# UNIVERSITY OF FLORIDA

University of Florida (UF) is a land-grant research university located on a 2,000-acre campus in Gainesville, Florida. It is the largest university in the Southeastern United States and is the seventh largest single-campus university in the United States with more than 55,000 students enrolled. UF has more than 4,000 faculty members with distinguished records in teaching, research, and service, including 45 faculty elected to the National Academy of Sciences, Engineering, the Institute of Medicine, or the American Academy of Arts and Sciences. The University is home to 16 academic colleges and more than 150 research centers and institutes. UF is a member of the Association of American Universities and is considered a Research Institution as designated by the Carnegie Commission on Higher Education. UF faculty conduct nearly $1 billion in research annually, placing UF among the nation’s leading institutions. There are currently nearly 8,000 active UF research projects. In addition, UF has been designated as the state’s preeminent institution by the Florida Legislature. UF Preeminence is the university's effort to become an international leader in more than two dozen areas, including health, agriculture, computing and education.

The UF entities, Centers, Institutes, and support offices most relevant to the proposed project are described below.

## UF OFFICE OF RESEARCH

UF accounts for about 40 percent of sponsored research performed in the State University System of Florida. The Office of Research is responsible for all proposal submissions, grant and contract negotiation and acceptances, and the execution of other research-related agreements. The Office of Research also manages and supports all research compliance obligations related to fiscal, human subjects, animal use, export control, conflict of interest, responsible conduct of research, and research misconduct. The Office of Research invests in research programs by providing resources and overseeing internally funded seed programs and initiatives. The Office of Research is also responsible for financial monitoring, invoicing, reporting, and collections. It also provides general guidance related to award management. Support for faculty also includes identifying external funding opportunities, facilitating industry outreach, supporting complex proposal development, and connecting researchers to funding agencies. The Office of Research manages research-centric shared resources that include Animal Care Services, the Interdisciplinary Center for Biotechnology Research, and various interdisciplinary centers and institutes whose cross-disciplinary missions include genetics, water, climate, informatics, smell and taste, and emerging pathogens.

### UF Graduate School

More than 12,000 graduate students at UF pursue master, specialist, and doctoral degrees in more than 150 fields of study, generally under the supervision of more than 2,800 members of the University’s Graduate Faculty. Graduate education at UF follows a decentralized model: most elements of the various graduate programs and activities are designed, implemented, managed and monitored by academic units in accord with the principles and traditions of their fields. Most academic units are administratively located in a college, and almost all of the colleges identify an Associate Dean as being responsible for graduate education and closely related activities. Graduate Coordinators are faculty members charged with the key managerial responsibilities for program delivery.

### Office of Postdoctoral Affairs (OPA)

The Office of Postdoctoral Affairs serves as a central source of general information and opportunities for postdocs. It provides a variety of resources and programming for postdoctoral associates including: monthly Postdoc Development Workshops; Grant-Writing Workshops; annual New Postdoc Orientation; annual Postdoc Research Symposium; and a recognition program for outstanding postdoc mentors through the Postdoc Mentoring Awards Program.

### Career Connections Center

The center provides services and resources to help students explore career paths, search employment opportunities, find career tools and more. The center introduced Gator CareerLink to: connect students with tools to help them choose or change their major; search for internship and job opportunities; explore organizations currently recruiting students from discipline(s) of interest; customize and review virtual mock interviews and find career-related events, programs and workshops for students and alumni.

### UF Libraries

The UF libraries form the largest information resource system in the state of Florida and serve every college and center at UF, including the Institute of Food and Agricultural Sciences and the Health Science Center. UF’s libraries consist of seven libraries; six of which comprise the George A. Smathers Libraries. The Smathers Libraries actively collaborate with the Legal Information Center, part of the Levin College of Law.

### Office of Technology Licensing

UF Innovate Tech Licensing works with innovators, entrepreneurs, investors and industry partners facilitates technology transfer through patenting, licensing, startups, and business incubation.

## CLINICAL RESEARCH AT UF

### UF HEALTH: ONCOLOGY PATIENT SERVICES

UF Health is a private, not-for-profit hospital system based in Gainesville.

With campuses in Gainesville and Jacksonville, UF Health is an entity consisting of the six UF Health Sciences Colleges, the UF Health Shands family of nine hospitals (below), nine research institutes, a host of physician medical practices and outpatient services throughout north central and northeast Florida, more than 800 resident trainees and more than 1,300 students.

* UF Health Shands Hospital
* UF Health Shands Cancer Hospital
* UF Health Shands Children’s Hospital
* UF Health Heart & Vascular Hospital
* UF Health Neuromedicine Hospital
* UF Health Shands Rehab Hospital
* UF Health Shands Psychiatric Hospital
* UF Health Leesburg Hospital
* UF Health The Villages® Hospital

UF Health encompasses the colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions and Veterinary Medicine; the UF Health Shands hospitals; UF Health Jacksonville medical center; UF Health North; and an academic campus in Jacksonville that is home to the UF College of Medicine – Jacksonville and includes degree programs offered by the colleges of Nursing and Pharmacy. It also includes primary care and specialty practices throughout North Central and Northeast Florida, as well as Southeast Georgia.
UF and UF Health attract skilled health professionals and staff from across the country. The dynamic university environment encourages business, career, and community growth and development. The UF Health network of hospitals and physician practices manages more than 3 million inpatient and outpatient visits each year and serves patients from all 67 Florida counties, from around the nation and from more than 30 countries. UF Health is a leading tertiary-care hospital and a comprehensive academic health center.

In 2019, UF Health was responsible for $400 million of UF research funding and nearly $20 million in licensing revenue.

#### UF Health Shands Cancer Hospital

The UF Health Shands Cancer Hospital maintains a 500,000 ft2 facility that houses 192 private patient beds for diagnostic and therapeutic oncology services. The UF Health Shands Cancer Hospital offers a variety of inpatient services including bone marrow transplantation, adult thoracic surgery (excluding lung transplantation), and adult otolaryngology (cancer only). The cancer hospital’s medical and outpatient services include an outpatient bone marrow transplant clinic and full spectrum radiological capabilities.

#### UF Health Neuromedicine

UF Health Neuromedicine Hospital is built around the needs of the patient is designed with safety and efficiency in mind. Patients have streamlined access to highly specialized, comprehensive outpatient treatment options and inpatient services in one location for neurological conditions. They also benefit from outstanding faculty physicians and clinical experts collaborating in a world-class medical facility designed to meet their unique needs, with improved efficiency and operations as well as a welcoming, accessible design. This state-of-the-art facility has seven neuromedicine operating room suites complete with intraoperative MRI capabilities, a 48-bed neuromedicine medical/surgical unit and a dedicated 48-bed neurointensive care unit. UF Health Neuromedicine Hospital includes one of the largest complements of neurologists and neurosurgeons in the country who have pioneered leading-edge treatments in neuromedicine.

#### **Davis Cancer Pavilion** and UF Health Medical Plaza

The UF Health Davis Cancer Pavilion and UF Health Medical Plaza house several outpatient cancer facilities such as Radiation Oncology, Adult Hematology and Oncology, Adult Outpatient Infusion (chemotherapy) Center and the Skin Cancer Center. The 113,288 ft2 pavilion offers a full range of radiation treatment services for almost all kinds of tumors at almost all body sites. A variety of machines provide patients with external-beam radiation therapy, a common technique used to treat malignant tumors or benign lesions through the delivery of high doses of x-rays or electrons.

A linear accelerator is a device that generates high-energy x-rays and electrons for cancer treatment. The high-energy x-ray beams penetrate deep into the body and spare more superficial tissues, whereas electrons penetrate only superficially and spare deeper structures. X-rays and electrons of different energies allow the radiation oncologist to customize the treatment according to a patient's specific needs. The linear accelerator is capable of rotating around a patient lying on a treatment couch, treating the tumor from several angles.  This allows the delivery of high doses of radiation to the tumor while reducing the dose to the normal surrounding tissues.

At Davis Pavilion, UF medical oncologists, certified by the American Board of Hematology Oncology, provide patients with consultations, evaluations and treatments for adults, offering specialized healthcare services, including screenings, consultations, second opinions, periodic re-evaluations and continuing care. A renovated outpatient and infusion suite, with six chairs reserved for clinical trials, serves ~3,000 new medical oncology patients/yr and 30,000 return visits. Offices of clinical research coordinators are immediately adjacent to support clinical trials.

#### **UF Proton Therapy Institute**

UF Proton Therapy Institute, staffed by UF faculty, is located in Jacksonville and allows convenient access to national and international patients. The 98,000 ft2 Institute offers proton and conventional radiation therapy with dedicated areas for research coordinators. The Institute has a focus on prostate cancer and childhood brain tumors as well as delicately situated tumors of the CNS, head and neck and base of the skull.

#### UF Clinical and Translational Science Institute

At the UF Health Science Center, the Clinical and Translational Science Institute (CTSI) UF Clinical Research Center (UF CRC) is considered to be UF “research space”. The CRC provides services for studies involving diverse diseases and age groups. The CRC’s highly experienced research staff includes registered nurses, research coordinators, a research dietitian, investigational pharmacists, research support and administrative personnel. Initial consultations for all services are offered at no cost. If a study requires special or extended involvement of staff, cost may be assessed.

### HUMAN SUBJECTS RESEARCH AT UF

#### UF Institutional Review Boards

The UF Institutional Review Boards (IRBs) are charged with protecting the rights and welfare of participants in clinical trials and other human subjects research studies. UF IRBs review all research involving human subjects to ensure the welfare and rights of research participants are protected as mandated by federal and state laws, local policies, and ethical principles. Faculty, staff, and students at the UF, UF Health, and/or the North Florida/South Georgia Veteran’s Health System must receive approval for any human subjects research from a UF IRB before conducting the research. This includes research conducted off site by University faculty and staff when acting as University employees or in connection with their University affiliation.

#### UF Office of Clinical Research

The UF Office of Clinical Research (OCR) is responsible for developing the rules, tools, and training for clinical research for which UF serves as an investigative site. It oversees and coordinates development and implementation of institutional policies, standards, provides training programs; develops research management tools; facilitates sharing of best practices and use of consistent workflow; and produces annual reports, metrics, and other data to evaluate research performance.

#### UF Health Cancer Center Clinical Research Office

The UF Health Cancer Center (UFHCC) Clinical Research Office (CRO) provides resources and support in Clinical Protocol development (concept development, protocol startup, activation and management, regulatory affairs, screening recruitment of patients, support and coordination of subject interventions, interfacing with investigational pharmacy and clinical services, data abstraction, adverse event reporting, information dissemination and serving as liaison with sponsors and regulatory bodies) and quality control for the efficient conduct of **cancer-relevant** clinical research. Through the enterprise-wide electronic Clinical Trials Management System, OnCore, the CRO monitors and ensures timely protocol activation, progress and completion of cancer-relevant clinical trials. The CRO provides quality assurance, education and training to augment data integrity and subject safety. The office also administers the UFHCC Data and Safety Monitoring Plan that delineates the structure and responsibilities of the Data Integrity and Safety Committee which oversees and reviews the safe conduct of cancer clinical research at the UFHCC. The goal of the CRO, achieved via centralized management, reporting and quality assurance functions, is to facilitate the conduct of high-quality cancer-relevant clinical research.

#### UF COM Office for Diversity and Health Equity (ODHE)

The UF COM ODHEsupports work on health disparities, health equity, and the inclusion of diverse communities in clinical research to address gaps in the quality of health and health care across racial, ethnic, and socioeconomic groups. This office provides vision, leadership, direction and oversight of this initiative, including enhancing existing services and programs, providing a new vision for education and community outreach/engagement, and increasing participation in clinical trials, especially for minority populations. ODHE is currently building infrastructure to strengthen and enhance authentic, meaningful, collaborations within UF Health, the community, and across community-based organizations, health systems and clinics, and faith-based and civic organizations.

In 2018, the National Cancer Institute awarded a five-year, $16 million grant to establish a cancer health equity center at the UF and partner institutions. The Florida-California Cancer Research, Education and Engagement, or CaRE2, Health Equity Center is an interdisciplinary, intercollegiate effort involving researchers from UF, Florida A&M University, and the University of Southern California. The center brings together researchers from the two states with the highest cancer incidence and mortality to create a bi-coastal minority cancer research and training center. Florida and California also have uniquely rich and heterogeneous populations of Blacks and Latinos, who are the focus of this study.

#### Community Engagement

##### Citizen Scientist Program

Adult and adolescent Citizen Scientists offer a lay perspective in proposal review, patient recruitment strategies, and in other areas where stakeholder engagement may be needed. The program developed an online educational curriculum to help train new Citizen Scientists who join the group at UF or elsewhere. The curriculum is broken out into seven topical modules, each of which contains several videos that are accompanied by resources to aid learning. Each didactic presentation is followed by a brief assessment to gauge comprehension of the topic presented. All modules include videos of Citizen Scientists offering insights from their work and guidance for new Citizen Scientists. These materials are offered as an Open Educational Resource at http://citizenscientist.ctsi.ufl.edu/. An instructor guide has been created as a companion resource to the modules, and contains additional elements that will help learners apply lesson content in real-world settings. The raw curriculum materials are available upon request and may be ported into an online learning management system to enhance structure and compliance.

