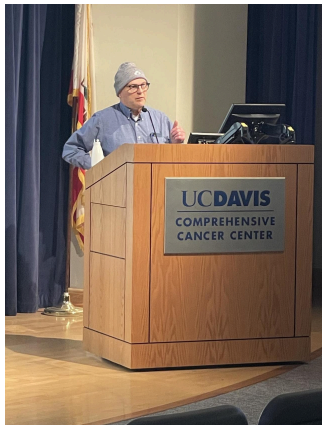


## Shared Resources Newsletter - November 2024

### Shared Resources and LLNL Joint Seminar

The UC Davis Comprehensive Cancer Center Shared Resources provides the UC Davis research community with centralized access to specialized scientific expertise, consultation and assistance, infrastructure and equipment necessary to conduct cutting-edge scientific research. The Cancer Center has partnered with Lawrence Livermore National Laboratory (LLNL), a premier research and development institution for science and technology applied to national security needs, to make available cutting-edge LLNL core resources (e.g., Biological Accelerator Mass Spectrometry (BioAMS), AI) to Cancer Center members.

The Cancer Center Shared Resource Management and LLNL team hosted a joint seminar on Wednesday, November 20, at the Cancer Center's Goodnight Auditorium to discuss how Cancer Center members can access LLNL resources. The inaugural seminar centered on fostering and growing the partnership to advance cancer related research and included keynote speakers from LLNL and post-seminar breakout sessions. The event was opened by Dr. Gabriela Loots (Senior Liaison to LLNL) followed by Dr. Kent Lloyd (Associate Director for Shared Resources) who talked about the strategic partnership and introduced the two featured speakers.



Dr. Bruce Buchholz (pictured left), a senior scientist at the Center for Accelerator Mass Spectrometry at LLNL and Project Manager for the NIH User Resource for BioAMS, talked about the use of BioAMS in research and clinical settings and described how AMS differs from conventional mass spectrometry and how to use it to approach problems with sensitivity. He also outlined procedures for accessing the NIH-funded User Resource for Biological AMS and receiving free measurements – something our Cancer Center members will benefit from.



Dr. Long Nguyen (pictured bottom left), a staff scientist at LLNL and a pharmacologist with aerosol development expertise with emphasis on the inhaled delivery applications into the airway and distal lung space, talked about the inhaled therapeutic development in oncology, in particular, the several advantages of inhaled over the traditional system approaches for lung cancer treatment. Dr. Nguyen has been responsible for building internal pulmonary capabilities to include establishing preclinical inhalation facilities and the analysis of aerosol particle deposition, characterization, and localization in various lobes and cell types of the respiratory tract and nasal cavity.

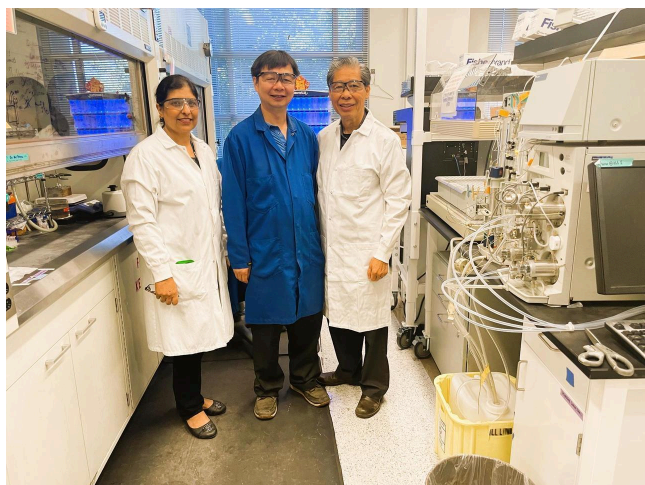
Dr. Matt Coleman, a senior staff biomedical scientist at LLNL and adjunct professor in the Department of Radiation Oncology concluded the seminar by expressing his gratitude for the opportunity to present LLNL technologies to the Cancer Center members.

For questions related to either presentation or if you would like to get in touch with the featured speakers to discuss research collaborations, please contact SR Admin.

