**FACILITIES & OTHER RESOURCES**

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This document highlights key UF Facilities and Resources related to **Inclusion, Diversity, Equity, and Access (IDEA), Artificial Intelligence and Data Science, and Neuroscience and Related Research:**

* **INCLUSION, DIVERSITY, EQUITY AND ACCESS (IDEA)**
* **ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**
* **NEUROSCIENCE AND RELATED RESEARCH**

The following sections describing additional resources available are also added:

* **CLINICAL AND TRANSLATIONAL RESEARCH (CTSA Hub)**
* **AFFILIATED COLLABORATORS AND NETWORKS**
* **RESOURCES FROM 16 UF COLLEGES**

**TABLE OF CONTENTS**

**INCLUSION, DIVERSITY, EQUITY AND ACCESS (IDEA)**

**IDEA TRAINING AND RESOURCES**

* Center for Teaching Excellence
* Crucial Conversations
* Gators Together Certificate Program
* Health Science Center Libraries Diversity, Equity and Inclusion
* Managing Bias
* Multicultural Mentoring Training Modules
* National Center for Faculty Development and Diversity Membership

**IDEA CHAMPIONS AND NETWORKS (CULTURE CHANGE)**

* AAAS SEA Change Charter Membership
* Affinity Groups
* APLU ASPIRE IChange Network Membership
* Chief Diversity Officer and Campus Diversity Liaisons Network
* CTSI Diversity and Cultural Competence Council (DC3)
* Faculty Senate Welfare Council

**HEALTH-RELATED IDEA RESEARCH**

* Cancer Research Education and Engagement (CaRE2) Health Equity Center
* Center for Advancing Minority Pain and Aging Science (CAMPAS)
* Health Disparities Research and Intervention Program
* Jacksonville Aging Studies Center (JAX-ASCENT)
* Jacksonville Health Equity Research Organization (JaxHERO)
* Minority Cancer Research and Training Center (MiCART)
* UF Racial Justice Research Fund

**Collaboration AND TEAM SCIENCE Resources**

* Collaboration Platforms
* CTSI Network Science Program
* CTSI Team Science Academy Workshops

**OUTREACH**

* Florida Comprehensive Cancer Research Training Opportunities for Outstanding Leaders (ReTOOL)
* Herbert Wertheim College of Engineering K-12 Gator Outreach Initiative
* MARC GatorSTAR Program
* SF2UF Bridge Program
* Summer Health Professions Education Program

**COMMUNITY ENGAGEMENT**

* Florida Community Engagement Alliance Against COVID-19 Disparities (Florida CEAL)
* UF HealthStreet
* CTSI Citizen Scientist Program

**COMMUNICATION**

* Center for Public Interest Communications
* STEM Translational Communication Center
* The Innovation News Center
* UF Health Communications

**ARTIFICIAL INTELLIGENCE AND DATA SCIENCE**

* UF-NVIDIA AI Partnership
* Malachowsky Hall for Data Science and Information Technology

**INSTITUTES, CENTERS AND CORE resourceS**

* Center for Data Solutions (College of Medicine-Jacksonville)
* Center for Drug Evaluation and Safety (CoDES)
* Center for Natural Products, Drug Discovery and Development
* Center for Safety, Simulation & Advanced Learning Technologies
* Center for Statistics and Quantitative Infectious Diseases (CSQUID)
* CTSI Biomedical Informatics Program
  + Clinical and Translational Science Informatics and Technology (CTS-IT)
* Data Science & Applied Technology Core (Claude D. Pepper Older Americans Independence Center)
* Digital Worlds Institute
* Informatics Institute
* NSF Center for Big Learning
* Perioperative Cognitive Anesthesia Network (PeCAN)
* PRISMA Partnership: Precision and Intelligence in Medicine
* Sepsis and Critical Illness Research Center

**RESEARCH COMPUTING AND INFORMATION TECHNOLOGY**

* UF IT Research Computing
* UF Health Information Technology

**DATA CONSORTIA and RESOURCES**

* FDA CBER Biologics Effectiveness and Safety (BEST) Initiative—IBM Watson Partner (OneFlorida)
* Florida Research Data Center
* Integrated Data Repository (UF Health)
* OneFlorida Data Trust

**NEUROSCIENCE AND RELATED RESEARCH**

**INSTITUTES, CENTERS AND CORE RESOURCES**

* Center for Addiction Research and Education (CARE Center)
* Center for Autism and Neurodevelopment
* Center for Breathing Research and Therapeutics (BREATHE Center)
* Center for Cognitive Aging and Memory
* Center for Exercise Science
* Center for Neurogenetics
* Center for OCD, Anxiety and Related Disorders (COARD Center)
* Center for Smell and Taste
* Center for Translational Research on Neurodegenerative Disease
  + Parkinson’s Foundation Research Center of Excellence
* McKnight Brain Institute at UF (MBI)
* Mentoring Institute for Neuroscience Diversity Scholars (MINDS)
* Myology Institute
* Norman Fixel Institute for Neurological Diseases at UF Health
  + Core Laboratories: Biomarkers, Cognitive Neuroscience, Neuroimaging, Neuromodulation and Brain Mapping, Neurotechnology and Neurophysiology
* Pain Research and Intervention Center of Excellence (PRICE)
* Preston A. Wells Jr. Center for Brain Tumor Therapy
* Trauma, Concussion and Sports Medicine (TRACS)

**NEURO-RELATED RESEARCH NETWORKS AND DATA RESOURCES**

* 1Florida Alzheimer’s Disease Research Center
* Adolescent Brain Cognitive Development (ABCD) Study
* Consortium for Medical Marijuana Clinical Outcomes Research
* Florida Neonatal Neurologic Network
* International Tourette Deep Brain Stimulation Database and Registry
* National Drug Early Warning System (NDEWS) Coordinating Center
* UF INFORM Patient Research Database

**CLINICAL AND TRANSLATIONAL RESEARCH (CTSA Hub)**

**TRANSLATIONAL WORKFORCE DEVELOPMENT**

* UF Health Office of Biomedical Research Career Development
* CTSI Translational Workforce Development Program

**RESEARCH SERVICES AND ADMINISTRATION**

* CTSI Service Center
* Office of Clinical Research

**INFORMATICS Platforms and Systems**

* EpicCare Electronic Health Record/MyChart
* OnCore Clinical Trials Management System (CTMS)
* REDCap (Research Electronic Data Capture)

**BIOSTATISTICS, EPIDEMIOLOGY AND RESEARCH DESIGN**

* CTSI Biostatistics, Epidemiology and Research Design (BERD) Program

**REGULATORY SCIENCE**

* RKS Catalyst
  + Center for Pharmacometrics & Systems Pharmacology
  + Translational Drug Development Core
* UF Innovate
  + Tech Licensing
  + Ventures
  + The Hub

**CTSA HUB AND NETWORK CAPACITY**

* OneFlorida Clinical Research Consortium
* CTSI Recruitment Center
  + Consent2Share
  + UFHealth.org Study Listings
  + UF Studies Facebook
  + ResearchMatch
  + ACT Network (NCATS/CTSA Accrual to Clinical Trials)
* CTSI Research Design and Data Coordinating Center
* CTSA Trial Innovation Network
* Venues
  + Clinical Research Center
    - CRC Advanced Research Resources
    - Investigational Drug Service Pharmacy
  + Dental Clinical Research Unit

**PRECISION HEALTH**

* Precision Cancer Care Program
* Precision Medicine Program
* Precision Public Health Program
* Southeast Center for Integrated Metabolomics
* UF Health Pathology Laboratories
  + UF Health Pathology Laboratories Genetic Laboratories, Molecular Pathology

**ADDITIONAL HUB FACILITIES**

* Clinical and Translational Research Building (CTRB)
* CTSI Biorepository

**AFFILIATED COLLABORATORS AND NETWORKS**

* International Mentoring Association
* Association for Clinical and Translational Science Membership
* NIH Common Fund Metabolomics Consortium Coordinating Center
* NHGRI Implementing Genomics in Practice (IGNITE) Pragmatic Clinical Trials Network
* North Florida/South Georgia Veterans Health System
  + VA Geriatric, Research, Education and Clinical Center
* Sentinel Network

**UF COLLEGES AND ADDITIONAL FACILITIES AND RESOURCES**

**UF COLLEGES**

* College of Agricultural and Life Sciences
* College of Dentistry
* College of Design, Construction & Planning
* College of Education
* College of Health & Human Performance
* College of Journalism and Communications
* College of Liberal Arts & Sciences
* College of Medicine
* College of Nursing
* College of Pharmacy
* College of Public Health & Health Professions
* College of the Arts
* College of Veterinary Medicine
* Herbert Wertheim College of Engineering
* Levin College of Law
* Warrington College of Business Administration

**ADDITIONAL UF FACILITIES AND RESOURCES**

* Center for Arts in Medicine
* Center for Cellular Reprogramming
* Animal Care Services
* Bureau of Economic and Business Research (BEBR)
* Cardiovascular Cell Therapy Center
* Cell & Tissue Analysis Core
* Child Health Research Institute
* Diabetes Institute
* Electron Microscopy Core
* Emerging Pathogens Institute
* Harrell Medical Education Building
* Human Applications Laboratory Manufacturing Facility
* Institute for Child Health Policy
* Institute on Aging
* Institutional Review Boards (IRBs)
  + Click Commerce
* Institutional Animal Care and Use Committee
* Interdisciplinary Center for Biotechnology Research (ICBR)
* Major Analytical Instrumentation Center & Particle Analysis Instrumentation Center
* Medical Honors Program
* Network for Pancreatic Organ Donors with Diabetes
* Office of Medical Education
* Powell Gene Therapy Center
* UF Center for HIV/AIDS Research, Education & Service (UF CARES)
* UF Genetics Institute
* UF Graduate Program in Biomedical Sciences
* UF Graduate School
* UF Health
* UF Institutional Planning and Research
* UF Research and Academic Center at Lake Nona

# INCLUSION, DIVERSITY, EQUITY AND ACCESS

**IDEA TRAINING and resources**

**Center for Teaching Excellence.** The Center for Teaching Excellence supports excellence in teaching and learning across the university. CTE offers several trainings related to IDEA for faculty, teaching assistants, post-docs and graduate students, including: modules in cultural competence in the Passport to Great Teaching certificate program and Accessible Online Environments. They have also compiled comprehensive resources in their website related to inclusive teaching.

**Crucial Conversations.** The Office of the Chief Diversity Officer has supported more than 300 faculty and staff members through this intensive training developed by VitalSmarts in how to have conversations around high-stakes, emotional and risky topics. The trainings have included college-level senior leadership, the Campus Diversity Liaison network, and specific colleges’ management teams. The university has invested in a train-the-trainer program and now has a group of trained, experienced trainers to deliver this content in a sustainable manner.

**Gators Together Certificate Program.** Gators Together is a seven-course certificate program offered by UF Human Resources for individual employees and supervisors. This diversity and inclusion program is designed to increase performance and engagement by creating an inclusive environment for our diverse talents.

**Health Science Center Libraries Diversity, Equity and Inclusion.** The HSCL Diversity, Equity and Inclusion Team, formed in 2018, is dedicated to developing and ensuring a safe and comfortable Health Science Center Libraries’ climate for its diverse patrons and employees. This committee promotes diversity, equity, inclusion, accessibility, and justice initiatives within the HSCL and beyond in order to foster safe and welcoming spaces for all. This formal committee continues and expands upon previous HSCL DEI efforts, including its Dollies without Borders initiative; grant-funded outreach on sex and gender differences and how they impact biological and medical research; hosting National Library of Medicine exhibits on DEI and developing related programming; and creating educational videos on HIV/AIDS to reach at-risk groups.

The Team’s charge-related activities thus far have included multiple DEI climate assessments, implementing training sessions for staff and hosting programming, partnering with campus units to create synergies around DEI, physical and digital spatial enhancements, and providing diverse health information resources. The initial assessment conducted by the Team in 2019 was a pilot featuring “HappyOrNot” machines stationed at the library’s entrances on the Gainesville campus. Library visitors would respond to biweekly question prompts regarding the DEI climate in the library by pressing a smiley or frowning face on the machines, indicating how they felt about the question. A second, more in-depth assessment was launched in 2020 as a follow up to the initial HappyOrNot results. This online survey asked the same questions as the pilot (and some additional ones) and allowed for off-campus students to participate, as well as gathered more demographic data.

Some of the programming conducted by the Team includes "Project Implicit", "Spent", and "Safe Zone" training taken amongst the team members. Some members also ran a Privilege Walk for HSCL employees, and others facilitated a session on microaggressions for an HSCL training day. The Team has hosted workshops on restorative justice, non-violent communication, Green Dot bystander interventions, and disability allyship. We partnered with UF’s College of Medicine to host the “Honoring LGBTQIA+ Health Stories” panel discussion for the “Celebration of Diversity Week” in 2019. A team member is part of the university's Post-doctoral Advisory Committee and has shared materials with this group as it strives to educate these future laboratory PIs. The team is well integrated into the Health Science Center's DEI efforts, as the current team lead is a member of the HSC Diversity Liaisons Group.

The Team has initiated multiple physical spatial improvements, such as advocating for all-gender restrooms and push foot-bar ADA buttons, the installation of a Mamava lactation pod and wheel-chair accessible KIC scanner, and the addition of ADA stickers to our wheelchair accessible desks. The team has enhanced the HSCL's digital spaces by conducting an inclusive-language review of the library's website. Every two to three weeks since October 2020, the HSCL has posted to its Face Book page brief biographies of “BIPOC in Health Science” - clinicians and researchers of color who have some relationship to the University of Florida.

Finally, the Team developed a LibGuide with links to relevant HSCL materials, local and national organizations, a calendar of commemoration days and local health-related DEI events, and most recently a page on anti-racism resources. The LibGuide serves as a hub for not only DEI health information, but information about the DEI Team, including its members, charge and activities. A second LibGuide was created on consumer health resources for diverse populations.

**Managing Bias.** In December 2020, UF HR introduced a new 30-minute “Managing Bias” online training module for faculty and staff as an initial step in our shared efforts to better understand and begin to dismantle the individual and collective forces that support racism. The module is part of a three-phase initiative:

Phase 1 - Launch required online educational modules for all faculty, staff and students

* "Managing Bias" for all faculty and staff
* "Diversity, Equity and Inclusion" for all students

Phase 2 - Develop and launch broader-based learning resources, webinars and conversations, including leadership-specific resources

* UF Human Resources, along with the offices of the Chief Diversity Officer and Student Affairs, invited “100 UF voices” from across campus to a half-day online retreat to identify the knowledge and skills required to build a more racially just UF
* Participants in this retreat helped identify three broad areas of focus for learning:
  + Fostering Awareness: Understanding anti-Black racism
  + Building Capacity: Knowledge and skills to engage in difficult conversations on race
  + Promoting Action: Effecting personal and institutional change
* UF HR and UF Multicultural & Diversity Affairs are launching webinars, workshops and resources aligned with the above areas in Spring 2021

Phase 3 - Working with UF expertise, develop a UF-specific online module for all faculty, staff and students to be launched in academic year 2021-2022

**Multicultural Mentoring Training Modules.** This 3-session workshop piloted in academic year 2020-2021 was sponsored by the Office of the Chief Diversity Officer and the International Mentoring Association and developed in association with the Office of the Provost and the Clinical and Translational Science Institute (CTSI) Mentor Academy. Nationally recognized speakers presented online, interactive sessions for audiences of more than 400 faculty, staff and trainees.

**National Center for Faculty Development and Diversity (NCFDD) Membership.** The university has joined NCFDD as an institutional member, providing all faculty and staff access to the free career and professional development programming offered. Membership data indicates that faculty and staff are steadily becoming aware of and taking advantage of the resource and report high levels of satisfaction with the resource. In addition, the university has made a concerted push to fund participation of faculty members, especially women and URM faculty, in the Faculty Success Program. This boot camp has been described by alumni of the program as transformative.

**idea CHAMPIONS AND NETWORKS (culture change)**

**AAAS SEA Change Charter Membership.** In October 2020, theUniversity of Florida joined the first SEA Change charter members. SEA Change is an initiative of the American Association for the Advancement of Science to support colleges and universities as they systematically transform themselves into diverse, equitable and inclusive institutions. This national network is publicly committed to creating sustainable changes to recruit, retain and advance the full range of diverse talent in science, technology, engineering, mathematics and medicine (STEMM).

**Affinity Groups.** The university has seven official faculty and staff affinity groups and numerous student affinity groups. The CDO meets with the leadership of the faculty and staff affinity groups on a regular basis to help foster cooperation and information sharing across the groups. The CDO also meets with the leaders of graduate student affinity groups, such as the Black Student Union, National Society of Black Engineers (NSBE), American Indian Science and Engineering Society (AISES) and Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), among others. The university supports undergraduate affinity groups through the Office of Multicultural and Diversity Affairs, a department within the Division of Student Affairs that provides a wide range of services, educational opportunities, learning support, outreach activities and engagement for students across identities.

**APLU ASPIRE IChange Network Membership.**  UF is a member of the second cohort of the Association of Public and Land-Grant Universities (APLU) ASPIRE IChange network. ASPIRE’s Institutional Change initiative (IChange) seeks to cultivate post-secondary institutions where STEMM faculty from underrepresented groups (URGs) are widely recruited, hired and retained, and all STEMM faculty employ inclusive teaching, advising, and research mentoring. The IChange Network is designed to catalyze institutional change by providing a comprehensive, systematic approach to organizational transformation using a structured self-assessment process to inform the development and implementation of an action plan.

**Chief Diversity Officer and Campus Diversity Liaisons Network.** The Chief Diversity Officer (CDO) is a cabinet level position that also serves as senior advisor to the President. The CDO provides leadership, expertise and vision for the university’s coordinated model for diversity and inclusion. A network of Campus Diversity Liaisons—faculty/staff members embedded within the leadership team of each college or business unit—work with the CDO to advance the university’s strategic initiative around IDEA and its anti-racism initiative.

**CTSI Diversity and Cultural Competence Council (DC3).** Part of the CTSI Clinical Research Professionals Advisory Council, the DC3 was established in 2018 to help UF clinical research professionals become competent communicators and actors in the intersectional areas of diversity and culture. With the clinical research professional and community member in mind, this council seeks to develop opportunities in raising awareness of distinct needs for diversity and inclusion, while identifying and disseminating best-practice information in the UF clinical research community. The goal of the DC3 is to intimately examine long-standing and unspoken issues of racial injustice, equality, and diversity within the working environment of the Clinical Research Professional workforce.The DC3 persists to convene on issues of racism and injustice, meeting monthly since its inception with guest speakers, program planning, and in-depth discussions. The CTSI DC3 conducted the inaugural Black Voices in Research Storytelling Eventin January 2021. The goals of this event were to create a platform for black biomedical researchers and research professionals (faculty, staff, post-docs, and graduate students) to amplify their stories, to bring awareness to their experiences that have shaped how they show up in their field, and to build and enrich UF’s diverse research community. This event underscores the inherent value of telling stories.