##### UF HealthStreet

UF HealthStreet Gainesville is a new state-of-the-art recruitment and community engagement facility with almost 12,000 ft2, faculty and staff offices, a lobby, a large completely wired meeting room, a conference room, two conference/community rooms with multimedia, a professional kitchen, accessible restrooms and 16 interview and interventions rooms. UF HealthStreet is close to the UF Health Science Center and is easily accessible to the greater Gainesville. UF HealthStreet is a one-stop portal of entry for linking and navigating underrepresented populations (URPs) to social (food pantry, housing, criminal justice, etc.), medical and psychiatric (physicians, nurses and nurse practitioners, drug treatment, blood pressure, glucose screenings, etc.) services, and to research opportunities.

UF HealthStreet relies on Community Health Workers (CHWs) for engagement and is complementary to planned national self-guided participant registries.

#### Human Subjects Training for Faculty and Staff

The UF is committed to protecting the rights and welfare of participants in clinical trials and other human subject research studies. To meet the standard of excellence set forward by the UF, every UF Investigator must give assurance that he/she has read the required human subject protection documents. Before working with human subjects in research at the UF, the Institutional Review Board (IRB) requires registration, review, and approval. When human subject work is part of a sponsored project, an IRB approval must be obtained before funds can be released. UF IRBs review all research involving human subjects to ensure the welfare and rights of research participants are protected as mandated by federal and state laws, local policies, and ethical principles. The Division of Sponsored Programs (DSP) ensures that the sponsored project is referenced by the funding source and title on the IRB application. Further, if at any time during the life of the sponsored project, the IRB protocol has lapsed or expired, the project funds will be stopped until an IRB approval is obtained. The UF has three IRBs and uses the services of Western IRB (WIRB) for industry-sponsored clinical trials. While all four IRBs are governed by the same set of federal rules, each has its own forms and procedures for review.

As part of the institutional goal of maintaining training within the clinical research community at UF, UF Health has adopted the web-based modules within the Collaborative Institutional Training Initiative (CITI) for certification in Human Subject Protection (HSP) Training. These modules are part of the ongoing development of a comprehensive educational and training program for researchers that includes annual training requirements that can be fulfilled in different ways. Depending on the type of research undertaken by an investigator, additional training may be required. For example, the IRB requires additional training for anyone involved in pediatric research. Similarly, studies involving an investigator-initiated Investigational New Drug (IND) or Investigational Device Exemption (IDE) also have additional training requirements. The Principal Investigator (PI), co-investigator, and key personnel listed on IRB submissions must satisfactorily complete all required modules before the IRB can approve initial or continuing review of a submission, or declare a submission exempt. Satisfactory completion of all required modules is also required as part of the “just-in-time" information required for federal grants.

##### Biohazard and Biosafety

The UF has a comprehensive Biosafety Program and is committed to providing a safe and secure research laboratory environment that is fully compliant with all applicable federal, state, and local regulations. The Safety Director and the Safety Committee are responsible for developing, maintaining and monitoring the effectiveness of the program.

##### Safety training

New hires must complete safety training before beginning work in the animal facilities or laboratories. Training is tailored to each worker’s assigned responsibilities and includes a combination of didactic and hands-on activities. In addition, each new worker is assigned an experienced mentor who reinforces the required work practices while directly supervising the worker. Examples of subject matter and tasks covered during training include: agent-specific hazards, blood-borne pathogens, BSL2, proper use and care of personal protective equipment, sharps handling, spill response procedures, and exposure response.

##### Occupational medicine

The UF’s Occupational Medicine (OCCMED) Program establishes procedures that govern safety and health precautions related to occupational exposure. The Program classifies job duties with known health risks and includes the following for individuals assigned to those covered job duties:

* Preplacement Health Assessments
* Medical Monitoring Programs with periodic health assessments
* Immunizations, tests, labs
* Emergency Protocols and Response
* Management System

UF’s OCCMED Program is managed jointly by Environmental Health & Safety and UF Occupational Medicine Service, a division of the Student Health Care Center. All laboratory personnel must complete a baseline health screening through UF’s Environmental Health and Safety (EHS) office at the time of employment. Initital and periodic health assessments are based on individual’s assigned job duties.  No faculty, staff, student or volunteer covered by the OCCMED Program may initiate or continue activities in the area of concern until they satisfactorily meet applicable medical criteria. The EHS Safety Director provides a detailed assessment of each worker’s exposure risk tailored to the work environment, so an appropriate screening can be done. EHS advises each employee regarding vaccinations, baseline serologic testing and medical surveillance, as indicated by their assigned duties. All workers with a risk of exposure to human specimens are offered the hepatitis B vaccine, in full accordance with the OSHA Blood-borne Pathogens Standard (29 CFR 1910.1030). The completion of EHS screening is documented in each employee’s file, which is maintained and monitored by the Safety Director.

##### Work practices for handling human samples

Work with biohazardous material is assigned to a particular biosafety level based on risk assessment. Human samples are confined to a Class II biological safety cabinet (BSL2) in laboratory space with BSL2+ practices and strict sharps precautions. Under the principle of Universal Precautions, all specimens are handled as if infectious for HIV or other blood-borne pathogens. Personal protective equipment includes seamless-front gown, disposable gloves, and eye protection. All solid biohazard waste is autoclaved at 121°C for 45 minutes prior to disposal and all liquid waste is treated with sodium hypochlorite prior to drain disposal. All aerosol-producing procedures that cannot be confined to a biological safety cabinet are performed in an aerosol-protective device.

All UF laboratories fully comply with BSL2/BSL3 containment as outlined in the CDC/NIH manual, Biosafety in Microbiological and Biomedical Laboratories (BMBL, 5th edition).

## CENTERS & INSTITUTES

### UF HEALTH SCIENCE CENTER (HSC)

It is the largest and most comprehensive Academic Health Center in the southeastern US and one of the country’s few academic health centers with 6 health-related colleges located on a single, contiguous campus. Incorporated within the HSC are major health-related research centers and institutes (CTSI, Institute on Aging, UFHCC, Emerging Pathogens Institute, McKnight Brain Institute, Institute for Child Health Policy, and Genetics Institute) that offer opportunities for collaborative research and access to shared equipment and facilities. All are adjacent to one another, facilitating multidisciplinary collaborations and interactions.

### UF HEALTH CANCER CENTER (UFHCC)

The UFHCC consists of more than 290 researchers and clinicians drawn from two campuses, 12 colleges, 72 departments, two major teaching hospitals (UF Health Hospital in Gainesville and Shands Jacksonville and the nation’s largest Veterans Administration hospital, the Malcom Randall VA Medical Center in Gainesville). The UFHCC is dedicated to providing state-of-the-art cancer treatment, prevention, control, and education to individuals of diverse races and ethnicities; conducting original scientific research aimed at discovering and comparing mechanisms of cancer-causing and normal cell growth; and fostering coordination and collaboration that facilitates clinical translation of novel research findings into new therapeutic, diagnostic or preventive trials. The research and clinical facilities of the UFHCC represent a statewide resource that is sensitive to meeting the needs of Floridians. The Center’s research and patient-care collaborations also have links to other institutions, including Orlando Health, University of Miami/Sylvester Cancer Center, and H. Lee Moffitt Cancer Center. UFHCC research initiatives are conducted primarily in the Cancer/Genetics Research Complex (CGRC) by multidisciplinary teams of investigators focused around three research programs; Mechanisms of Oncogenesis, Cancer Therapeutics & Host Response, and Cancer Population Sciences. Three floors of the CGRC (83,047 ft2) house office space and laboratories for approximately 30 PIs fully equipped for modern molecular and cellular cancer biology studies with workbenches shelves, sinks, centrifuges, refrigerators, -20ºC and -80ºC freezers, tissue culture hoods, tissue culture incubators, water baths, micro-osmometers, light microscopes, power supplies, electrophoresis apparatuses, PCR machines, real-time PCR machines, and flow cytometers. Each floor in these facilities has an autoclave, dark room, library, small and large conference rooms, and walk-in cold and warm rooms. On the 5th floor exists an AAALAC Accredited Vivarium, under the supervision of the UF Animal Care Service, which has all the facilities necessary for animal care and procedures and includes a Cs137 irradiator for total body or local irradiation of mice. A Small Animal Radiation Research Platform (SARRP) system (Xstrahl Life Sciences) for precision radiation also is available in the animal vivarium. The vivarium also includes separate areas for immunocompromised rodents as well as housing for germ free mice maintained free from demonstrable microorganisms such as bacteria, viruses, fungi, and parasites throughout life. The CGRC also houses the UFHCC Shared Resources and the Interdisciplinary Center for Biotechnology Research (ICBR) as well as a cGMP facility UFHCC Shared Resources.

### CLINICAL & TRANSLATIONAL SCIENCE INSTITUTE (CTSI)

The UF Clinical and Translational Science Institute (CTSI) is the academic home for clinical and translational science at the UF, providing a centralized and integrated infrastructure. The CTSI was founded in 2008 to speed the translation of scientific discoveries into clinical practice by strengthening the university’s ability to conduct clinical and translational research. The mission of the CTSI is to improve human health by accelerating the translation of scientific discoveries into practical applications and practices for the diagnosis, treatment, prevention and cure of human diseases. The CTSI aims to develop novel clinical and translational research methodologies; support pilot studies, biomedical informatics, epidemiology, research design, ethics, and regulatory support, community engagement, new technology and resource cores, new educational and training programs, and rigorous evaluation and measurement of performance outcomes.

The UF CTSI is supported by multiple NIH grants, most notably a [Clinical and Translational Science Award](http://www.ncats.nih.gov/research/cts/ctsa/ctsa.html) (CTSA) from the [National Center for Advancing Translational Sciences](http://www.ncats.nih.gov/index.html), and by significant matching funds from the UF Office of Research and the UF College of Medicine. Additional support comes from in-kind efforts of most UF colleges.

The CTSI offers [multidisciplinary training programs](https://www.ctsi.ufl.edu/education), undertakes [transformational initiatives](http://www.ctsi.ufl.edu/research-initiatives/), and provides [services and resources](https://www.ctsi.ufl.edu/research) to facilitate health research in multiple disease areas and advance knowledge across the translational spectrum: from laboratories to health-care settings, to public health and policy arenas. As a catalyst and hub connecting resources, people and ideas, the CTSI expands collaboration and advances science across UF’s 16 colleges, the state of Florida, and the [national Clinical and Translational Science Award consortium](http://www.ctsacentral.org/).

### UF INTERDISCIPLINARY CENTER FOR BIOTECHNOLOGY RESEARCH (ICBR)

The ICBR is the major biotechnology science and instrumentation service provider at UF. Established in 1987 and leveraging strong state and University support, ICBR maintains a reputation for acquiring, housing, and providing access to state-of-the-art instrumentation and advanced services to all researchers at UF. ICBR is organized into eight life science facilities offering extensive services ranging from visualizing microscopic structures to producing and analyzing small molecules and big data. ICBR also supports the education mission of the University with hands-on workshops, training, and seminars hosted by the core scientists. Most ICBR facilities are concentrated in 25K ft2 of the CGRC with auxiliary laboratories in the Microbiology and Cell Science building and the McKnight Brain Institute. While highly centered on its more than $20 million stable of instrumentation technologies, ICBR is devoted to engaged scientific services that are provided by 22 PhD-level scientists and 25-trained staff with more than 500 combined years of experience in biotechnology science. This provides UF researchers with access to both technical expertise and advanced instrumentation as well as informed interpretation of the resulting data with a concept-to-data workflow that enables scientists to actively propose, develop, and engage in advanced technologies, extending the scope of their individual laboratories. These facilities are universally recognized for providing equal and fair access at low cost as well as for their commitment to excellence.

### MCKNIGHT BRAIN INSTITUTE (MBI)

The MBI is one of the nation’s most comprehensive and technologically advanced research and teaching centers conducting integrated research in neuroscience, neurology, neurosurgery, psychiatry, cognitive science, and related areas. To aid research in these areas, the MBI operates several facilities that provide advanced (up to 17.5 tesla) magnetic resonance imaging and spectroscopy, brain tissue banking, gene therapy, and more. The MBI has 300 faculty from 51 academic departments and 10 colleges, entailing research and educational programs in nearly all aspects of basic, clinical, and translational neuroscience. The departments of Neuroscience, Neurology, Neurosurgery, and Psychiatry and the centers for Smell and Taste, Structural Biology, and Addiction Research are housed in the MBI and promote interdisciplinary projects. The MBI develops new therapies for nervous system afflictions and serves as a catalyst and focal point for widely diverse but synergistic multidisciplinary research programs.

