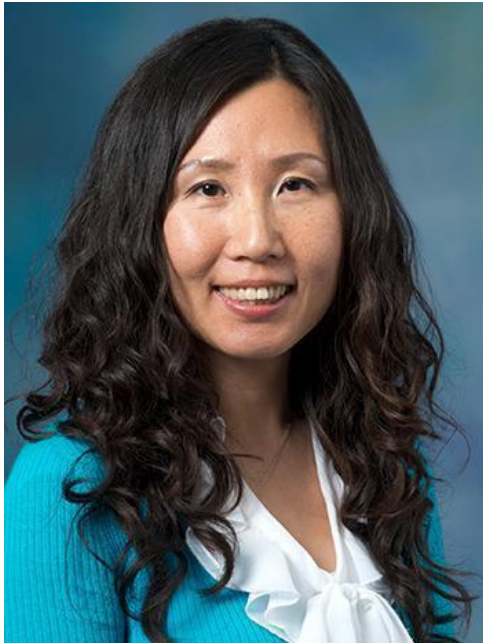


## Shared Resources Newsletter - Fall 2025

### Welcome Message from the Director of Biostatistics Shared Resource – Lihong Qi, Ph.D.



Welcome to the **2025 Fall Edition** of the Shared Resources Newsletter. It is my pleasure to introduce the Biostatistics Shared Resource (BSR) of the UC Davis Comprehensive Cancer Center in this issue.

The BSR provides essential statistical expertise that drives cancer research across the spectrum - from molecular discovery to clinical trials and population studies. The BSR team (pictured below) partners with investigators at every stage of research, from study design and grant preparation to data analysis, publication, and mentoring. Their expertise spans clinical trials, precision medicine, risk modeling, screening and diagnostic test evaluation, cost-effectiveness, causal inference, and machine learning using large datasets such as the California Cancer Registry and electronic health records. Nationally recognized for advances in prediction modeling, biomarker discovery, and longitudinal analysis, BSR biostatisticians ensure rigor, innovation, and reproducibility in all Cancer Center-supported studies. They review every investigator-initiated clinical trial and provide expert input on protocol development.



Shuai Chen, Ph.D.,  
Biostatistician

Hong Li, Ph.D.,  
Biostatistician

YueJu Li, M.S., Assistant  
Biostatistician

Cancer Center members receive 10 hours of no-cost consultation per cancer-related project each year, with access to state-of-the-art methods, priority service, and competitive recharge rates supported by institutional and Cancer Center Support Grant (CCSG) funding. BSR Core Services include:

1. **Study Design** – Expert guidance on efficient, well-powered research designs tailored to cancer-specific questions.
2. **Statistical Analysis** – Comprehensive data analysis following best practices for reproducible research, supporting publications and presentations.
3. **Methodological Innovation** – Advanced and emerging approaches, including machine learning, applied from molecular to population-level studies.

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.

[\*\*Schedule an appointment\*\*](#)

Learn more about BSR services and how to request support on the BSR website. We look forward to working with you on your future projects.

BSR

Any published research or abstracts that used BSR services should include an acknowledgement of BSR support. We suggest language such as:

***This project was supported by the Biostatistics Shared Resource, funded by the UC Davis Comprehensive Cancer Center Support Grant awarded by the National Cancer Institute (NCI P30CA093373).***

## Imaging Research Center Open House and Leadership Celebration

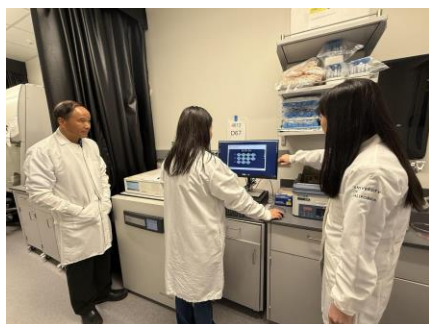


Congratulations to [Abhijit Chaudhari](#), Ph.D., (*pictured left*) for his appointment as the permanent Director of the [UC Davis Imaging Research Center](#) (IRC). Dr. Chaudhari is also the Director of the [UC Davis Center for Molecular and Genomic Imaging](#), a Co-Director of [In Vivo Translational Imaging Shared Resource \(IVTISR\)](#). He has served as interim Director of the IRC since 2023.