**Faculty Senate Welfare Council.** Faculty Senate Councils make recommendations to the Senate, facilitate the implementation of policy, and serve as liaisons between the Senate and the administration within their areas. Each policy council oversees, coordinates and facilitates the work of committees that are assigned to that respective council. The Senate Steering Committee coordinates the referring of matters to, and the receipt of recommendations from, the Senate Policy Councils. The Faculty Senate Welfare council's area encompasses matters that support, encourage, define, and evaluate the quality of the faculty and retention of faculty members, including faculty rights and academic freedom; faculty support programs, such as fringe benefit packages; faculty diversity; and programs that improve the quality of faculty life.

**HEALTH-RELATED IDEA RESEARCH**

**Cancer Research Education and Engagement (CaRE2) Health Equity Center. The CaRE2 Health Equity Center**is an NIH/National Cancer Institute collaborative partnership between the University of Florida, Florida A&M University and University of Southern California (U54CA233444). The center’s mission is to address cancer disparities in Black and Latino communities through high-impact and innovative research; building research capacity and innovation; training and education of underrepresented minority students and early-stage investigators; culturally sensitive community engagement; and research training of the next generation of scientists who can conduct cancer disparities research going from the molecule to the community to the clinic.

**Center for Advancing Minority Pain and Aging Science (CAMPAS).** UF CAMPAS is one of 18 centers under the National Institute on Aging Resource Centers for Minority Aging Research (RCMAR). The UF CAMPAS aims to enhance the diversity of the aging research workforce by recruiting and training promising investigators from underrepresented backgrounds and supporting their mentored experiences conducting innovative social and behavioral research addressing pain and disability among older adults. The UF CAMPAS leverages multiple institutional strengths and resources and represents a partnership between the UF Pain Research and Intervention Center of Excellence (PRICE) and the UF Institute on Aging (IOA). Core Faculty is a multidisciplinary group of scientists whose expertise spans the spectrum of clinical and translational research related to the theme of biopsychosocial contributions to pain and disability among older adults.

**Health Disparities Research and Intervention Program.** This program is a collaborative effort between College of Liberal Arts and Sciences and College of Medicine teams that aims to eliminate health disparities by fostering partnerships among patients, providers, community members, educators, administrators, and researchers to achieve the following broad goals: (1) promote health and well-being among racial/ethnic minorities, the poor, and the underserved; (2) assure the delivery of patient-centered culturally sensitive health care to all patients; (3) recruit and retain racially/ethnically diverse faculty and students who are interested in medicine or other health professions; (4) increase community-based participatory health research in racial/ethnic minority communities; and (5) develop, test, and institutionalize evidence-based interventions targeting obesity and other health problems that have a disproportionately negative impact on racial/ethnic minorities, the poor, and the underserved.

**UF Health Jacksonville Aging Studies Center (JAX-ASCENT).**  JAX-ASCENT serves as a hub for behavioral, nutritional and pharmacologic clinical trials targeting older adults, particularly racial minorities and people of low socioeconomic status who have been underrepresented in clinical research, making it more difficult to develop the best prevention and treatment approaches to assist them. Jacksonville is an ideal location for such a center because of the high concentration of residents who fall into those demographic groups. Researchers will also study social determinants of health that contribute to chronic diseases and functional decline within those demographic groups. The center opened in 2018 on the UF Health Jacksonville campus.

**Jacksonville Health Equity Research Organization (JaxHERO).** JaxHERO is a primary care practice-based research network that conducts community-based research in order to improve the quality of care and promote health equity for persons living in Northeast Florida. JaxHERO is composed of primary care centers from UF Health Jacksonville, Florida Department of Health – Duval, Mayo Clinic Jacksonville and the St. Vincent’s family medicine program. JaxHERO provides the foundation for translational and evidence-based research focused on studying and reducing health disparities while building on institutional commitments to the underserved population. JaxHERO has four objectives: create a diverse network of primary care physicians throughout the area that fosters collaborative research; conduct primary care based research to reduce health disparities and increase health equity; educate network members and clinical staff to increase participation in research; disseminate findings to network members, patients and community stakeholders to develop a research agenda and determine future research topics.

**Minority Cancer Research and Training Center (MiCART).** MiCaRT is Florida’s first and only National Cancer Institute P20-funded minority institution/cancer center partnership focused on cancer research and training for African Americans. The center is administered by scientists from UF and Florida A&M University to provide research mentoring and training opportunities that burnish minority students’ and faculty members’ research skills with the goal of impacting cancer health disparities in Florida’s minority communities.

**UF Racial Justice Research Fund.** In FY 2021, UF committed nearly $1 million to faculty research projects focused on racial disparities in health care, diversity in professional programs, challenges in developing and teaching an inclusive curriculum, and strategies for creating a more inclusive campus environment. UF Research has awarded $970,000 to more than a dozen faculty teams across campus. Examples of specific topics being addressed by funded projects include racial disparities in clinical trials of treatments for some of the nation’s most prevalent chronic diseases; why older Black individuals are reluctant to take advantage of traditional health care and whether they might be more likely to use telehealth options that have grown significantly during the pandemic; and identification of barriers to success for Blacks in biomedicine and strategies for them to thrive.

**Collaboration and Team Science Resources**

**Collaboration Platforms**. Many software solutions enable and enhance collaboration for team science and beyond. Tools include: Web and voice conferencing: Adobe Connect, Cisco, Skype for Business, Webex Event Center, Zoom. Distance Learning: Canvas, Office Mix, Storyline 360. Cloud-based software and storage: DropBox, Lucid Chart, One Drive, Slack, Voice Thread. Software: Endnote, Express Scribe, Transcription Pro, Mediasite, Libre Office, Yammer.

**CTSI Network Science Program.** UsesNetwork Science and Social Network Analysis to map, visualize and analyze patterns of collaborations among UF scientists over time. These include publication co-authorship, co-participation in grant proposals and awards, co-membership in graduate committees, and proximity of office spaces. The Network Science Program includes investigators from the UF Bureau of Economic and Business Research, the Department of Sociology and Criminology & Law, and the Department of Anthropology. Network methods have been used in the program to identify emerging scientific communities and research fields at UF, design innovative interventions for matching potential collaborators, inform CTSI pilot programs, and evaluate the role of the CTSI on the growth of interdisciplinary research at UF. The Network Science Program is available to provide network methods consults to other UF investigators.

**CTSI Team Science Academy Workshops.** The Team Science Academy, piloted at UF in fall 2020, offers faculty members practical guidance about engaging in Team Science to pursue complex research questions, work effectively with team members, and assess team performance in order to produce high impact research outcomes. The academy consists of six workshops offered over the course of the semester.

**OUTREACH**

**Florida Comprehensive Cancer Research Training Opportunities for Outstanding Leaders (ReTOOL).** Established in February 2012, the ReTOOL program focuses on increasing the number of underrepresented minority (URM) cancer scientists who will effectively address cancer disparities through outstanding biomedical cancer research enterprise. The primary mission of the ReTOOL program is to develop, promote and sustain an independent, competitive cancer research training program that creates opportunities and promotes careers in oncology for URM students. The ReTOOL program has received continuous funding since 2012 by the US Army Department of Defense and the NIH/National Cancer Institute. The Department of Defense awards funded the Basic ReTOOL program, which provided summer research training for URM students with no previous research experience. The National Cancer Institute P20 award funded the Advanced ReTOOL program, which provided students with previous research experience additional summer research experiences. In 2017, the ReTOOL program was expanded to the Comprehensive ReTOOL (C\_ReTOOL) program through the National Cancer Institute. Under the C\_ReTOOL program, qualified URM students from University of Florida, Florida A&M University, Bethune-Cookman University, Edward Waters College and Florida Memorial University will undergo 15-week research training at University of Florida. Within the next 5 years, at least 15 URM students will be trained annually to create opportunities and promote cancer research careers for these students in the areas of basic, behavioral, biomedical and clinical sciences.

**Herbert Wertheim College of Engineering K12 Gator Outreach Initiative.** The Herbert Wertheim College of Engineering K12 initiative serves to support and promote the success of the Florida Engineering Experiment Station (FLEX), an arm of the HWCOE dedicated to driving economic and workforce development around the state and strengthening Florida’s role in the global innovation economy. The K12 Gator Outreach Initiative also seeks to increase the diversity of tomorrow’s technology leaders by promoting the success of pre-collegiate institutions and their students across the state. This effort includes the GatorTRAX summer program, which is designed to pave the way to careers in engineering or other fields that require creative thinking, analytical skills and problem-solving skills. This free K-12 math and engineering outreach program is run through the combined efforts of student volunteers from the engineering honor society Tau Beta Pi and the University of Florida's College of Engineering. **The content of the modules** is designed to complement education received in Alachua County public schools.

**MARC GatorSTAR Program.** This program is designed to enhance the academic preparation and research skills training of underrepresented minority students at UF; to place them in mentored research environments with dynamic, experienced faculty preceptors; to support the students through to their graduation with a BS degree in a biomedical or behavioral science-related discipline; and to promote their continuation to a successful career as a research scientist. Students who are accepted into the MARC program become GatorSTAR scholars for their junior and/or senior years, during which they receive 60% of their tuition, a monthly stipend and travel support. Scholars participate in focused programs to enhance their academic preparation and research skills, and participate in intensive research experiences with UF faculty mentors and faculty mentors at our partner institutions throughout the Southeast.

**SF2UF Bridge Program.** The SF2UF Bridge to the Baccalaureate Program is a partnership between Santa Fe College and the University of Florida. The SF2UF Bridge Program seeks to increase the number of minority and underrepresented Santa Fe students in the biomedical and behavioral sciences who go on to transfer to UF and graduate with bachelor's degrees in biomedical and behavioral science-related disciplines. This program is funded by the National Institutes of Health (NIH)/ National Institute of General Medical Sciences (NIGMS) NIH Grant # R25GM115298. The goal of the program is to support the education, research experience, and professional development of students from underrepresented groups. Selected students will be able to conduct scientific research in the laboratory of a University of Florida professor as undergraduates while enrolled at Santa Fe College. In addition, SF2UF Bridge supports and enhances the educational experience of *all* Santa Fe College students by providing chemistry and biology tutoring, offering a seminar course (*ISC2931: Entering Research in the Biomedical and Behavioral Sciences*) as well as a lecture series where active UF scientific investigators share their research with the SF community at large.

**Summer Health Professions Education Program.** This program is a free summer enrichment program focused on improving access to information and resources for college students interested in the health professions. SHPEP’s goal is to strengthen the academic proficiency and career development of students underrepresented in the health professions and prepare them for a successful application and matriculation to health professions schools. These students include, but are not limited to, individuals who identify as African American/Black, American Indian and Alaska Native and Hispanic/Latino, and who are from communities of socioeconomic and educational disadvantage. UF SHPEP is an immersive program where scholars will engage in case-based learning and interprofessional experiences. Scholars learn to prepare for the rigors of professional school through the academic program and workshops on successful study strategies. The University of Florida Health Science Center (UFHSC) houses six health related colleges: Dentistry, Medicine, Nursing, Pharmacy, Public Health & Health Professions, and Veterinary Medicine. The UFHSC provides students who are interested in the medical, dental, pharmacy, or public health pathways an opportunity to explore career choices in a collaborative and collegial environment. Examples of UF SHPEP activities include: academic enrichment, clinical skills laboratories, career development workshops, health policy seminars and interprofessional education, and clinical experience.

**COMMUNITY ENGAGEMENT**

**Florida Community Engagement Alliance Against COVID-19 Disparities (Florida CEAL).** Through a $1 million award from the National Institutes of Health (NIH), universities and health care entities throughout the state of Florida are collaborating to provide outreach and engagement to ethnic and racial minority communities disproportionately affected by the COVID-19 pandemic. Led by population health experts and physicians with the University of Miami Miller School of Medicine, the effort titled “Community Engagement Alliance Against COVID-19 Disparities” or the Florida CEAL Team, includes a diverse group of partner experts at Florida International University, the University of Florida, Florida A&M University, Moffitt Cancer Center and Health Choice Network.  Both the University of Florida and the University of Miami are part of the OneFlorida Clinical Research Consortium, a statewide network of academic health systems, hospitals and clinics established to help facilitate and accelerate health research in Florida. Researchers attribute elevated COVID-19 prevalence and mortality rates in underserved communities to structural inequalities and social determinants of health. Working with community organizations, the Florida CEAL Team will develop community-based outreach activities aimed at promoting evidence-based COVID health promotion practices and participation in clinical trials. They will also implement and evaluate the impact of strategies that increase the enrollment of minorities into COVID vaccine and therapeutic trials.

**UF HealthStreet.** The HealthStreet community engagement program has enrolled more than 12,000 members. The HealthStreet team supports community engagement activities across CTSI programs out of a Gainesville facility that provides a one-stop portal of entry for linking and navigating underrepresented populations to social services (food pantry, housing, criminal justice, etc.), medical and psychiatric services (MDs, nurse practitioners, drug treatment, blood pressure, glucose screenings, etc.), and research opportunities. The 10K-square-foot southwest Gainesville location also includes a lobby, a community center, a conference room, multiple meeting spaces, several interview rooms, two kitchen facilities and handicap accessible restrooms and showers. HealthStreet relies on Community Health Workers, who drive three seven-passenger vans to outreach locations and to provide transportation to community members for engagement. Community Health Workers operating in 46 of 67 counties in Florida complement the Gainesville outreach efforts. Additionally, HealthStreet leads a national network of 18+ CTSA sites in conducting Our Community, Our Health events. These monthly forums promote bi-directional communication between researchers and the communities they serve, addressing relevant health topics and disseminating research findings. The events are streamed nationwide and are interactive using text messaging and social media.



From left to right: Exterior of building, computer hub and conference

room at HealthStreet in Gainesville, Florida

HealthStreet vans are used to travel to outreach locations across Florida and provide transportation for community.



**CTSI Citizen Scientist Program.** Through the CTSI 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 online as an Open Educational Resource. 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.

**COMMUNICATION**

**Center for Public Interest Communications.** Based in the College of Journalism and Communications, the Center for Public Interest Communications studies, tests and applies the science of strategic communication for social change. The Center assists organizations wanting to create change discover how behavioral, cognitive and social science can show them how people think, make decisions and behave. Through use of science, systems thinking and human-centered design, the Center helps organizations create and implement powerful communication strategies.

**STEM Translational Communication Center (STCC).** The STCC strives to improve human health and environmental quality by making scientific research more accessible, understandable, and usable. The center creates strategic partnerships among university researchers, community members, the healthcare industry, and the environmental sector around evidence-based communication. We improve the messages, techniques, and strategies in science, environment, and health literacy, enhancing knowledge engagement, and behavioral change. Properly translated and communicated to various audiences, basic research in science, technology, engineering, and medicine (STEM) can lead to enhanced individual, family, group, and policy-level decision-making. The STCC is housed within the College of Journalism and Communications with connections across the UF Health campus, including the CTSI and UF Health Cancer Center. The STCC fosters strategic communication partnerships across diverse disciplines at UF and internationally (Ireland, Australia, Bangladesh). The center offers trainings, consultations, and seminars to enhance research and methodological rigor across disciplines, and fosters community interest in the recruitment and translation of health communication research.

**The Innovation News Center** is a real-world, working newsroom producing content for the UF’s seven broadcast and affiliated digital properties, including PBS and NPR public media stations. The two-story, 14,000-square-foot Innovation News Center facilities include almost 100 seats for student reporters, producers, and editors, breakout rooms for team meetings, tablet publishing, television, and radio editing rooms, audio booths, and a mini-studio (or “live-shot area”) to create video content for broadcast and online streaming. The Summer Journalism Institute is a weeklong camp at the UF College of Journalism and Communications for high school students. Started in the 1960s, the camp immerses the participants into the INC where they work with faculty and professionals on news stories and broadcasting on multiple television and radio stations and WUFT.org.

**UF Health Communications.** A division of ~80 communication professionals, UF Health Communications provides integrated communications support to all UF Health executive and administrative divisions, colleges, institutes, physician practices, and hospitals. With staff in Gainesville and Jacksonville, UF Health Communications mobilizes expertise across seven specialized teams to meet UF Health’s full scope of internal and external communications needs. The Advancement Communications team provides strategic communications planning and execution for advancement initiatives, including online communications, social media efforts and materials in support of UF Health events. The Communications & Public Affairs team provides strategic communications and public relations strategy development and programming to support the vision, mission and goals of the academic health center and key units. The Creative Services team provides print layout and graphic design, creative consultation, video and audio production, voiceovers, multimedia design (such as 3D animation), digital publishing and photography. The Marketing team provides marketing consultation, marketing plan development and implementation, production of advertising campaigns and marketing collateral materials, and website content development for programs and services in north central Florida to support the missions and business goals of UF Health. The News & Publications team provides expertise in publications, editing, science writing, media training and news dissemination to stakeholders throughout UF Health. The Strategic Communications team provides strategic communications direction and support for Gainesville-focused and system-wide programs and initiatives across UF Health. The Web Services team is a full-service shop offering high-quality solutions for public Web-based communications needs, including website design and hosting, Web application development, website refurbishment, usability testing, search engine optimization, analytics and metrics, social media consultation and email newsletters. In addition, UF Health Communications has a long-standing collaboration with the UF College of Journalism and Communications to produce a national consumer health radio program that airs on public radio affiliates in 18 states and in Washington, D.C.

# ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

**UF-NVIDIA AI Partnership.** In July 2020, the University of Florida announced a research and education partnership with NVIDIA to address some of the world’s most formidable challenges through UF’s research strengths, create unprecedented access to AI training and tools for underrepresented communities, and build momentum for transforming the future of the workforce. The initiative is anchored by a $50 million gift -- $25 million from UF alumnus Chris Malachowsky and $25 million in hardware, software, training and services from NVIDIA, the Silicon Valley-based technology company he cofounded and a world leader in AI and accelerated computing -- along with an additional $20 million investment from UF. The initiative has created an AI-centric data center that houses the world’s fastest AI supercomputer in higher education. Working closely with NVIDIA, UF is boosting the capabilities of its existing supercomputer, HiPerGator, with the recently announced NVIDIA DGX SuperPOD™ architecture. This gives faculty and students within and beyond UF the tools to apply AI across a multitude of areas to improve lives, bolster industry, and create economic growth across the state. UF is the first institution of higher learning in the U.S. to receive DGX A100 systems, which are designed to accelerate diverse workloads, including AI training, inference, and data analytics. NVIDIA will also contribute its AI expertise to UF through ongoing support and collaboration across the following initiatives:

* The NVIDIA Deep Learning Institute will collaborate with UF on developing new curriculum and coursework for both students and the community, including programing tuned to address the needs of young adults and teens to encourage their interest in STEM and AI, better preparing them for future educational and employment opportunities.
* UF will become the site of the latest NVIDIA AI Technology Center, where UF Graduate Fellows and NVIDIA employees will work together to advance AI.
* NVIDIA solution architects and product engineers will partner with UF on the installation, operation and optimization of the NVIDIA-based supercomputing resources on campus, including the latest AI software applications.

**Malachowsky Hall for Data Science & Information Technology.** Currently under construction, the Malachowsky Hall for Data Science & Information Technology will be a 263,000-square-foot academic building located in the heart of UF's main campus that will connect students and researchers from across disciplines and create a hub for advances in computing, communication and cyber-technologies with the potential for profound societal impact. The building, made possible by a gift from UF alumnus Chris Malachowsky as well as funding from the state, will provide collaboration space and will focus on the application of computing, communication, and cyber technologies to a broad spectrum of areas including health care, pharmacology, security, technology development, and fundamental science. The engineering spaces will serve as the headquarters for IT students in the National Society of Black Engineers, Society of Hispanic Professional Engineers, Women in Science and Engineering, and Women in Computer & Information Science & Engineering. Faculty and students will be able to expand on fields like human centered computing, intelligent healthcare, and informatics and data science.

