

Shared Resources Newsletter - Summer 2025

Welcome Message from the Director of Molecular Pharmacology and Chemical Biology Shared Resource – Aiming Yu, Ph.D.



Welcome to the **2025 Summer Edition** of the Shared Resources Newsletter.

It is my pleasure to introduce the newly consolidated **Molecular Pharmacology and Chemical Biology Shared Resource (MPCBSR)**, which integrates the most cancer-relevant services and features of the Molecular Pharmacology Shared Resource (MPSR) and Combinatorial Chemistry and Chemical Biology Shared Resource (CCCBSR).

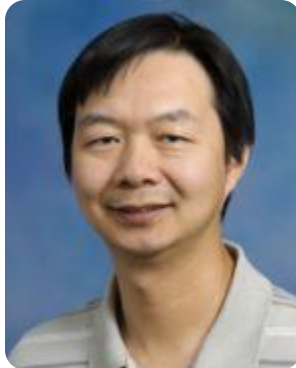
The MPCBSR enables translational and basic cancer research at the UC Davis Comprehensive Cancer Center by providing researchers with expertise and resources in three principal areas:

1. Clinical PK/PD studies including specimen collection, processing, and analysis
2. Molecular pharmacological studies in preclinical models
3. Chemical biological studies including chemical synthesis and preparation of drug delivery platforms

The MPCBSR is equipped with many state-of-the-art instruments that are available to and accessible by Cancer Center investigators to conduct innovative studies that improve our understanding of cancer biology and to develop new anticancer therapies: HIPAA-compliant, ultra-low freezers for storage of clinical specimens, liquid chromatography-tandem mass spectrometry (LC-MS/MS) for accurate, selective, and sensitive analysis of drugs, metabolites, and biomarkers, Seahorse XFe24 Analyzer for *live-cell* metabolic analysis, Incucyte S3 Live-Cell Imaging and Analysis System for morphological and phenotypic studies, CEM microwave and CSBio conduction heating automated peptide synthesizers for peptide and peptide derivative synthesis, and a Lago X *in vivo* animal imaging system for *in vivo* and *ex vivo* optical imaging with X-ray capability.

The MPCBSR is located on the Sacramento UC Davis Health Campus and is available Monday through Friday (9 a.m. - 5 p.m.) with access to after-hours service with prior arrangement.

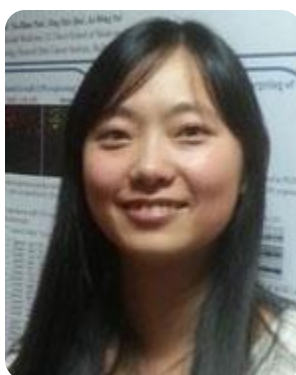
The MPCBSR is managed by a highly knowledgeable, experienced, and capable team. Contact MPCBSR staff for any questions related to services and equipment:



**Dr. Ruiwu Liu - Technical Director
Chemical Biology**



**Anthony Martinez - Technical Director
Clinical Trials Specimen**



**Dr Meijuan Tu - Project Scientist
Molecular Pharmacology**

Visit the [MPCBSR](#) website to learn more about their services and capabilities.

Cancer Center members receive priority service and subsidized rates when using the MPCBSR for cancer-related research. Use the PPMS system to request a service by clicking [here](#) (first-time users can also click [here](#) to create a PPMS account).

PPMS

**UC Davis Radiology receives SNMMI-designated Comprehensive
Radiopharmaceutical Therapy Center of Excellence status**



Congratulations to Dr. Lorenzo Nardo and the Department of Radiology for receiving the [Society of Nuclear Medicine & Molecular Imaging](#)-designated (SNMMI) **Comprehensive Radiopharmaceutical Therapy Center of Excellence** status.

SNMMI-designated **Comprehensive** Centers of Excellence are leading the growth in the field. The centers have experience administering multiple radiopharmaceutical therapies and established care teams in specific disease areas and have the training, personnel, equipment, and experience needed to manage patients receiving radiopharmaceutical therapy.