### PRESTON A. WELLS, JR. CENTER FOR BRAIN TUMOR THERAPY

The Preston A. Wells, Jr. Center for Brain Tumor Therapy is one of the nation’s leading comprehensive brain tumor centers, providing comprehensive surgical and medical oncological management for adult and pediatric tumors of the brain and spine. Center’s collaborative team of neurosurgeons, oncologists, clinical and basic investigators is devoted to the care and treatment of patients with brain tumors. With a total of over 40 faculty, 22 of whom are active in clinical services and 18 of whom are principal investigators of research studies with total $9.8 million in federal funding, $5.6 million in state funding, $1.6 million in private funding, the Center stands as one of the leading neuro-oncology programs on the world stage. The center facilitates state-of-the art clinical care and sponsors innovative clinical trials, as well as supports ongoing basic and translational research. Each patient is treated by a health care team that includes neurosurgeons, radiation oncologists, neurologists, psychologists, social workers, and therapists working together to determine an individualized treatment strategy. Individualized treatment could mean combining conventional therapy with clinical trials, combinations of therapeutics for symptom management, or combinations of rehabilitation, education, and support services. Neurosurgeons apply modern microsurgical and image-guided techniques to the removal of complex and deep-seated tumors involving the brain. Malignant lesions include glioblastoma, anaplastic astrocytoma, germinoma, metastases, and central nervous system lymphoma. Center investigators currently lead 15 ongoing clinical trials for brain tumors and 2 first-in-human ongoing.

The infrastructure within The Preston A. Wells Jr. Brain Tumor Center at UF and Department of Neurosurgery provide an unparalleled opportunity for investigators to develop novel therapeutics for the treatment of brain tumors and evaluate their safety and efficacy in human patients.

### FLORIDA CENTER FOR BRAIN TUMOR RESEARCH (FCBTR)

The FCBTR is a brain tumor bank/data registry that provides highest‐quality tumor samples, DNA, plasma/serum samples, and annotated clinical data to Florida’s brain tumor researchers for the conduct of basic, translational, and clinical research on brain tumors. The mission of FCBTR is to (1) establish a coordinated effort among the state’s public and private universities and hospitals and the biomedical industry to discover brain tumor cures and develop brain tumor treatment modalities; (2) develop and maintain a brain tumor registry that is an automated, electronic, and centralized database of individuals with brain tumors; (3) foster collaboration with brain cancer research organizations and other institutions, providing a central repository for brain tumor biopsies from individuals throughout the state, improving and monitoring brain tumor biomedical research programs within the state, facilitating funding opportunities, and fostering improved technology transfer of brain tumor research findings into clinical trials and widespread public use; (4) expand the state’s economy by attracting biomedical researchers and research companies to the state. The project was founded by the Florida Legislature in 2006 (381.853FS).

The FCBTR routinely collects tumor and peripheral blood samples from consented patients for research purposes. It is located in the Brain Bank on the 5th floor of the MBI, and consists of 489 ft2 in a suite of 4 interconnected rooms. Located within are six ‐800 C freezers (locked, checked for temperature daily, backed up with carbon dioxide in case of an emergency, and connected to an alarm system that calls out to pre‐programmed cell phone numbers if temperature variations occur). One liquid nitrogen storage tank is located in the bank to store cell lines. An empty ‐80°C freezer and several large LN2 freezers are available in the MBI for emergency back‐up. There is a clean work area and a dissection area. The bank is located in an area secured by limited, locked, card‐swipe door access and the door to the bank itself is locked. The bank is inspected yearly by Environmental Health and Safety.

### UF EMERGING PATHOGENS INSTITUTE

The institute provides a research environment to facilitate interdisciplinary studies of emergence and control of human, animal and plant pathogens. Major areas of research include vector-borne diseases, influenza, tuberculosis, enteric and foodborne illnesses, and antibiotic resistance. The Emerging Pathogens Institute is housed in an 88K ft2 research building and includes 16 BSL-3 laboratory modules as well as extensive BSL-2 space and space for biomathematics. It has 50 faculty offices, 150 spaces for graduate students and postdoctoral fellows, and multiple conference rooms (including a 70-seat seminar room). The institute has over 200-affiliated faculty from 11 different UF colleges, with collaborations in over 34 countries.

### INSTITUTE ON AGING (IOA)

The IOA, whose infrastructure and academic environment is provided by the Department of Aging and Geriatric Research, is the home of faculty members from diverse disciplines who wish to pursue a career focused on research and education on aging. They are dedicated to high quality interdisciplinary and translational research and training focused on the health and independence of older adults. The overarching goal of the IOA is to develop interdisciplinary and dynamic research that spans across public health, social, health services, behavioral, clinical, and basic sciences. The research focuses on mechanisms, etiology, and prevention of cognitive and physical disability. The focus is to accelerate translation, dissemination, and implementation of research findings into clinical practice and healthcare policy using an interdisciplinary approach that traverses the entire spectrum of social and biomedical investigation, including molecular biology, in vitro and animal studies, clinical research, behavioral and social sciences, epidemiology, and health services research. The overarching goals of the Institute are: to educate undergraduate, graduate, professional and post-graduate trainees in an integrated model of care and research; and to provide state-of-the-art comprehensive patient and community-centered care for older adults that is grounded in respect and understanding and fosters compassion and effective communication with patients, populations, and families.

### PAIN RESEARCH AND INTERVENTION CENTER OF EXCELLENCE (PRICE)

PRICE is affiliated with and supported by the CTSI, and receives strong support from the IOA and the UFHCC. It consists of over 20 extramurally funded investigators pursuing a broad range of studies and provides members with several resources and services to facilitate clinical and translational pain research at UF.

### CLAUDE D. PEPPER OLDER AMERICANS INDEPENDENCE CENTER (OAIC)

The mission of the UF OAIC is (1) to assess the risk factors and better understand the biological mechanisms of physical disability in older adults, (2) to develop and test effective prevention and rehabilitation therapies, and (3) to educate and train new investigators in research on aging and disability, while developing their leadership qualities and roles.

### CENTER FOR NATURAL PRODUCTS, DRUG DISCOVERY &DEVELOPMENT (CNPD3)

The CNPD3 headquarters are based in the Department of Medicinal Chemistry in the College of Pharmacy. The founding of the Center was driven by the need for a concerted drug discovery effort at UF. The faculty, staff and postdoctoral fellows providing hands-on expertise to the center are funded by the College, NIH/NCI, and UFHCC. The mission of the CNPD3 is to foster early-stage drug discovery by providing the infrastructure, chemical libraries and expertise to screen for disease-relevant targets and for drug-like disease-modifying molecules that modulate target activity. The CNPD3 is the academic home for drug leads and subsequent development campaigns carried out in concert with other biomedical centers at the UF to drive forward drug development.

## EDUCATION AND TRAINING (CTSI)

The TL1 Pre-doctoral Training Program provides pre-doctoral trainees with the skills required to develop a career in multidisciplinary clinical and translational research. The program uses a team-science approach and provides mentoring and didactic training for pre-doctoral students performing clinical and/or translational research in health-related fields at UF.

The KL2 Multidisciplinary Scholars Program provides junior faculty two years of financial support and research training to develop the skills necessary to build a well-funded, collaborative career in clinical/translational research. Didactic coursework, mentored research and multidisciplinary teamwork are offered to develop the skills necessary to build a well-funded collaborative research career. K College is a monthly luncheon seminar series for about 150 early-stage and early established investigators, and pre-and post-doctoral researchers (20-50 attendees at each session). The series ranges from life-work balance to identifying core facilities available to scholars. It provides peer support and opportunities to raise issues of concern and discuss need for resources to support career development.

The Office of Biomedical Research Career Development (GradDev) operates as a resource for career and professional development for pre-doctoral and postdoctoral research trainees. Their programs are provided via a collaborative effort of the CTSI, the UF Health Office of Biomedical Research Career Development, and the graduate and postdoctoral training programs of all six colleges of the HSC and other UF partner programs related to human health. GradDev hosts regularly scheduled seminars that educate trainees on team science, translational research & therapeutics, leadership, responsible conduct of biomedical research, ethics, and writing. The office also provided trainee-tracking services for pre-doctoral and postdoctoral trainees.

The CTSI Mentor Academy, provides training in optimizing mentoring relationships for mentors at all levels of career development. The academy offers a Master Mentor program structured around a year-long seminar series on topics relevant to successful mentor-mentee interactions. Topics include ethics and professionalism, dealing with conflicts, benefits and challenges of diversity, tracking success, and transitioning from mentor to colleague.

## CANCER-RELEVANT EDUCATION AND TRAINING (UFHCC)

The UF Health Cancer Center’s Research Training and Education Coordination Core (CaRTECC) provides education and training in environments suitable to students and investigators at various stages of their cancer research careers. The Core offers opportunities in basic science, population science, and clinical/translational research, with the goal of stimulating interest, providing enriched environments, offering support and guidance, and nurturing the development of future dedicated cancer research scientists. The approach to achieve this goal is to consider cancer education and training as a continuum that ranges from pre-collegiate students to junior faculty and to offer career enhancement opportunities at every stage of the continuum.

### Pre-Collegiate Training

At the pre-collegiate level, the program seeks to introduce high school students to the field of cancer research by providing them the opportunities to participate in summer programs that stimulate interest and shape their academic choices.

### Undergraduate Training

The UFHCC Undergraduate Scholars Program provides a fall-spring semester research opportunity that offers laboratory experience for UF undergraduate students interested in cancer research. Students applying to the program self-select their research interests aligned with the foci of our UFHCC Research Programs. During the course of the year, interns complete individual research projects and attend weekly seminars. At the end of the program, interns participate in a Research Symposium, giving oral presentations on their research projects. The Undergraduate Scholars Program also provides an enrichment experience for our current graduate students and post-doctoral trainees, who act as student mentors (buddy partners) for the interns, as they participate in teaching activities for the monthly research seminars. Seminars follow multiple formats, including laboratory demonstrations. Seminar topics include: ‘Applying to Graduate School’ and ‘How to Give an Oral Presentation’.

### Florida Cancer ReTOOL Program for Underrepresented Minority Students (URM) (R25 CA214225)

Complementing our Cancer Scholars Program, the primary objective of this program is to augment, promote and sustain an independent, competitive cancer research training program that creates opportunities and promotes careers in oncology for minority students. It apprises and culturally sensitizes students of the need to reduce the disproportionate cancer burden in minority populations through basic, clinical, and behavioral research conducted in the US, Europe, Africa and the Caribbean.

### Pre-doctoral Training

Graduate Program in Biomedical Sciences: This program seeks to provide a pre-doctoral educational experience that will train experimentalists and scholars for a wide range of careers. The educational goals are to promote biological literacy by providing core and advanced curricula covering key chemical, biological and genetic principles using molecular, cellular and physiological approaches, and to promote scholarship in biomedical science through mentored, original research. Specialized training is available via 8 advanced interdepartmental concentrations: Biochemistry & Molecular Biology, Cancer Biology, Genetics, Immunology & Microbiology, Molecular Cell Biology, Neuroscience, Physiology, and Pharmacology.

Cancer Biology Concentration provides training opportunities in cancer research ranging from basic to translational, spanning many disciplines, including molecular and cell biology, genetics and epigenetics, biochemistry, microbiology, pharmacology, anatomy, pathology, epidemiology, bioinformatics, immunology and others involved in the understanding of the development, progression, dissemination, and treatment of cancer.

COM MD-PhD Training Program is at the interface of discovery and development where enthusiastic and interactive researchers, creative minds and cutting-edge technology work together to apply and advance science, transcending individual disciplines for the "team science" paradigm.

CTSI TL1 Pre-doctoral Training Program provides pre-doctoral trainees with the skills required to develop a career in multidisciplinary clinical and translational research. The program uses a team-science approach and provides mentoring and didactic training for pre-doctoral students performing clinical and/or translational research in health-related fields at UF. The UFHCC is partnering with the CTSI to provide financial support for one cancer-focused TL1 research team and one pediatric cancer-focused TL1 research team annually.

Cancer Translational Science Certificate Program, designed to meet the educational needs of students and health care professionals interested in gaining a fundamental understanding of cancer biology, cancer risk and prevention, management of cancer and its impact on health outcomes, includes 3 required courses:

* GMS 6065: Fundamentals of Cancer Biology (3 credit hours)
* PHC 7007: Cancer Epidemiology (3 credit hours)
* GMS 6812: Cancer Health Outcomes Assessment (3 credit hours)

### Post-doctoral Training

UFHCC Postdoctoral Research Program: The objective of this program is to encourage outstanding graduate students with a demonstrated potential and interest in pursuing careers as independent researchers by facilitating their successful transition to postdoctoral research positions. Eligibility is limited to students who are in the final stages of completing their PhD program and seeking postdoctoral research opportunities for the next stage of establishing a successful career in cancer research.

Research projects are planned and developed based on the postdoctoral fellows’ areas of interests and faculty expertise. Postdoctoral fellows are matched with research faculty who (1) take an active role in helping the fellows to plan and achieve their research goals; (2) facilitate opportunities for the fellows to participate in national and international research meetings; (3) assist the fellows in seeking opportunities to present papers or to interview for faculty positions; and (4) support the fellows in attending professional development activities, such as career development seminars, research symposia and grant-writing workshops.