**INSTITUTES, CENTERS AND CORE RESOURCES**

**Center for Data Solutions (College of Medicine-Jacksonville).** The Center for Data Solutions was created in 2019 to support research at all stages, from ideas and study design to analytics and publication. The Center for Data Solutions is structured to respond to the changing health science research landscape by complementing classical biostatistical support with expertise in epidemiology, machine learning and artificial intelligence. The Center for Data Solutions utilizes a customer service-oriented approach that emphasizes communication and collaboration. This is exemplified by our motto of "laptop and go," where analysts meet busy clinicians in their place of work to facilitate more efficient and impactful collaborations. To generate innovative ways to improve patient outcomes, the Center for Data Solutions' three hubs (advanced analytics, epidemiology and biostatistics) will support investigator-initiated projects as well as key areas for research growth at UF Health Jacksonville. For example, epidemiology will interface with the growing precision medicine program for the design of "omics" studies, whose big data will then be analyzed using novel machine learning approaches in the advanced analytics hub. Biostatistics will help train our residents and fellows to become the next generation of researchers.

**Center for Drug Evaluation and Safety (CoDES).** Established in 2019, the UF Center for Drug Evaluation and Safety, or CoDES, aims to improve public health by enhancing and disseminating evidence on the safety and value of medications in real world populations. CoDES unites a multidisciplinary group of big data researchers in epidemiology, health economics, health services research and decision-sciences who evaluate and project drug outcomes to guide policy and clinical and personal decision-making. In addition to delivering new actionable evidence, CoDES fosters the development of new methods and analytic tools to enhance drug evaluation and regulatory science.

**Center for Natural Products, Drug Discovery and Development.** The Center for Natural Products, Drug Discovery and Development (CNPD3) was instituted in 2013 and is based in the Department of Medicinal Chemistry in the College of Pharmacy at the Medical Science Building. The center has infrastructure with state-of-the-art equipment and facilities to strengthen assay development and screening capabilities. The center’s drug discovery and development platform is natural products-centric and covers the entire range from the identification of unexplored organisms, particularly microbes with high biosynthetic capacity, as the starting point for our Genomes-to-Natural Products-to-Drugs initiative. Four cores enable research collaboration in focus areas that include microbial genomics, structure-based drug design, molecular diversity and screening, synthetic chemistry, molecular pharmacology, and animal models of disease.

**Center for Safety, Simulation & Advanced Learning Technologies.** The centerhas access to two different state-of-the-art simulation spaces in the Harrell Medical Education Building. The Lou Oberndorf Experiential Learning Theatre contains 1,600 square feet of flexible simulation space that can be transformed into any healthcare provider setting (OR, L&D, ER, ICU, etc.). The Simulation OR has 700 square feet of space that is equipped with an anesthesia machine, laparoscopy equipment, OR lights and table. These simulation spaces feature multiple in-ceiling cameras with microphones (ceiling and lapel) to record video that can be used for debriefing. In addition to simulation space, there are another 430 square feet of office and workshop space in the Harrell Medical Education Building that are used to develop simulators and medical-device technologies. These spaces house a number of different simulators and medical devices including three CAE/METI mannequin human patient simulators: adult, pediatric, and infant; a bronchoscopy part task trainer; a transthoracic/transesophageal echocardiography simulator; and two Virtual Humans developed at the UF Department of Computer & Information Science & Engineering. Part task trainers include those for central venous access, regional anesthesia, ultrasonography skills and cross-sectional literacy, airway trainers (7), central venous cannulation, IV placement in the foot and arm, and spinal injection. Medical equipment includes three anesthesia machines, an ultrasound machine, state-of-the-art physiological monitors and gas analyzers, an array of airway devices, a defibrillator with crash cart, a 62" touch-sensitive display, a Polycom video conferencing system, piped medical gases, clinical supplies, and two calibrated mechanical lung models. Other development equipment includes a wearable optical display, a virtual reality device, a 3-D printer, and microcontrollers. Ceiling-mounted IR tracking cameras in the simulation and engineering labs and magnetic tracking systems enable mixed reality applications. The simulation center also encompasses the Virtual Anesthesia Machine website, which hosts a portfolio of web-enabled transparent reality simulations and PK/PD models developed by center personnel and used worldwide.

**Center for Statistics and Quantitative Infectious Diseases (CSQUID).** The Center for Statistics and Quantitative Infectious Diseases is a joint program of the Fred Hutchinson Cancer Research Center in Seattle, Washington, and the University of Florida. The main interest of the center is in quantitative methodological developments related to scientific and public health aspects of infectious diseases, including epidemiology, evaluating interventions, immunology, and vaccinology. Research focuses on prevention and intervention in infectious diseases of global health importance, as well as emerging infectious diseases, such as pandemic influenza. The quantitative methods include statistical, epidemiologic, mathematical modeling, computational biology, and bioinformatic methods. The group is in the MIDAS network and is partially supported by the National Institute of General Medical Sciences at NIH.

**CTSI Biomedical Informatics Program.** BMI has a programmatic home in the CTSI and an academic home in the Department of Health Outcomes and Biomedical Informatics. BMI offers three graduate programs: a graduate certificate, master’s concentration in BMI, and a PhD concentration in BMI. There are six faculty, one postdoctoral fellow, and 10 staff in the program, located in the CTSI’s office space within the Clinical and Translational Research Building and in separate Health Outcomes and Biomedical Informatics office space. In addition to these academic components, the BMI program includes the Clinical and Translational Science Informatics and Technology (CTS-IT) group, research-focused activities of the Integrated Data Repository and IT-related activities of the Office of Clinical Research.

* **Clinical and Translational Science Informatics and Technology (CTS-IT).** A CTSI informatics support unit with 21 employees and 3,645 square feet of office space separate from the CTRB and Health Outcomes and Biomedical Informatics space. The CTS-IT cost-recovery unit provides data-management, database and software services to investigators, research centers and consortia. CTS-IT staff offer design and development of custom software applications for research including RED-I, UF’s software application to move data from UF’s Integrated Data Repository, and other institutions' EHR data, to REDCap. CTS-IT also offers informatics consults, research system hosting in accordance with UF’s strategic plan for biomedical informatics, data workflow development and management of research software. CTS-IT summer informatics student internships, a project-driven approach to expand the data-driven knowledge of healthcare research, offer students the opportunity to gain informatics skills such as data harvesting, manipulation, translation and analysis. Business informatics internship entails financial analysis, charts and narrative about accomplishments in the fiscal year.

**Data Science and Applied Technology Core.** The UF Claude D. Pepper Older Americans Independence Center’s Data Science and Applied Technology (DSAT) Core is an interactive data ecosystem created to meet the new demands for data-driven approaches and health technologies (e.g. mobile health). The overarching goals are to harvest, warehouse, repurpose, analyze, and reduce complex data while implementing new technology in an applied manner to preserve mobility and prevent disability in older adults. These goals are perfectly aligned with large NIH initiatives such as the Big Data to Knowledge (BD2K) and The Precision Medicine Initiative Cohort Program. The core has specific expertise in analyzing and modeling multimodal (e.g. sensor data, images, and medical records) as well as “unstructured data” (e.g. facial expressions from video) that is atypical of most clinical research, but is rapidly expected to become an important research tool. Unstructured data require a significant amount of data reorganization to ensure feature identification and extraction, model generation, validation, and visualization to obtain medically relevant relations. DSAT also leverages new technologies by developing wearable and mobile applications (“apps”) that assess and characterize mobility, while simultaneously allowing researchers to interact with participants, e.g., in a closed-loop system.

**Digital Worlds Institute.** UF’s Digital Worlds Institute is on the cutting edge of digital arts and sciences — both in our research initiatives and innovative approach to education. We are a recognized leader in combining arts, communications, engineering and science, with a focus on advanced media systems. Founded in 2001 as a partnership between the College of the Arts (COTA) and the College of Engineering, the Institute has grown its initiatives across six additional colleges at UF. Digital Worlds Institute shares the COTA mission of serving as an educational, professional, and cultural resource for the campus, community, state, and region. Our undergraduate and graduate students contribute to and benefit from that commitment as we continue to develop a culture of creativity, innovation and access. Our Research, Education, and Visualization Environment (REVE) is designed for research and education and features collaborative environments with numerous technological capabilities, including: Polymodal Immersive Classroom Theater, Virtual Production Studio, three Digital Media Suites, and Digital Worlds Reality Lab.

**Informatics Institute.** The UF Informatics Institute facilitates leading-edge informatics research in all sectors of the campus through events, seed funding and fellowship programs, among other resources, and consists of four interrelated thrust areas. Informatics Techniques and Technologies performs research into the hardware, software, algorithms, and mathematical approaches needed to develop the next generation techniques and technologies for Big Data. Biomedical and Life Science Informatics utilizes informatics to address the fundamental questions in genetics, genomics, biodiversity, environment, and agricultural science as well as its application for improved human health outcomes. Informatics for Engineered Systems and the Physical Sciences studies the application of intense computation and complex informatics to understanding and designing complex engineered systems, and for uncovering the fundamental nature of our physical world and universe. Informatics in Social Science, Humanities and Education addresses leveraging the explosion of data in understanding people, culture, political development, education, and human behavior.

**NSF Center for Big Learning.** The Center for Big Learning (CBL) is under the auspices of NSF’s Industry & University Cooperative Research Center Program. UF is one of three CBL academic sites engaging >60 faculty across the country, along with University of Missouri at Kansas City and University of Oregon. The CBL also includes >50 industry partners. With the vision of creating artificial intelligence and leveraging collective wisdom from academia, industry, and governments, the CBL consortium focuses on large-scale deep learning (DL), intelligent platforms, and DL-enabled big data applications in a broad spectrum of disciplines, including health applications in precision medicine, bioinformatics, diagnosis, genomics, imaging, agriculture, and computational biology. The consortium is sponsored by NSF and industry members over the world.

**Perioperative Cognitive Anesthesia Network (PeCAN).** Part of the Presurgical Center at UF Health Shands Hospital, this interdisciplinary network of anesthesiologists, neuropsychologists, geriatric medicine specialists, surgeons and nurses plan patient care prior to surgery. It is a clinical-training-research program designed to address the needs of older adults at risk for poor postoperative outcomes.

**PRISMA Partnership: Precision and Intelligence in Medicine.** Established in 2013, PrismaP is changing the face of medicine through the use of intelligent, data-driven algorithms. Bringing together experts in Medicine, Health Policy Research, and Computer Engineering, our partnership combines modern approaches to modeling, signal processing, and machine learning to develop and refine data analysis methods. The predictive models, physiologic markers and clinical reasonings generated by Prisma P serve to facilitate patient care in perioperative environments. Risk calculators include a Post Operative Complications Calculator, Cardiovascular Death Risk Calculator, and ESRD Risk Calculator, with additional risk calculators in development.

**Sepsis and Critical Illness Research Center.** The UF Sepsis and Critical Illness Research Center is the first of its kind in the nation and studies long-term outcomes in patients treated for sepsis in the UF Health Shands Hospital’s surgical and trauma intensive care units. The center’s goal is to develop clinical solutions for sepsis, as well as illnesses that stem from it and their enduring effects. It includes Administrative, Animal Studies, Bioanalytical, Data Management and Biostatistics, and Human Subjects cores. Four areas of research include: the course and outcomes of chronic, critical illness that follows sepsis in patients who have been in surgical and trauma ICUs; the possible role of immature immune system cells called myeloid-derived suppressor cells in the onset of PICS; how sepsis affects the kidneys and how these organs in turn may contribute to PICS and other forms of chronic illness; and muscle wasting, one of the most debilitating effects of sepsis and PICS.

**RESEARCH COMPUTING AND INFORMATION TECHNOLOGY**

**UF IT Research Computing.** In 2011, UF made a 5-year commitment to build out the facility into a comprehensive cyber infrastructure for research computing, creating the department of Research Computing as a part of UF Information Technology. The commitment from the University has been renewed because of the success in supporting research computing activities of the faculty, their students, and collaborators. UF Research Computing has grown to a staff of about 17 FTE, supporting the work of over 300 faculty-led research groups, with over 3,300 users, of which 500 submitted jobs in the last week, every week.

**Florida regional network infrastructure.** The Florida Lambda Rail (FLR) provides the underlying fiber optic network and network connectivity between these institutions and many others. The FLR backbone completed the upgrade to 100 Gbps in June 2015. The University of Florida is connected to this backbone with two full speed of 100 Gbps links since June 2019. UF has had a 100 Gbps path to the Internet2 backbone since Jan 2013. Universities in the state of Florida joined forces in the Sunshine State Education & Research Computing Alliance (SSERCA), a part of FLR, to share expertise in research facilitation and to support collaborations among researchers in the state of Florida and with other researchers in the nation and the world.

**High-performance computing and big-data analytics.** Research Computing operates HiPerGator, UF’s supercomputer, a cluster-based system with a combined capacity of about 70,000 cores in multi-core servers by the middle 2021. The servers are part of an integrated InfiniBand fabric. The clusters share over 10 PetaBytes of distributed storage via the Lustre parallel file system. In addition, Research Computing houses about 2.8 PB of storage for the High Energy Physics collaboration of the Compact Muon Solenoid (CMS) experiment. The system includes 80 NVIDIA K80 GPUs for simulation, and 560 NVIDIA GeForce RTX 2080ti and 48 NVIDIA Quadro RTX 6000 GPUs for machine learning, deep learning, Artificial intelligence, and simulation and modeling, available for exploratory and production research, as well as for training and teaching. In January 2021 HiPerGator 3.0 and HiPerGator AI go into production. The 16,000 oldest cores are replaced with around 40,000 newer cores and HiPerGator AI will add 140 DGX A100 nodes, 17,920 2nd Gen EPYC AMD cores, 1,120 NVIDIA Ampere A100 GPUs, and 4 PB of all-flash storage for AI research, education, and workforce development. The peak performance of HiPerGator 3.0 is around 1 Pflops, that of HiPerGator AI is about 13 Pflops. The AI operation performance of HiPerGator AI is 0.7 Eflops.

**Restricted data storage, computing, and development.** Research projects may involve storing and processing restricted data, including intellectual property (IP), protected health information (PHI), Controlled Unclassified Information (CUI) regulated by Health Insurance Portability and Accountability Act (HIPAA), International Trade in Arms Regulation (ITAR), Export Administration Regulation (EAR), Family Educational Rights and Privacy Act (FERPA). For such projects Research Computing supports a special environment on the HiPerGator platform. The HiPerGator ResVault system is approved for NIST 800-53 “moderate” and NIST 800-171 since Dec 2017.

**Network infrastructure.** The Research Computing systems are located in the University of Florida 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. The CRN was created with an NSF Major Research Instrumentation award in 2004 and has been maintained by the University since the end of that award. An NSF CC-NIE award in 2012 funded the 100 Gb/s switch and an NSF MRI grant awarded in 2012 funded the upgrade of the CRN (Science DMZ) to 200 Gb/s. The upgrade has been operational since the winter of 2013. The CRN connects the HPC systems to the FLR, from which Internet2, ES.net and other national and international research networks are accessible. The University of Florida was the first institution (April 2013) to meet all requirements to become an Internet2 Innovation Platform, which implies the use of software defined networking (SDN), the implementation of a Science DMZ, and a connection at 100 Gb/s to the Internet2 backbone. In June 2019 the UF network border capacity was upgraded to 200 Gb/s.

**Virtual network environments.** By the end of 2014, the campus network infrastructure was upgraded to support virtual network environments. These virtual environments enable extending physical networks beyond their physical boundaries that traditionally coincide with individual buildings. There are three physical networks: the Academic network; the Health network that allows protected health information to be stored and accessed; and the Campus Research Network or Science DMZ connecting HPC resources with data generating instruments. With the virtual network environments it is possible to connect instruments in any enabled building to the Science DMZ virtual environment, even if the instrument resides in a building that is served by the physical Health network. Similarly researchers can choose to be connected to the Academic virtual network even if their offices are in a Health network building. The virtual environments allow deployment of the correct policies and security measures on a fine-grained scale to meet the needs of the activities of the people using the network. Further virtual network environments include: administrative virtual network environment, with a level of security in between academic and health; industrial building control network environment will allow separating traffic for monitoring and controlling building systems from the networks used by the occupants of the buildings; Payment Card Industry virtual environment; and ITAR virtual environment to connect that compliant data storage and processing system ResVault in a compliant and secure way to some of the engineering labs where the restricted data is used to create and test export controlled devices.

**Space, Power and Cooling.** The funding model for Research Computing includes the commitment from the Provost, the VP for Research, and the VP and CIO to provide for machine-room facilities with electrical power and cooling and professional staff. The university has a substantial investment in research computing infrastructure including a data center completed in 2013 on the East Campus that provides 10,000 square feet of machine room space, of which 5,000 square feet is dedicated to research computing.

**Staffing.** The University pays the salaries of the 23 highly-qualified, staff members, including several with a PhD or Master degree in science or engineering. Staff members, in addition to sharing in the system design, installation, and administration duties, provide application support and consulting services to faculty members, their research associates, and their graduate students. This support ranges from assistance with job flow management and installation of open-source software to teaching students how to improve the MPI performance of their programs.

**Training and Outreach.** UFIT Research Computing provides advanced support and training to the user community. Many training materials are now available online. In addition, user feedback meetings are held as well as periodic training workshops are organized every semester. Several graduate courses use HiPerGator and train and prepare graduate students to use the clusters and the software for their thesis research. A new program in 2019 provides training for IT staff in the academic units to help faculty and researchers make the best use of available resources. Three cohorts have been trained already. Since 2017, UFIT Research Computing also offers a summer program for high-school students to show them the ubiquity of computing in today’s world, called the Gator Computing Program.

**UF Health Information Technology.** UF Health IT manages data center space in multiple facilities in both Gainesville and Jacksonville. The Gainesville data center space provides approximately 9,300 square feet to house computer systems and associated components. Additional space accommodates the mechanical, electrical, and physical infrastructure, including electrical equipment, UPSs, air handlers (cooling), security (video and access controls), and fire detection and suppression systems. All systems supporting clinical, education, and research functions utilize the data center resources. A comprehensive set of services is available to customers, including, but not limited to, provision and management of physical and virtual servers, storage, backup and disaster recovery, desktop and mobile device support, security services, database management, and consulting on IT design, support, and costs. UF Health IT employs 450 experienced and highly skilled IT professionals in both Gainesville and Jacksonville who provide the wide range of IT services needed to run a major academic health center. Key facilities and resources within UF Health IT include the HealthNet networking engineering department; Enterprise Storage and Disaster Recovery team; Systems Administration and Database Administration services; Commodity Services and End User Device Support services; Clinical Applications team; and Web Service and Enterprise Software Engineering services.