## Email SR Admin

# Combinatorial Chemistry and Chemical Biology Shared Resource

The Combinatorial Chemistry and Chemical Biology Shared Resource (CCCBSR) provides combinatorial libraries and support services to UC Davis Comprehensive Cancer Center members. The one-bead one-compound (OBOC) and the one-bead-two-compound (OB2C) methods are highly efficient, both in compound synthesis and in library screening, and these ultra-high throughput methods are unmatched by any parallel synthesis methods. Many UC Davis investigators have developed successful grant proposals using these methods. In addition to OBOC and OB2C libraries, the CCCBSR provides solution-phase small molecule libraries to comprehensive cancer center investigators.



The CCCBSR facility is managed by **Dr. Kit Lam** (Director), **Dr. Ruiwu Liu** (Co-Director) and **Urvashi Bhardwaj** (Manager).

Dr. Kit S. Lam is the inventor of the one-bead one-compound, or OBOC, combinatorial library method. The OBOC library method is a powerful tool to discover ligands against various biological targets, such as protein kinase substrates and inhibitors, protease substrates and inhibitors, ligands for cell surface receptors, artificial enzymes and various ligands for the preparation of affinity column media.

**Pictured CCCBSR Team L-R:** Urvashi Bhardwaj, Ruiwu Liu, Kit Lam

### Services include:

- Hands-on training to perform library synthesis and screening
- Pre-made OBOC and OB2C combinatorial libraries, peptides and small molecules
- Design, synthesize and screen OBOC and OB2C combinatorial libraries
- Re-synthesize compounds in on-bead or soluble form for *in vitro* and *in vivo* evaluation
- Provide custom synthesis of compounds
- Provide telodendrimer-based nanomicelles for nanoformulation and *in vivo* delivery of hydrophobic drugs
- Provide polyvinyl alcohol (PVA)-based nanomicelles for loading or conjugation of drugs
- Provide transformable peptide nanoplatform
- Provide medicinal chemistry support for optimization of lead compounds
- Provide HPLC analysis and purification
- Full consultation service

### Key Technologies and Instrumentation:

- ABI protein microsequencer
- CS-Bio automated peptide synthesizer
- Fluorescent microscope
- Stereo-microscopes
- Confocal microscope
- Agilent HPLC system
- Waters HPLC system with automation
- Lyophilizers
- Mini Incushaker
- Rotary evaporators
- Lago X *in vivo* animal imaging system
- Multiple channel peptide synthesizer
- CEM microwave peptide synthesizer



Urvashi demonstrating in vivo imaging using the Spectral Imaging Instrument.

Dr. Ruiwu Liu demonstrating the CEM microwave peptide synthesizer used for rapid synthesis of long and difficult peptides.

The full list of CCCBSR'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.

### CCCBSR website

The CCCBSR's primary research lab and office spaces are located in [Research Building I, Room 2109](#), 4635 2nd Avenue, Sacramento, CA 95817. CCCBSR hours of operation are 9 a.m. - 6 p.m. weekdays. They are also available 24/7 via email or telephone. If you have any questions, please contact them by clicking the button below:

### Email CCCBSR

## Research Core Directory



The Office of Research launched their new Research Core Directory in October. The Directory is comprehensive and includes resources for biological and medical sciences, engineering, agriculture, environmental sciences, social sciences and the

humanities, and it spans across the Davis and Sacramento campuses and off-campus facilities. You can use this comprehensive directory to locate shared research facilities, instruments, resources, services, technologies, training and expertise across UC Davis.

The Directory includes over 70 cores and facilities with more than 450 resources and services available to support research including:

**Cores:** labs, centers, offices, and units that own resources and provide services

**Resources:** equipment, space, software, datasets, and other assets

**Services:** analysis, consultation, training, recording, and other expertise for hire or for free

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## Staff Spotlight



You can email Chris with any marketing, branding, and communications-related questions at [cjoyce@ucdavis.edu](mailto:cjoyce@ucdavis.edu).

