researchers.

For more information, please reach out to Prashant.Singh@RoswellPark.org.

Flow & Immune Analysis Shared Resource (FIASR)

New Equipment



CalSreener™ (Symcel)

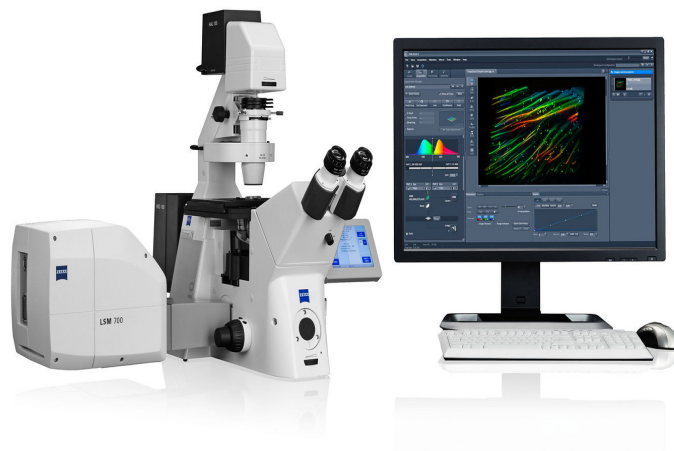
The Symcel calSreener arrived in FIASR in June 2024 as the result of a successful S10 shared instrument grant [OD034359](#) by [Dr. Elizabeth Repasky](#). The CalSreener measures the total metabolic activity of a sample, by directly measuring the heat produced as a result of metabolic processes; the energy output is measured in μW .

We welcome any studies to test out the instrument! Contact [Orla Maguire](#) or [Courtney Ryan](#) for more information.

Zeiss LSM700 confocal microscope

FIASR has added a Zeiss laser scanning confocal microscope provided by Dr. Brentjens in June 2024. This microscope is equipped with 4 solid-state lasers (405nm, 488nm, 555nm, and 639nm), and 4 objectives (10X Air, 20X Air, 40X Oil, 63X Oil).

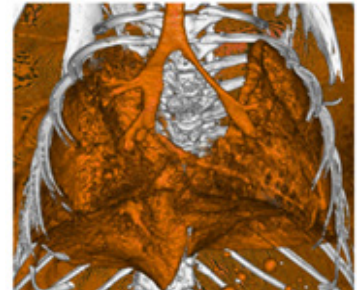
Assisted use is available by contacting [Brian Buckley](#) or [Orla Maguire](#). Training will commence soon...stay tuned!



Translational Imaging Shared Resource (TISR)

New Equipment

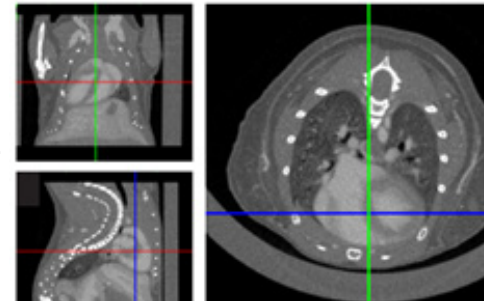
TISR recently acquired a Quantum GXII, preclinical microCT (μ CT) from Revvity, Inc. The system is capable of imaging small animals of disease up to 5kg in size (e.g. rabbit, guinea pig). This system can acquire images in either high resolution, high speed or standard modes. In the high-resolution mode, a 4.5 μ m voxel size resolution can be attained at a 36 mm FOV, while a 9 μ m voxel size resolution can be attained at 72 mm FOV. Subvoxel reconstruction allows for exceptionally high-resolution reconstruction of specific regions of interest within a 3D dataset.



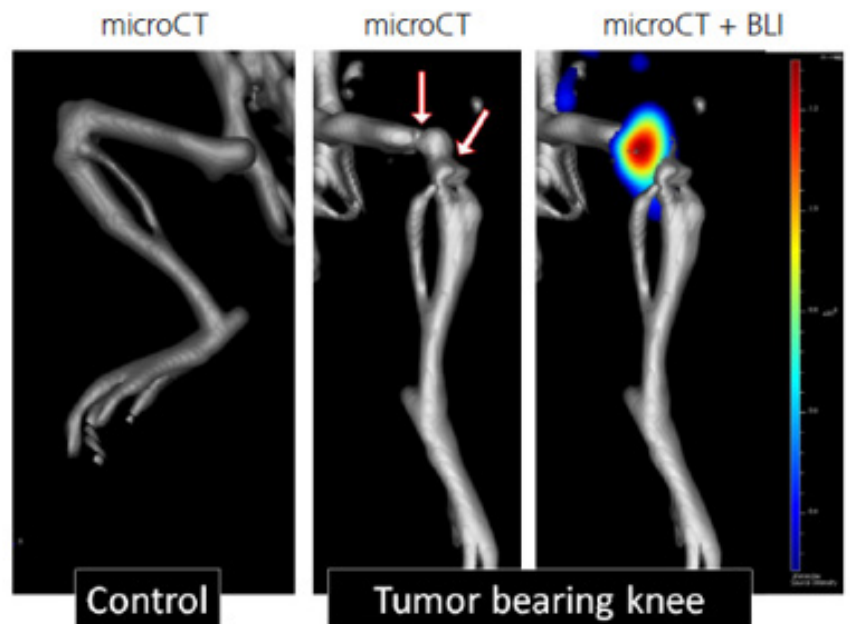
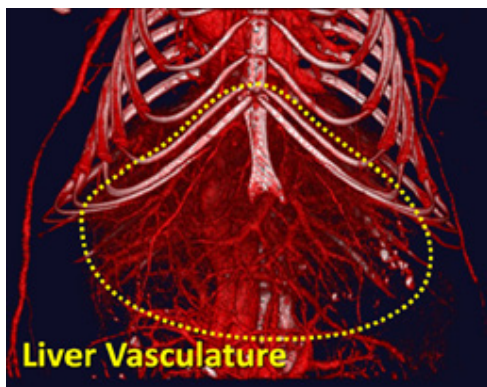
Automated data-stitching allows for entire animal to be viewed within a single reconstruction. An imaging “shuttle” allows for rapid and simplified co-registration of 3D bioluminescence signal acquired from the IVIS Spectrum onto tomographic, μ CT 3D renderings.