**DATA CONSORTIA AND RESOURCES**

**FDA CBER Biologics Effectiveness and Safety (BEST) Initiative—IBM Partner (OneFlorida).** The Biologics Effectiveness and Safety (BEST) System was launched in October 2017 to expand and enhance CBER access to new and better data sources, methods, tools, expertise and infrastructure to conduct surveillance and epidemiologic studies. BEST is part of the Sentinel initiative and it promotes CBER's Office of Biostatistics and Epidemiology's (OBE) mission to assure the safety and effectiveness of biologic products including vaccines, blood and blood products, tissues and advanced therapeutics. The OneFlorida Clinical Research Consortium participates as a partner with IBM, which serves as the BEST coordinating center for EHR and linked EHR-claims data sources. BEST data and surveillance activities include artificial intelligence and natural language processing, specifically development and validation of innovative methods to obtain computable phenotypes of patients representing biologic product exposure/adverse event (AE) pairs from health records.

**Florida Research Data Center.** With NSF funding awarded in 2020, UF is establishing the Florida Research Data Center (FRDC) to expand the community of Federal Statistical Research Data Centers and provide an important asset to regional researchers. A partnership with Florida State University (FSU), the FRDC will provide medical and social science researchers access to restricted-use data collected by federal agencies. The FRDC will serve health, medical, social, behavioral, demographic, and economic research communities. A focus point for the FRDC will be the integration of population and health data with U.S. Census microdata.

**Integrated Data Repository (UF Health).** Serving as the CTSI’s research data warehouse as well as the UF Health enterprise data warehouse, the Integrated Data Repository is a collection of disparate data organized to help understand important relationships and answer clinical, operational, and research questions. The Integrated Data Repository enables new research discoveries as well as patient care quality and safety improvements through a continuous cycle of information flow between the clinical enterprise and research community. The Integrated Data Repository aggregates data from various clinical and administrative information systems, including the Epic electronic health record, and contains demographics, inpatient and outpatient clinical encounter data, diagnoses, procedures, lab results, medications, select nursing assessments, co-morbidity measures, perioperative anesthesia information system data, and more. New data are curated and added regularly based on operational and research needs. The Integrated Data Repository staff offer cohort discovery and honest broker services to investigators, including the ability to identify cohorts of patients who have consented to be contacted directly for research studies through the UF Consent2Share program.

**OneFlorida Data Trust.** The OneFlorida Data Trust is a repository of statewide health-care data that is regularly updated with the inclusion of new partners and data refreshes from existing partners. The Data Trust contains claims and encounter data for Floridians enrolled in Medicaid and robust patient-level electronic health record data from public and private health care systems, including diagnoses, procedures, medications, patient demographics, unique patient codes for re-identification by consortium partners and other data elements in the PCORnet Common Data Model (CDM). In total, the Data Trust contains data for approximately 15 million Floridians. The OneFlorida Data Trust program has an Information Technology Team comprised of members from OneFlorida partners that developed linkage strategies to support linking data from multiple sources such as health care claims and electronic health record data. In addition, OneFlorida is part of a national PCORI workgroup to develop linkage strategies within each of the Clinical Data Research Networks. The linkage uses a mechanism that does not enable UF honest brokers to see or learn the names, addresses, or other identifying information of the contributors’ patients. For individual studies, data queries can be highly tailored, and the consortium is enhancing the Data Trust with data elements beyond the PCORnet CDM. Maintaining a high standard of data quality in order to enable health research is a central concern of the OneFlorida Data Trust team. The team has an appointed team member who is responsible for ensuring established data quality standards are followed. These standards include procedural guidelines, technical protocols, and a system of recurring quality-checking phases.

# NEUROSCIENCE AND RELATED RESEARCH

**INSTITUTES, CENTERS AND CORE RESOURCES**

**Center for Addiction Research and Education (CARE Center).** UF’s Center for Addiction Research & Education (CARE) is one of the oldest continuing University-wide Centers at UF. It has undergone a re-vitalization in recent years with an expanded mission and as addiction science established a larger footprint at UF.  Membership includes faculty from six colleges and 14 departments across both the main and HSC campuses. CARE has over 40 faculty (Full) members (at the time of this writing) and over 60 trainee (Affiliate) members. CARE investigators have active research programs in highly diverse domains; ranging from molecular neuroscience and drug discovery through epidemiology and clinical trials. While most of the CARE faculty focus on the addictive disorders and their comorbid conditions, a number examine substance use, more broadly, for example, studying social drinking in older adults or developmental trajectories across adolescence. In short, CARE is a group of highly diverse investigators who are committed to understanding the biological, psychological and social correlates and consequences of substance use and addictive behaviors. CARE offers on-going programs through a monthly seminar series and hosts an Annual Symposium each Spring.  Each Spring Symposium is centered on a timely theme.  In 2019, the theme was “Opioids” featuring Drs. Brigitte Kieffer & R. Kathryn McHugh. The CARE website has a number of links to participating departments, current addiction-related training grants, and funding sources as well as information describing current committees and their membership. Addiction and related disorders represent a significant threat to individuals, families and their communities. It is only through the collaborative efforts of diverse programmatic research that we can understand the contributing processes and define more effective prevention, intervention, and recovery programs.  CARE is committed to facilitating these kinds of collaborations. CARE is fortunate to have time-limited, generous support from the McKnight Brain Institute, the Senior Vice President for Health Affairs, Department of Psychiatry, and Department of Pharmacodynamics.

**Center for Autism and Neurodevelopment.** Neurodevelopmental disorders represent some of the greatest challenges in the arena of childhood well-being in the 21st century.  This group of disorders includes any impairment that arises due to a disruption in the growth and development of the brain or central nervous system.  The neurodevelopmental disorders most recognized by the public at present are autism spectrum disorders (ASD). However, other impairments that can be categorized as neurodevelopmental disorders include dyslexia, language impairments, Fragile X syndrome and other genetic neurodevelopmental disorders, sensory impairments, attention deficit hyperactivity disorder (ADHD), and fetal alcohol syndrome (FAS). The mission of the Center for Autism and Neurodevelopment at the University of Florida (UF) is to explore the causes of neurodevelopmental disorders, design more effective intervention strategies, and to implement policies and model facilities to ensure that affected children and their families have access to the integrated services they require.

**Center for Breathing Research and Therapeutics (BREATHE Center).** BREATHE Center is the only center of its kind in the US. Although many centers in the United States are devoted to pulmonary function, no other is focused on respiratory neuromuscular function. The mission of the center is to create a world-renowned program devoted to understanding physiological challenges to respiratory motor control in health and disease and to translate that knowledge into strategies of respiratory rehabilitation in devastating clinical disorders that compromise breathing. The center fosters links between the University of Florida and private/public organizations that support biomedical research. Currently, more than 50 researchers and clinicians from across UF, and dedicated leadership and administrative teams, are committed to the BREATHE Center mission. The NIH-funded BREATHE Training Program brings together top breathing researchers and clinicians from over 20 departments across UF to educate the next generation with an emphasis on “cross-training.” In addition, BREATHE Center supports 5 research cores that represent the breadth of preclinical and clinical respiratory research: Airway Defense Core, Basic Breathing Research Core, Neurological Disorders Core, Neurotechnology Core, and Neurotherapeutic Oxygen Core.

**Center for Cognitive Aging and Memory.** Housed in UF’s Evelyn F. and William L. McKnight Brain Institute (MBI), the CAM Center is a multidisciplinary UF research center focused on brain aging and cognition. CAM Center researchers come from departments and colleges across campus and possess diverse expertise in physiology, neurobiology of aging, neuroplasticity, pharmacology, computational, cellular and behavioral neuroscience and clinical interests. With strengths in both preclinical discovery-based research and clinical science, CAM Center researchers are dedicated to the translation of leading-edge discoveries about brain aging into interventions that will preserve cognitive function and improve the quality of lives for older adults. As a world-class research center, the CAM Center is also a fertile training ground for those interested in preclinical or translational research careers focused on preventing, alleviating or reversing age-related cognitive decline and memory loss.

**Center for Exercise Science.** The University of Florida Center for Exercise Science (CES) is a multidisciplinary research center housed in the Department of Applied Physiology and Kinesiology. CES is dedicated to investigating the complex interactions between physical activity, muscle, heart, brain and age-related diseases. The primary goal of scientists in the CES is to improve human health by advancing knowledge through research. Moreover, the CES provides an outstanding laboratory environment to educate UF students and post-doctoral fellows who will become the next generation of health-related exercise scientists and clinicians.

**Center for Neurogenetics.** The researchers affiliated with the Center for Neurogenetics are committed to defining the causes of neurodegenerative diseases such as amyotrophic lateral sclerosis (ALS), muscular dystrophy (DM), Huntington disease (HD) and the spinocerebellar ataxias (SCAs) in the hope of developing effective treatments for these conditions. The center’s research goal is to integrate molecular, genetic and clinical approaches to define the causes of neurodegenerative disease and develop effective treatment strategies.

**Center for OCD, Anxiety and Related Disorders (COARD Center).** The Center for OCD, Anxiety, and Related Disorders (COARD) is an interdisciplinary group of researchers and clinicians who conduct clinical and translational research in obsessive compulsive and anxiety disorders at the University of Florida. Areas of interest include, among others, understanding the genetic and environmental causes of anxiety disorders and obsessive compulsive and related disorders (OCRDs), identifying biological markers associated with the development and/or life course of these disorders, understanding the brain circuitry and neurodevelopmental abnormalities associated with the OCRDs, finding ways to reduce stigma and increase understanding of these disorders, and optimizing available treatment options for adults and children, including refining existing treatments and developing new treatments. Researchers in COARD come from the College of Medicine, Public Health and Health Professions, Pharmacy, Veterinary Medicine, Arts and Liberal Sciences, and Communication and Journalism, and encompass multiple departments, divisions, and disciplines. Funding for this research comes from multiple sources, including the National Institutes of Health, the Patient Centered Outcomes Research Institute, private non-profit foundations such as the Tourette Association of America, Jonathan D. Rosen Family Foundation and the International Obsessive Compulsive Foundation, the University of Florida, and the support of generous donors.

**Center for Smell and Taste.** The University of Florida Center for Smell and Taste has devoted over 20 years to revolutionizing scientific collaboration and academic advancements in chemical senses. The University of Florida’s large, welcoming faculty and staff provide the UFCST with a wonderfully diverse range of expertise throughout the science of smell and taste. Established in October 1998, the UFCST was organized as a University-wide center to promote research and education that thrived outside the box. We proudly call ourselves the home to a unique, dynamic center dedicated to advances in chemical senses research. Over 50 faculty members, along with their postdoctoral associates, graduate students, and staff enhance our unique, academic team. We gain expertise from numerous colleges within the University, including the Colleges of Engineering, Medicine, Dentistry, Pharmacy, Health and Human Performance, Agriculture, and Liberal Arts and Sciences. All of those fields and each member of our team sheds another light on smell and taste disorders. Research, application, and education keeps us busy in the hopes to share our wealth of knowledge with those afflicted with smell and taste disorders. Many members affiliate with other interdisciplinary units, such as the Institute for Food and Agricultural Sciences, the Genetics Institute, the Brain Institute, the Institute on Aging, the Whitney Laboratory for Marine Bioscience, and the Emerging Pathogens Institute. Additionally, the UFCST partners with chemosensory scientists at several other Florida institutions, thus pushing above and beyond new advances in smell and taste science across the State. The center’s mission not only involves UF’s admired team of academics but the center’s valued community, as well. UFCST holds events and guest lecturers to educate and serve its community. Engagement and advocacy are critical to making advances for the chemosensory disorders community. Without the contributions of everyone involved, the University of Florida Center for Taste and Smell would not be able to stand out as an exceptional convergence of academic diversity, collaboration, and dynamic research for chemical senses.

**Center for Translational Research on Neurodegenerative Disease.** Supports faculty appointed in the departments of Neuroscience, Neurology, Anesthesiology, and Pharmacology that utilize wide-range of technical and conceptual expertise in research aimed towards developing new therapies for neurodegenerative disease. Strengths include animal modeling using transgenic technology and recombinant adeno-associated virus, and biotherapeutic development using monoclonal antibodies and neuroinflammatory modulators. The center uses an open lab structure that facilitates frequent interaction across labs. The laboratories are designed as a typical molecular biology and biochemistry laboratories with waist-height benches, with rooms equipped for cell culture (Forma or Baker tissue culture hoods; Forma or NuAire cell incubators; table top centrifuges, and microscopes). The center has in-house histopathology group that includes dedicated personnel and equipment, including two Leica CM-1850 cryostats, sliding and rotary microtomes, paraffin embedding station, and an automatic tissue processor. The center also has an imaging lab that includes Aperio ScanScope XT and FL systems equipped with fluorescence and stereology packages and computers. The lab is in the process of replacing the Aperio equipment with a new Zeiss scanner. Additional center equipment includes a Bruker-Datlonics Microflex LRF mass spectrometer, Bio-Rad NGC FPLC, Amersham AKTA FPLC, Amersham AKTA Prime Plus HPLC, Eppendorf EpMotion Liquid Handler, Li-Cor Odyssey IR imager, Thermofisher NanoDrop 2000, multiple spectrophotometer, and multiple gel documention systems for both DNA and protein gels/blots. The center maintains a brain bank that has ~200 neuropathologically characterized brains with ongoing addition of ~20 brains per year.

**Parkinson’s Foundation Research Center of Excellence.** In July 2019, UF Health was named one of four Parkinson’s Foundation Research Centers of Excellence. This four-year award will provide funding to help researchers at the Norman Fixel Institute for Neurological Diseases at UF Health and the MBI at UF jumpstart pilot projects and form new collaborations. This research will help make significant contributions to the understanding of Parkinson’s disease with new discoveries and better therapies.

**McKnight Brain Institute at UF (MBI).** 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, cell and tissue analysis, flow cytometry, 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 College of Medicine departments of Neuroscience, Neurology, Neurosurgery, and Psychiatry along with the centers for Smell and Taste, Structural Biology, and Addiction Research and Education are housed together in the MBI to promote numerous interdisciplinary programs and projects, including facilitating more than 320 lectures and seminars each year involving the best scientists from around the globe. Many of these take place in the Lauretta & John DeWeese Auditorium, which offers over 2,300 square feet of space and stadium seating for 162, including wheelchair accommodations. Featuring a 10-foot by 15-foot screen, this room offers high definition video conferencing as well as live web-streaming and archival of lectures.



McKnight Brain Institute

The MBI develops new therapies for nervous system afflictions. Some of the research initiatives comprising the MBI are the Advanced Magnetic Resonance Imaging and Spectroscopy Facility (AMRIS), the Cell and Tissue Analysis Core (CTAC) and CTAC Histology Resource Center, the Radiosurgery/Biology Research Lab, the Movement Disorders Center, the Age-related Memory Loss (ARML) Program, the Brain and Spinal Cord Injury/Stroke Program, and the Addiction Program. With a design theme of beyond the-state-of-the-art, the conceptual mission of the 210K-square-foot MBI building is to serve as a catalyst and focal point for widely diverse but synergistic multidisciplinary research programs. Thus, in addition to an obvious emphasis on high technology, the strategic design of the MBI includes a strong emphasis on multiuser facilities within a research and clinical setting that includes highly dedicated and gifted basic science and clinical researchers.

**Mentoring Institute for Neuroscience Diversity Scholars (MINDS).** Funded by an R25 award from the NIH, the Mentoring Institute for Neuroscience Diversity Scholars (MINDS) is a national mentoring program for early career faculty. The University of Florida neurology and neurosurgery residency programs have adopted an infrastructure to identify resident researchers early in their training and to advance them toward K awards. This early identification coupled with a milestone driven approach has provided a formula for the success of residents interested in research career paths. The focus is on the development of a comprehensive early research program to meaningfully engage neurology and neurosurgery residents in research from day 1 of their internship all the way through their residency, fellowship, and successful K award application. This project will provide the potential UF R25 individual applicant access to an ideal research environment with protected time, coursework, mentorship and a strong institutional commitment.

**Myology Institute.** The UF Myology Institute brings researchers from throughout UF campus, private industry, and other institutions together in a collaborative effort to further the understanding and treatment of neuromuscular diseases. The scope of the Myology Institute extends from fundamental muscle research, to the translational, to human clinical trials. The institute’s Physiological Assessment Core is intended to serve as a national resource for performing functional evaluation of potential therapies for the muscular dystrophies. The core performs performs ex vivo, in situ, and whole animal assessments of muscle integrity and function.

**Norman Fixel Institute for Neurological Diseases at UF Health.**A world-class medical hub established at UF in 2019, the Fixel Institute advances research, technological innovation and clinical care for Parkinson’s disease and other neurological disorders, including Alzheimer’s, Lewy body, ALS, dystonia and concussions. The Fixel Institute opened a $9 million clinical care and research building in July 2019, expanding its space to 24,700 square feet, 28 exam rooms and seven therapy rooms — including three clinical trials rooms and a telemedicine room. The recently created Fixel Scholars Endowment will support fellowship and postdoctoral researchers with a primary focus on Parkinson’s disease and dystonia. The Fixel/Center for Movement Disorders and Neurorestoration has a full complement of experts in several disciplines, including neurologists, neuropsychologists, neurosurgeons, neuroscientists, neurophysicists, psychiatrists, physical therapists, occupational therapists, speech and language pathologists. Over 25 faculty members and over 30 students and residents make up one of the most dynamic movement disorders centers in the country. Center staff are specifically trained to arrange patient specific and coordinated research programs and the clinic has one of the world’s largest degenerative and movement disorders databases. Center clinics include: Florida National Parkinson Disease Center of Excellence, Florida Tourette Syndrome and Tic Clinic, UF Ataxia Center of Excellence, UF Huntington’s Disease Center of Excellence, UF Progressive Supranuclear Palsy & Atypical Parkinsonism Clinic, UF Lewy Body and Parkinson Disease Dementia Center of Excellence, UF Tyler’s Hope Dystonia Center for Comprehensive Dystonia Care, and DBS Troubleshooting and Failures Clinic. The Fixel Institute’s core research laboratories include:

**Biomarkers:** The biomarkers laboratory will be engaged in real time collection of biologicals from patients and family members attending the Fixel Institute for Neurological Diseases clinic site.  The laboratory is dedicated to promoting true translational research including blood, saliva, cerebrospinal fluid, skin and GI samples.  There is a full biomarkers laboratory onsite for processing and the samples will support translational research efforts across the campus.

**Cognitive Neuroscience:** The Cognitive Neuroscience / Clinical Neuropsychology Laboratory examines neural systems underlying cognitive, emotional, and motivational changes in healthy aging and disease.  State of the art methodologies (ERP, MRI/MRS, noninvasive brain stimulation) are used to fine tune and evaluate the potential of novel interventions in the normal aging process and also in age-related conditions, like Parkinson disease, mild cognitive impairment, and early dementia.

**Neuroimaging**. The neuroimaging laboratory is a multidisciplinary effort to capture imaging from all of the patients and research subjects participating in Fixel Institute of Neurological Diseases research.  The imaging will link to the other core laboratories and will be especially important for database and biomarker projects.  The imaging pipelines have been developed to facilitate effective and efficient processing of neuroimaging data across platforms including Freesurfer, FSL, ANTs, AFNI, SPM, and other custom methodologies.  The laboratory collaborates with researchers interested in motor, mood, cognition, quality of life, DBS and non-invasive stimulation research.  The laboratory has also developed novel techniques for imaging in vivo and ex vivo animals and for tracking disease progression in humans.  Specific applications in the laboratory include Parkinson’s disease, dystonia, Alzheimer’s disease, essential tremor, ataxia, and chronic pain.