The IRC held an open house on September 4 to celebrate Dr. Chaudhari's permanent leadership and to showcase the imaging resources onsite, in particular the Siemens Prisma 3-Tesla scanner. The IRC supports MRI research and promotes modern MRI-based methods in basic science and clinical investigations.

Read more about Dr. Chaudhari's appointment and IRC [here](#).

**Molecular Pharmacology and Chemical Biology Shared Resource now in Aggie Square**



**Pictured L-R:** Dr. Yu with Drs. Guan and Tu operating the Incucyte

The Molecular Pharmacology and Chemical Biology (MPCBSR) support investigators with state-of-the-art instruments and technologies to conduct a wide range of cancer studies. MPCBSR helps investigators develop and study new cancer therapeutics for diseases most prevalent in our catchment area.

The facility offers comprehensive services including:

**1. Clinical studies:** Collection, processing, and management of clinical trial specimens; evaluation of PK/PD and drug-drug interactions.

**2. Preclinical studies:** Molecular pharmacology of novel agents, including drug metabolism, disposition, biomarkers, and combination effects.

**3. Drug discovery:** Chemical synthesis of new compounds and nanomaterials for drug delivery.

The MPCBSR is led by **Dr. Aiming Yu** (Director), with **Dr. Ruiwu Liu** and **Dr. Urvashi Bhardwaj** overseeing the Chemical Biology Lab, **Anthony Martinez** directing Clinical Trials and specimen management, and **Dr. Mejuan Tu** and **Dr. Su Guan** supporting the Molecular Pharmacology Lab at Aggie Square.

The lab houses state-of-the-art instrumentation at **Aggie Square, Room 4710, 4500 Second Avenue, Sacramento.**

A complete list of services and subsidized recharge rates for Cancer Center members is available on the [MPCBSR website](#).



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

## Shared Resources Events

The Cancer Center 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 (SRM) regularly hosts

workshops and seminars and participates in events held at UC Davis to showcase and raise awareness of SRs services along with hosting visitors at the various SRs.

### AvenueM Students visit Shared Resources



**Pictured above L-R:**

Paige Kular (CTSC),  
Harkiran Kaur (AvenueM),  
Ashleigh Karajeh (FCSR),  
Jonathan van Dyke  
(FCSR), Ruthie Alvarado  
(AvenueM), and Sarah  
Casas (AvenueM) at FCSR

**AvenueM** is a community college to medical school pathway program that aims to reduce barriers to entry to medical and other healthcare careers.

In July 2025, AvenueM students interested in learning more about cancer-related research visited the Flow Cytometry (FCSR), In Vivo Translational Imaging's (IVTISR) EXPLORER Molecular Imaging Center (EMIC; part of the IVTISR), Mouse Biology Shared Resource (MBSR), and the MPCBSR chemical biology lab.

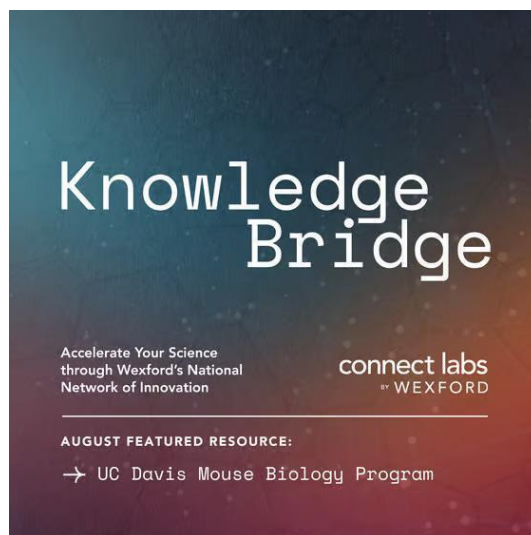
Students had equipment demonstrations, explored the PET/CT scanner at EMIC, and participated in a mock experiment at the FCSR.