UFHCC Clinical Trials Curriculum is a self-study program on the best practices of clinical research in oncology (concept development & trial execution) for Residents, Clinical Fellows and Early-Stage Investigators. The UFHCC provides support for prospective studies for participants who want to develop as clinical investigators.

### Early Stage Investigators & Junior Faculty Mentoring

Early-career Faculty Mentoring Committees: Early-stage investigators with cancer-focused research interests are paired with senior cancer research mentors, in addition to their departmental mentors. These mentors play a vital role in helping new recruits to develop their research careers by identifying funding opportunities, reviewing grant applications, and building research collaborations. Successful mentoring relationships are also likely to foster commonality of purpose, a sense of academic and professional community, and career satisfaction. Faculty mentors can contribute significantly to the development of mentees’ research, teaching, career management, and collegial networking. The ultimate goal is to support the mentee’s development to achieve an independent cancer research career.

UFHCC-CTSI KL2 Training Program: The CTSI KL2 program for junior faculty provides two years of financial support and research training to develop the skills necessary to build a well-funded, collaborative career in clinical/translational research. Qualified faculty at the rank of assistant professor with an MD, PhD or equivalent degree in the health sciences from any of the UF Health Science Center’s six colleges, who are U.S. Citizens or have Permanent Resident status, are encouraged to apply. The UFHCC is now partnering with the CTSI to provide financial support for one cancer-focused junior faculty annually to develop the skills necessary to build a well-funded, collaborative career in cancer clinical/translational research.

Travel Awards Program (TAP): Junior and mid-career clinical or population science investigators are encouraged to apply for these travel awards, which provide $10,000 over 3 years to enhance their career development by attending national cancer-focused scientific conferences and workshops. The purpose of this program is to provide resources to support attendance and participation in cancer-focused scientific workshops, professional organizations, meetings and/or conferences as part of their personal career development as a cancer-relevant investigator.

Junior Faculty Research Showcase: Outstanding early career (K99/R00 awardees) cancer researchers from across the nation visit the UF Health Cancer Center to give brief talks about their work, attend presentations by UF faculty and learn about the opportunities at the UF. The event is open to faculty, staff, lab members and trainees, and includes a renowned keynote speaker at the event.

### Seminar Series, Meetings, Symposia and Workshops

UFHCC Grand Rounds Lecture Series: a bi-weekly clinical research-focused lecture series that is held from September-May annually. The series includes lectures by cancer research leaders renowned in their field.

UFHCC Topics in Cancer Seminar Series: a weekly basic research-focused seminar series that is held from September-May annually. The series is comprised of research presentations by UF cancer research faculty and includes lectures by cancer research leaders renowned in their field.

UFHCC Research Day: This annual event includes a keynote presentation by a nationally-renowned cancer researcher, as well as a research poster session and pre-doctoral 3-minute thesis presentations. In keeping with the center’s mission to foster education and training and to build research collaborations, poster prizes are awarded to graduate students and post-doctoral fellows/associates. Junior faculty are welcome to submit abstracts in order to showcase current research and foster mentorship; junior faculty posters are not judged.

COM Celebration of Research: This research event includes a keynote talk by a nationally-renowned researcher and a poster session, provides an opportunity to reflect on the strength of UF’s research programs and appreciate the breadth, quality, and merit of the science conducted within the College.

UFHCC Principles of Clinical Pharmacology Course: The UFHCC has been selected as a remote site for the NIH's Principles of Clinical Pharmacology course. This course focuses on pharmacokinetics; drug metabolism and transport; drug therapy in special populations; assessment of drug effects; drug discovery and development; pharmacogenomics and pharmacotherapy. This free course is designed for graduate students, post-doctoral scholars, medical and pharmacy students, scientists, and health professionals.

The UFHCC also offers special educational opportunities via workshops and conferences, such as the International Tumor Microenvironment Workshop (held biennially) and the International Conference on Malignant Salivary Gland Tumors.

## RESEARCH RESOURCES

### DATA, BIOSTATISTICS AND BIOINFORMATICS

#### Biostatistics & Quantitative Sciences Shared Resource, BQS-SR (UFHCC)

The UFHCC BQS-SR provides biostatistical leadership and analytic collaborative support to members of the Cancer Center. It facilitates the development of state-of-the-art quantitative methods by members from biostatistics, bioinformatics, computational biology and health informatics. Some noteworthy research areas include adaptive trial designs, Bayesian approaches to personalized medicine, mediation analysis for microbiome, and novel techniques for single cell RNA sequence analysis. The UFHCC BQS-SR also provides education and disseminates information to ensure the scientific rigor of cancer research through seminars, individual sessions and short courses tailored to cancer researchers. The BQS-SR supports development of novel quantitative approaches, engages in methodological research, encourages collaboration, and provides tailored education for cancer researchers. Services are provided as a no chargeback system and support for short and moderate term projects free of charge.

#### Cancer Informatics & eHealth (UFHCC)

Cancer informatics is where information science, computer science, and healthcare intersect. It focuses on acquiring, storing, and using cancer-relevant information in the most thorough and efficient manner. eHealth is an emerging field in the intersection of biomedical informatics, computer science, health communication, public health and health care delivery, referring to health services and information delivered or enhanced through the Internet and related technologies, such as mobile-based apps.

Cancer Informatics and eHealth Shared Resource provides expertise and collaboration for investigators across the UF, with a priority on cancer-focused studies. Functions include: (1) design, development, and implementation of novel informatics methods, tools, and systems for capturing and synthesizing data to support clinical activities and clinical research; (2) development of tools and methods to transform data collected by eHealth technologies, integrating with other relevant data sources, into actionable knowledge; (3) development and implementation of eHealth interventions and making eHealth tools freely available; (4) support investigators to engage communities and key stakeholders in the development of eHealth tools and other patient-or clinician-facing technologies that are relevant to addressing the needs of patients, especially those in the UF Health catchment area, in collaboration with the UFHCC Community Outreach and Engagement (COE) Program; facilitate integration of tools into the electronic health record (EHR) systems and liaise with the EPIC/MyChart team at UF Health; (5) liaison with the IDR/i2b2 team at UF Health when new data elements are being considered for i2b2; and (6) liaison with UF Health IT security to ensure that tools meet necessary security and privacy standards.

#### Bioinformatics Core (ICBR)

offers bioinformatics consulting and data analysis services to help researchers analyze and understand the large data sets acquired from next generation sequencing and array-based technologies. This core coordinates closely with other ICBR cores (Next-Gen Sequencing, Gene Expression, Cytometry, and Proteomics) on shared projects. The core collaborates with researchers to design experiments and analyze complex datasets.

#### UF Children’s Oncology Group (COG) Statistics Data Center

The Children's Oncology Group Statistics and Data Center (SDC), collaborates with the COG membership to design, conduct analyze and report the results of clinical trials of the treatment of childhood cancers and associated, laboratory-based, companion studies of the biology of these malignancies. COG SDC personnel participate in the setting and evaluation of COG research priorities; collaborate in the development of study concepts and protocols. In particular, members of the SDC develop the study's statistical considerations; collaborate in the development and implementation of the study's case- report forms for the Group's clinical data management system; monitor study enrollment and the quality and completeness of study data submission; produce interim reports on study conduct and adverse event experience for the Group membership and protocol-specified interim analyses of study outcomes for the Group's Data and Safety Monitoring Committees; produce final reports of the study results for the Group membership; collaborate with laboratories to link specimen data and high dimensional genomics data with COG clinical and outcome data and to produce analyses of these data for publication; produce Technical Reports, detailing analyses performed for Group abstracts and manuscripts; conduct database and methodological research of relevance to the Group's research; perform CDUS and results reporting; monitor the performance of COG member institutions, producing reports for the Group's Institutional Performance monitoring Committee; provide data derived from COG studies to investigators external to the SDC in accordance with the policies and procedures of the Group; participate in National Clinical Trials Network initiatives and CTEP committees as appropriate.

#### Data Management Resources (CTSI)

##### Biostatistics, Epidemiology and Research Design (BERD) Program

Provides a central location for investigators seeking quantitative and qualitative research design and analysis support through the CTSI. BERD links investigators with multidisciplinary faculty members and experts in various methodological techniques including biostatistics, epidemiology, qualitative data techniques and measurement and evaluation in health-related research. This program also assists students and young investigators in accessing basic and advanced graduate classes in research design, data acquisition and management and data analysis that are applicable across the entire spectrum of clinical and translational research. It serves as an early point of contact for investigators to facilitate their research, whether standalone or multidisciplinary, with high-quality research design and analysis assistance for their grant applications. Additionally, BERD acts as a liaison to ensure that the educational needs in both quantitative and qualitative methods are individually tailored to students’ and young investigators' needs while developing and adopting new methodology as needed for specific clinical and translational research. Study design, database design, and data analysis services are available to investigators. Investigators can also take advantage of Design Studios and office hours offered by BERD faculty.

The CTSI’s Biomedical Informatics Program, Integrated Data Repository and CTS-IT teams provide resources and expertise to assist investigators with translational research data, informatics and software development needs.

##### [REDCap](https://www.ctsi.ufl.edu/research/research-support/redcap/)

Secure, Web-based application designed to support traditional case report form data capture for research studies (provided at no cost for use with any research project).

##### [Integrated Data Repository](https://www.ctsi.ufl.edu/research/research-support/integrated-data-repository-queries/)

A large-scale “database” integrating information from UF’s clinical and research environments.

##### Informatics Consulting

The CTSI Biomedical Informatics Program provides informatics consulting through CTS-IT, a unit dedicated to working with investigators on their information system needs.

### THE DRUG SCREENING CORE (UFHCC Shared Resource)

UFHCC Drug Screening Core has the capability to run medium-to high-throughput screens (96-and 384-well) and experienced personnel to miniaturize assays. Assay platforms include biochemical assays using colorimetric, fluorescence and ultra-sensitive luminescence outputs including assays designed to quantify protein concentration and protein-protein interactions using the AlphaLISA technology. A recently developed high-content screening assays allows for tissue, cell and organelle morphology and protein expression and localization in 2D and 3D cultured cells and isolated primary cells using the Operetta high-throughput fluorescent confocal microscope with up to four different fluorescent stains. Additionally, sophisticated image analysis procedures are established to quantify tissue, cell and organelle morphology and protein expression and localization and high throughput processing procedures to prepare images for custom analysis.

### NEXT GENERATION SEQUENCING (UFHCC/ICBR Shared Resource)

This Shared Resource provides researchers with quality, massively parallel, high-throughput sequencing data using the most current instrumentation, at a reasonable cost. This Shared Resource currently supports the most popular platforms: Illumina NovaSeq6000 and MiSeq and the Pacific Biosciences SEQUEL IIe system. Together, these instruments cover a broad range of powerful applications. Free consultation services aim to help researchers navigate through the complex matrix of experimental options represented by the available sequencing technologies. Some of these important considerations include: read length, error rate, predominant type of error, data output/run, speed, cost, etc. The ever-broadening range of applications include (but are not limited to) *de novo* sequencing of whole genomes, targeted sequencing, transcriptome sequencing (RNA-Seq), chromatin immunoprecipitation (ChIP) sequencing, methylation analysis and metagenomics.

### GENE EXPRESSION (ICBR Shared Resource)

The Gene Expression Shared Resource provides state-of-the-art technical services and consultation on Affymetrix and Agilent gene expression arrays and miRNA arrays, The Gene Expression service provides state-of-the-art technical services and consultation on Affymetrix and Agilent gene expression arrays and miRNA arrays, RNA-seq libraries (low and high-throughput using the Agilent Bravo robot), sequence capture libraries, and up-to-date gene expression analysis methods, allowing scientists to be on the cutting edge of research. RNA-seq libraries (low and high-throughput using the Agilent Bravo robot), sequence capture libraries, and up-to-date gene expression analysis methods.

### GENOTYPING (CTSI Shared Resource)

The CTSI Genotyping Core provides consultation and guidance to designing and performing genetics and pharmacogenetics studies. The Center for Pharmacogenomics and Precision Medicine Genotyping Laboratory provides sample handling and processing services, along with individualized single-plex through 384-plex genotyping assays.

### CRISPR (UFHCC/ICBR SHARE RESOURCE)

The CRISPR/Cas9 system allows researchers to easily introduce deletions, insertions and edited DNA sequences into mammalian cell genomes. It can be used to introduce very specific surgical edits to any gene and can in fact introduce foreign genes into specific regions of the animal cell genome. This resource provides services for generated mammalian cell lines in which one or both copies of a particular gene have been altered by the introduction of random mutations.

### CYTOMETRY AND CONFOCAL MICROSCOPY (UFHCC/ICBR Shared Resource)

The Flow Cytometry and Confocal Microscopy Shared Resource provides a variety of tools and expertise for cellular measurements.

The services are provided at two sites in close proximity, with the major laboratory of 1400 ft2 in the Cancer and Genetics Research Complex (CGRC) and an additional 1000 ft2of space at the McKnight Brain Institute (MBI) that includes the Cell and Tissue Analysis Core (CTAC). CYT-SR facilities are equipped to satisfy different experimental needs, from simpler devices (2 FACS Calibur instruments, Canto II, Sony SH800 and 2 Accuri-C6) to high-end 5-laser, 16-parameter instruments to analyze (LSR-II and LSR Fortessa cytometers) or sort cells (3 Aria-II/III sorters).