**Neuromodulation and Brain Mapping.** The human brain consists of numerous networks distributed over space and connected over time to orchestrate meaningful interaction with the external world. In the Brain Mapping Laboratory, we study precursors to behavior and aftereffects of stimulation in neural networks to understand this interaction through electrophysiology and bioimaging. The aim is to translate this knowledge into clinical diagnostic and therapeutic systems to improve the quality of life of those suffering from neurological disorders. Research involves neurosurgical patients with epilepsy and movement disorders (Tourette’s syndrome, Parkinson’s Disease, essential tremor), as well as stroke patients undergoing neurorehabilitation.

**Neurotechnology and Neurophysiology.** The Neurotechnology & Neurophysiology Laboratory integrates non-invasive neuromodulation and next generation neurotechnologies into clinical care and research.

**Pain Research and Intervention Center of Excellence (PRICE).** A multi-college center of excellence, PRICE serves as the professional home for UF scientists, clinicians and trainees dedicated to improved understanding and treatment of pain. PRICE is affiliated with and supported by the CTSI and receives strong support from the UF Institute on Aging and the UF Health Cancer Center. PRICE consists of more than 20 extramurally funded investigators pursuing a broad range of studies. PRICE provides member investigators with several resources and services in order to facilitate clinical and translational pain research at UF. PRICE maintains a registry of more than 1K potential research participants who have expressed interest in research participation and have provided permission for future contact. This registry includes individuals from several different patient populations as well as those who are generally healthy and can serve as control subjects. The registry is comprised of an ethnically diverse group of individuals between 18 and 85 years of age who were recruited via multiple methods, including print, radio and electronic advertisements, clinic-based recruitment, and word of mouth.

PRICE offers facilities and services to assist investigators with collection of pain assessment data in their research protocols via the Pain Clinical Research Unit. The unit’s primary facility consists of four examination rooms located in the CTSI Clinical Research Center in the north wing of the CTRB. Satellite locations of the Pain Clinical Research Unit are available on the second floor of the Dental Tower at the UF Health Science Center and in the Institute on Aging Geriatric Clinical Research Facility. Altogether, the Pain Clinical Research Unit comprises nine fully equipped quantitative sensory testing units and several flexible-use examination rooms. The Pain Clinical Research Unit is staffed by well-trained research staff, including an advanced registered nurse practitioner, a phlebotomy-trained research coordinator, a lab manager, multiple research technicians and numerous trainees, including undergraduate, graduate and professional students, post- doctoral fellows and junior faculty members. Investigators can conduct their own studies in the Pain Clinical Research Unit or request that the unit staff collect the data for their protocol. In addition, PRICE coordinates training activities related to pain, including a T32 training grant in translational pain research, as well as journal clubs, seminar series and a monthly Pain Interest Group. In early 2013, PRICE occupied its physical home in the new CTRB, a state-of-the-art research building that serves as the home for clinical and translational research at the UF. The CTRB provides offices for the PRICE director and program manager as well as the director of the Pain Clinical Research Unit and several PRICE research staff members.

**Preston A. Wells Jr. Center for Brain Tumor Therapy.** The Preston A. Wells Jr. Center for Brain Tumor Therapy is committed to finding better treatments, and eventually, a cure for brain cancer. In their quest to do this, they are discovering fundamental insights into neuro-oncologic diseases. They are translating their scientific discoveries and new technologies into innovative treatments to help people with brain tumors. The center’s research capabilities include immunotherapy, chemotherapy and optune therapy clinical trials.

**Trauma, Concussion and Sports Medicine (TRACS).** The TRACS program willintegrate and build upon foundation to develop a world class center of excellence for treatment, research, and education in Concussion and Traumatic Brain Injury.  The TRACS program goes beyond the traditional compartments and silos of clinicians and researchers.  The concept acknowledges that concussion and traumatic brain injury are complicated challenges that require teams to advance knowledge and care. The program creates synergy and innovation by serving as a hub to facilitate connection and teamwork. The hub model links clinicians, researchers, and educators following a “Learn as We Heal” concept. Pertinent clinical issues guide the research while innovations from research are rapidly disseminated into practice.

**NEURO-RELATED RESEARCH NETWORKS AND DATA RESOURCES**

**1Florida Alzheimer's Disease Research Center (ADRC).** The 1Florida ADRC is funded by the National Institutes of Health (National Institute of Aging, P30AG066506). Led by UF, the 1Florida ADRC is a collaboration between Mt. Sinai Medical Center in Miami Beach (MSMC), University of Miami (UM), Florida International University (FIU), and Florida Atlantic University (FAU). The ADRC coordinates the activities of over 40 faculty and 75 total staff from participating institutions. The specific aims of the 1Florida ADRC are to 1) Elucidate novel markers for the earliest prodromal stages of cognitive impairment and identify predictors of decline in our ethnically and racially diverse participants, who present with no or varied comorbidities. These longitudinal cohort studies, biomarker studies, and neuropathological studies will help the field to better understand AD, comorbidities, and disease heterogeneity. 2) Enhance our institutional research environments and provide resources to foster unique training opportunities; career development; and novel and innovative research in ADRDs with a growing emphasis on cross-disciplinary team science and advanced data analysis approaches. 3) Provide data, research tools and biospecimens to, and interact with, a wide variety of stakeholders within and outside (e.g., NACC, NCRAD) of our collaborating institutional network. 4) Provide educational activities relevant to ADRDs to health professionals, those in training, and to lay community members, with the goals of improving knowledge, developing skills, and building stronger coalitions to deliver better diagnoses and care to patients and their families.

**Adolescent Brain Cognitive Development (ABCD) Study**. Funded by the NIH the Adolescent Brain Cognitive Development Study (ABCD Study**®**) is the largest long-term study of brain development and child health ever conducted in the United States and is following 11,750 children, including 2,100 who are twins or triplets, for at least 10 years starting at ages 9 to 10. UF is one of the research project sites where these children are assessed. Scientists are documenting exposures to drugs (including nicotine, alcohol and marijuana), screen time activities, sleep patterns, engagement in sports and arts, among other variables, that may affect brain development, cognitive skills, mental health and many other outcomes. The young participants undergo interviews and behavioral assessments once or twice a year, with physiological measures (e.g., blood pressure, cholesterol) of cardiovascular health and neuroimaging of brain structure and function every two years. The project is designed to answer long-held questions about the development of the teenage brain through the entire period of adolescence and beyond. The data include basic participant demographics, assessments of physical and mental health, substance use, culture and environment, and neurocognition, tabulated structural and functional neuroimaging data, and minimally processed brain images. The comprehensive dataset, which is disaggregated by sex, racial/ethnic group and socioeconomic status, allows researchers to address numerous questions that may ultimately inform health decisions and policies related to education, nutrition, physical activity, sleep, and prevention of substance use and mental illness.

Analyses have led to a better understanding of the association between certain traits and experiences in adolescence (e.g., sleep, body mass index, family conflict, screen time) and brain physiology and other outcomes, such as cognitive ability and mental illness (e.g., depression and suicide). While most of these research projects have only looked at associations at a single point in time, data that will be collected over time will allow scientists to examine the developmental trajectories of individuals and how they are affected by many of the factors mentioned above — including genetics.

**Consortium for Medical Marijuana Clinical Outcomes Research.** In 2019 the State University of Florida Board of Governors selected UF to lead the statewide Consortium for Medical Marijuana Clinical Outcomes Research. The consortium is composed of public and private universities engaged in research on clinical outcomes of medical marijuana. The consortium will evaluate the safety and effectiveness of medical marijuana, consider dosing and routes of administration, including study of the effects of smoking medical marijuana versus other methods of consumption. Key initiatives of the consortium include fostering collaboration amongst consortium members, disseminating evidence via an outreach plan and developing research infrastructure that would support medical marijuana clinical outcomes research by members. The research infrastructure features a Clinical Core to support prospective clinical research and controlled trials; an expert group of scientific, medical and policy consultants to inform development of a research agenda and evidence synthesis; and the development of the Medical Marijuana Clinical Outcomes Research Data Repository, or MEMORY, database, which aims to link medical marijuana registry data with other data sources such as medical records such as medical and prescription claims as well as electronic medical records. The MEMORY database will serve as a unique resource for real-world medical marijuana clinical outcomes research.

**Florida Neonatal Neurologic Network.** A long-term collaboration between Level III facilities in North and Central Florida designed to improve the outcome of babies with hypoxic-ischemic encephalopathy. A single care center cannot perform this research due to the small number of patients treated per year. Therefore, a collaborative network has been developed to impact outcomes. UF Health Shands Hospital serves as the hub. Florida Neonatal Neurologic Network has a standardized hypothermia protocol with the same entry criteria, standardized systemic supportive care protocols, a centralized data repository for capturing patient demographics (REDCap), standardized MRI result reporting, a standardized developmental follow-up time line, and a serum sample repository located at UF Health. The network is reducing confounding variables for studying babies with hypoxic-ischemic encephalopathy and improve outcomes by standardizing practices among the centers. Florida Neonatal Neurologic Network consists of nine Level III NICUs in North and Central Florida including Gainesville (UF Health Shands), Tampa (Tampa General Hospital-USF, St. Joseph’s Hospital), Jacksonville (UF Health Shands – Jacksonville and Baptist-Wolfson Children’s Hospital), Orlando (Florida Hospital), Tallahassee (Tallahassee Memorial), Gulf Coast (Panama City), and Sacred Heart (Pensacola). The network has active online teaching, one annual meeting, and quarterly conference calls.

**International Tourette Deep Brain Stimulation Database and Registry.** Tourette syndrome is a neurodevelopmental disorder that typically starts in early childhood or adolescence and is estimated to affect about one in 160 children ages 5 to 17. Data collected in a registry from a small international group of patients with uncontrolled Tourette syndrome show a link between deep brain stimulation, or DBS, and some symptom improvement as well as some adverse events. Results from this registry indicate an approximate 45 percent reduction in tics one year after the DBS device was implanted. Just over a third of the patients reported adverse events including dysarthria, which is a speech disorder caused by muscle weakness, and paresthesias, which is a burning or prickling in the arms or legs. UF neuroscientists are leading a multinational effort to track outcomes for patients with Tourette syndrome who undergo deep brain stimulation surgery, an established treatment for other movement disorders such as Parkinson’s disease that’s now being tested as a potential means to decrease the motor and vocal tics of Tourette syndrome in certain patients. In partnership with the Tourette Association of America, UF researchers have established the new public registry and database, which will allow patients, physicians and families to review one-year outcome data for 171 patients with uncontrolled Tourette who underwent DBS from 2012 to 2016 at 31 medical institutions in 10 countries. Expert medical centers may have only one or two Tourette surgical cases a year, so pooled data can inform and drive the field forward. The goal of the new registry of pooled data is to understand the safety and efficacy of DBS for Tourette syndrome.

**National Drug Early Warning System (NDEWS) Coordinating Center.** Established in April 2020 with funding from the National Institute on Drug Abuse (NIDA), The National Drug Early Warning System (NDEWS) aims to provide the field with the most timely, salient, and valuable information on emerging substance use trends. UF leads the nationwide NDEWS effort as the coordinating center, to inform health experts, researchers and the community about drug use patterns throughout the country, hot spots with high rates of drug use or drug-related morbidity and new methods of drug use through leading-edge detection methods. NDEWS will interview emergency responders, workers at syringe exchange programs and funeral directors to understand the impact of COVID-19 on people who use drugs, and then rapidly disseminate findings to the scientific community and public. As the coordinating center, UF has received a five-year grant to track drug use trends through regular monitoring of key data from a range of resources, including the internet and social media. The center is also tasked with developing novel approaches to collecting data, such as web-based surveys, data mining and use of crowdsourcing. NDEWS will invite investigators from urban, suburban and rural areas within 18 sites across the U.S. to collect standardized indicators of drug use on an ongoing basis. Center researchers will also train doctoral students and postdoctoral fellows in epidemiological surveillance of drug use through UF’s National Institute on Drug Abuse-funded training program.

**UF INFORM Patient Research Database.** The INFORM research database houses over 12,000 unique patients and hundreds of thousands of visits. The database has brought together multidisciplinary and multidepartment research, driven grant funding and netted nearly 1,000 research papers.

# CLINICAL AND TRANSLATIONAL RESEARCH (CTSA Hub)

The University of Florida Clinical and Translational Science Institute serves as a catalytic hub connecting resources, people and ideas across UF’s 16 colleges, the state and the national Clinical and Translational Science Awards (CTSA) consortium. The CTSI’s mission is to improve human health by accelerating the translation of scientific discoveries and the implementation of evidence-based best practices for the diagnosis, treatment, prevention and cure of human disease. Established in 2008 and headquartered in a dedicated LEED-platinum facility that opened in 2013, the CTSI amplifies the capabilities of individual and team investigators, and helps them more effectively and more quickly carry out clinical and translational research. The CTSI performs three central functions: 1) transforms and continuously improves the research environment by developing new capabilities for research and translation to practice; 2) delivers high-quality and efficient services and resources for translational research; and 3) cultivates a strong translational workforce. The CTSI and its programs are supported by multiple grants, most notably a CTSA from the National Center for Advancing Translational Sciences of the NIH, and by significant institutional support from UF. In 2013, the CTSI led creation of the OneFlorida Clinical Research Consortium in collaboration with FSU, the University of Miami CTSA hub and other stakeholders to extend the impact and reach of translational science throughout the nation’s third-largest state. The CTSI serves as the coordinating center for OneFlorida, which bridges two national networks: the NIH-funded CTSA Trial Innovation Network and the Patient-Centered Outcomes Research Institute -funded National Patient-Centered Clinical Research Network. The facilities, resources and services described below are available through the CTSI.

**TRANSLATIONAL WORKFORCE DEVELOPMENT**

**UF Health Office of Biomedical Research Career Development**. Provides a comprehensive website and calendar that identifies available programs and resources to help health-science college predoctoral and postdoctoral trainees pursue the career pathways of their choice. These 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 UF Health Science Center and other UF partner programs related to human health.

**CTSI Translational Workforce Development Program.** The principal TWD aims are to: serve as the primary coordinator, provider and champion of education and training in translational science at the UF Health Science Center; provide onsite and online knowledge, training, resources, and networking to community collaborators in Florida; contribute to the CTSA network through creation of externships, mentor networks and sharing of education and training resources; and evaluate the creation of leaders, mastery of core competencies, and completion of learning objectives. The TWD Program’s leadership, infrastructure, program models and expertise have positioned it as a university-wide hub that catalyzes new opportunities in translational science graduate education and training. CTSI pathway and career development programs include:

* **Biotility**: The Biotility’s Bioscience Industry Workforce Program includes certificate short-courses and workforce credentials designed to expand participant career opportunities in the bioscience industry.
  + **Bioscience Industry Short-Courses and Credentialing.** Offered through UF’s Biotility (Center of Excellence for Regenerative Health Biotechnology), certificate short courses that integrate industry concepts and skills into traditional biomedical research are offered to undergraduate and graduate students, researchers and faculty, and companies throughout the state. These industry-defined courses set the stage for next steps in the product development pipeline, and prepare/upskill individuals for industry careers. Courses are available on-line and in-class, and focus on product and process development, biomanufacturing, analytical methods, quality systems, and regulatory compliance. UF Biotility also maintains and administers the Biotechnician Assistant Credentialing Exam (BACE), which leads to a nationally recognized workforce credential. The BACE has been formally added to the Arizona, Arkansas, Florida, Maryland, Missouri, South Carolina, and Washington D.C. Department of Educations’ lists of Industry Recognized Credentials (IRCs). Located in Alachua, UF Biotility is part of Florida’s northeast bio-industry cluster, which allows for incumbent employee training, pre-employment training, and participation of industry leaders in course development and instruction.



Biotility Cleanroom and Gowning course

* **Certificate of Basic Coordinator Training.** Experienced research coordinators are in demand both locally and nationwide. Training and certification can lead to many different career possibilities that can include clinical and commercial applications with greater professional growth and higher levels of pay. The CTSI Certificate of Basic Coordinator Training provides entry-level education for those who wish to become a clinical research coordinator. Potential students include health professionals working in nursing, nutrition, respiratory therapy, occupational/ physical therapy, or similar allied health fields. The certificate program consists of two required courses and one optional course. These courses can be taken in any order. Students set their own pace, and most are expected to complete all requirements in approximately two semesters.
* **Clinical Research Professionals Advisory Council.** Representatives from a variety of departments serve on the council, a diverse group of clinical research professionals who promote cross-functional collaboration for research initiatives at UF. The council’s goal is to help clinical research coordinators grow professionally and to achieve success at UF by being champions for clinical research, and facilitate collaborative discussion forums to exchange information. The members of the council act as advocates for professional development opportunities for the clinical research coordinator community; offer insight to senior leadership about workflows in order to help strategize training plans for all clinical research professionals; provide a connection between clinical research professionals and functional units involved with clinical research; and identify and disseminate best-practice information within the clinical research professional community.
* **Clinical/Translational (CTS) Certificate.** This Clinical & Translational Science Predoctoral Training Program certificate provides junior trainees with the skills required to develop a career in multidisciplinary clinical and translational research. Completion of program requirements results in the award of a certificate in Clinical & Translational Science.
* **Clinical/Translational (CTS) Concentration**. This training program provides junior 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 predoctoral students performing clinical and/or translational research in health-related fields at UF. Completion of program requirements results in the award of an interdisciplinary concentration in Clinical & Translational Science
* **K College.** A monthly luncheon seminar series that brings together a community of more than 200 early-stage and early established investigators, and pre- and post-doctoral researchers. Seminar topics range from life-work integration 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 in clinical and translational research.
* **KL2 Scholar Multidisciplinary 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 and translational research
* **Mentor Academy.** More than 130 faculty from 10 colleges have participated in the CTSI Mentor Academy’s Master Mentor program since its launch in 2013. The four-month program for current and potential research mentors offers biweekly sessions on topics relevant to successful mentor-mentee interactions. Supported by UF Health, the UF College of Medicine, and the UF CTSI, the Mentor Academy promotes the development of the next generation of clinical and translational scientists through a culture of support for mentoring and training in optimizing mentoring relationships for mentors and mentees at all levels of career development.
* **TL1 Predoctoral Training Program.** Provides graduate students with skills to develop a career in multidisciplinary clinical and translational research. The program uses a team-science approach and provides mentoring and didactic training for predoctoral students performing clinical and/or translational research in health-related fields at UF. The Clinical & Translational Science field of study is available to UF PhD students as an interdisciplinary concentration (“co-major”) and as a graduate certificate.
* **Research Coordinator Certification Study Groups.** Facilitated study groups for clinical research professionals seeking national certification in clinical research coordination. The Association of Clinical Research Professionals (ACRP) offers Clinical Research Associate, Clinical Research Coordinator and Physician Investigator certifications. A nonprofit founded in 1976, ACRP has grown to more than 13,000 members worldwide today. The Society of Clinical Research Associates (SoCRA) offers Clinical Research Professional certification. SOCRA is a nonprofit with more than 15,000 members worldwide.
* **Training and Research Academy for Clinical and Translational Science (TRACTS).** A two-year training program for early career faculty at UF who have an interest in pursuing clinical and translational research as a major component of their careers. TRACTS consists of three components: 1) Didactics (Intro to CTR, Quantitative Literacy), 2) Mentor identification and 3) Individual and group career support aimed at balancing the demands of clinical and academic pursuits. The goal of TRACTS is to prepare clinicians for roles in health sciences, including further research career development.
* **MD-PhD Training Program.** Trains clinician-scientists for a career in academic medicine with the full expectation that these students will become future leaders at academic medical centers worldwide. The MD-PhD program takes a broad view toward the development of the entire spectrum of skill sets necessary to complete the “clinical translational mission” and essential for closing the gap in health disparities. Consequently, MD-PhD students are enrolled in four different colleges (Engineering, Health Professions, Medicine, and Pharmacy) for their graduate work. The MD-PhD Training Program office, totaling 301 square feet, is located on the first floor of the Medical Science Building (MSB) and consists of a two-room suite that includes a conference space. It is adjacent to the Medical Admissions Office and directly across from the Office of Research Affairs of the College of Medicine. The program has ready access to conference rooms in the Department of Ophthalmology and the McKnight Brain Institute. The MD-PhD Training Program’s location within the College of Medicine provides scholars with access to a broad array of medical experts and allows it access to eight full-time faculty (executive committee members) to provide leadership in mentor selection, program policy assessment and MD-PhD candidate evaluations.