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### Knowledge Bridge: UC Davis Mouse Biology Program

The Mouse Biology Program (MBP) at UC Davis is a world-class resource for custom mouse model development, phenotyping, and translational research having served over 5,000 researchers across more than 400 institutions in over 40 countries since inception. The MBSR is a component of MBP dedicated to serving Cancer Center members conducting cancer research.

**K.C. Kent Lloyd, D.V.M., Ph.D.**, Director of the UC Davis Mouse Biology Program and **MBSR**, and Louise Lanoue, Ph.D., offered insights into the program's unique capabilities and how it



supports innovation from bench to breakthrough as part of WexFord Connect Lab's Knowledge Bridge on Wednesday, August 20. There were 30 participants.

Wexford's national network is home to world-class core research facilities—specialized labs, instrumentation, and expert staff—and these virtual sessions bring together scientists, entrepreneurs, and industry partners to spotlight the most powerful resources available across the research community. Wexford Connect Labs is located on Level 2 of [Aggie Square](#).

## Spotlights

### Faculty Spotlight - Emanuel Maverakis



**Emanuel Maverakis, M.D.**, a dermatologist and clinical informaticist, is the Director of the Immune Modeling, Analysis and Diagnostics Shared Resource (IMADSR) at UC Davis Comprehensive Cancer Center.

Dr. Maverakis began his research career as an undergraduate in the laboratory of the late Eli Sercarz, Ph.D., at the University of California, Los Angeles (UCLA). Dr. Sercarz, one of the founding figures in the field of autoimmunity, took a liking to him and introduced him to other leaders in the field. Dr. Maverakis then matriculated at Harvard Medical School but returned to California during medical school to spend almost two years as a Howard Hughes Medical Student Fellow at the La Jolla Institute for Immunology, where he received additional training in immunogenetics.

At the time, Harvard required only a single clinical elective to graduate, so Dr. Maverakis opted to focus on research rather than additional clinical rotations. His work on T-cell molecular mimicry, antigen processing, epitope spreading, and T-cell competition led to several publications in high-impact scientific journals. After returning to Boston to complete his clinical rotations, Dr. Maverakis graduated from Harvard

Medical School *summa cum laude*. This rare distinction has been awarded to only 15 students in the school's 237-year history. The *Boston Globe* ran a multi-page article in its Sunday Magazine covering the story. At that time, Fu-Tong Liu, then Director of the Division of Allergy at the La Jolla Institute for Immunology, had accepted a position as Chair of Dermatology at UC Davis. Emanuel, who knew Fu-Tong from his time at La Jolla, accepted a dermatology research residency position at UC Davis. He remained on faculty and launched his career with Early Career Awards from the Howard Hughes Medical Institute and the Burroughs Wellcome Fund, as well as a National Institutes of Health (NIH) New Innovator Award, presented by Francis Collins, then Director of the NIH.

At UC Davis, Dr. Maverakis forged strong collaborations with Dr. Carlito Lebrilla in the Department of Chemistry, studying cancer glycobiology. He also recruited Alina Marusina and Alexander Merleev to IMADSR, positioning UC Davis at the forefront of single-cell RNA sequencing and spatial RNA profiling. Dr. Maverakis helps many Cancer Center investigators apply these technologies to their own research. In addition, he is a leading clinical trialist in dermatology, working with Dr. Mehrdad Abedi to conduct cell-based therapy trials.

Dr. Maverakis has been nationally recognized for his research. He received an NIH Mid-Career Award and the Presidential Early Career Award for Scientists and Engineers (PECASE) - the highest honor bestowed by the U.S. government on early-career researchers - which was presented to him by President Obama at the White House. He was elected to the California Academy of Sciences in 2019, the Society of Clinical Investigation in 2022, and the American Association for the Advancement of Science in 2023.

