# **RESOURCES & ENVIRONMENT (R&E)**

**USC/College of Pharmacy “Boilerplate” Information for Sponsored Award Proposals**

*The following includes ‘boilerplate’ (basic) information about the University of South Carolina (USC) and the College of Pharmacy (COP):*

* *Use only what you need*. *Include only the information that is pertinent to your proposal* (not the whole thing). Note that there is some information overlap between sections.
* Be sure to add specific department, lab, equipment, and collaboration information as needed for your proposal and edit out what is not relevant to it.
* Other USC units and external institutions/organizations should be able to supply you with their R&E information upon request.
* Overview and contact information about additional COP centers and programs is at: https://sc.edu/study/colleges\_schools/pharmacy/

*Updated Summer 2024 for formatting and Fall 2023 for content (Arial 11 pt.)*

# **The University of South Carolina (USC)**

**The University of South Carolina (USC)** was established in 1801 and is a full-service, state- assisted research university that includes the 358-acre Columbia campus and seven regional campuses, with a total full-time student body population of more than 35,000 in Columbia and 50,000 overall. Located in the capital city of Columbia in the geographic center of the state, USC's main campus is part of a thriving metropolitan area of more than 800,000 inhabitants. USC offers a broad spectrum of educational opportunities with 14 colleges and schools that encompass 324 undergraduate and graduate degree-granting programs. USC confers 25% of all bachelors, graduate, and professional degrees awarded at institutions of higher education in South Carolina.

**USC Research Capacity.** In fiscal year 2024, USC was awarded over $300 million in extramural sponsored award funding, 72% percent of which was for research. USC is listed in the Carnegie Classification of Institutions of Higher Education as a Very High Research Activity University.

The University provides researchers with a full range of grant and contract-related services through its Sponsored Awards Management and Grants and Funds Management offices. USC’s Office of Research Compliance oversees the institutional review processes for human and animal subjects as well as disclosure and management of financial conflicts of interest and assists with scientific misconduct regulation and export controls.

**The SC SmartState Centers of Economic Excellence** **program** was established by the state's General Assembly in 2002 with $180 million of non-tax revenue funds generated from the South Carolina Education Lottery. These funds, along with legislatively mandated dollar-for-dollar matching non-state funds, provide support for hiring world-class researchers who serve as the endowed chairs of the SmartState Centers. The 51 Centers are grouped into six industry- focused Smart Clusters to facilitate engagement with business, students, potential faculty, and the public. Each Center includes one or more endowed chair, research infrastructure, technical staff, and sustainable funding sources. USC is home to 27 SmartState Centers, including 18 that are headquartered at USC's Columbia campus and eight within which USC actively collaborates working with other SC research institutions.

**USC Libraries.** Thomas Cooper, the University’s main library, is centrally located on the Columbia campus, and the School of Medicine library is a 15-minute drive from central campus. Both libraries maintain an extensive collection of health-related resources, including books, journals, and indices. Access to online databases and full-text journals is available through the Thomas Cooper Library Web page.

**USC’s Division of Information Technology (DoIT)**, under the direction of the Vice President for Information Technology and Chief Information Officer, oversees centralized and distributed computing and telecommunications services for academic, research, and administrative use to meet the needs of USC faculty, staff, and students. DoIT provides the USC community with computing, voice, and data communications, networking, data security, video transport, information technology training, Web services, customer support, desktop and server support, installation and maintenance of IT infrastructure, policies and procedures assistance, PC labs, software licensing and distribution, IT planning, applications development and support, and operational systems. The Columbia campus is covered by wireless service. USC has a licensing agreement with Microsoft that includes 5TB of secure cloud storage space for every faculty and staff member on OneDrive. Microsoft has signed legal agreements with the University that hold them liable for the security and protection of data stored on OneDrive. OneDrive provides USC researchers with the capability to share data and results with external partners by emailing them a link to securely download the data.