**RESEARCH SERVICES AND ADMINISTRATION**

**CTSI Service Center.** Facilitates rapid activation of research for investigators performing translational research across the UF campus and provides a range of research services and resources, including biostatistical and regulatory support, data support through the Clinical and Translational Science-IT and Research Electronic Data Capture (REDCap) teams, recruitment and retention support through the CTSI Recruitment Center, and facilities to conduct research through the UF Clinical Research Center. The CTSI Service Center also provides Regulatory Knowledge and Support for investigators, including access to a Research Participant Advocate, informed consent expertise, IND and IDE assistance, ClinicalTrials.gov assistance, ethics consults, data safety monitoring assistance, and Standard Operating Procedure development. The Regulatory Knowledge and Support team can also provide Good Clinical Practice, Good Laboratory Practice and Good Manufacturing Practice training. The CTSI Service Center’s Research Navigators advise research teams on available resources and help them navigate research-related processes. Navigators are well-versed in IRB application preparation, protocol development, Good Clinical Practice guidelines, and NIH research rules and standards for the design, conduct, performance, monitoring, data collection, management, analysis, and reporting of clinical trials. Through consultation, Navigators help investigators assemble research teams to conduct studies, provide budget reviews, and oversee study management. The CTSI Service Center also links investigators to other CTSI resources and CTSI-affiliated core facilities such as the Human Imaging Core and the Center for Safety, Simulation and Advanced Learning Technologies. The CTSI Service Center works closely with investigators, the UF Institutional Review Boards, the CTSI Office of Clinical Research, and numerous service providers across the CTSI. The service center holds monthly liaison meetings with all component/program leads, who cross-refer investigators as appropriate to resources available throughout the study life cycle.

**Office of Clinical Research.** Created in 2017 as a one-stop shop for managing clinical studies from start to finish. Part of the CTSI, with support from the UF Office of Research and the UF College of Medicine, the Office of Clinical Research leads two major initiatives: 1) Implementation of OnCore as an enterprise-level clinical research management system; and 2) reorganization of clinical research resources and administration into a more facilitative model that merges staff and functions from Research Administration and Compliance, CTSI, UF Health, Cancer Center and Office of Research units. OnCore manages multiple aspects of clinical research, including protocols, participants, billing, data and specimens. Housed under the CTSI, the Office of Clinical Research redesigned workflows to leverage the full functionality of OnCore, minimize bottlenecks and streamline processes. In response to recommendations of the UF Human Subject Research Taskforce convened in the fall of 2015, the Office of Clinical Research provides support to clinical research teams campuswide, with major functions of the office including OnCore user support, system maintenance, analytics and reporting; education and training, including OnCore utilization and regulatory and compliance processes; study finance, including sponsor invoicing and collections, contract negotiations and budgets, and OnCore protocol calendars and billing grids; and clinical research support and facilitation through the CTSI Service Center, which provides Clinical Research Center, recruitment, navigation, regulatory, quality management, biostatistics and investigational pharmacy services.

**INFORMATICS PLATFORMS AND SYSTEMS**

**EpicCare Electronic Health Record/MyChart.** In use at UF Health since 2011, the EpicCare Electronic Health Record system offers a patient portal, MyUFHealth (using the MyChart software) that allows patients to communicate with providers and access portions of their medical records, such as schedule and test results, from a computer or smart device.

**OnCore Clinical Trials Management System (CTMS).** UF uses the web-based OnCore® Enterprise Research system to streamline its data management needs for clinical research. The OnCore® application enables research teams to efficiently manage their research portfolios by supporting the management of regulatory, clinical, and biospecimen data. Financial management of accounts receivable ensure timely and accurate invoicing. Additionally, UF has implemented an integration with the electronic health system (Epic®) at UF Health. The Epic® interface moves demographic data from Epic® into OnCore® and OnCore® creates research records and patient timelines in Epic. The movement of patient data between interfaces is completely within the secure UF/UF Health computing environment (please see below). Functionally, this reduces manual data entry, supports harmonized data within the two systems and ensures accurate and timely information within the patient’s medical record that is available at the point of care. OnCore® can also track regulatory and patient information centrally at multiple clinical sites. These sites are considered “affiliate sites” within OnCore®. Clinical and research staff working on the protocol can securely access a central repository of information and track patient enrollments and data. In order to accomplish this securely, the staff must be added to the UF directory and will need to both run the UF Health virtual private network and provide current credentials for secure authentication (please see below for more details on OnCore® security). The OnCore® support team provides UF investigators with the needed resources and technical support to manage their clinical research projects. This team of OnCore® analysts provides service and support to investigators through end-user training, product builds within the application, and report design services.

**REDCap (Research Electronic Data Capture).** A 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. For those with funding, fee-based configuration services are also available to jump-start a given project. REDCap was developed at Vanderbilt University. UF and more than 2,100 other partners now comprise the REDCap Consortium that continues to develop and support the software. Using REDCap’s streamlined process for rapidly developing databases and/or surveys, users create a project, define and organize the data they wish to capture, build the related forms/surveys and associate them with study events. Other features include automated export procedures for seamless data downloads to Excel and common statistical packages (SPSS, SAS, Stata, R), as well as a built-in project calendar, a scheduling module, ad hoc reporting tools, and advanced features, such as branching logic, file uploading, and calculated fields. At the time of this assessment, the UF REDCap supported 544 projects with 2,120 users. The system held the records of approximately 12,000 study participants and an annual growth rate of 3,000 per year. The REDCap Web Application is supported and managed by the CTSI team, and the REDCap backend database is managed by the UFHealth Enterprise server team. All components are housed in the UF Health Data Center. REDCap authentication uses the UF enterprise Shibboleth system.

**BIOSTATISTICS, EPIDEMIOLOGY AND RESEARCH DESIGN**

**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.

**REGULATORY SCIENCE**

**RKS Catalyst.** This program combines the CTSI Translational Drug Development Core and the Joint Research Program in Systems Pharmacology and Pharmacoepidemiology, which draw on the following resources:

**Center for Pharmacometrics & Systems Pharmacology.** The center’s purpose is to create a uniquely rigorous and integrative academic translational science program in quantitative clinical pharmacology with a focus on personalized medicine. Integral to this mission is the education and training of doctoral students and post-doctoral fellows in the discipline of drug development and regulatory science. Using systems biology approaches, researchers study drug activities, targets, and clinical effects to support and advance translational research, which improves the process of bringing new drugs to market for improved patient therapies, including personalized medicines.

**Translational Drug Development Core.** Established in 2017 to fill a pressing gap in the drug development pipeline: providing needed data to advance promising compounds from discovery to clinical trials. The core provides services and expertise in bioanalytical drug metabolism and preclinical pharmacokinetics to assist in bridging this gap. The core can provide consultation, laboratory services, and bioanalytical services to support UF investigators and collaborators.

**UF Innovate.** Comprises four entities in the university’s technology commercialization ecosystem: Tech Licensing, Ventures, and two incubators, The Hub and the Sid Martin Biotechnology Incubator. UF Innovate’s quartet forms a comprehensive commercialization system that brings together five critical elements: intellectual property, technology-transfer expertise, facilities, talent and capital management. To inventors, this means UF Innovate cares for their intellectual property by seeking patent or other protection and by marketing it to find the perfect licensee that can further develop or use those inventions. To entrepreneurs and startup companies, UF Innovate provides facilities and programs to help them find or develop the talent and funding they need.

**Tech Licensing.** Established as the Office of Technology Licensing in 1985 after passage of the Bayh-Dole Act that encouraged universities to commercialize their discoveries. The office has earned a reputation as a leader in commercializing discoveries that cure diseases, create efficiencies, improve quality of life and create jobs. Consistently ranks among the top universities for startup launches and licensing. Since the office opened, it has launched nearly 200 biomedical and technology startups. Tech Licensing receives more than 300 invention disclosures, executes more than 100 commercial transactions and launches nearly 20 companies each year. In 2017, the Milken Institute ranked the University of Florida third in the nation for its tech commercialization efforts. In fiscal year 2015-16, the office received 311 invention disclosures, signed 122 licenses and options, and launched 17 companies. This is a result of the collaborative working relationship between faculty generating new discoveries and Tech Licensing working to find commercial partners.

**Ventures.** Seeks to fuel consistent growth in the number and quality of technology-based startup companies. These startups move UF inventions out of the lab and into the marketplace for the global good. Ventures supports startups by developing entrepreneurs, connecting companies to potential investors, and making equity investments. UF Innovate | Ventures has a $1 million venture fund available to support startups during each fiscal year. Ventures will assist UF startups in preparing for a financing round and may participate in financings after review and approval by the Investment Committee. Ventures will act as a co-investor with an accredited third-party investor acting as the lead investor of a financing round. In addition, Ventures oversees an Entrepreneurs in Residence program throughout the state of Florida. With EIRs strategically located throughout Florida in major urban centers, these seasoned entrepreneurial experts will connect UF startups with experienced executives in various industry sectors across the state. Also, the EIR program will connect UF startups to private capital, elevating the probability of success for these new enterprises.

**The Hub.** UF Innovate | The Hub (formerly the Florida Innovation Hub) is a business incubator with a mission to build, drive and support the spirit of innovation. It is the “hub” of the North Central Florida entrepreneurial ecosystem with a global outreach. It offers state-of-the-art wet laboratory, light manufacturing and office space, along with advising, mentoring, education and programs and amenities to help you succeed. It has resident and affiliate programs available to assist every startup and small business. The original 48,000-square-foot facility was built with an $8.2 million grant from the federal Economic Development Administration and a $5 million commitment from UF. After it opened in October 2011, the incubator demonstrated such success that the EDA awarded a second $8 million grant, to which UF added an additional $9 million in 2015. The expansion opened in January 2018, doubling the facility to a total of 100,000 square feet. Since the addition of UF Innovate | The Hub, the entrepreneurial landscape and culture of Gainesville have experienced an amazing transformation, and the incubator is recognized as a major catalyst in helping propel the university city to become one of the top energized tech communities in the Southeast. Much more than a building, the Hub provides a complete growth ecosystem that leverages the prestige of the university’s research and technology commercialization prowess and combines that with programming, resources and networking opportunities designed to support small startups and growth companies.



From left to right, The Hub building in Gainesville, and Sid Martin Biotech building in Alachua

**CTSA HUB AND NETWORK CAPACITY**

**OneFlorida Clinical Research Consortium.** Founded by UF, FSU and the University of Miami in 2013, the combined network includes health systems that provide care for approximately 15M or over half of all Floridians through 4,100 physician providers, 1,240 clinic/practice settings with a catchment area covering all 67 Florida counties. OneFlorida aims to unite its stakeholders to address some of the nation’s biggest health challenges and serve as a resource for the state in improving health, health care and health policy. To support research aimed at addressing these challenges, the OneFlorida Data Trust and OneFlorida Practice-based Research Network allow investigators to identify cohorts and conduct observational research using aggregate and de-identified patient-level health data from diverse partners across the state; identify and intervene with patients at the point-of-care; and conduct pragmatic clinical trials and other interventional studies, including implementation science and comparative effectiveness research, in eligible, research-ready clinics. The OneFlorida coordinating center is housed at the UF CTSI and facilitates streamlined support for network-wide research through a centralized IRB process, integrated programs, budgeting, contracting and stakeholder engagement, and a front-door process to assist investigators. The strength of the consortium is in the diversity of its patients, partners and clinical settings. The consortium actively participates in two national networks dedicated to translational research: the CTSA Program, with CTSA hubs at UF and the University of Miami, and the Patient-Centered Outcomes Research Institute’s PCORnet, as one of nine large clinical research networks nationwide.

**CTSI Recruitment Center.** Optimizes recruitment and retention of study participants through consultations and services that help UF research teams address their study recruitment needs. The Recruitment Center supports several resources to help facilitate cohort identification and the recruitment of research participants, including access to electronic health record data for cohort discovery, consent for contact to participate in research and participant-centered engagement methods to reach clinical, community and special populations. Additional resources within the Recruitment Center include the UF Health Integrated Data Repository and i2b2 cohort discovery tool (>1.3M patients as of July 2020) HealthStreet (>10,000 members as of July 2020), and the Translational Communication Program.

**Consent2Share:** An initiative that offers UF Health patients an opportunity to allow UF researchers to contact them about research studies for which they might be eligible based on information in their electronic health record. More than 66,000 patients have consented to participate through UF Health’s internal medicine and medical specialties, family medicine, cardiovascular and pediatric practices, with ongoing expansion underway. Consent2Share participation is recorded in the electronic health record system and is part of the HIPAA-compliant limited data set made available to researchers via the UF Health Integrated Data Repository’s i2b2 query tool. The UF Health Office of the Chief Data Officer oversees the Integrated Data Repository and works closely with the UF Institutional Review Board to manage the Integrated Data Repository’s honest broker process and to oversee quality assurance for the Consent2Share initiative.

**UFHealth.org Study Listings:** In collaboration with the four UF Institutional Review Boards, UF Health and UF research teams, the CTSI maintains and promotes central UFHealth.org listings of UF clinical research studies seeking volunteers (>430 studies listed as of July 2020).

**UF Studies Facebook:** The Recruitment Center maintains the UF Studies Facebook page, designed to connect community members with research participation opportunities and information. The page was developed as part of an institutional effort to address recruitment needs on social media and is intended as a central location for research-study advertising.

**ResearchMatch:** A national research volunteer registry that brings together researchers and willing volunteers who want to get involved in research studies. This national registry, developed by institutions affiliated with the CTSA Program, provides a secure, web-based approach to address a key barrier to advancing research: finding research participants. The goal of ResearchMatch is to better connect volunteers with potential study opportunities. As of July 2020, ResearchMatch.org had registered more than 146,000 volunteers nationwide (>6,100 volunteers in Florida).

**ACT Network (NCATS Accrual to Clinical Trials).** The ACT Network is a real-time platform allowing researchers to explore and validate feasibility for clinical studies across the CTSA consortium, from their desktops. ACT helps researchers design and complete clinical studies, and is secure, HIPAA-compliant and IRB-approved. The ACT Network is open access and available to all researchers at the University of Florida as well as other participating CTSAs at no cost. The ACT Network contains more than 125M patient records and de-identified data from 48 CTSAs across the country, expanding to ~90% of the CTSA consortium in 2020. ACT was developed collaboratively by CTSA members, with funding from NCATS.

**CTSI Research Design and Data Coordinating Center:** The mission of the RDDC is to advance biomedical research by providing innovative research design, high quality data management, state-of-the-art data analysis, and advanced data privacy technologies. The center provides research services including literature reviews, data management, study design consultations, and data analysis. The center’s team of experienced professionals helps researchers to design state-of-art of clinical trials, manage clinical trial data, implement innovative randomization systems, and facilitate secure data sharing among research teams. The new center leverages the CTSI Biomedical Informatics Program’s development of OnCore-REDCap interfaces for a web-based platform that integrates electronic data capture and clinical trial management capabilities. It provides support for all study operational activities with the CTSI Service Center, including development of study protocols and case report forms, seamless and innovative/ adaptive randomization, regulatory document management, and medical safety, data quality and trial progress monitoring. The integration of data collection and trial management will make it feasible to implement innovative designs when appropriate, improve efficiencies of clinical trial development and execution, and enhance chance of trial success. Also, the center will expand its research on data privacy technologies and implement these methods for sensitive information collection and medical data sharing. The team invented data masking technologies such that, without sharing the original data, standard statistical analysis can still be performed with the same results for masked data. These technologies have the potential to increase people’s willingness to reveal sensitive information or participate in crowdsourced projects and research teams and institutions to share medical data. The center serves as a laboratory where BERD, RKS and BMI faculty can collaborate to advance innovation in regulatory science, privacy protection, data security and data analysis.

**CTSA Trial Innovation Network.** The UF CTSI has a network liaison team that provides facilitative support to UF investigators leading or participating in multisite studies who wish to access the services and resources of the CTSA Trial Innovation Network, which launched in October 2016. The Trial Innovation Network is a collaborative initiative within the national CTSA program and is composed of three key organizational partners: institutional CTSA hubs, Trial Innovation Centers (at Duke-Vanderbilt, Utah, Johns Hopkins-Tufts universities), and a Recruitment Innovation Center (at Vanderbilt University). The Trial Innovation Network features a single IRB system, master contracting agreements, quality by design approaches, and a focus on evidence-based strategies to recruitment and patient engagement. The goal of the Trial Innovation Network is to execute trials better, faster, and more cost-efficiently and to be a national laboratory to study, understand and innovate the process of conducting clinical trials.

**Venues.**

**Clinical Research Center.** Occupies 14K square feet on the first floor of the Clinical and Translational Research Building (CTRB). The dedicated research space includes 14 exam rooms, a large infusion suite, two procedure rooms, and a large exercise physiology room. The unit also includes administrative offices and is equipped for complex exams such as bronchoscopy, liver biopsies, and gene therapy. Other available equipment includes pulmonary function equipment, dental chair, Bod Pod, Body Box, Basal Metabolic cart, Ultrasound machine, EKG machine, and blood pressure monitors. Located within the CRC are an investigational pharmacy, a conference room, work areas for nursing and study staff, and a sample processing lab which houses refrigerators, centrifuges and -80° freezers. The CRC provides a highly trained research staff including registered nurses, a medical technologist, a research dietitian, and administrative staff. All staff have human-subject protection and Good Clinical Practices training and participate in ongoing education. Services include administration of investigational medications, specimen collection including pharmacokinetic sampling, monitoring of vital signs, administration of glucose tolerance tests, euglycemic clamp procedures, diet recalls, specimen processing, and exercise testing. CRC also provides study coordinator and internal study monitoring services.

