

Biostatistics Shared Resource (BSR)

Min Zhang, MD, PhD²
Director

Mission and Leadership



MISSION

BSR provides a centralized resource of biostatistical expertise for the experimental design and analysis of basic, translational, clinical, and population-based cancer research

To fulfill this mission, **BSR**:

- Initiates active participation during grant preparation in the areas of cancer etiology, genetics, detection, and prevention
- Partners on research design, qualitative, and quantitative protocol features
- Incorporates existing and develops new statistical methods
- Provides guidance on sample size requirements

LEADERSHIP



Min Zhang, MD, PhD²
Director



Wen-Pin Chen, MS
Manager



- **Study Design, Data Analysis, and Interpretation**

- Study design and sample size calculations
- Data management and quality control
- Data analysis, interim analyses, interpretation of findings, treatment of missing data

- **Develop & Maintain Statistical Quality Control Procedures**

- Statistical review of research protocols and grant preparation
- Evaluate protocols for clear statements of objectives, background and purpose
- Elements for evaluation include drug information, staging criteria, eligibility criteria, stratification or randomization schemes, treatment plan, monitoring of toxicities and dosage modification, and criteria for evaluation and endpoint definitions



More information regarding all services can be found at: <http://cancer.uci.edu/bsr>



- **Omics Data Analysis**

- Genomic (SNP, WGS, WES) data analysis (including GWAS, PheWAS)
- Transcriptomic (bulk/single cell RNA-seq) including eQTL
- Epigenetics (ChIP-seq; ATAC-seq)
- Single-cell multi-omics
- Functional (pathway, GO)
- Metabolomics

- **Consulting**

- Bioinformatics
- Database
- Machine Learning
- Statistical genetics and genomics

- **Research Computing**

- HIPAA-compliant computational needs, cloud computing technologies
- Setup and run computationally intensive jobs on Cloud
- Programming assistance
- Database design, creation and management



BigCARE 2024 Summer Workshop

bigcare.uci.edu

The Chao Family Comprehensive Cancer Center (CFCCC) of the University of California, Irvine is pleased to announce the annual NCI-funded workshop on "Big Data Training for Cancer Research" (BigCARE) on July 14-26, 2024. This intensive workshop will help cancer researchers develop skills for managing, visualizing, analyzing, and integrating various types of omics data in cancer studies. The workshop is open to oncologists, faculty, postdoctoral researchers, and graduate students. With supplemental funding from NIAID, we also welcome researchers in infectious & immune-mediated diseases. Individuals from underrepresented groups are especially encouraged to apply. The workshop will be held on-site at the University of California Irvine, in Irvine, CA. There is **no cost** for registration, tuition, food, and lodging! Travel scholarships would be available for a limited number of participants. We will continuously review applications weekly until all spots are taken. The latest application deadline is Friday, March 1, 2024. Please check our website for more information.

The BigCARE Team

When:
July 14-26, 2024

Where:
University of California,
Irvine (UCI)

Website:
bigcare.uci.edu

Contact:
bigcare@uci.edu

Selected 2024 Publications



CFCCC INVESTIGATOR(S)	PROGRAM	PUBLISHED JOURNAL	YEAR
Christine McLaren, PhD Fa-Chyi Lee, MD Farshid Dayyani, MD, PhD Jason Zell, DO, MPH Jennifer B Valerin, MD, PhD	CC BIDD SPT CC SPT	J Natl Compr Canc Netw	2024
Daniela Bota, MD, PhD	BIDD	Neuro-oncology	2024
Christine McLaren, PhD Xiaolin Zi, PhD	CC CC	Clin Transl Med.	2024
Argyrios Ziogas, PhD Gelareh Sadigh, MD	CC CC	Cancer	2024
Farshid Dayyani, MD, PhD Fa-Chyi Lee, MD	SPT BIDD	Oncologist	2024
Helen Ma, PhD Pankaj Gupta, MD Wendy Cozen, PhD	CC SPT CC	Blood Adv.	2024



Community Engagement / Catchment Area

- Continue to support the development of grant applications / manuscripts that focus on the catchment area and result from partnerships developed through CE efforts;
- Continue to provide consulting services on bioinformatics, biostatistics, database access, data integration;
- Expand new services on machine learning, statistical genetics and genomics, research computing to facilitate interdisciplinary collaborations in catchment area.

Enhancing Diversity, Equity and Inclusion

- Offer scholarships for underrepresented trainees to attend the NCI-funded big data workshop;
- Develop new machine learning methods to improve the analysis of data from minority populations.

Education and Training

- Organize annual NCI-funded summer workshop on “Big Data Training for Cancer Research”;
- Offer regular need-based workshops on basic statistical analysis, workflow for sequencing data analysis; FAIR computational workflows on the cloud;
- Organize regular seminar series to provide education opportunities for trainees.

Thank You
