**Biomedical Research Core Facilities**

The Biomedical Research Core Facilities (BRCF) serve the elite multidisciplinary research at Westlake University that was birthed with high ambitions. With a can-do attitude, the BRCF seeks to become an enabling mechanism by providing technical solutions that are beyond the capabilities of any individual laboratories, removing barriers to the implementation of complex and sophisticated scientific programs, thus allowing researchers to think big and tackle the most daunting challenges in biomedical research.

As one of the earliest core facilities in operation at Westlake, the BRCF is currently consisted of eight facilities, including the CryoEM, Flow Cytometry, General Equipment & Autoclave Service, Genomics, High-throughput, Mass Spectrometry & Metabolomics, Microscopy, and Phenotypic Analysis Core Facilities.

After the completion of the university campus at Yungu, the BRCF will further improve and strengthen its capabilities, delivering high-quality, high-efficiency, and professional services. The facilities will work closely with their counterparts at other colleges as well as research laboratories to actively participate in technological and scientific research, and in the meanwhile make the latest technological innovations available to Westlake researchers, which in turn will greatly facilitate the translation of new technologies. The BRCF will strive to build a world-class research support system, a platform for talent training, and an incubator for multidisciplinary collaborations.

**Laboratory Animal Resources Center**

The Laboratory Animal Resources Center (LARC) provides intellectual and technical services for Westlake and non-Westlake investigators, these services include optimized animal care and welfare, rederivation, generation of genetically modified mice, speed expansion or strain rescue via in vitro fertilization and/or embryo transfer, mouse line cryopreservation and resuscitation, animal model development and professional support in the broad field of laboratory animal science. LARC interacts closely with the IACUC (Institutional Animal Care and Use Committee) to satisfy guidelines for the care and use of animals used in research.

At Westlake University, Yungu campus, LARC has 8,200 square meters of space devoted to animal breeding, holding and animal experiments. LARC will be highly involved with research, teaching and training, and oversight the care and use of laboratory animals. The missions of LARC are to provide quality care for all animals used at Westlake University, to assist investigators in achieving their research goals, and to maintain the highest standards of humane care of animals used in research.

**Westlake Center for Micro/Nano Fabrication**

Westlake Center for Micro/Nano Fabrication is equipped with advanced micro/nano fabrication facilities and operated by a group of experienced engineers. The center houses Suss mask aligner, Raith e-beam lithography （EBL） system, Samco plasma etching systems, ULVAC thin film deposition tools. The equipment endows fabrication capabilities for silicon and organic micro/nano devices that can fulfill the requirements from physics, chemistry, electronics, photonics, biomedicine, and other multidiscipline. Besides the traditional fabrication tools mentioned above, the center owns focused helium ion nanofabrication, femtolaser writing and laser direct writing tools and offers a lot of flexibility for creating novel complex 3D Nano-complex for both scientific research and industry prototyping projects.

With the future expansion of the center at Yungu campus of Westlake University, it will fully expand its electronics research capabilities by merging ion implanter, stepper scanner, materials growth and device fabrication tools for III-V and II-VI semiconductors, and its structure characterization to sub-nanometer resolution for 3D nano complex.

Westlake Center for Micro/Nano Fabrication will support the university to become one of the first-tier universities in the world by substantially exploring the center’s hardware and intellectual resources and being actively involved in the university’s research, development, and educational programs.

**Instrumentation and Service Center for Physical Sciences**

Initiated by the School of Science, the Instrumentation and Service Center for Physical Sciences (ISCPS) hosts state-of-the-art facilities not only to meet routine analysis needs, but also to collaborate with our faculty and researchers in developing novel instrumental technologies or methodologies that address problems emerging from dynamic, cutting-edge research. ISCPS has currently installed a series of instruments covering X-ray diffraction, surface physics analysis, cryogenic measurement, electron microscopy and physical property characterization, which together provide strong support for the development of Westlake University.

**Instrumentation and Service Center for Molecular Sciences**

The Instrumentation and Service Center for Molecular Sciences (ISCMS) is a shared-use core facility at Westlake University to provide a collaborative multi-disciplinary research environment to support of the creation and evolution of world-class molecular sciences and technical expertise, for the Westlake research community as well as the larger community of external researchers both from academia and industry. ISCMS is composed of four professional analytical laboratories: Spectroscopy Lab, Magnetic Resonance Lab, Chromatography and Mass Spectroscopy Lab, and In-situ Chemical Analysis Lab, focusing on the exploration of molecular structure, intra- and inter-molecular interactions, and molecular dynamics. The characterization service covers organic and inorganic components and structures analysis, qualitative and quantitative measurements of drugs and polymers, determination of the structure of functional materials and the conformation of polypeptides and biomolecules, stability and dynamics analysis, metabolomics analysis of drugs or clinical markers, inspections of quality for water, food, or drug, as well as detection of environmental pollutant etc. The focus of ISCMS technical team has been not only to serve a broad, diverse, international set of researchers who are focus on pioneering scientific innovations, but also to develop specialized methodologies, protocols, instrumentation, and expertise to help simulate, characterize, and analyze novel molecules, materials, and systems going beyond conventional approaches.

**Westlake University High-Performance Computing Center**

Westlake University High-Performance Computing Center (WU-HPCC) provides advanced computing and data analysis service for cutting-edge scientific and engineering research for Westlake University research community. WU-HPCC now hosts three HPC clusters (scientific computing, AI application, and cryo-EM data analysis), including ~12000 CPU cores, ~570 GPU cores (A100, Tesla V100, and RTX 2080TI), and ~14PB parallel storage with 56/100Gbps Infiniband network. Frequently used software and production environment has been setup on all clusters: Guassian, VASP, Tensorflow, PyTorch, RELION, GROMACS, GATK, and gcc/g++, gfortran, Intel compiler, java, python, perl, openmpi et al. The computational resources in WU-HPCC are open to all Westlake University faculty, students, and staff.