**CRC Advanced Research Resources.** The CRC provides a coordinator pool of 5.0 FTE for study coordination and quality monitoring support to clinical trials on a study-funded basis. This pool serves numerous investigators and provides a nurse liaison to the CTSA Trial Innovation Network. The CRC quality monitoring staff resolves regulatory issues and contributes to overall improvement in the responsible conduct of research, data quality and safety. The quality monitoring team is available for consultation and services upon request by the Institutional Review Board and/or investigators.

**Investigational Drug Service (IDS) Pharmacy.** Provides a full list of services related to investigational drug management. In addition to standard investigational drug management, the IDS Pharmacy provides sterile compounding services (including complex gene therapy preparation) and oral blinded dosage form compounding (over-encapsulation). The IDS Pharmacy offers all levels of investigational product storage (room temperature, refrigeration, freezer, and ultra-low freezer).

**Dental Clinical Research Unit.** The facilities enable performance of state-of-the-art clinical research in the field of oral and craniofacial clinical and translational research, and foster collaborative research with areas of biomedical research. Examples of investigational research include fundamental clinical studies funded by the NIH exploring the etiology and pathologies of oral infectious diseases and translational research that evaluates the efficacy of anti-inflammatory products, growth factors in periodontal regeneration, systemic and locally delivered antibiotics, other antimicrobials and antiseptic agents, and newly developed health care products or devices. The Dental Clinical Research Unit also assists with in vitro studies of antimicrobial compounds and susceptibility studies and evaluate diagnostic methods and procedures.

**PRECISION HEALTH**

**UF Health Precision Cancer Care Program.** Established in early 2014 to facilitate the translation of cancer genomics research into clinical care. The program comprises researchers and physicians in the UF Health Cancer Center and UF Health Pathology Laboratories. The program offers molecular profiling of clinically relevant and therapeutically actionable mutations in all patients with lung and colorectal malignancies. This marks the first example of next generation sequencing to tailor treatment of common solid tumors in the state of Florida, with ongoing expansion to ad hoc sequencing in other types of cancer, including ovarian, melanoma, pancreatic, endometrial and immune system cancers. Molecular profiling includes a comprehensive assessment of clinically actionable somatic activating mutations, amplifications, and fusion genes. This clinical approach seeks to identify genetic mutations contributing to cancer progression, and the novel therapies to target these mutations.

**UF Health Precision Medicine Program.** Part of the CTSI, this program partners with health professionals and patients at UF Health and across the state to develop, implement, study, and refine methods that allow genetic information to be used routinely as part of patient care. The program’s initial focus is on pharmacogenetics, given the significant research contribution of UF faculty in this area. Led by faculty from the UF College of Pharmacy, it brings together a large and multidisciplinary team that provides complementary clinical, informatics, laboratory medicine, and administrative expertise required to implement genomic medicine. The program has launched six drug-gene implementations and performed clinical pharmacogenetic tests for more than 5,000 patients. The Precision Medicine Program is focused on expanding evidence-based genomic medicine to other inpatient and outpatient settings throughout Florida, leveraging existing OneFlorida partnerships.

**CTSI Precision Public Health Program.** Precision Public Health is “providing the right intervention to the right population at the right time.” In a research setting, Precision Public Health can be used to create programs that are tailored to underserved community groups for whom focused attention has the potential to significantly improve health outcomes. A Library Guide created by this group lists resources, datasets, and tools available to researchers in this area. The UF Health Science Center Library maintains this online LibGuide, which has federal, state, and local-level data resources with the geospatial level for each source and type of data, the population and location specified, and type of data (agricultural, clinical data, demographic, environmental, health statistics, health services statistics, community health resources, housing, and legal/law enforcement and crime data identified. A primary use of these data is the identification and characterization of a high-risk population segment through data linkage and layering.

**Southeast Center for Integrated Metabolomics.** Offers services in mass spectrometry (MS) and nuclear magnetic resonance (NMR) -based metabolomics and is developing a fully integrated platform for analytical measurements and statistical analysis. SECIM offers untargeted global metabolomics using NMR and liquid chromatography-mass spectrometry (LC-MS) and targeted assays using LC-MS on amino acids, organic acids, acyl-carnitines, acyl-CoAs, and NAD metabolites through partners at Sanford Burnham Prebys Medical Discovery Institute in Orlando. Biomarkers are identified by state-of-the-art NMR and MS. SECIM users are able to conduct isotopic ratio outlier analysis (IROA) experiments to measure global metabolomic changes in response to external perturbations or mutations using LC-MS through a partnership with IROA Technologies. SECIM technical cores include: Mass Spectrometry Services for global and targeted metabolomics Nuclear Magnetic Resonance for global metabolomics and biomarker identification; High Resolution-Magic Angle Spinning for tissue analysis and 13C Isotopomer Fluxomics analysis; Advanced Mass Spectrometry for biomarker identification, imaging mass spectrometry and IROA; and Bioinformatics for SECIM pipeline development and analysis. Additionally, the Promotion & Outreach Core unifies the technical cores’ activity by expanding the user base and providing education and training in SECIM capabilities.

**UF Health Pathology Laboratories.** An independent laboratory and leading provider of surgical pathology and diagnostic laboratory services for the southeastern United States. Headquartered in Gainesville, the UF Health Pathology Laboratories have offered pathology services, clinical testing of a variety of types, pathology second opinion services and autopsy services for more than 20 years. It serves all major markets across the state of Florida and provide services to more than 600 clients. The laboratory also provides full-service customer support, billing, and courier services. It also functions as a R&D laboratory for lab-developed tests in support of clinical translational research projects. In the past six years, the laboratory has supported new technologies, developed informatics resources, and built clinical support capabilities. It has closely aligned with the CTSA and supported NIH-funded translational projects in the College of Pharmacy, and departments of Pathology and Surgery as well as for individual investigators in support of translational research activities. It is both a basic science and clinical department and home to more than 80 faculty including nationally recognized pathologists who are knowledgeable in all subspecialties of pathology. In addition, the department ranks in the top 10 of public universities for NIH funding and is an international leader in autoimmune diseases. Clinical faculty have the experience, expertise and resources to diagnose a variety of patient’s conditions quickly and accurately providing clinicians with critical diagnostic and theranostic information. Importantly, the laboratory strives to provide the highest level of support for patient care by utilizing established technologies and developing new cutting-edge ones. Because of these leading-edge innovations, contributions to the field of medical research are highlighted by numerous publications and research awards. UF Health Pathology Laboratories also function as a part of clinical teaching facilities where medical students, residents, fellows receive focused instruction from seasoned pathologist coupled with intensive hands-on training. The laboratory’s commitment to education is underscored by the numerous teaching awards granted to faculty.

**UF Health Pathology Laboratories Genetic Laboratories, Molecular Pathology.** The major goal of the Molecular Pathology Laboratory is to develop and provide exceptional clinical services to patients and physicians.  It offers detection of pharmacogenomic variants by quantitative PCR and are currently validating a next-generation sequencing-based approach.  In addition to pharmacogenomic testing capabilities, the Molecular Pathology Laboratory is, as a full-scale reference laboratory, also equipped to offer solid tumor screening and diagnosis, as well as testing for lymphoid malignancies and infectious diseases. The laboratory serves hospitals, physicians, public health centers and reference laboratories, as well as supporting clinical trial and other translational projects. The laboratory is committed to contributing to the advancement of the field of molecular pathology and genomic medicine and to the education of tomorrow's pathologists and molecular geneticists. It utilizes a multidisciplinary approach to diagnose genetic diseases in collaboration with anatomical pathologists, hematopathologists, microbiologists and cytogeneticists.  The laboratory is taking a major leadership role within the UF Health Personalized Medicine Program through development of genetic test offerings to support this program as well as in a variety of other clinical translational programs at UF.

**ADDITIONAL HUB FACILITIES**

**Clinical and Translational Research Building (CTRB).** Serves as the headquarters for clinical and translational science at UF and in the state. The CTRB houses patient-oriented research venues for the Institute on Aging and the CTSI. The 120,000-square-foot facility features two main wings. Units in the building include: CTSI, Institute on Aging, Department of Biostatistics, Department of Epidemiology, Department of Health Outcomes and Biomedical Informatics.



Clinical and Translational Research Building

**CTSI Biorepository.** Accredited by the College of American Pathologists, CTSI Biorepository services include retrospective and prospective procurement of high quality biospecimens for research (fresh, fresh-frozen, formalin-fixed, paraffin-embedded tissue, DNA, RNA, plasma, serum, buffy coat, etc.); a centralized, secure, and monitored biospecimen storage facility; biospecimen processing services; nucleic acid extraction and quality assessment services; comprehensive clinical trial specimen management services including kit creation, sample receipt/ reconciliation, storage and distribution; regulatory assistance, including Institutional Review Board documentation when applying for Biorepository services; and comprehensive pathology services, including diagnosis confirmation by board certified pathologists. The total sample storage capacity is approximately 500K samples stored in nine -80°C freezers and one liquid nitrogen freezer. The current storage inventory exceeds 230K samples including approximately 31K biorepository “library” specimens which are available to researchers and nearly 198K samples collected by investigator-directed research projects including multi-center clinical trials. Examples of large scale clinical trials utilizing CTSI Biorepository services include the "Lifestyle Interventions and Independence for Elders Study” (*The* *LIFE Study*), the “Hepatitis C Therapeutic Registry and Research Network” Study (*HCV-TARGET*), the UF’s “Sepsis and Critical Illness Research Center” (P50 grant, departments of Surgery, Anesthesiology, Medicine, Physical Therapy, Aging and Geriatric Research), and the UF Health/Orlando Health Joint Oncology Program. The CTSI Biorepository also serves as the official UF Health Cancer Center’s biospecimen procurement and storage facility for Cancer Center Members.

Biorepository



**AFFILIATED COLLABORATORS AND NETWORKS**

**International Mentoring Association.** A non-profit (501(c)(3)) association of mentoring professionals in the education, business and government sectors. Offers the most current information in the constantly evolving field of mentoring best practices in an organized, accessible, and easy-to-use format. IMA advances personal and organizational development by promoting the use of mentoring best practices in all settings. This diverse worldwide organization unites a broad cross-section of hundreds of people who have interest in the theory and practice of effective mentoring. Members bring unique experiences and a fresh perspective from their various fields of mentoring and share a commitment to increasing 1) The impact of mentoring, 2) performance of mentoring participants 3) effectiveness of the organizations those programs serve. The association offers a wealth of free information, including monthly webinars covering a range of mentoring and coaching topics and articles written by experts in the field.

**Association for Clinical and Translational Science.** UF has an institutional membership in this association for individuals engaged in or supportive of clinical and translational science, which focuses on research, education, advocacy and mentoring. ACTS supports investigations that continually improve team science, integrating multiple disciplines across the full translational science spectrum: from population based and policy research, through patient oriented and human subject clinical research, to basic discovery. Its goal is to improve the efficiency with which health needs inform research and new therapies reach the public. ACTS is the academic home for the disciplines of research education, training, and career development for the full spectrum of translational scientists. Through meetings, publications, and collaborative efforts, ACTS will provide a forum for members to develop, implement, and evaluate the impact of research education programs. ACTS provides a strong voice to advocate for translational science, clinical research, patient oriented research, and research education support. ACTS will engage at the local, state, and federal levels and coordinate efforts with other professional organizations. ACTS will promote investigations and dissemination of effective models for mentoring future generations of translational scientists. Through collaborative efforts, ACTS will provide a forum for members to share studies, promote best practices, and optimize professional relationships among trainees and mentors.

**NIH Common Fund Metabolomics Consortium Coordinating Center.** The Metabolomics Coordinating Consortium Coordinating Center (M3C) at UF organizes the efforts of the national NIH Common Fund Metabolomics Consortium to advance the science and practice of metabolomics to improve human health. The M3C organizes meetings, conducts a pilot and feasibility awards program, and provides information to the community through its web site and a Twitter feed. The M3C has developed the People Portal to showcase investigators, projects, and available datasets in the field of metabolomics.

**NHGRI Implementing Genomics in Practice (IGNITE) Pragmatic Clinical Trials Network.** Precision medicine researchers at UF Health are among the nation’s leading experts in studying pharmacogenomics and developing strategies to implement precision medicine into practice. Since 2011, UF Health researchers have been studying precision medicine from multiple angles and have been building an evidence-base which supports using genetic information to improve patient care. UF was among six sites chosen for the National Institutes of Health-funded Implementing GeNomics In pracTicE, or IGNITE, Network dedicated to supporting the implementation of genomics in health care and received more than $6 million in IGNITE I funding over five years. In 2018, UF was selected among five sites to lead IGNITE II and further advance the use of genomic information into medical practice. IGNITE II: Implementing Genomics into Clinical Practice: IGNITE II is a multi-institutional research network funded by the National Institutes of Health. Five institutions, including the University of Florida, have been funded to deliver personalized health care informed by genomics through IGNITE II.

**North Florida/South Georgia Veterans Health System.** Consists of two medical centers, three large multi-specialty outpatient clinics and eight small community-based primary care outpatient clinics. The Malcom Randall VA Medical Center in Gainesville is a tertiary care facility that is also an active teaching hospital, with an extensive array of specialty services. The Malcom Randall VA Medical Center hospital combines a full range of patient-care services with state-of-the-art technology that is enhanced and supported through education and research. The health system has a strong and meaningful affiliation with UF and is connected both physically and functionally to the university. More than 180 UF medical school residents, interns, and students are trained at the Gainesville and Lake City VA Medical Center each year. Programs are also in place with UF for dentistry, nursing, physical therapy, health services administration, and pharmacy. Through sharing agreements, there is collaboration in the areas of radiation therapy, professional radiology services, sleep lab, electron microscopy, and cardiac catheterization. North Florida/South Georgia Veterans Health System has more than 300 active projects and is the home to four VA research centers: the Brain Rehabilitation Research Center of Excellence, which seeks to improve current treatments or discover new forms of treatment to improve neurorehabilitation for impairments caused by stroke, incomplete spinal cord injury and other neurological problems; the Center of Innovation on Disability and Rehabilitation Research which conducts interdisciplinary research to improve the health, function and community reintegration of post-deployed veterans and veterans with neurological impairment; the Geriatric Research, Education and Clinical Center which finds ways to improve health care and enhance quality of life for older veterans and their caregivers; and the National Center for Occupational Health and Infection Control which seeks to solve important problems that arise at the intersection of occupational health, infection control, industrial hygiene and bio-safety.



Malcom Randall VA Medical Center in Gainesville

**VA Geriatric, Research, Education and Clinical Center** consists of six full-time and four part-time staff who are engaged in translational research with an emphasis on improved patient care for older veterans. The center collaborates with UF’s Department of Aging and Geriatric Research to address major themes including function, prevention, healthcare quality, and safety.

**Sentinel Network.** A collaborative effort across two community-focused national organizations and six CTSA sites, including Washington University in St. Louis, University of California-Davis, University of Michigan, Albert Einstein College of Medicine, University of Rochester, and UF. The Sentinel Network develops procedures to increase community participation in research, build the capacity of Community Health Workers to expand their role in research by increasing the rigor of health evaluation metrics in the field, and establish a sustainable network, the Sentinel Network, to provide ongoing, real-time assessments of top health and neighborhood needs, concerns and research perceptions. The data can then be shared with researchers and local communities to increase the representativeness and relevance of research by facilitating community participation. In addition to continuing to collect health data, the Sentinel Network includes the provision of medical, social service, and research referrals appropriate to the assessed health needs and concerns of community members.

**UF COLLEGES AND ADDITIONAL FACILITIES AND RESOURCES**

# UF COLLEGES

**College of Agricultural and Life Sciences.** Administers the academic degree programs of the UF Institute of Food and Agricultural Sciences (UF/IFAS). 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. It has 597 state-funded faculty and 313 county-funded faculty in extension offices throughout Florida.

**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 predoctoral 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-square-foot dental tower includes dental clinics, teaching facilities, offices, laboratories, and classrooms. Approximately 35K square feet 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 square feet 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’s **Dental Clinical Research Unit** (described in the Hub and Network Capacity section of this document) performs state-of-the-art clinical research in the field of oral care as well as collaborative research in all other areas of health care. The Dental Clinical Research Unit also assists with in vitro studies of antimicrobial compounds and susceptibility studies and test diagnostic methods and procedures.

**College of Design, Construction & Planning.** Engaged in a wide array of applied research, focus areas 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. In addition, multiple research centers across the nation provide support and convenience for students to conduct high quality research.

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.** UF continues to stake claim as the top-ranked college of education in Florida and among public institutions in the Southeast. The College of Education jumped five spots this year to No. 14 among the nation’s public education colleges in U.S. News & World Report’s 2019 annual rankings of America’s Best Graduate Education Schools. UF also placed five spots higher overall at No. 24 among both public and private graduate education programs. The college ranking has improved better than three places per year, on average, over the past eight years. No other education school in the country has improved more over this time span.

Faculty and graduate students 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. The Education Library houses approximately 130,000 books and more than 11,000 journals, and maintains current subscriptions to more than 700 journals. An online computer catalog and interlibrary loan system allow access to materials from libraries around the state, as well as to ERIC and other databases. The college’s Office of E-learning, Technology, and Creative Services has full-time staff available to assist faculty with their research projects, including programmers, instructional designers, and graphic artists who can quickly and efficiently collaborate with project personnel to meet technology needs. The College of Education has ample space to support research projects and staff. These spaces are equipped with state-of-the-art computer equipment and are suitable for meetings and group work.

**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 Journalism and Communications.** Ranked in the top 10 for all communication disciplines taught at the college — advertising, journalism, public relations and telecommunications, as well as the Science/Health graduate track. It enrolls approximately 2,300 undergraduates in these fields 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. Since 1977, the college has also been home to the Brechner Center for Freedom of Information. The center exists to advance understanding, appreciation and support for freedom of information in the state of Florida, the nation and the world. Through education and promotion of freedom of information laws and policies, the Center seeks to foster open government and a participatory democracy.

**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.



The Harrell Medical Education building, home of the UF College of Medicine

**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 square feet 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. College of Medicine physicians accounted for nearly 937,000 physician visits in North Central Florida at UF Health Physicians practices in Fiscal Year 2017. Within UF Health Shands Hospital, College of Medicine physicians accounted for more than 51,000 patient discharges in Fiscal Year 2017.

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

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

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-square-foot 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’s research funding ranks in the top 25 of public universities, and its NIH research funding improved 20 places in 2017. 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 Pharmacy.** Founded in 1923, the College of Pharmacy 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 square feet 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.

**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-square-foot Health Professions, Nursing, and Pharmacy complex, which provides educational, administrative, and research space for the colleges of Nursing and Pharmacy as well.

**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.

**College of Veterinary Medicine.** 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. From 2000 to 2017, DVM graduates have consistently ranked above the national average on the North American Veterinary Licensing Examination. Many continue their education through internships at accredited veterinary institutions or private practices, and many go on to pursue residencies as well. Last year the college received 908 applications for 112 openings in the freshman class. 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.

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 square feet of space, including 73,768 of research space. The college has treated 78,797 animals, including field visits.

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. The college is in the process of forming a fifth department, of comparative, diagnostic and population medicine.