In his free time, Dr. Maverakis enjoys lecturing nationally and internationally. Each summer, he helps bring 50 to 150 migrant high school students to Sacramento for a college-preparation camp (*pictured below*). He also volunteers at the Knights Landing Free Clinic, which serves migrant workers in California's Central Valley.



**Pictured:** Participants in the Migrant Student Leadership Institute

Outside of work, Dr. Maverakis enjoys outdoor activities with his daughter Natalia Maverakis Ramirez, who is a third-year medical student at San Juan Bautista School of Medicine. You can learn more about Dr. Maverakis and his research at UC Davis [here](#) or by emailing him.

[Email Dr Maverakis](#)

## Staff Spotlight - Ryan Davis



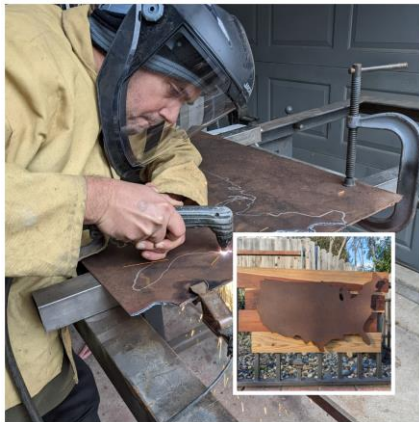
**Ryan Davis, B.S.** has been the Genomics Specialist for the Genomics Shared Resource (GSR) since 2002. Born in France, Ryan's journey to becoming one of UC Davis's trusted genomics experts began when he moved to the United States in 1998 and completed his Bachelor of Science in Biochemistry and Molecular Biology at UC Davis.

What makes Ryan's story particularly remarkable is that during his undergraduate years, he interned in the very lab that eventually evolved into today's GSR. This means he has witnessed and helped shape the resource's transformation from a research lab into the comprehensive genomics resource it is today. Few people can say they've been part of an organization's

entire evolution, but Ryan has literally grown up with the field of genomics.

Over the past 23 years, Ryan has built unparalleled expertise in genomics, becoming the go-to person for researchers who need to design and execute projects that push the boundaries of scientific discovery. His passion lies in guiding scientists through the GSR's comprehensive suite of services, which includes DNA and RNA analysis, next-generation sequencing (NGS), and sophisticated bioinformatics support.

The GSR, under Ryan's technical leadership, offers centralized, cost-effective support across the entire genomics spectrum. Whether researchers need transcriptome profiling (RNA-Seq, small RNA-Seq, SLAM-Seq), epigenomics analysis (ChIP-Seq, CUT&RUN, Hi-C), variant analyses through whole-exome and genome sequencing, cutting-edge single-cell sequencing, or spatial transcriptomics, Ryan ensures each project receives the technical expertise it deserves.



**Pictured:** Ryan carving out the US map using steel

What truly sets Ryan apart is his collaborative approach to scientific challenges. He doesn't just provide services, he partners with investigators to develop creative, custom solutions to complex research questions. Every project is unique, and he loves the puzzle-solving aspect of figuring out the best approach for each scientist's specific needs.

Ryan's versatility is one of his greatest strengths. He's equally comfortable working at the bench handling delicate sample preparations and running complex sequencing protocols as he is behind a computer providing bioinformatics support and building custom analysis pipelines. This dual expertise allows him to bridge the gap between wet lab work and computational analysis, ensuring that projects flow seamlessly from study design to sample to publication.

In the rapidly evolving world of genomics, staying current isn't just helpful, it's essential. Ryan has made it his mission to remain at the forefront of emerging technologies, constantly testing new laboratory methods and exploring open-source computational tools that can make data analysis more accessible and powerful for UC Davis researchers. His commitment to continuous learning means that the GSR consistently offers state-of-the-art services.

Outside the lab, Ryan's hands-on nature extends to all aspects of his life. He's always tinkering—whether tackling house projects, fixing things around his home, or

experimenting with new recipes in the kitchen. His love for cooking reflects the same attention to detail and creative problem-solving that makes him such an effective genomics specialist.