# **The College of Pharmacy**

**The College of Pharmacy** was founded in1866 and was one of the first state-supported pharmacy schools in the nation. COP Doctor of Pharmacy program is accredited by the Accreditation Counsel of Pharmacy Education (ACPE). In addition to ACPE accreditation, the college has received accreditations from the American Society of Health-Systems Pharmacists (ASHP) and the American Association of Poison Control Centers (AAPCC). The South Carolina Commission on Higher Education has also approved the Pharm.D. program. COP’s vision is to empower students, researchers, educators, and partners to transform healthcare through comprehensive pharmacy education, scholarly excellence, strategic collaborations, and entrepreneurial advancements, thereby enriching local, national, and global communities. COP strives to prepare the next generation of innovative and collaborative pharmacists and health scientists while pioneering clinical, entrepreneurial, and research endeavors to improve health outcomes for residents of South Carolina and beyond.

**COP Degree Programs.** COP offers a pre-pharmacy undergraduate degree program, including a Bachelor of Science (BS) in Pharmaceutical Sciences, and also offers a graduate Doctor of Pharmacy (PharmD) program. The College also offers two certificate programs in Penicillin Allergy Assessment and Skin Testing and Clinical Teaching. COP also offers Sterile Compound Training. The college also offers postgraduate training opportunities including three residency programs and one fellowship program.

**COP Academic Departments.** College of Pharmacy is the home of two academic departments with faculty who are renowned for clinical innovation, patient care, pharmacological research and for empowering students to transform health care globally. These two departments are the Clinical Pharmacy and Outcomes Sciences (CPOS) and Drug Discovery and Biomedical Sciences (DDBS).

**COP Research Centers and Institutes.** In addition to its academic departments, COP has four state of the art research centers including: COBRE Center for Targeted Therapeutics, Kennedy Pharmacy Innovation Center, Palmetto Poison Center, and Peromyscus Genetic Stock Center.

**COP SmartState Centers.** The College of Pharmacy is home to two SmartState Centers for Economic Excellence. These are the Center for Translational Cancer Therapeutics and Center for Medication Safety. These centers seeks to discover new drug targets and develop novel drugs and approaches for cancer treatment, and to study long term effects of medication.

**COP Faculty Offices.** Each faculty member has a private office with a printer and personal computer with Microsoft Office and additional software relevant to his or her teaching and research, Internet access, telephone, and general office support. Faculty members are furnished with additional office and laboratory space as needed for project support

**COP Computing Resources.**

**COP Computing Security and Capacity.**

Along with standard lap-tops, we have two custom-built bio-informatics workstations, each consisting of a 12-core, 2.7GHz Mac Pro with 64G Ram and 50TB of external storage space. Software includes BWA, the GATK suite from the Broad institute, CLC genomics workbench, Partek Genomics Suite, and many other molecular biology, bioinformatic, and statistical software packages. The computers are connected to the departmental network and the internet, with access to the Thomas Cooper Library and its electronic journal holdings. All laboratory personnel in the Cancer Genetics laboratory have their own computer, with remote access to the bio-informatics workstation. As well, the University of South Carolina High Performance Research Computing Infrastructure (<http://www.sc.edu/about/offices_and_> divisions/division\_of\_information\_technology/rci/) maintains several clusters located throughout the university, with high performance research clusters located in the University data center. Bio-informatics software (<http://zion.cec.sc.edu/wordpress/scientific-applications/>) is deployed on a CentOS machine (bolden.sc.edu), which has 15 nodes, 20 cores per node, 2.8GHz, each with 64GB RAM, and 100TB of attached storage space. These resources are available to UofSC researchers free of charge.

**COP Research Capacity.** College of Pharmacy staff members assist faculty and departmental staff with proposal development and post-award related activities that promote and support efforts to increase grant and contract funding to the College. Primary research disciplines include: cancer, neuroscience, addiction and behavior, dig data, drug repurposing and medication safety, rural health disparities, infectious disease, metabolic dysregulation and obesity, and pharmacoeconomics.