**Chris Joyce** joined the UC Davis Comprehensive Cancer Center in 2018 as the center's dedicated Marketing Specialist. He is responsible for the brand and all associated collateral related to the Cancer Center, including brochures, posters, social media, and email communications. Chris works with the Administration team assisting with the Cancer Center Support Grant renewal, collaborating on the upcoming website conversion, producing the Beat Cancer podcast, and filling up the water in the coffee maker.

Before joining the Cancer Center, Chris spent nearly twenty years in the radio industry where he wore multiple hats including board operator, national promotions director, webmaster, graphic designer, videographer, and online content director. These roles allowed him to participate in crazy radio stunts, interact with a variety of celebrities, and engage with the local audiences at live events to ensure everyone had a great time during the silliness.

When he's not working, Chris hangs out with his family watching movies and having passionate discussions comprised almost entirely of movie quotes, snuggling with his dog Buddy, completing aggravating puzzles, and podcasting with a friend. While he comes across as an extrovert, he's just an over-excitabile introvert, preferring a cold cloudy day bundled up on the couch over venturing outside where people talk to him, but don't let that prevent you from saying hi... Chris would love to chat and is always eager to help colleagues and patients.

## Upcoming Events and Office Hours

### Shared Resources Workshop Series 2024-25

The Shared Resources provide the UC Davis research community with centralized access to specialized scientific expertise, consultation and assistance, infrastructure, and equipment necessary to conduct cutting-edge scientific research.

Want to know how to incorporate SRs into your research? This year's workshop series will feature faculty who have used one or more SRs for their cancer research projects.

[Register today](#) to learn from Cancer Center members who will share their unique experiences.

This series will equip you with ways to take full advantage of SRs services and equipment in your research and publications and how to learn strategies for using SRs. As a Cancer Center member conducting cancer research, you are eligible for prioritized status and subsidized rates when using the SRs! Register now and hear what our SRs "super users" have to say!

Join us at one or more of the workshops scheduled below and learn how SRs can add value to your research:

**Dr. Aiming Yu and Dr. Hongwu Chen - December 19, 2024, 1 - 2 p.m.**

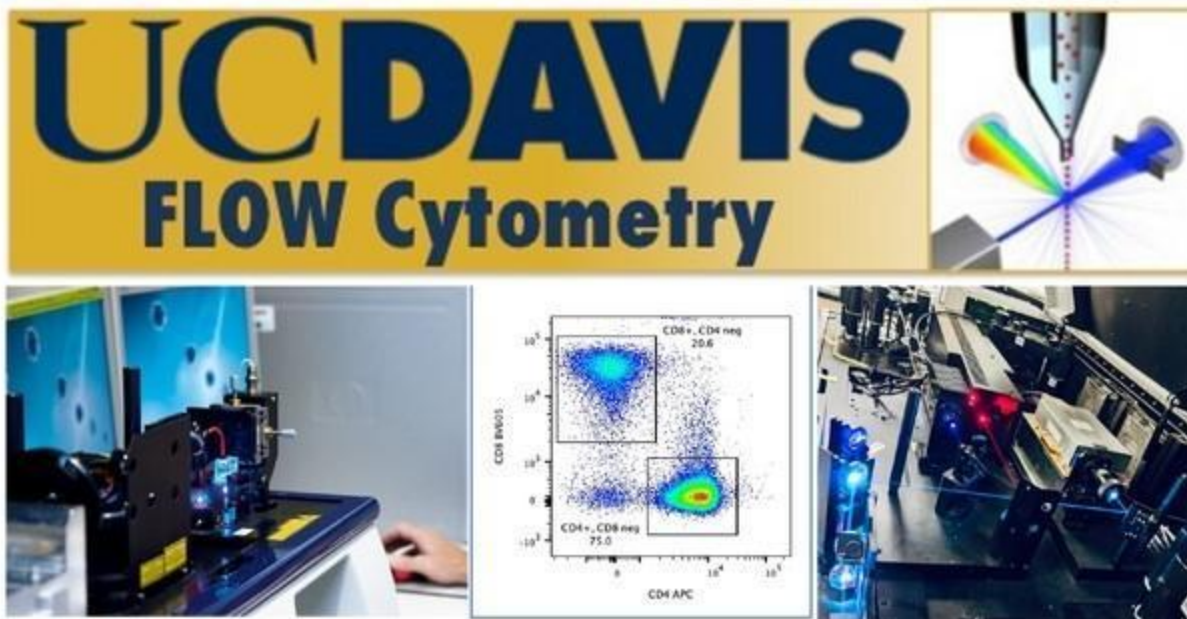


Dr. Shuchi Gulati - February 20, 2025, 1 - 2 p.m.