In addition, CYT-SR offers a laser scanning confocal microscope Leica ST5 with a variety of excitation lines and ability to collect up to 4 emission colors with live-cell time-lapse and extensive computed parameter capabilities, including FRET, FRAP, image stitching, and 3D reconstruction. The CYT-SR also offers access to the Sony SP6800 Spectral Analyzer to enhance signal detection and multicolor analysis of heterogeneous cell populations and complex samples, and a NanoSight300 Microparticle Analyzer.

### THE MONOCLONAL ANTIBODY CORE (ICBR Shared Resource)

develops new mouse monoclonal antibodies. Major service categories include: immunization of mice, cell fusion, cell cloning, screening by ELISA and Western blot, monoclonal antibody production, purification and labeling, monoclonal antibody analyses such as antibody/antigen affinity measurements, epitope binning and identification of matched antibody pairs.

### NANOPARTICLE RESEARCH FACILITIES

Nanoscale Research Facility - NRF (Core facility available to all investigators on application): The NRF offers 7,000 ft2 of Class 100–1000 cleanroom space for semiconductor/microsystem processing and nanoscience research.

Laboratory for Mesoscale Magnetic Biomaterials (LMMB): The LMMB is a network of laboratories with its primary location in over 1200 ft2 of laboratory space in the Biomedical Sciences Building adjacent to Shands Hospital at the UF.

Nano-Bio Interface and Nanoparticle Characterization Laboratory: This laboratory occupies a total of 800 ft2 of assigned space in the Biomedical Sciences Building. It is outfitted with analytical balances, a chemical hood, a Brookhaven Instruments ZetaPALS/BI-90Plus dynamic light scattering instrument, NanoSight LM10HSBT14 Nanoparticle Characterization System with CMOS camera and temperature controlled sample holder, DynoMag AC Susceptometer, a Shimadzu UV-2600 UV-Vis spectrophotometer, an induction heating system consisting of a Ambrell EASYHEAT 8310LI 10 kW induction heater, NeOptix Reflex 4-channel fiber optic thermometer with immersion probes, and FLIR SC325 thermal camera.

NanoBioMagnetics Laboratory: This 800 ft2 laboratory, including a tissue culture facility, is located in the Biomedical Sciences Building. The tissue/cell culture facility includes a laminar flow cabinet, incubators, centrifuges, an inverted microscope, and -20°C freezer. Other instrumentation available include an iCyt Eclipse Flow Cytometer, MICA Biosystems Magnetic Force Bioreactor, magnetic transfection device nanoTherics magnefect nano II, induction heating nanoTherics magnetherm 1.5 AC system, NeOptix Reflex 4-channel fiber optic thermometer with immersion probes, Siskiyou motorized MX1641 micromanipulator for magnetic actuation combined with an AMG EVOS Digital Fluorescent Microscope, and a chemical hood.

Magnetic Characterization Laboratory: This laboratory is in the new Physics building and houses a new Quantum Design SQUID-VSM magnetometer with AC susceptibility and ultra-low field accessories. This facility takes advantage of the Physics Building’s helium recovery and re-liquefaction system.

US National High Magnetic Field Laboratory / Advanced Magnetic Resonance Imaging and Spectroscopy (AMRIS): The university houses the imaging branch of the US National High Magnetic Field Laboratory along with AMRIS high field MR facilities. AMRIS houses some of the highest field (and resolution) MR systems in the world for both ex vivo and clinical studies (e.g. 500 & 600 MHz NMR Spectrometers; a 750 MHz Wide Bore Spectrometer; 4.7T/33 & 11T/40 MRI systems; a 3T/60 Siemens Allegra Scanner).

### METABOLOMICS (CTSI Shared Resource)

The Southeast Center for Integrated Metabolomics (SECIM) provides state-of-the-art metabolomics services to users in all areas of biomedical and biological sciences. Several technologies contribute to the SECIM pipeline, giving users the flexibility to choose the best approach for a particular problem. SECIM also provides educational opportunities to help create the next generation of metabolomics experts. SECIM is funded by the NIH Common Fund’s Metabolomics program, which has established a consortium of six Regional Comprehensive Metabolomics Resource Cores (RCMRC) and a Data Repository to serve users across the United States. The SECIM at UF houses 3 cores: Mass Spectrometry (which provides high-throughput global and targeted metabolomic and lipidomic analysis on serum, plasma, urine, tissues, cells, stool and other samples), Nuclear Magnetic Resonance (which provides global metabolomics using standard 1D and 2D 1H detection for serum, urine, extracts and cultures and tissue metabolomics using high resolution magic angle spinning (HR-MAS)), and Advanced Mass Spectrometry (which provides integration of imaging mass spectrometry with global metabolomics, including MALDI/tandem mass spectrometric imaging of small molecules and correlation with MALDI/MS imaging of peptides and proteins).

### THE PROTEOMICS & MASS SPECTROMETRY CORE (ICBR Shared Resource)

provides tools for fast, accurate, high-throughput biomolecular separation and characterization to allow researchers to investigate how proteins, their dynamics, modifications, and interactions affect cellular processes and how cellular processes and environment affect proteins. The Core provides service and training in proteomics and mass spectrometry. Capabilities include proteomics, two-dimensional difference gel electrophoresis (2D-DIGE), isobaric tags for relative and absolute quantitation (iTRAQ), tandem mass tags (TMT), iodoTMT, stable isotope labeling with amino acids in cell culture, quantification of proteins by label-free LC-MS/MS, and the analysis of protein post-translational modifications.

### BIOREPOSITORY (CTSI Shared Resource)

The CTSI Biorepository Core provides biospecimen collection, processing, and storage; prospective biospecimen collection to fulfill investigator needs for IRB-approved protocols; and storage for biospecimens collected by investigators, including stored biospecimens that belong solely to that investigator, oversight of the release of biospecimens from the UF Dept. of Pathology for other IRB-approved research protocols, and pathology services, including those provided by the Molecular Pathology Core.

### IMAGING Shared Resources

#### Molecular Pathology Core (CTSI)

This is a comprehensive histology and microscopy facility for paraffin and frozen blocks and for all aspects of specimen collection, preparation, fixation, processing, staining, and analysis. Staining can include immunolocalization for proteins or RNA/DNA using bright-field or fluorescent microscopy and multiple color combinations. Digital slide scanning, tissue microarray construction, and laser microdissection services are also available.

#### Cell & Tissue Analysis Core (ICBR)

Located in the MBI, Cell & Tissue Analysis Core (CTAC) is a part of ICBR/UFHCC cytometry and confocal microscopy shared resource. It consists of two facilities that provide the UF research community with a wide array of imaging modalities as well as basic histology equipment for tissue sample preparation. The CTAC Imaging facility maintains instrumentation for both in-vitro and in-vivo imaging experiments.

Microscopes for in-vitro imaging include laser scanning and spinning disk confocal systems, an automated live-cell time-lapse and tile-mapping system, and standard wide field systems in both inverted and upright formats for fluorescent, bright field, and H&E projects. Instrumentation for in-vivo experiments includes high resolution ultrasound, preclinical bioluminescent and fluorescent imaging, and an intra-vital laser scanning fluorescent microscope.

The Cell & Tissue Analysis Core (CTAC) has been established to provide a centralized imaging and analysis resource for the UF research community. The CTAC maintains high-end instrumentation as well as standard microscopy systems for the acquisition and analysis of bright field, ultrasonic, intravital, fluorescent, and bioluminescent data from both in vitro and in vivo experimental models. The Histology Self-Serve Lab houses several Histology instruments for hands-on access, as well as the ability to process fixed tissues.

#### Electron Microcopy

There are two EM facilities available to UF investigators

##### EM Core (Department of Medicine)

This facility is located in the Department of Medicine and provides access, assistance, consultations, training and services necessary for ultrastructural research. The EM Core houses a transmission electron microscope (TEM) and equipment for light and electron microscopy sample preparation and image processing, plastic polymerization, cold processing, and vibratome sectioning, light microscopy sample processing, sample storage, and digital light microscopy. It also houses all necessary equipment and technical expertise for ultrastructural morphologic, morphometric, and immunolocalization research. In addition to standard laboratory equipment and computers, the equipment includes a Leica DM2000 microscope, a Nikon LaboPhot-2 microscope, four ultramicrotomes, a EM TP automatic tissue processor, fume hood for TEM tissue processing, microtome for sectioning polyester wax and paraffin embedded samples, two Lancer Vibratome sectioning systems for pre-embedding immunolocalization studies, a Pelco Biowave Promicrowave and Pelco SteadyTempPro for microwave-assisted immunohistochemisty, antigen retrieval, and tissue processing; a cold room, and a Leica AFS automated freeze substitution unit.

##### EM Core (ICBR Shared Resource)

These EM Cores provide investigators with access to instruments, consultations and technical support necessary for ultrastructural morphologic, morphometric, and immunolocalization research. Equipment includes transmission and scanning electron microscopes, equipment for light and electron microscopy sample preparation and image processing, plastic polymerization, cold processing, and vibratome sectioning, light microscopy sample processing, sample storage, and digital light microscopy.

#### Human Imaging (CTSI)

The core houses two state-of-the-art 3.0 Tesla whole-body human MR scanners, Siemens and Philips, dedicated to research. Both scanners are equipped with the latest acquisition techniques for human MR research, including multinuclear capabilities, functional MRI (fMRI), advanced diffusion MRI techniques, MR elastography, musculoskeletal and cardiac studies, and MRS techniques.

The Siemens scanner is a 60 cm bore Prisma equipped with an unmatched 80 mT/m @ 200 T/m/s gradient system, parallel transmit capabilities, a series of MR coils and pulse sequence packages. The Philips scanner is a 70 cm bore Engenia Elition 3TX and provides the largest homogenous field-of-view, 55 cm, in a commercial 70 cm system, while still providing strong gradients. The Elition is equipped with Philips’ unique broadband digital MR architecture, the d-STREAM, which samples the signal directly at the coil and transmits the signal through fiber optics to reduce noise and increase signal-to-noise ratio.

#### AMRIS (MBI)

On the same floor in the MBI, the Advanced Magnetic Resonance Imaging and Spectroscopy Facility houses three higher magnetic field magnets (4.7 T, 11.1 T and 17.6 T) for MRI and MRS of animals and/or tissue samples. This is a biological program of the NSF-funded National High Magnetic Field Laboratory, which together with the UF CTSI Human Imaging Core, provides a state-of-the-art facility for cutting-edge translational MR research in human health and diseases.

### TRANSLATIONAL DRUG DEVELOPMENT (CTSI Shared Resource)

The Translational Drug Development Core provides services and expertise in bioanalysis, drug metabolism, and preclinical pharmacokinetics. With solid data, researchers can meet the short timelines from provisional to full patent to licensing, enhance federal funding, and accelerate the transformation of new therapeutic interventions for the treatment and prevention of diseases.

### HUMAN APPLICATIONS LABORATORY (HAL) MANUFACTURING FACILITY (GMP)

The Human Applications Laboratory is a state of the art GMP manufacturing facility for the production of cellular therapy products that occupies 2200 ft2 in the MBI. The unit includes an 1900 ft2 BL2/BL3 GMP facility, a 300 ft2 Quality Control laboratory and storage facilities for receipt and control of incoming materials. The GMP manufacturing facility has two suites for Cell Processing and for Viral Vector Production with a total of 14 separate rooms. Each suite is designed to function independently of the other and is comprised of two production rooms (Class 10,000), a staging and storage area (Class 10,000) and entrance and exit vestibules (Class 100,000). Production Suite A is designated for cell processing and cellular therapy production. No viral production occurs in this suite. The suite occupies approximately 700 ft2 and has a positive differential pressure relative to the adjacent rooms. Production Suite B is approximately 1,200 ft2 and has positive pressure differential relative to adjacent rooms and is used for the purification, filtration and aseptic fill of recombinant viral vectors.

### CANCER AND GENETICS MANUFACTURING FACILITY (C&G GMP)

C&G GMP for the production of cellular therapy products is located in the Cancer and Genetics Research Complex (CGRC). The production facility occupies approximately 1200 ft2 and consists of two suites with a total of eleven separate rooms. Each suite is designed to function independently of the other and is comprised of one production room (Class 10,000) and entrance and exit vestibules (Class 100,000). Each suite occupies approximately 350 ft2 and has a positive differential pressure relative to the adjacent rooms. Access to the facility is limited to Room 489 and is restricted with card key access.

The Quality Control Lab operates according to controlled, issued standard operating procedures including sample submission and tracking procedures, reagent receipt and tracking, and equipment operation, cleaning, calibration, and maintenance. Assays are performed using controlled documents called test records. These records are numbered to ensure appropriate documentation of all assays performed on product and product intermediates. In addition, the Lab is responsible for submitting all samples to contract laboratories for testing and for reviewing and reporting these results. All in-house reagents are prepared and documented using controlled reagent preparation records.