Family and friends play a central role in Ryan's life, and he treasures the time spent with them. But perhaps nothing brings out Ryan's passion quite like soccer. You'll often find him proudly sporting a French national team jersey or cheering on Paris Saint-Germain (PSG), maintaining his connection to his French roots while fully embracing his life in California.

After more than two decades at UC Davis, Ryan has become more than just a genomics specialist—he's a mentor, collaborator, and trusted advisor to countless researchers. His door is always open to scientists at any career stage, from graduate students running their first sequencing experiment to established faculty members tackling ambitious new projects.

If you have a genomics or bioinformatics question, or if you're curious about how the GSR might support your research, don't hesitate to reach out. Ryan would be happy to discuss your project and explore how genomics might unlock new insights in your work.

[Email Ryan](#)

## Upcoming Events and Office Hours

### Shared Resources and Lawrence Livermore National Library BioAMS Seminar - November 7

Join the UC Davis Comprehensive Cancer Center Shared Resources and Lawrence Livermore National Laboratory (LLNL)-led seminar to learn how Cancer Center members can access the LLNL National User Resource for Biological Accelerator Mass Spectrometry (bioAMS).

Procedures for accessing the NIH-funded User Resource for bioAMS and receiving free measurements will be described. The event features a one-hour seminar with lunch (for those attending in-person) followed by breakout sessions for additional discussions.

## Featured Speakers



**Bruce Buchholz, Ph.D.**

Dr. Bruce Buchholz is a senior scientist at the Center for Accelerator Mass Spectrometry at LLNL and the Principal Investigator for the NIH User Resource for BioAMS. For the past 25 years he has designed and conducted  $^{14}\text{C}$ -tracer biological AMS studies with collaborators around the world in the fields of nutrition, environmental toxicology, cancer biology, pesticide ADME, and cell biology. His academic training is in physics, and he holds a Ph.D., in Nuclear Engineering from the University of Illinois. Before joining LLNL, he completed postdocs at Argonne National Laboratory in nuclear-chemical engineering and at UC Davis in pesticide ADME in the Department of Entomology. He has authored more than 100 peer-reviewed publications on the use of isotopic tracers in biology, combustion systems, and chemical engineering.



**Paramita M. Ghosh, Ph.D.**

Dr. Paramita Ghosh is a Professor in the Department of Biochemistry and Molecular Medicine and the Molecular Oncology Program at UC Davis School of Medicine. Dr. Ghosh's research focuses on elucidating the mechanisms of prostate and bladder cancer progression, especially through understanding the signal transduction pathways involved. Her current research concentrates on the study of signal transduction pathways involved in prostate cancer development and progression. This includes studies on the EGFR family of receptor tyrosine kinases, leading to the PI3K/Akt pathway and finally to the mTOR signaling pathway. She also has interest in developing new targets for therapy and the re-purposing of drugs for novel uses.

**Event Details**

**When: 12:30 – 1:30 p.m. November 7, 2024**

**Where:** Lecture Hall 2222, [Education Building 4610 X Street | Sacramento, CA 95817](#)

**How:** Hybrid (In-person and via Zoom)

**Breakout sessions will be available from 1:30 – 2:30 p.m.**

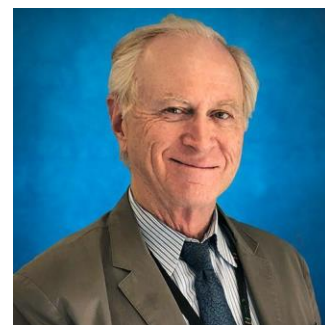
Registration is required. Light lunch provided for those attending in person.

[Register Here](#)

## AD for SR Office Hours @ Aggie Square

The Associate Director for Shared Resources, Dr. Kent Lloyd, will now be available for consultations by appointment at Aggie Square.

**Email Dr. Lloyd to book a time to discuss how the Cancer Center [Shared Resources](#) can assist you with your cancer research project.**



[Email Dr. Lloyd](#)

## 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](#).

[Join by Zoom](#)

[Explore all the Shared Resources](#)

[Shared Resources](#)

## 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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