Shared Resources Management would also like to acknowledge and congratulate the contributing faculty and team members for this huge achievement - the GU team (Dr. Parikh, CTP); Dr. Mitsiades (AD Translational Research; Chair, Molecular Tumor Board; CTP); the GI team (Dr. Kim, CTP); and Dr. Sutcliffe (Radiochemistry and Cyclotron Facility, BTP); and Stephen Wetzal, Denise Caudle, Phu Huynh, Veronica Fuentesbella, and Melina Wier.

Receipt of Comprehensive status was a collaborative effort from the Divisions of Hematology and Oncology (Dr. Wun, PSMD) and Endocrinology (Dr. Lado); the Departments of Urology (Dr. Dall'Era, CTP); Surgery (Dr. Campbell, CTP); Radiology (Dr. Morris, BTP and Dr. Vu); and Radiation Oncology (Dr. Valicenti, CTP); Health Physics (Curtis Hicks); and the Comprehensive Cancer Center (Dr. Lara, CTP).

Dr. Nardo is Co-Director of the Comprehensive Cancer Center's [In Vivo Translational Imaging Shared Resource](#) (IVTISR) and manages the [EXPLORER Molecular Imaging Center](#) (EMIC) offering human total-body positron emission tomography (PET) imaging services.

Shared Resources Events

The Shared Resources provide members of the scientific community with advanced equipment, technical expertise, and advanced training to enable high-impact cancer research. Shared Resources Management participated in three recent events held at UC Davis to showcase and raise awareness of Shared Resource services.

Ralph de Vere White Symposium for Early Stage Investigators in Cancer - April 24



Pictured L-R: Aruna Chetty (SR Admin) with Hanouvi Agbassekou and Kirsten Asher (ETWD)

Held in the UC Davis Health Education Building, the Ralph de Vere White Symposium for Early Stage Investigators in Cancer was organized by the [Office of Education, Training and Workforce Development \(ETWD\)](#). The symposium highlighted cancer research conducted by undergraduates, predoctoral and postdoctoral students, research staff, residents and fellows via oral and poster presentations.

Janai Carr-Ascher, associate professor, Division of Hematology/Oncology welcomed the attendees while the keynote address was given by Maxine Umeh-Garcia, instructor of Neurosurgery at Stanford University School of Medicine,

The Cancer Center also invited 27 students from [Sheldon High School](#) to attend the symposium as part of their new high school cancer immersion program.

You can learn more about the symposium [here](#) or contact [ETWD](#) for any questions.

2025 Research Expo - April 30

Held at the UC Davis Conference Center on the Davis campus, the 2025 Research Expo was organized by the School of Medicine Office of Research (SOMOR).

The Vice Chancellor for Research, Simon Atkinson, welcomed the attendees while the keynote address was given by Donna K. Ginther, from the Institute for Policy & Social Research, University of Kansas.

A total of 595 people attended the expo, taking part in breakout sessions, attending panel discussions, browsing the research exhibitions and networking.

The Shared Resource Management exhibit was visited by almost 100 people including undergraduates and postdoctoral students, staff, external vendors, and other guests.



Pictured: Aruna Chetty (SR Admin)

Aggie Square Grand Opening Ceremony - May 2



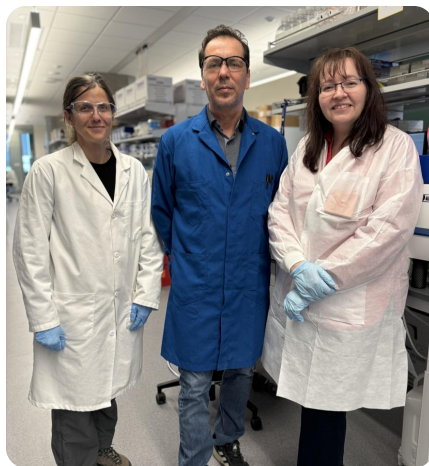
Pictured: Dan Port (Mouse Biology Shared Resource)

Shared Resources Management and Shared Resources Leaders joined UC Davis, Wexford Science & Technology, and the City of Sacramento at the grand opening ceremony of Aggie Square.

Aggie Square is a new innovation district where researchers, businesses, startups, and the broader community can come together to create opportunities and drive progress in Sacramento using cutting-edge technologies, life sciences, and education.