Human Applications Laboratory Quality Management has developed appropriate quality systems to help assure the quality and safety of the clinical materials produced and tested by the Human Applications Laboratory. Additionally, all test results (both in-house and contract laboratory results), equipment records, reagent preparation records are audited by independent Quality Assurance. The Quality Assurance Unit (CTSI-QA) was established at the College of Medicine to support the Powell Gene Therapy Center in June 2001. It was transferred to the UF CTSI in 2010. CTSI-QA reports directly to the Director of CTSI Research Services.

Since commissioning in 2002 (HAL) and 2006 (C&G), the facilities have manufactured GMP clinical trials materials for eleven gene therapy-related Investigational New Drug projects and four cellular therapy Investigational New Drug projects. The group specializing in the development of new process and testing, deployment for use in the GMP Manufacturing Facility or QC Laboratory, execution of GMP manufacturing and testing and ongoing product stability testing.

### VECTOR CORE LAB (MBI)

The primary role of the Vector Core Lab is to generate gene therapy vectors. This service is comprehensive, starting with consultation on construct design and AAV capsid selection, molecular cloning of AAV plasmids and finally packaging and purification of virus. The Core has served a number of NIH program project grants worth over $25M and produces over 400 preps per year for both academic and industry sponsors. In addition, the Vector Core serves a training role for students associated with those programs.

### ANIMAL FACILITIES

The UF maintains an Animal Welfare Assurance Statement which declares its compliance with the various regulations and policies. The UF animal welfare program is monitored by federal regulatory agencies (U.S. Department of Agriculture – Animal and Plant Health Inspection Service, USDA-APHIS and Office of Laboratory Animal Welfare, OLAW) and an accreditation agency (Association for the Assessment and Accreditation of Laboratory Animal Care, AAALAC): USDA Registration #: 58-R-0003; OLAW Assurance #: A3377-01; AAALAC Accreditation #: 000023. To ensure compliance with all regulations, policies and standards in place to protect animal welfare, **UF Institutional Animal Care and Use Committee (IACUC)** reviews all requests for approval to use vertebrate animals: anyone working on an animal use protocol and entering Animal Care Services (ACS) facilities must be approved on an active IACUC protocol. The IACUC also conducts inspections of all areas where animals are housed and used, reviews the institutional program for animal use, and reports its findings to the UF Institutional Official semi-annually. ACS provide oversight for the care and well-being of all animals used for research, teaching, and testing at the UF.

ACS maintain animal housing facilities and provides animal husbandry services, veterinary care, training, and technical services to UF researchers and instructors. All ACS facilities are staffed 365 days a year with animal husbandry and veterinary technicians, and veterinarians. Technical assistance is available upon request to all investigators. ACS employ over 140 staff with more than 200,000 ft2 of animal facility space encompassing 20 buildings and housing approximately 15 species.

Investigators will have convenient access to ACS (fee-for-service) at three sites where they are located. The 5th floor of the CGRC isallocated entirely for mice, and includes a germ-free facility. The animal facility in Communicore Building (across from the MBI) and the MBI house a variety of animal species. The facilities are equipped with procedure rooms and equipment for irradiation and imaging.

The UF Animal Care Services (ACS) comprise 16 facilities and provide housing for immunocompetent and immunodeficient animals. Various housing types are available for all investigators including conventional housing, biosafety levels 2 and 3, ventilated, good laboratory practice, infectious disease, and isolator housing. ACS also provide fully operational common use surgery and procedures suites for rodent, porcine, canine, feline and USDA covered species. ACS services also include X‐ray irradiation using the X‐Rad 320 system for rodents. Rodent breeding and colony management are available for all investigators. Zebrafish services are also available. UF ACS also provide a mouse modeling core facility for transgenic mouse generation, knockout/knockin mouse generation, and reconstitution of cryopreserved embryos. ACS serve nearly 600 UF faculty and approximately 1,400 (animal care and use) protocols in various research and teaching programs.

The housed species range from mice and other rodent species to large animals such as pigs, sheep, horses, cattle, and nonhuman primates. The ACS has a veterinary staff that consists of eight board-certified veterinarians and ten veterinary technicians primarily involved in providing or supervising veterinary care, protocol review, surgical services, pathology services, diagnostic laboratory services, training of investigators, and investigator staff and compliance.

### INFORMATION TECHNOLOGY

#### UFIT Research Computing

UF Research Computing supports the work of over 300 faculty-led research groups, with over 3,300 users.

The Research Computing systems are located in the UF data center. The machine room is connected to other campus resources by the 200 gigabit per second Campus Research Network (CRN), now commonly called Science DMZ.

Virtual environments enable extending physical networks beyond their physical boundaries that traditionally coincide with individual buildings. There are three physical networks:

1. The Academic network
2. The Health network that allows protected health information to be stored and accessed
3. The Campus Research Network or Science DMZ connecting HPC resources with data generating instruments

#### UF Health Information Technology

UF Health IT consists of over 450 experienced and highly skilled IT professionals in Gainesville and Jacksonville, Florida, who provide the full-range of IT services needed to run a major academic health enterprise including clinical, educational, and research missions as well as administrative functions.

## UF COLLEGES

### COLLEGE OF DENTISTRY

One of six UF Health colleges, and home to 369 DMD students and 144 advanced education residents, fellows and interns, the College of Dentistry is dedicated to high-quality programs of education, research, patient care and public service, the college ranks ninth among 65 US dental schools in a comparison of dental schools based on mean GPA of admitted students, DAT scores and acceptance rates. The school of Advanced Dental Sciences facilitates integration of advanced study in endodontics, oral and maxillofacial pathology, oral and maxillofacial radiology, orthodontics, pediatric dentistry, periodontology and prosthodontics. The college is continually expanding interdisciplinary educational opportunities in the pre-doctoral and advanced education arenas.

The college is nationally recognized for its oral health research enterprise, emphasizing infectious diseases in dentistry, bone biology, pain and neurosciences, and translational research to improve oral health care and patient outcomes. The Department of Oral Biology is one of the top-ranked in the U.S. based on National Institutes of Health, or NIH, research funding among similar departments. The college is ranked fifth out of 65 US dental schools for NIH funding. The oral biology faculty includes national leaders in oral infectious diseases and immunology research. The Comprehensive Training Program in Oral Biology (T90/R90) builds on 20 years of successful training of basic/clinical scientists and was selected for a national excellence award by the American Dental Education Association.

The 173,179 ft2 dental tower includes dental clinics, teaching facilities, offices, laboratories, and classrooms. Approximately 35K ft2 of the dental tower is dedicated to research, with much of this space classified as wet laboratory space. More than 90 percent of preclinical instruction is delivered in the simulation laboratory with 98 patient simulators. The college has 269 dental operatory chairs at its Gainesville location and more than 52,452 ft2 dedicated to clinical operations. DMD clinical instruction also occurs in the nine-chair Oral & Maxillofacial Surgery Center, in the Pediatric Dental Center with six DMD student chairs, in the Endodontic Center, with six DMD student chairs, and in the Graduate Orthodontics Center where there are 15 DMD student chairs available. College-owned clinics in Naples, Hialeah and St. Petersburg have 20, 23, and 17 chairs, respectively. The college is home to the UF Health Periodontology and Prosthodontics Dental Center. This center, which houses 25 dental chairs and state-of-the-art surgical suites, represents the final step in consolidating all specialty clinics on the first floor, facilitating ease of patient access, and streamlining interdisciplinary care between dental specialties. In addition, students participate in clinical rotations in the department clinics of Oral & Maxillofacial Surgery, Orthodontics, and Pediatric Dentistry.

The College of Dentistry is the only publicly-funded dental school in the state and ranks as a national leader in dental education, research, patient care and community service. The college is housed in the Dental Sciences Building. Faculty participate in interdisciplinary learning and research that benefits the college and its patient community, resulting in a well-rounded curriculum that produces dentists skillful in the art and science of dentistry. The college educates the state’s future dentists and dental specialists through 16 degree and certificate programs. The college is nationally recognized for its oral health research enterprise, emphasizing infectious diseases in dentistry, bone biology, pain and neurosciences, and translational research to improve clinical and dental care and is building on this reputation by recruitment of mid-career, top-notch basic scientists to achieve excellence in areas of established strength in the college while more closely aligning the college with key initiatives within the university and HSC. These initiatives include genomics of infectious diseases, immunology, autoimmunity, biostatistics, cancer epidemiology and prevention, cell biology/cell signaling, and pain and neurosciences. It is also recruiting magnet investigators and junior investigators to provide a nucleus of clinical and translational researchers.

### COLLEGE OF ENGINEERING

The Herbert Wertheim College of Engineering houses one of the largest and most dynamic engineering programs in the nation. Curriculum offered across nine departments, 15 degree programs, and more than 20 centers and institutes produces leaders and problem-solvers who take a multidisciplinary approach to innovative and human-centered solutions. Students, faculty and alumni are hailed as *New Engineers* who aim to transform the way we live, work and play. The college produces inventions at twice the national average — and startups at five times the national average — for every research dollar spent. Engineering is the largest professional school, the second-largest college, and one of the top three research units at UF. Established in 1910, the college was named after Distinguished Alumnus Dr. Herbert Wertheim in 2015. The Major Analytical Instrumentation Center, the Particle Analysis Instrumentation Center, and the Nanoscale Research Facility comprise the Research Service Centers in the College of Engineering. These are multiuser materials characterization, fabrication, and analysis facilities that provide service to all faculty and students at UF, research universities, and the industrial and commercial community. These facilities have provided teaching, training, and services for more than 30 years together and continue to be the largest and most successful hands-on, multiuser facilities at UF.

Key departments in the College of Engineering include the Department of Chemical Engineering the Department of Industrial & Systems Engineering (ISE), the Department of Materials Science & Engineering and the Department of Biomedical Engineering (BME). The latter is part of the Herbert Wertheim College of Engineering and is a prime resource for biomedical engineering education, training, research, and technology development. BME is dedicated to developing innovative and clinically translatable biomedical technologies, educating future generations of biomedical engineers, and cultivating leaders, by nurturing the integration of engineering, science, and healthcare in a collaborative and dynamic educational and research environment. The department leverages the unique co-localization of talent and resources in engineering, biology, medicine, veterinary science, dentistry, and technology commercialization at UF, thereby maximizing opportunities for interdisciplinary student education and clinical translation of technologies to improve human health. The Nanoscale Research Facility is a campus-wide resource, consisting of seven functional areas: a Class100-1000 cleanroom facility for nanofabrication and bio processing; advanced electron, optical, and surface imaging laboratories; core research laboratories for synthesis, processing, characterization, assembly, and testing of nanoscale materials, devices and sensors; general laboratory space for interdisciplinary research collaborations; interactive spaces for conferences, informal gatherings, user administration, and surroundings conducive to multidisciplinary interactions; and building support and utility handling areas. The Particle Analysis Instrumentation Center (PAIC) provides the instrumentation and expertise to synthesize and characterize particulate systems for a wide variety of applications across a broad range of industries. There are over 20 instruments available for analyzing particle size, shape, surface and bulk powder properties along with spectroscopic, imaging and analytical instrumentation for chemical analysis and systems characterization.

### COLLEGE OF HEALTH & HUMAN PERFORMANCE

Research and teaching in Health & Human Performance has an impact on almost every aspect of the human condition. The college’s three centers; the Center for Behavioral Economic Health Research, Center for Exercise Science, and the Eric Friedheim Tourism Institute; as well as its three primary departments, Applied Physiology and Kinesiology, Health Education and Behavior, and Tourism Recreation and Sport Management, place the college firmly in a position to influence and improve an array of societal problems and challenges. Its mission is to provide recognized programs of excellence in teaching, research and service that focus on assisting individuals, families and communities to promote health and prevent disease while enhancing quality of life across the lifespan. Areas of research include addictive behavior and substance abuse, examining beneficial therapy techniques for Parkinson's Disease and other physiological and cardiovascular disorders, America's obesity epidemic from all perspectives, to help guide prevention and policy, and discovering the role and impact of leisure activities, tourism and sport on individuals and the environment.

### COLLEGE OF LIBERAL ARTS AND SCIENCES

One of the largest and among the first of the 16 colleges to be established at UF, the College of Liberal Arts and Sciences forms the intellectual core of the university and is home to the humanities, the social and behavioral sciences, and the natural sciences and mathematics. The college's 700 faculty members are responsible for teaching the university’s core curriculum to more than 35,000 students each year. Liberal Arts and Sciences has more than 11,000 undergraduate students pursuing a variety of disciplines through its 42 majors and minors. Additionally, close to 1,800 graduate students pursue advanced degrees in the college and work with faculty to advance the frontiers of knowledge.

Faculty in Liberal Arts and Sciences rank among the best in the nation and have received a variety of national and international awards, including Guggenheim Fellowships, Senior Fulbright Awards, National Science Foundation Fellowships, Presidential Young Investigator Awards, and National Endowment for the Humanities Fellowships. They hold memberships in the National Academy of Science, the Nobel Prize Committees, the Swedish Royal Academy of Sciences, and the Royal Societies of London and Edinburgh.