Commonly used scientific applications include detecting osteolytic disease, screening for lung metastases, cardiac and respiratory function, contrast-enhanced angiography, and body composition analysis for quantifying subcutaneous and visceral fat volumes. TISR staff is in the process of developing optimized acquisition protocols and researchers will be notified via an institute-wide announcement when the system is permanently sited and available for use. TISR staff will assist and train users in the acquisition and analysis of μ CT datasets.



Please contact Joseph.Sperryak@RoswellPark.org for more information.



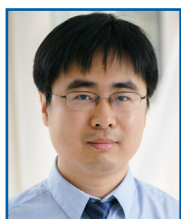
LEADERSHIP UPDATES

Biomedical Research Informatics Shared Resource (BRISR)



Dr. Sarah Mullin was appointed Director of BRISR. Under her leadership, BRISR will begin providing collaborative research consultations and services for machine and deep learning solutions for clinical and bioinformatics research. Their goal is to develop through team science artificial intelligence and high throughput computational methods that elevate Roswell Park's research programs and provide meaningful clinical and biological insights. Their staff is trained in statistical and computational artificial intelligence and can provide insights into cutting-edge methodology that abides by the NIST AI risk framework. Some areas of expertise are graphical modeling, clustering, named entity extraction and sentiment analysis, and survival machine learning.

Biostatistics & Statistical Genomics Shared Resource (BSGSR)



Dr. Han Yu was appointed Co-Director of the BSGSR alongside Dr. Qianqian Zhu. He started at Roswell Park in 2018 and is an Assistant Professor of Oncology in the Department of Biostatistics and Bioinformatics, where he is a co-investigator on 19 NIH, DOD, and Alliance grants. With a robust background in clinical trials, machine learning, neural networks, artificial intelligence, graphical models, statistical theory, and computational methods, Dr. Yu brings a wealth of expertise to his role. He has published multiple statistical and bioinformatics papers as first or senior author. He earned his Ph.D. and M.A. in Biostatistics, and M.S. in Neuroscience, from the State University of New York at Buffalo, where he also serves as an adjunct instructor. His academic journey began at China Medical University, where he completed a seven-year program in clinical medicine, culminating in a Master of Medicine in Oncology and a Bachelor of Medicine in Clinical Medicine.

EXCITING SHARED RESOURCE COLLABORATION!

Flow & Immune Analysis Shared Resource, along with [Dr. Prashant Singh](#) in Genomics Shared Resource, and [Dr. Agnieszka Witkiewicz](#) in Advanced Tissue Imaging Shared Resource are currently undertaking a cross-platform study of advanced spatial profiling technologies at Roswell Park. This Alliance Foundation funded study aims to educate the research community on the strengths and limitations of each platform and help them identify which

Scientific Editing & Research Communications Core (SERCC) Shared Resource

SERCC provides professional-level scientific editing services to faculty and postdoctoral fellows with the goal of helping them succeed in their pursuit of funding and publication of high-impact research. Grant proposals and manuscripts are edited over a turn-around time of 8–10 business days, and requests for editing support can be submitted through the submissions form on SERCC's website at <https://www.roswellpark.org/shared-resources/scientific-editing-research-communications-core>. Submission requests can be sent as early as approximately one month in advance of the projected start date for a project. Please send any questions to editing@roswellpark.org. Editing support is free for postdoctoral fellows and Assistant Professors at Roswell Park with active mentoring committees. More information about SERCC's services and fees can be found online under Roswell Park's Shared Resources website linked above.

SERCC's latest educational factsheets on i2 include "How to Format Gene and Protein Names," "Differences Between American and British English," and "Recommendations for Successful Grant Writing in the Literature."

Dr. Deanna Conners, who serves as the resource's director and senior science editor, represented SERCC at the [Council of Science Editors annual meeting](#) held May 4–7, 2024, in Portland, Oregon. The team's poster presentation was titled "Common mistakes in scientific writing observed by a biomedical editing program."

Join us for lunch every month to learn more about the services our Roswell Park Shared Resources have to offer!



**First Thursdays
Shared Resources
Lunch and Learn Series**