**Intra-University Collaboration.** COP closely collaborates with the five other schools and colleges of health-related professions that form USC’s Health Sciences Division, including the Arnold School of Public Health, College of Nursing, School of Medicine - Columbia, College of Social Work, and the more recently established School of Medicine-Greenville, which was fully accredited in 2015. Investigators from these academic units are actively involved in interdisciplinary research, training, community engagement, and service activities with COP faculty members.

**Federal Funding to USC and the College of Pharmacy.** The University of South Carolina received $180 million in federal grant and contract awards, or 74% of its total sponsored award funding from all extramural sources in fiscal year 2023. USC’s College of Pharmacy received $14.8 million in federal awards and $17.4 million in total sponsored award funding. NIH provides %85 of the School’s federal grant and contract funding, followed by funding from other federal agencies, including HRSA, DOD, NSF, and the VA.

**Health Sciences South Carolina (HSSC)** was founded in 2004 as the nation's first statewide health data and research collaborative whose mission is to transform South Carolina's public health and economic well-being through research. Its members include the state’s largest research-intensive universities (the University of South Carolina, the Medical University of South Carolina, and Clemson University) and the state’s largest healthcare systems (AnMed Health, McLeod Health, MUSC Health, Prisma Health, Self Regional Healthcare, and Spartanburg Regional Healthcare System). HSSC also provides financial support to South Carolina’s SmartState Centers of Economic Excellence that are led by world-class researchers. Research conducted in these centers is leading to new products and services with the potential to improve public health while creating economic development opportunities and new jobs in the state.

**COP Core Facilities.** The COP contains four core facilities which aid in a variety of research tasks in order to streamline research and provide technological expertise to researchers. The **Drug Design and Synthesis Core Facility** advises and assists researchers with rational drug design, high-throughput screening, and chemical synthesis and provides resources for computational structure, ligand-based design, and synthetic organic chemistry. This facility is equipped with a synthetic chemistry laboratory, automated flash chromatography system, protein technologies, compound screening, and state of the art molecular modeling software. The **Functional Genomics Core Facility** offers resources and solutions for conducting genomics, transcriptomics, epigenomics, and functional genomics projects. This facility provides a variety of services including: bioinformatics, microarray hybridization, PCR, custom epigenomics applications, viral vectors, and CRIPR-CAS9sgRNAs and RNAi/shRNAs: knockdown of individual genes and functional screening of sgRNA and shRNA libraries for target identification. The **Microscopy and Flow Cytometry Core Facility** advises, trains, and assists investigators with advanced microscopy and flow cytometry procedures, both on the Columbia campus and at the School of Medicine Columbia campus. Flow Cytometry instrumentation includes the BDLSR II Flow Cytometer with HTS Option, Beckman Coulter FC500 Flow Cytometer, and BD FACS ARIA Cell Sorter. The Microscopy Core hosts a wide variety of biological imaging technologies for researchers including Leica AS MDW Live Cell Imaging System, two Leica DM IRE2 Mircrosystems, three Carl Zeiss Axiovert 200 Microscopes, Olympus IX81 Fluorescence Microscope, Carl Zeiss LSM700 Confocal Microscope, and ZEISS PALM System for Laser Microdissection.

**Organoid Core:** The Organoid Biobank, overseen by Dr. Buckhaults, is located in room 512 of the Coker Life Science Building. It is approximately 525 sq. ft. It has been certified as a BSL-2 area with an approved CRISPr-Cas9 genome editing protocol (protocol #300163). The facility contains two Class II Type A2 biological safety cabinet/tissue culture laminar flow hoods, four water jacketed CO2 incubators with HEPA filters, Zeiss Axiovert 40 C inverted microscope with camera, a Thermo Scientific IEC CL31 multispeed centrifuge, Fluroskan Ascent Microplate Fluorometer, Thermo Scientific 37C water bath, refrigerator, frost-free freezer, -80C freezer, and liquid nitrogen storage system. Additionally, there is a dedicated lab bench (10’x2’) for surgical tissue processing adjacent to the tissue culture room.