Scientists in the college are engaged in a wide array of world-class research efforts spanning diverse topics and fields. For example, Liberal Arts and Sciences physicists participated in the discovery of the Higgs particle using the Large Hadron Collider at CERN, created the algorithm that allowed the detection of gravitational waves at LIGO, and maintain a high-profile involvement with the National High Magnetic Field Laboratory. Liberal Arts and Sciences chemists are developing methods for the nanofabrication of the next generation of electronic devices, smart polymers, and more sensitive techniques for diagnosing and treating cancer. Liberal Arts and Sciences biologists have worked on epidemiological projects to prevent deadly outbreaks and developed conservation guidance to protect endangered species. Astronomers search for earth-like planets outside our solar system using UF’s share of the Gran Telescopio Canarias, the world’s largest telescope, and the Keck Foundation Exoplanet Tracker at the Sloan Digital Sky Survey. Liberal Arts and Sciences mathematicians apply their modeling skills to solutions such as reducing the wait times in hospital emergency rooms and controlling the effects of citrus greening on Florida’s agricultural industry. Liberal Arts and Sciences geologists study the changes that have occurred over the past 4.6 billion years in order to meet the challenges the earth is experiencing today. Liberal Arts and Sciences psychologists are applying cognitive and social psychological inquiry to address issues of bias, discrimination, and bullying. Faculty in the humanities publish books with leading presses and in leading journals and have garnered grants from a number of prestigious foundations, as noted above. All of these examples provide ample evidence for the breadth and depth of the research enterprise in the College of Liberal Arts and Sciences.

CLAS is the largest college on campus, with more than 600 faculty members responsible for teaching the majority of the university's core curriculum to at least 32,000 students each year. CLAS has more than 10,000 undergraduate students pursuing a variety of disciplines through its 37 majors and 48 minors. Additionally, nearly 1,800 graduate students are attaining advanced degrees in the college. During the past several years, CLAS has produced a Rhodes Scholar, as well as several Barry Goldwater Scholars, Harry Truman Scholars and James Madison Scholars. The college faculty rank among the best in the nation and have received a variety of national and international awards, including Guggenheim Fellowships, Senior Fulbright Awards, National Science Foundation Fellowships, Presidential Young Investigator Awards and National Endowment for the Humanities Fellowships. They hold memberships in the National Academy of Science, the Nobel Prize Committees, the Swedish Royal Academy of Sciences and the Royal Societies of London and Edinburgh. CLAS’s mission is to lead the academic quest to understand our place in the universe, and to help shape our society and environment. The College pledges to ensure equitable access for all of its constituencies present, drawing strength from our rich heritage of racial, ethnic and gender diversity. Through teaching, research and service, the College continually expands our knowledge and practice in the most fundamental questions in the arts, humanities, social sciences, and natural and mathematical sciences. At the graduate level, students master a specialized body of knowledge and pursue original research under the guidance of outstanding faculty. As a public institution, the College serves society through its research programs to advance our knowledge and capabilities, through its teaching to prepare tomorrow's leaders, and through its outreach programs to ensure dissemination of the state of the art in areas ranging from languages and literatures, to social behaviors, to the fundamental laws of nature. Research is a major activity at all levels within CLAS and research activities of this college are more diverse than those of any other college on campus and have gained the college a national and international reputation.

### COLLEGE OF MEDICINE

Faculty are national leaders in fundamental, translational and clinical research in areas pertaining to diseases of the nervous system, human aging, cancer, diabetes, infectious disease, immunology and inflammation, genetics and gene therapy. College researchers are involved in collaborative research in several research institutes and centers within the university, including the Evelyn F. and William L. McKnight Brain Institute, the Emerging Pathogens Institute, the Genetics Institute, the Institute on Aging, the UF Health Cancer Center, the Diabetes Institute, the CTSI, the Institute for Child Health Policy and the Research and the Research and Academic Center at Lake Nona.

College of Medicine faculty and collaborative research teams continue to receive awards and honors that reflect their exceptional distinctions and contributions. The college’s steady increase in NIH funding over the last nine years is reflected in the impressive rise in national rankings in recent years to No. 16 among public medical schools, joining the upper third of US colleges of medicine, according to U.S. News & World Report. With lab spaces across UF in Gainesville and at the UF Research and Academic Center in Lake Nona, the college is home to more than 380,000 ft2 of research space.

College faculty members practice at UF Health Shands Hospital, the UF Health Shands Children's Hospital, the UF Health Shands Cancer Hospital, the UF Health Heart & Vascular Hospital, the UF Health Neuromedicine Hospital, the North Florida/South Georgia Veterans Health System, the Florida Recovery Center, the UF Health Shands Rehab Hospital and the UF Health Shands Psychiatric Hospital. In addition, physicians practice throughout North Central Florida at more than 50 UF Health Physicians practices

Clinical strengths of UF physicians include cancer, heart and vascular, neuromedicine, aging, psychiatry and addiction medicine, diabetes, orthopedics and children's health services.

The UF COM encompasses 26 clinical and basic science departments staffed by 1,400 faculty on the Gainesville campus and more than 450 faculty on the UFHSC’s urban campus in Jacksonville. The college attracts nearly $200M in external grants and contracts for research per year and is the leading educator of outstanding physicians, physician assistants, and biomedical scientists for the state of Florida. Through UF Health, COM physicians provide cutting-edge care to residents of Florida and patients around the world who travel to Gainesville and Jacksonville for specialized care. More than 1,500 students, residents, and fellows receive education and training at the COM each year. In addition to the medical degree, the college offers a variety of educational opportunities, including the interdisciplinary Biomedical Sciences Program, leading to a PhD degree, and joint programs for both MD and PhD degrees. Also part of the COM is the School of Physician Assistant Studies. The college plays an important role in the continuing education of resident physicians and fellows through its collaboration with UF Health. Patient care occurs at two principal locations, Gainesville and Jacksonville, and at more than 40 clinical practices. In Gainesville, patient care is provided by UF Health, the Malcom Randall Veterans Affairs Medical Center and several community healthcare sites and other affiliated hospitals in Florida. The UF Health Shands Hospitals serve a variety of inpatients, including those receiving diagnostic and therapeutic oncology care and emergency and trauma services. The UF Health Florida Proton Therapy Institute, located in Jacksonville, is one of only five proton therapy treatment centers in the U.S., delivering a highly precise and effective form of radiation to destroy tumors with little or no damage to adjacent healthy tissues. The COM has attained national leadership in research related to the brain and spine, cancer, diabetes, drug design, genetics, and organ transplantation. Collectively, the faculty are responsible for nearly half of UF’s total extramural research awards. The college has more than 350K ft2 of research laboratory space in more than 20 buildings on campus, including the CGRC (2006), one of the largest research buildings in Florida. The college also is home to the CTSI.

### COLLEGE OF PHARMACY

Founded in 1923, the College of Pharmacy (COP) consists of five clinical and basic science departments (Medicinal Chemistry, Pharmaceutics, Pharmacodynamics, Pharmaceutical Outcomes and Policy, and Pharmacotherapy and Translational Research ) staffed by 105 faculty. The college is ranked ninth nationally (public and private) according to U.S. News & World Report. The college’s research programs reside on two campuses in Gainesville and Orlando. The largest pharmacy educator in the state of Florida, the college is nationally and internationally recognized for its professional and graduate programs. As a UF Health college, the College of Pharmacy clinical faculty serve as a part of interprofessional teams in community health care clinics and at UF Health Shands Hospital for residents of Florida who travel to Gainesville and Jacksonville for specialized care. The college’s Center for Quality Medication Management operates a call center that serves more than 150,000 Medicare and other patients nationwide. The college is the home to one of only two accredited PGY2 residencies in pharmacogenetics, the only one based at a university.

More than 1,600 students receive professional degree education and training leading to the doctor of pharmacy (PharmD) degree. The college offers graduate programs to more than 100 students leading to a PhD or an MS degree in one of five areas: medicinal chemistry; pharmaceutics/ pharmacometrics; pharmacoepidemiology/ pharmacoeconomics; pharmacodynamics; and clinical pharmaceutical sciences/pharmacogenomics. The college also provides MS training in one of 11 online programs in specialized areas of pharmaceutical science to more than 800 students worldwide. Students in the online MS programs usually work in a clinical or applied science field while gaining their advanced education. The college also offers numerous continuing education programs for pharmacists, residents, and fellows.

Patient care occurs at UF Health Shands hospitals in Gainesville and Jacksonville and other clinical pharmacy locations around the state of Florida. Clinical strengths are in ambulatory care, diabetes, infectious disease, patient safety, and medication therapy management.

The college has 109,000 ft2 of space for education, administration, and research in the UF Health Science Center in Gainesville and at the UF Research and Academic Center at the Lake Nona medical community in Orlando. Both the specialized and the multidisciplinary research space at these sites support nationally and internationally recognized research programs in drug discovery, drug development, pharmacokinetics/pharmacometrics, pharmacoepidemiology, and pharmacogenomics/personalized medicine.

Faculty from across campus conduct research within one of three active interdisciplinary research centers in the college, the Center for Pharmacogenomics; the Center for Natural Products, Drug Discovery and Development; and the Center for Pharmacometrics and Systems Pharmacology. The Center for Pharmacogenomics, is recognized for its translational research, teaching, and service focused on genetically guided drug therapy decision-making. The Center for Pharmacogenomics also houses the UF Health genotyping core laboratory. The Center for Natural Products, Drug Discovery and Development provides both drug discovery expertise and the infrastructure to screen for novel therapeutic targets and chemical entities that modulate target activity. The Center for Pharmacometrics and Systems Pharmacology uses a systems biology approach to study drug activities, their targets, and clinical effects to support and advance translational research and improve the process of bringing new drugs to market for improved patient therapies, including personalized medicines.

The COP consists of five clinical and basic science departments (Medicinal Chemistry, Pharmaceutics, Pharmacodynamics, Pharmaceutical Outcomes and Policy, and Pharmacotherapy and Translational Research) staffed by 96 faculty. The college’s research programs reside on two campuses in Gainesville and Orlando. The college attracts approximately $10M in external grants and contracts for research per year. The largest pharmacy educator in the state of Florida, the college is nationally and internationally recognized for its professional and graduate programs. As a UF Health college, the COP clinical faculty serve as a part of inter-professional teams in community health care clinics and at UF Health Shands Hospital for residents of Florida who travel to Gainesville and Jacksonville for specialized care.

### COLLEGE OF VETERINARY MEDICINE

The UF College of Veterinary Medicine is Florida’s only veterinary medical college. One of six UF Health colleges, the College of Veterinary Medicine is committed to excellence in teaching, research and patient care and is home to 445 DVM students, 59 residents, 12 interns, 58 MS/PhD students and 708 distance education/online MS students. Many continue their education through internships at accredited veterinary institutions or private practices, and many go on to pursue residencies as well. The college offer special interest certificate programs in Aquatic Animal Health, Veterinary Business Management, Food Animal Veterinary Medicine, International Veterinary Medicine and Shelter Medicine. A new state-of-the-art clinical skills laboratory opened in 2015, providing dedicated space for veterinary students to enhance their training in clinical and technical skills. The college also offers a dual DVM/MPH degree program.

With approximately 3,500 graduates of the professional (DVM) degree program, veterinary medical alumni are active throughout Florida, the United States and overseas in areas ranging from in-depth scientific research to traditional small and large animal practice, zoological and aquatic medicine, public health, epidemiology and the military. More than 900 individuals have completed either MS or PhD degrees in Veterinary Medical Sciences. These individuals are working in academia, in the biomedical sciences, in government and in industry to advance animal, human and environmental health.

Faculty, who are housed in four academic departments, pursue both clinical and basic science research interests. Both clinical and research collaborations exist between the College of Veterinary Medicine and other health-related colleges through the UF Emerging Pathogens Institute and the UF Center for Environmental and Human Toxicology, as well as with governmental agencies. A strong extension outreach program allows the college to work closely with a variety of agricultural industry groups.

A major leader in neuro-respiration, toxicology, immunology and infectious diseases research, this program investigates emerging and exotic infectious diseases of livestock, pets and wildlife. The college’s Aquatic Animal Health program remains one of the most broadly based of any veterinary college worldwide and conducts extensive research on the health, management and conservation of free-living, captive and farmed aquatic animals, from shellfish to marine mammals. In addition, the college’s Center for Environmental and Human Toxicology is a leader in aquatic toxicology, with a major strength in nanotoxicology. The college is also internationally recognized for its world-class basic science research in mucosal immunology, traumatic neural injury, vaccine development, malarial research and neurogenesis of airway defensive behaviors, much of which is conducted in collaboration with UF Health and the Institute of Food and Agricultural Sciences. Most funding support is provided through competitive grants from the NIH, the U.S. Department of Agriculture and the Centers for Disease Control and Prevention.

Clinics, research space, offices, and teaching rooms in the college occupy a total of 331,927 ft2 of space, including 73,768 of research space.