Three of the Comprehensive Cancer Center's Shared Resources are now based in Aggie Square - Flow Cytometry (FCSR); Immune Modeling, Analysis and Diagnostics (IMADSR); and Molecular Pharmacology and Chemical Biology (MPCBSR) and showcased their services with an interactive kiosk and brochures during the grand opening ceremony.

Immune Modeling, Analysis and Diagnostics Shared Resource now in Aggie Square



Pictured L-R: Andrea Gompers, Emanuel Maverakis, and Alina Marusina

The Immune Modeling, Analysis and Diagnostics Shared Resource (IMADSR) provides comprehensive, up-to-date immune monitoring services for clinical and translational studies to support academic investigators and industry partners who want to characterize the immune system in the setting of disease, especially autoimmunity and cancer.

The IMADSR facility is led by **Emanuel Maverakis, M.D.** (Director), and managed by **Alina Marusina, Ph.D.** (Co-Director), **Andrea Gompers, Ph.D.** (Project Coordinator), and **Alexander Merleev, Ph.D.** (Bioinformatics Leader).

Certified by [Clinical Laboratory Improvement Amendments \(CLIA\)](#), the IMADSR lab provides cancer investigators access to services and expertise in a state-of-the-art facility within the newly opened Aggie Square in Sacramento.

Beyond standard services and consultations, IMADSR also offer diagnostic tests, single-cell sequencing and specimen banking.

Services include:

- Consulting service
- High parameter immunophenotyping
- Multi-omics Data Integration and Interpretation
- Construction of molecular models and pathway analysis
- Comprehensive microbiome analysis services for any biological sample type
- Bulk RNA Sequencing Services offer complete solutions from RNA isolation to data analysis
- Data analysis services, especially for high-parameter datasets and data mining of previously published datasets

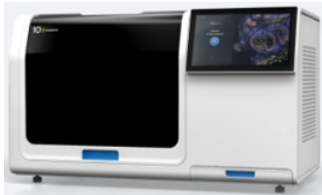


Click on the **video** for a virtual tour of the IMADSR lab in Aggie Square.

Instruments in IMADSR's Aggie Square lab include:



Chromium X Series



Xenium In Situ



Illumina MiSeq



Stratigdig Spectral flow cytometer

The full list of IMADSR's services and recharge rates can be found on their website. Please note that rates charged to Cancer Center members are subsidized for cancer-related research.

IMADSR website

The IMADSR lab is located in Aggie Square, Room 4710, 4500 Second Avenue, Sacramento. If you have any questions, please email [IMADSR](mailto:IMADSR@ucsf.edu).

Flow Cytometry Shared Resource now in Aggie Square



Pictured L-R: Ashley Karajeh, Jonathan Van Dyke, Barbara Shacklett, and Bridget McLaughlin

The Flow Cytometry Shared Resource (FCSR) offers state-of-the-art resources and training for investigators throughout the cancer research community, including UC Davis, other academic institutions and for-profit partners. Their cytometry experts can support your research with cell sorting, analytical cytometry and hands-on training.

The FCSR facility is led by **Barbara Shacklett, Ph.D.** (Director), and managed by **Bridget McLaughlin, M.S.** (Technical Director), **Jonathan Van Dyke, B.S.** (Manager), and **Ashley Karajeh, B.S.** (Cytometry Technician).

FCSR now has four lab locations that enable access to researchers across UC Davis - Health Sciences Complex (Tupper Hall), Institute for Regenerative Cures, College of Biological Sciences and their latest lab in the Aggie Square.

Flow cytometry is fundamental to the analysis of live or fixed cells and subcellular particles. Flow cytometers can quickly characterize, enumerate and separate single cells from mixed populations.