Dr. Tianhong Li - March 20, 2025, 1 - 2 p.m.

**Register and Learn More**

## Comprehensive Online Course in Flow Cytometry February 3-7, 2025



This comprehensive ONLINE flow cytometry course will teach you how flow cytometers work and how to design assays to achieve reliable and reproducible results. In addition to the basics, advanced topics will include multicolor panel design, troubleshooting, data analysis and artifact reduction. The concepts introduced in these lectures will be complemented by virtual laboratory sessions that will expand your knowledge of key concepts and best practices in analytic cytometry, cell sorting, experiment design and analysis. With over 35 years of combined experience, Bridget McLaughlin (Technical Director) and Jonathan Van Dyke (Technical Manager) of the UC Davis Flow Cytometry Shared Resource provide the foundation for this excellent learning experience!

The course includes daily interactive sessions, such as live data analysis, a live panel design workshop, trivia, and question/answer sessions to give students the best online experience and instructive time at the cytometers using live streaming videos. Lectures from our vendor partners will provide brief “bite-sized” discussions to familiarize you with the latest flow cytometry technologies. Please make plans to join us for this affordable training opportunity. The course is offered live and online in the Pacific Time Zone.

**Register here**

Additional details and tuition rates are described in the registration page. Discounted tuition rates are offered to registrants from UC Davis sister NCI-designated Cancer Centers.

**Email**

Contact [Bridget McLaughlin](#) for any questions.

[Subscribe](#) to our email list.

Visit the [Flow Cytometry Shared Resource](#) website to learn more about them.

[Visit FCSR](#)

## Biostatistics Shared Resource Office Hours

The **Biostatistics Shared Resource (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.

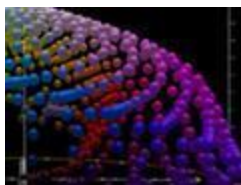
For more information, contact [Dr. Lihong Qi](#).

[Schedule an appointment](#)

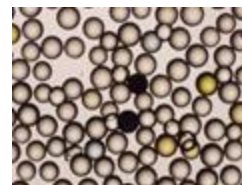
## Explore all the Shared Resources



**Biorepository  
(BRSR)**



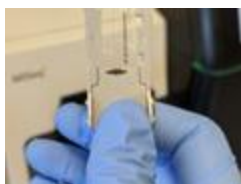
**Biostatistics  
(BSR)**



**Combinatorial Chemistry  
and Chemical Biology  
(CCCBSR)**



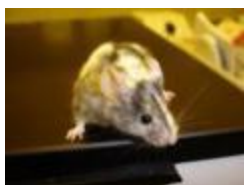
**Flow Cytometry  
(FCSR)**



**Genomics  
(GSR)**



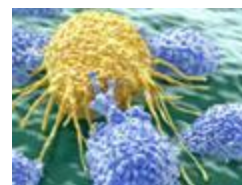
**In vivo Translational  
Imaging  
(IVTISR)**



**Mouse Biology  
(MRSR)**



**Molecular Pharmacology  
(MPSR)**



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

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# Notice to All NIH-Funded Investigators

Shared Resources are funded by the UC Davis Comprehensive Cancer Center Support Grant (CCSG) awarded by the National Cancer Institute (NCI P30CA093373). Publications that have utilized facility resources, services or scientific data generated using shared resources should acknowledge the shared resource(s) or the assistance provided by their staff and cite the CCSG (NCI P30CA093373). An electronic copy of the publication should also be sent to the directors of the SRs that were used.

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