The Veterinary Academic Building houses a large portion of the basic science faculty in the College of Veterinary Medicine as well as a number of laboratory facilities, including BSL3 Research Laboratories. The college is organized into six functional and administrative units: College Administration; the Department of Large Animal Clinical Sciences; the Department of Infectious Diseases & Pathology; the Department of Physiological Sciences; the Department of Small Animal Clinical Sciences; and the UF Veterinary Hospitals, and a recently formed fifth department of comparative, diagnostic and population medicine.

### COLLEGE OF DESIGN, CONSTRUCTION & PLANNING

Focus areas of the College of Design, Construction & Planning include sustainable design and construction, including green infrastructure; evolving design and construction technologies; health and the built environment; transportation planning; planning for a balance in human and natural systems; and the creation, application, and dissemination of geospatial information. The college is well equipped for the study and research needs of its faculty and students with facilities dedicated to their individual research requirement.

Much of the college’s research is conducted under the umbrella of 10 established research centers, the oldest of which is the Geoplan Center. Geoplan works with the Florida Department of Transportation to help streamline long-range transportation planning. Using an online tool for geospatial evaluation, Geoplan staff are able to evaluate alternative transportation corridors for environmental, fiscal, and cultural factors that would render an alternative unfeasible. For example, Geoplan works with Florida Department of Transportation to examine the potential impacts on the state’s highway infrastructure from sea level rise. Geoplan’s Florida Geographic Data Library is a comprehensive collection of Florida geospatial data that is used by state agencies, academic institutions, and private consultants.

Other centers in the College of Design, Construction & Planning with robust project portfolios include the Center for Landscape Conservation, which focuses on ecological networks and reserve design; the Center for World Heritage Research and Stewardship, which is dedicated to the protection of significant structures, monuments, and landscapes; the Center for Advanced Construction Information Modeling, which promotes the use of 3-D modeling technologies in the construction industry; the Powell Center for Construction Environment, which focuses on sustainable construction, including net zero energy; and the Shimberg Center for Housing Studies, which maintains data on Florida’s housing stock and supports efforts to address the challenge of affordable housing in communities across the state.

### COLLEGE OF EDUCATION

Faculty and graduate students of the College of Education pursue vital, interdisciplinary research that impacts teaching and learning, education policy and leadership in all education disciplines. By partnering with multiple stakeholders, education faculty engage in novel scholarship and research activities that enhance “whole school” improvement, human development, student achievement, early-childhood readiness, assessment and program evaluation, teacher preparation and retention, and classroom technology advances.

The college consists of three schools, six research centers, and the P.K. Yonge Developmental Research School. Enrolling nearly 1,700 students on campus in 32 bachelor’s and advanced degree programs within nine academic specialties, and nearly 4,000 students in 161 online courses, 14 online degree programs, and six online certification programs, the college’s educator preparation programs have been accredited by the National Council for the Accreditation of Teacher Education since 1954. The college faculty members engage in innovative research and public scholarship that enhance student readiness and achievement, whole school improvement, and leadership development in all education professions. The college’s Education Library is a branch library within the UF library system, which forms the largest information resource system in the state of Florida.

### COLLEGE OF JOURNALISM AND COMMUNICATIONS

The College of Journalism and Communications enrolls approximately 2,300 undergraduates in advertising, journalism, public relations and telecommunications, as well as the Science/Health graduate track and offers master’s degrees and doctorate degrees in mass communication enrolling approximately 200 students at the graduate level. The college excels in providing hands-on experience for journalism and telecommunication students, working alongside professionals, in the Innovation News Center and with seven media properties, including the local PBS, NPR and ESPN affiliates. Advertising and public relations students get experience working with national and regional clients through The Agency, a strategic communication agency led by professionals and run by students. The college is home to several research programs focused on message dissemination, persuasion and translation and has several state-of-the-art facilities that support communication research. The College of Journalism and Communications is home to the STEM Translational Communication Research Center, which was established as a strategic university-wide pre-eminence initiative. In 2018, the college established the second center, the Center for Public Interest Communications, which is the first of its kind in the nation. The center’s goals are to build and test both undergraduate and graduate curricula for adoption by other universities; nurture, generate and promote scholarship that can advance the practice of public interest communications; and support a vibrant community among those who practice or study public interest communications.

### COLLEGE OF PUBLIC HEALTH & HEALTH PROFESSIONS

One of the largest and most diversified health education institutes in the nation, the College of Public Health & Health Professions is one of six UF Health colleges. Across its eight departments — biostatistics; clinical and health psychology; environmental and global health; epidemiology; health services research, management and policy; occupational therapy; physical therapy; and speech, language, and hearing sciences — the college offers two bachelor’s, seven master’s, eight PhD and three professional degree programs. The college is also home to five National Institutes of Health-funded training grants in breathing research and therapeutics; movement disorders and neurorestoration; physical, cognitive and mental health; rehabilitation and neuromuscular plasticity; and substance abuse. The college’s research funding has more than doubled during the last decade, and its faculty members are among the most productive at the university. The college is ranked thirteenth in NIH funding among the 59 accredited US schools of public health. Public Health & Health Professions faculty members are working on research projects close to home and in countries throughout the world on a diverse range of topics, including muscular dystrophy, dementia, sports concussions, driving safety among older adults and at-risk populations, rehabilitation following traumatic injuries, suicidal ideation, violence and addiction, obesity, nutrition and physical activity, and infectious diseases such as cholera, Ebola, malaria and Zika.

Public Health & Health Professions has 452 affiliation agreements that allow students to participate in site visits and to be placed at various organizations to complete internships, clinical rotations, supervised research, and other practical experiences. The agreements include 147 with health departments, hospitals, health centers, and Veteran’s Administration facilities, 275 with clinics and private practitioners, and 30 with other universities/educational institutions.

The college is located within the 173,133 ft2 Health Professions, Nursing, and Pharmacy complex, which provides educational, administrative, and research space for the colleges of Nursing and Pharmacy as well.

(PHHP) is one of the largest and most diversified health education institutes in the nation. The college has nine departments: Behavioral Science and Community Health; Biostatistics; Clinical and Health Psychology; Environmental and Global Health; Epidemiology; Health Services Research, Management and Policy; Occupational Therapy; Physical Therapy; and Speech, Language and Hearing Sciences. The college offers a bachelor of health science, seven masters programs, eight doctoral programs, and two professional degree programs with 155 faculty teaching a total of 2,168 students. Additionally, the college’s research funding has more than doubled during the last decade, with nearly $20M in external grants and contracts for research per year. PHHP faculty work collaboratively with many investigators across UF and on research projects locally, nationally and globally. The PHHP's home is in the Health Professions, Nursing, and Pharmacy (HPNP) building and includes 11 classrooms, four lecture halls, one auditorium, and a distance learning room for a total of 7,783 ft2. The college also includes the PHHP Research Complex, which is located in the Dental Wing (Ground Floor) of UF Health. PHHP has 452 affiliation agreements that allow students to participate in site visits and to be placed at various organizations to complete internships, clinical rotations, supervised research, and other practical experiences.

### COLLEGE OF THE ARTS

Previously known as the College of Fine Arts, evolved from the School of Architecture, which was established in 1925. In 1975 the previous College of Architecture and Fine Arts was divided into two colleges, the College of Architecture and the College of Fine Arts. Many programs, however, have flourished since the university's earliest days. The UF Band Program got its start in 1913, and the Men's Glee Club was founded in 1907. The painting and drawing programs began in 1929 and became the basis for the School of Art and Art History. In May 2014, the college changed its name to the College of the Arts. In 2015 the college celebrated its 40th anniversary.

The College of the Arts offers baccalaureate, Master’s and PhD degree programs in its three schools, the School of Art and Art History, School of Music, and School of Theatre and Dance. The college is home to the Center for Arts in Medicine, Center for World Arts, Digital Worlds Institute, University Galleries, and the college program of the New World School of the Arts in Miami. More than 100 faculty members and approximately 1,200 students work together daily to engage, inspire, and create. The college achieves the university’s mission by training professionals and educating students as artists and scholars, while developing their critical thinking and inspiring a culture of curiosity and imagination. The college hosts more than 300 performances, exhibitions, and events each year. Faculty and students also exhibit and perform at other local, national, and international venues.

College of the Arts faculty members are active and productive researchers, scholars, and creative artists who engage in basic and applied research within the arts and across disciplines. Faculty research focuses on and occurs within the specific arts discipline and across sub-disciplines within their respective fields. Interdisciplinary and multidisciplinary research brings arts researchers together with colleagues in other fields to create new areas of study that bring the complementary strengths of the arts to those fields. In each of these processes, both traditional and unique arts methodologies inform and enhance research across disciplines, and the results of this work contribute significantly to strengthening the human condition and improving quality of life. Faculty researchers disseminate their work in multiple ways — books, articles, conference presentations, recitals, exhibitions and productions — both in print and electronically. This combination of traditional and unique arts delivery systems is a dynamic component of arts research, allowing all individuals multiple access points to the results of research activity in the college.

### LEVIN COLLEGE OF LAW

Offers students a diverse range of specializations and interdisciplinary options through more than 100 JD courses. In addition to the JD, the college offers: an LLM in Taxation, an LLM in International Taxation, an SJD in Taxation, an LLM in Environmental and Land Use Law, and an LLM in Comparative Law (US Law).

The college also houses the Center for the Study of Race and Race Relations, Center for Governmental Responsibility, Center on Children and Families, Center for Criminal Justice, and the Institute for Dispute Resolution. Nearly 80 full-time faculty members teach at UF Law, in addition to dozens of adjunct and affiliate professors. Several faculty members are scholars in their field, writing chapters, articles, treatises, casebooks, and major books used by law schools and practitioners throughout the nation and world.

### WARRINGTON COLLEGE OF BUSINESS ADMINISTRATION

Has six undergraduate majors, six minors, seven specialized master’s programs, five PhD programs, and two doctorate degrees. The college has more than 100 faculty members across four departments conducting vital research in the fields of finance, information systems and operations management, management, and marketing. In addition to their teaching and research duties, Warrington scholars are also extremely active in professional service. Warrington professors have served as reviewers, editors, and in leadership positions on the editorial boards of some of the world’s elite academic publications.

The college’s expansive research agenda also includes 11 research centers that are dedicated to producing studies and examinations that provide thought leadership to academic, business and governmental organizations globally. Warrington’s research centers include entrepreneurship, international business, business communication, supply chain management, retail, ethics, human resources, accounting and auditing, real estate, economics and teaching, and learning and assessment. The studies, conferences, workshops, and academic and professional programs these centers produce make significant and tangible impacts in their respective fields.

Warrington’s business education offers a blend of traditional classroom instruction with innovative experiential learning opportunities, Warrington’s curriculum challenges students to think creatively and generate solutions.

### COLLEGE OF NURSING

CON is driven to transform health through innovative practice, preeminent research, and exceptional academic programs that provide excellent personalized nursing care, generate research and scholarship that have an impact on practice, and prepare graduates who care, lead, and inspire. The college is a major provider of baccalaureate-prepared (BSN) nurses in the state.

As part of the academic health center, the College of Nursing collaborates with other health colleges, the UF Health family of hospitals and clinical affiliates across the state. The College of Nursing has a strong collaborative relationship with the UF Health nursing division to support the college’s missions of education, research and patient care. Strategic goals and activities focus on efforts to ensure nurses are best prepared to meet today’s health care needs. New joint faculty appointments have been forged between the college and the teaching hospital, and the college has an innovative model of clinical education where a cohort of BSN students is assigned to Academic Partnership Units at UF Health Shands and UF Health Jacksonville. The College of Nursing is located within the 173,133 ft2 Health Professions, Nursing, and Pharmacy complex, which provides educational, administrative, and research space for the College of Nursing, the College of Public Health and Health Professions, and the College of Pharmacy.

The College of Nursing research portfolio is diverse and includes projects focused on three areas of excellence: management of symptoms associated with aging and chronic illnesses; disparities in health and health services; and translational research for families. Faculty members receive funding from a number of sources, including the NIH, the National Science Foundation and private foundations. This research has resulted in improvements in health promotion, disease prevention and symptom management for young and old alike. Students are actively involved with faculty members in research, helping the students understand and value clinical research. Renowned faculty researchers and experts are leading the efforts to build robust research teams within the college and across campus and the nation. The college has an established Florida Blue Center for Health Care Quality and a Center for Palliative Care Research and Education. In addition, the college boasts two faculty members who hold joint appointments with UF Health Shands Hospital, one of whom directs clinical research on nursing and patient care services.

### COLLEGE OF AGRICULTURAL AND LIFE SCIENCES

With 23 undergraduate majors, more than 50 areas of specialization, and 23 graduate majors, the college is an educational leader in the areas of food, agriculture, natural resources, and life sciences. Its mission is to deliver unsurpassed educational programs that prepare students to address the world’s critical challenges related to agriculture, food systems, human well-being, natural resources and sustainable communities. The College of Agricultural and Life Sciences is one of the largest colleges of its kind in the nation, serving nearly 5,000 students in programs ranging from horticultural sciences to geomatics and resource economics.