The applications of flow cytometry to cancer research include:

- Apoptosis assays
- Cell signaling pathway analysis
- Cell sorting
- DNA measurement
- Multicolor detection of up to 40 biomarkers
- Probes of metabolic state

Instruments in FCSR's Aggie Square lab include:



Cytoflex NANO nanoscale cytometer





Sony MA900 12-color in HEPA enclosure



Cytek Aurora Spectral 40+ color

The FCSR also received a new NIH S10 (2024) to buy the Beckman Coulter Cytoflex Nano. The CytoFLEX Nano (Nano) is a benchtop flow cytometer that is designed specifically for nanoscale flow cytometry and is now available for shared use in the FCSR's Davis campus facility. It offers enhanced laser scatter sensitivity, detects up to six fluorescent signals, and includes several ease-of use improvements including automated QC, new cleaning and background monitoring features, and instrument validation tools that will ease barriers to entry and meet the needs of the expanding extracellular vesicle research community at UC Davis. The Nano will be located in the UC Davis FCSR core laboratory and will be operated for shared use by basic, translational, and clinical researchers studying extracellular vesicles (EV) and engineered EV-like particles in cancer biology, immunotherapy and pharmacotherapy, infectious diseases, hereditary disorders, stem cell therapy, and innate and adaptive immunity.

The full list of FCSR's services, equipment and recharge rates can be found on their website. Please note that rates charged to Cancer Center members are subsidized for cancer-related research.

[FCSR website](#)

The FCSR's newest lab is located in Aggie Square, Rooms 4653 & 4655, 4500 Second Avenue, Sacramento. If you have any questions, please email [FCSR](#).

Faculty Spotlight - John McPherson



John McPherson, Ph.D., was recruited to UC Davis in October 2015. He is Professor, Department of Biochemistry and Molecular Medicine, Deputy Director of the UC Davis Comprehensive Cancer Center, and Director of the Cancer Center Genomics Shared Resource.

He has deep expertise in DNA sequencing and cancer genomics through his participation in the Human Genome Project and large-scale tumor sequencing as a founding member of the International Cancer Genome Consortium (ICGC).

In his previous position at the Ontario Institute for Cancer Research (OICR),

Dr. McPherson led the whole genome sequencing of >200 pancreatic ductal adenocarcinomas using laser capture microdissected material to generate accurate deep mutational analyses as part of the ICGC dataset. Prior to the OICR, his career spanned three Genome Centers: as Co-Director, the National Human Genome Research Centre - Chromosome 5 Genome Center (1993-1996); Co-Director, the Washington University Genome Sequencing Center (WU; 1996-2003; Human Genome Project), and Senior Faculty, the Human Genome Sequencing Center at the Baylor College of Medicine (BCM; 2003-2007).

At WU he pioneered many large-scale mapping and sequencing technologies and was lead author on the human genome physical map, co-published with the initial draft sequence of the human genome. Also, at BCM he established an early high-throughput targeted resequencing pipeline with a peak capacity of one million Sanger sequences per month of PCR amplified genome targets. The primary objective of the BCM pipeline was the sequencing of all ion channel genes (~250) in 500 sporadic epilepsy patients and controls. This pipeline was also used to examine lung adenocarcinomas and glioblastomas as part of trans Genome Center collaborations, the Tumor Sequencing Project, a nascent version of The Cancer Genome Atlas. These projects laid the groundwork for future large-scale efforts aimed at utilizing high-throughput next generation sequencing and other genomic technologies to unravel the cancer genome.

Outside of work, Dr. McPherson enjoys cooking, gardening, woodworking, and hiking.



Paella in the making



Table and chair made from old barrels



Sunday roast

You can learn more about Dr. McPherson and his research at UC Davis [here](#) or by [emailing him](#).

Staff Spotlight - Dan Port



Dan Port, M.S., is the Marketing Lead for the Mouse Biology Shared Resource (MBSR) where he plays a key role in connecting the cancer scientific community with advanced services and capabilities essential for groundbreaking biomedical research. He is responsible for developing and implementing strategic marketing initiatives that enhance the MBSR's visibility and facilitate researchers' access to its specialized resources, particularly in support of translational cancer research.

Dan focuses on clearly communicating the value of the MBSR's offerings, which include the creation of mouse models, comprehensive model characterization and phenotyping, cryopreservation, and expert consultation. His work involves crafting targeted informational materials, managing digital outreach, and actively engaging with investigators to ensure their research needs are met.

Since taking on his marketing role, Dan has been instrumental in making connections and sharing ways MBSR can support cancer research. He is committed to ensuring that researchers can easily discover and utilize the MBSR to advance user's projects, from experimental design to publication. Dan also strives to ensure that Cancer Center Shared Resources are recognized and appreciated for the vital research support they provide.

Dan has a B.S. in Business Administration, so he has a firm foundation in business operations.



Pictured: Dan at Carmel Beach

However, with an M.S. in Marketing, he found his true calling in promotion and efforts to connect with people and help them find the resources they're looking for. Dan can connect with anyone on any given day and turn it into marketing gold.

When Dan isn't thinking about innovative (and sometimes overly creative marketing methods), he enjoys finding somewhere with water—a lake, a river, or the ocean—and jumping in. Also, a mention for food: if you're ever in Woodland, call Dan. He'll take you to the taco truck outside Home Depot—for the Quesataco, you won't regret it!

You can [email](#) Dan Port with any questions about MBSR marketing, discuss how MBSR can support your research goals, or explore opportunities to showcase your MBSR-enabled discoveries or just to say hi!

Upcoming Events and Office Hours

Genomics Pop-in Workshops

Have you ever been ready to submit your manuscript but gotten bogged down trying to figure out how to upload your data to GEO?

Join us for the next Genomics Pop-in Workshop, where we'll walk through the process step-by-step, discuss best practices, tackle common pitfalls, and answer all your burning questions. Whether you're knee-deep in sequencing data or just getting started, we're here to help!

After the presentation, stick around for open discussion and troubleshooting on any genomics-related questions or projects - bring your data, ideas, and curiosity! We invite you to use this opportunity to discuss/troubleshoot/brainstorm any genomics applications, topics, projects, data, proposals, manuscripts, etc.

No registration needed - the workshop will be held in-person and virtually on the UC Davis Health campus on the 4th Wednesday of each month, **1:30-2:30 p.m. (Betty Irene Moore Hall, Room 1602, Sacramento)**. For those attending in-person, home-baked snacks will be provided.

Join via Zoom using the button below. For questions, email the [GSR team](#).



Biostatistics Shared Resource Office Hours

The **BSR** provides biostatistical support for clinical, population, and basic science researchers.

To better support the study design and data analysis efforts of our members, the BSR offers weekly office hours in collaboration with the Clinical and Translational Science Center:

1st and 3rd Monday, 1 - 2 p.m.

Tuesdays, 12 - 2 p.m.

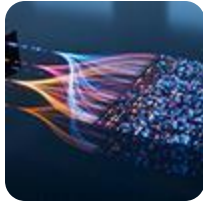
For more information, contact [Dr. Lihong Qi](#).



Explore all the Shared Resources



**Biorepository
(BRSR)**



**Biostatistics
(BSR)**



**Flow Cytometry
(FCSR)**



**Genomics
(GSR)**



**Immune Modeling, Analysis, and Diagnostics
(IMADSR)**



**In vivo Translational Imaging
(IVTISR)**



Mouse Biology
(MRSR)



Molecular Pharmacology and Chemical Biology
(MPCBSR)



Shared Resource Management
(SRM)

Notice to All NIH-Funded Investigators

Acknowledging the Cancer Center Support Grant and Shared Resources in Publications

Shared Resources are funded by the UC Davis Comprehensive Cancer Center Support Grant (CCSG) awarded by the National Cancer Institute (NCI P30CA093373). All publications, press releases or other documents that cite results from CCSG-supported research, including the use of CCSG-supported Shared Resources and awarded pilot project funding, must acknowledge the CCSG and maintain compliance with NIH Public Access Policy (see below). NIH citation instructions can be found by clicking the button below:

[Communicating and Acknowledging Federal Funding](#)

Example statements are provided below:

CCSG Acknowledgement: Research reported in this publication was supported by the UC Davis Comprehensive Cancer Center Support Grant (CCSG) (NCI P30CA093373).

Disclaimer: The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Sample SR Acknowledgement: The authors wish to acknowledge the support of the UC Davis Comprehensive Cancer Center [NAME] Shared Resource, supported by the Cancer Center Support Grant (CCSG) (NCI P30CA093373).

Guidance on submission and reporting methods can be found [here](#).

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