**Herbert Wertheim 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.

**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.** 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.

**ADDITIONAL FACILITIES AND RESOURCES**

**Center for Arts in Medicine.** The University of Florida Center for the Arts in Medicine is committed to advancing research, education, and practice in arts in health, locally and globally. Through ongoing interdisciplinary research, training programs, and dynamic academic programs the Center advances its mission to further the field of arts in health. Established in the College of the Arts in 1996, the Center provides a framework for interdisciplinary collaboration among University of Florida faculty and students, healthcare providers, clinical artists, and our local and global communities. The Center develops and effects interdisciplinary research studies and educational curricula on all levels and serves as a national model for arts in health research, education, and training. The Center for Arts in Medicine in housed in the College of the Arts at the University of Florida, in Gainesville, Florida. The College of the Arts fosters creative activity, scholarly and artistic excellence and innovation across disciplines.

**Center for Cellular Reprogramming.** Provides services and training for induced Pluripotent Stem Cell derivation and related cell reprogramming technologies. The center occupies approximately 1,600 square feet for all general laboratory activities, including storage and experiments. Major equipment includes four CO2 incubators, three tissue culture hoods, three liquid nitrogen cell storage tanks, refrigerated high-speed centrifuges, a BioTek Synergy 2 plate reader, a shaking incubator, a spectrophotometer, two thermocyclers (for PCR), a real-time PCR machine, an inverted fluorescent microscope with a digital camera system, an upright microscope, a surgical microscope, and all equipment needed for electrophoresis.

**Animal Care Services.** Serves nearly 600 UF faculty and approximately 1,400 animal care and use protocols in various research and teaching programs. The UF animal care program has been continuously accredited by the Association for the Assessment and Accreditation of Laboratory Animal Care International since 1966 and is registered with the US Department of Agriculture as a research site. Animal Care Services manages 12 animal housing facilities totaling approximately 200K square feet that include environments ranging from ABLSL3 to rodent barriers, which are essential to the development and maintenance of unHarique transgenic rodents and the conduct of experimental protocols.The housed species range from mice and other rodent species to large animals such as pigs, sheep, horses, cattle, and nonhuman primates. The Animal Care Services 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. Animal Care Services has a total staff of approximately 130 employees who provide daily animal husbandry and veterinary care.



Germ Free/Gnotobiotic mice housed in Animal Care Services

**Bureau of Economic and Business Research (BEBR).** Founded in 1930, and part of theUF College of Liberal Arts and Sciences, conducts research in its Population, Economic Analysis, Survey Research and Social Networks programs. The Population program produces Florida’s official state and local population estimates and projections, and it conducts Geographic Information Systems and demographic research. Economic Analysis conducts research such as cost/benefit analysis, economic impact studies and employment projections for state and local governmental agencies and private industry. The Social Networks program investigates connections across personal networks: applications include fostering scientific collaboration, increasing research efficiency and improving health outcomes. The UF Survey Research Center conducts large-scale telephone, mail, web and face-to-face surveys out of a 93-station lab. Projects are particularly focused on, but not limited to, health care research.

**Cardiovascular Cell Therapy Center.** A collaborative effort of basic and clinical researchers from the Health Science Center who are dedicated to adult stem cell research in order to improve the outcome of patients with diseases of the heart and cardiovascular system. This collaborative team is also part of the Cardiovascular Cell Therapy Network and has been sponsored and funded by the National Heart, Lung, and Blood Institute of the NIH since 2006. This network is composed of physicians, scientists and support staff from institutes and universities across the country, including the Minneapolis Heart Institute Foundation, the University of Minnesota, the Texas Heart Institute Stem Cell Center, the University of Louisville, the Vascular and Cardiac Center for Adult Stem Cell Therapy, the University of Miami and Stanford University.

**Cell & Tissue Analysis Core.** The McKnight Brain Institute’s Cell & Tissue Analysis Core 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 Cell & Tissue Analysis Core 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 imaging facility also has software available for image deconvolution, quantification, and 3-D rendering. The core’s Histology Resource Lab provides researchers with access to cryostats, microtomes, microwave processing, paraffin embedding, laser capture micro-dissection, and other tissue-processing equipment. Skilled technical staff are available to train new users, assist, or operate each piece of equipment.

**Child Health Research Institute.** Established in 2006 to provide the environment necessary to focus on and develop a wide variety of unique research concepts and to support pilot research activities of faculty to obtain data necessary to submit research proposals to outside agencies. The institute creates support infrastructure and fosters collaboration between investigators and teams from various departmental specialty divisions, the College of Medicine departments, the health science colleges and the main campus departments. The institute also supports pediatric and pediatric sub-specialty fellows and residents during their required research rotation. The institute was integral to establishing pre-eminent pediatric translational research programs with NIH-funded investigators, creating synergy with the Cancer Center, Brain Institute, Genetics Institute, Diabetes Research Center and Powell Gene Therapy Center. The institute fills an infrastructural gap, providing support for collaborative research across divisions of the Department of Pediatrics and Health Science Center, fostering interactions and collaborations among physicians, physician/scientists and basic scientists on campus

**Diabetes Institute.** Includes more than 100 investigators from multiple College of Medicine departments as well as investigators from the UF colleges of Engineering, Pharmacy, and Nursing, IFAS, the Institute on Aging, and the Genetics Institute. All are active collaborators and contribute to an atmosphere conducive to and supportive of comprehensive diabetes research. UF has led multiple studies on the pathogenesis and natural history of Type 1 diabetes, which involved the analysis of tens of thousands of individuals. UF has stored serum, plasma, and/or DNA samples (as well as associated clinical laboratory data) from more than 75K individuals (i.e., Type 1 diabetes patients, their relatives, persons with other autoimmune disorders, healthy controls) throughout the US as well as developed relationships with lay organizations (i.e., ADA, JDRF, Children with Diabetes) in order to aid investigators in terms of subject recruitment. UF serves as both the lead Administrative Unit and the Organ Procurement and Processing Core for the JDRF-funded Network for Pancreatic Organ donors with Diabetes (nPOD) program. It is the world’s largest repository of whole pancreatic and lymphoid tissues from subjects with Type 1 diabetes, persons at increased risk for the disease, control subjects across a variety of ages, and those with other pancreatic disorders relevant to address questions about Type 1 diabetes.

**Electron Microscopy Core.** Occupies approximately 1,800 square feet in the basement of the UF Academic Research Building. The facility is part of the Department of Medicine, but it also provides access, assistance, and services to researchers in other UF colleges as well as researchers outside of UF. The mission of the core is fourfold: to provide investigators with access to instruments necessary for ultrastructural research; to teach faculty, staff, and students methods in ultrastructural research; to provide technical services; and to consult with faculty, staff, and students on projects and advise them regarding possible approaches to their research questions involving ultrastructural research.

**Emerging Pathogens Institute.** Created in 2006, 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 square foot research building dedicated for institute use. The building includes 16 BSL3 laboratory modules as well as extensive BSL2 space and space for biomathematics; it has 50 faculty offices, 150 spaces for graduate students and post-doctoral 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.

**Harrell Medical Education Building.** The George T. Harrell, M.D., Medical Education Building opened in Fall 2015 and serves as a home for medical education at UF, accommodating advanced simulation training and meeting the educational needs of the next generation of UF physicians and physician assistants. The Harrell Medical Education Building is a 95K-square-foot, four-story facility that is located in close proximity to UF Health Shands Hospital. Its design facilitates the collaborative education of health sciences students at the UF College of Medicine. It features a state-of-the-art experiential learning center to teach complicated, high-risk skills, including an experiential learning theater with retractable walls and concealed grid to accommodate dozens of configurations and hundreds of health care scenarios, as well as one UF Health Shands Hospital mock operating room. It offers an expanded clinical skills learning and assessment center, with 18 standardized patient examination rooms equipped with video cameras and microphones; a control room with display screens to record student-patient encounters; spaces for review and evaluation of students’ skills; and two hospital rooms modeled after UF Health Shands Hospital patient rooms. It also has two circular learning studios – each of which can accommodate up to 160 students – with six oversized video screens, ceiling-mounted projectors and sound-absorbing acoustical wood paneling.

**Human Applications Laboratory Manufacturing Facility** for the production of cellular therapy products recombinant viral vectors, located in the McKnight Brain Institute. The production facility occupies approximately 1,900 square feet and consists of two suites 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 square feet and has a positive differential pressure relative to the adjacent rooms. Production Suite B is approximately 1,200 square feet and has positive pressure differential relative to adjacent rooms and is used for the purification, filtration and aseptic fill of recombinant viral vectors.

**Institute for Child Health Policy.** Brings together multidisciplinary faculty from UF to conduct innovative and rigorous science to promote the health of children, adolescents, and young adults. The institute, housed within the department of Health Outcomes and Biomedical Informatics in the College of Medicine at UF, has a 25-year history of collaborating with teams of researchers across the UF campus and with scientists nationally. Within UF and nationally, there is an emphasis on early childhood interventions, child health outcomes, and a research infrastructure to support pragmatic clinical trials and implementation science studies in community settings. The Institute for Child Health Policy has had success over the past 15 years of developing innovative methods for using big data in support of examining child health outcomes. In addition, the institute is leading the development of the OneFlorida Child Health Alliance and pediatric components of the OneFlorida Data Trust, which houses linked heath care claims, vital statistics, immunization, electronic health record, environmental, geographic, and parent- and child-reported outcomes data for approximately 4M children in Florida. Having served as infrastructure support in launching the OneFlorida Data Trust, the Institute for Child Health Policy is facilitating child health research that is funded by NIH, AHRQ, and the Patient-Centered Outcomes Research Institute*.*

**Institute on Aging.**  Improves the health, independence, and quality of life of older adults by means of interdisciplinary teams in the areas of research, education, and health care. The overarching goal of the Institute on Aging is to develop interdisciplinary and dynamic research that spans public health, social, health services, behavioral, clinical, and basic sciences. The research focuses on mechanisms, etiology, and prevention of cognitive and physical disability. The Institute on Aging also focuses on maximizing the participation and life potential of older adults with disability and prevention of secondary disabilities.

The Institute on Aging is headquartered in the Clinical and Translational Research Building, a 120K-square-foot research complex. Clinical research facilities include office space, conference rooms, nine patient exam rooms, specimen processing area, a DEXA machine, and a GAITRite walkway. The research program of the Institute on Aging focuses on the etiology and prevention of cognitive and physical disability. This focus is pursued 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 Institute on Aging initiated its major development phase in February 2005 with the creation of the new Department of Aging and Geriatric Research. The department serves as support infrastructure for the Institute on Aging and academic home for faculty members from diverse disciplines who wish to pursue a career primarily focused on research and education on aging.

**Institutional Review Boards (IRBs).** The UF IRBs oversee nearly 5,000 research protocols. There are two on-campus IRBs and one contracted IRB. IRB-01 reviews and oversees biomedical research conducted under UF Health (including all of the hospitals and facilities owned by UF Health), the UF campus, and for the North Florida/South Georgia Veteran’s Health System. IRB-02 reviews and oversees social and behavioral research. In 1999, UF contracted with the Western IRB (WIRB) to offset some of the workload for IRB-01. UF faculty conducting multicenter drug or device protocols sponsored by industry are able to submit their protocols for review by the WIRB. Annually, WIRB reviews an average of 110 protocols a year. Staff members at the on-campus IRB offices provide investigator education, protocol design consultation as it relates to regulatory considerations, and compliance monitoring. In conjunction with the CTSI, IRB-01 has developed a OneFlorida IRB, which serves as the single IRB for all OneFlorida Clinical Research Consortium members. The IRB also supports single and central IRB functions for multicenter studies. All IRB-01 and 02 new study submissions are made through the electronic myIRB program, which has been updated to meet AAHRPP requirements. A robust IRB website is available for investigators, which provides them with IRB guidelines, all current forms, educational bulletins, required standard language, and links to frequently used web sites. IRB-01 also serves as the Privacy Board for UF Gainesville Campus and the North Florida/South Georgia Veteran’s Health System in accordance with the Health Insurance Portability and Accountability Act (HIPAA) and implementing its regulations. All waivers and any other HIPAA-related issues are provided as part of the IRB review.

* **Click Commerce.** UF implemented Huron’s Click Commerce IRB module for processing and managing human subject research submissions. UF’s implementation of this interactive web-based platform facilitates four major benefits: integration with other research units, in-line education, enhanced compliance, and improved efficiency to its human subject research enterprise. UF’s Click system integrates data capture, education, and real-time parallel review for multiple research related offices (e.g. billing compliance, radiation review, etc.) beyond just the IRB. Adaptive submission forms simplify the process for researchers and serve as a research enterprise roadmap by targeting instructions for relevant requirements. Facilitating navigation of the UF research enterprise maximizes researcher efficiency and improves compliance with all applicable requirements. Robust, integrated validations improve submission quality, thereby reducing submission rejections as well as insuring compliance oversight units comply with all applicable regulatory requirements.

**Institutional Animal Care and Use Committee.** A federally mandated committee, qualified through the experience and expertise of its members, that oversees its institution’s animal program, facilities, and procedures. Its mission is to protect the welfare of animals used in research, keeping the integrity of our enterprise, and providing exceptional and professional customer service.

**Interdisciplinary Center for Biotechnology Research (ICBR).** 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 biotechnology services to all researchers at UF. ICBR is organized into core 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 Core facilities are concentrated in 25k square feet of the Cancer and Genetics Research Complex with auxiliary laboratories in the Microbiology and Cell Science building and the McKnight Brain Institute.

**Major Analytical Instrumentation Center & Particle Analysis Instrumentation Center.** Along with the Nanoscale Research Facility, these comprise the Research Service Centers in the Herbert Wertheim 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.

**Medical Honors Program.** An accelerated, seven-year BS/MD program offered by UF. Admission is open to all possible candidates who are US citizens or permanent residents. The program is intended for undergraduate students who have demonstrated superior scholastic ability and personal development during their first two academic years of enrollment at a four-year accredited science degree-granting institution and who are dedicated to pursuing medicine as a career. When accepted to this program, students secure places in medical school at the UF College of Medicine as long as they complete JHMP requirements and maintain academic standards. This program has two pathways: biomedical sciences for individuals with a primary focus on pursuing academic careers in medicine; and Rural and Urban Underserved Medicine (RUUM) for individuals with a primary focus on careers serving urban, rural, and medically underserved populations.

**Network for Pancreatic Organ Donors with Diabetes.** UF is the primary coordinating center for the JDRF (formally known as Juvenile Diabetes Research Foundation) Network for Pancreatic Organ Donors with Diabetes (nPOD), a Type 1 diabetes research project dedicated to study of the human pancreas. JDRF-nPOD supports scientific investigators worldwide by providing, without cost, rare and difficult to obtain human tissues beneficial to their research. nPOD has been supporting more than 170 research studies at several US medical institutes and 19 countries. Projects have a broad scope including, but not limited to the immunopathology of Type 1 diabetes; beta cell physiology and dysfunction; pancreas development; beta cell regeneration; trans-differentiation and dedifferentiation; and environmental factors and imaging. The main goals of nPOD are to obtain specimens from organ donors with Type 1 diabetes (diagnosed or subclinical), and establish a research resource of pancreas and disease-relevant tissues, i.e. pancreatic lymph nodes, spleen, thymus, blood, and other tissues, from organ donors with Type 1 diabetes obtained at any point after clinical diagnosis or during the pre-diabetes phase when islet autoimmunity leads to beta cell destruction (donors identified by screening for islet autoantibodies); to distribute specimens to JDRF-nPOD scientists anywhere in the world for comprehensive and diversified investigations of human Type 1 diabetes; and to promote collaboration by using tissue and real-time data sharing, by developing and managing synergistic project interactions, as well as focused working groups in order to facilitate a comprehensive understanding of human Type 1 diabetes.

**Office of Medical Education.** The College of Medicine Education Center serves several functions in the College of Medicine, including the coordination of all teaching activities as well as the selection and scheduling of the senior elective courses and clerkships for all four years of medical school. The office is responsible for the preparation of course syllabi, handouts and examinations. Information provided by course directors may be distributed during classes or through this office. Students may come to this office any time they have questions on any course materials. The office coordinates the evaluation of courses, faculty, and teaching programs within the College of Medicine. Office personnel compile and summarize data on the teaching programs including course and faculty evaluations. Course debriefings are also scheduled and conducted through this office. The debriefings are meetings held at the end of courses in which student representatives meet with course faculty and representatives of the College of Medicine Curriculum Committee and Dean’s Office. The sessions provide an opportunity for students to provide feedback and influence the future planning of the course as the strengths and weaknesses of each course are discussed. The Office of Medical Education coordinates the advisor program. Advisors are assigned through the office. They are then informed of students’ progress in academic course work. Any issues associated with the advisor program are also reported to this office.

**Powell Gene Therapy Center.** Provides institutional and external investigators with the expertise to support preclinical and clinical studies in gene therapy with an emphasis on the development of translatable protocols to facilitate clinical trials initiation. The center has three components; the Vector Core, the Human Applications **Laboratory and the Toxicology Core.** The Vector Core, located in the Academic Research Building and operated as an auxiliary, performs up to 400 research and GLP-grade rAAV preparations per year for individual investigators and program grants. Research-grade preparations support both in vitro and in vivo pilot phase studies for proof of principle. An important research activity is dedicated to process and development of novel production and purification methods. Working together with the Human Applications Laboratory, methods are developed as translatable platforms in compliance with cGMP. The Human Applications Laboratory, located in the McKnight Brain Institute (MBI), manufactures and releases clinical grade rAAV products and cell vaccines with a current track record of eight manufacturing campaigns for phase I/II trials. The production facility occupies approximately 1,900 square feet and consists of two suites designed to function independently. Production Suite A is dedicated to cell processing, cell banks and cell- based vaccines. Production Suite B is used for the purification, filtration and aseptic fill of viral vectors. The Quality Control Laboratory within the Human Applications Laboratory operates independently and conducts product release testing and environmental monitoring. An independent Quality Assurance Unit of the CTSI oversees raw material as well as in-process and final product lot release with audits and inspections of all procedures. The Toxicology Core conducts exhaustive FDA-reviewed GLP toxicology and bio-distribution studies for IND submission as well as intermediate proof of concept studies. It often operates in coordination with the Vector Core and the Human Applications Laboratory. To date, the core has contributed to the initiation of 14 clinical trials in man.

**UF Center for HIV/AIDS Research, Education & Service (UF CARES).** The only comprehensive pediatric and family-focused HIV and AIDS program in Northeast Florida and South Georgia. At UF CARES Rainbow Center (located on the third floor of UF Health Jacksonville's Clinical Center building), clinicians provide primary, secondary, and tertiary care for HIV- exposed and infected individuals and families. In addition to basic medical care, the center provides medical case management, pharmacy services, health education, nutrition, and mental health counseling. UF CARES doctors are trained in general pediatrics and internal medicine with additional specialization in infectious diseases and women’s health. UF CARES employs a full time psychologist and part time psychiatrist and gynecologist who provide specialty services. UF CARES also works to provide services through collaborations and partnerships with Children's Medical Services, a state sponsored program to provide health care to low-income children with special needs. In the last five years, the center has conducted 23 NIH-sponsored clinical trials, 11 pharmaceutical-sponsored studies and several investigator studies, serving more than 900 research subjects. The center actively collaborates with the Department of Obstetrics and Gynecology in Jacksonville and colleges of Medicine, Public Health and Health Professions, Veterinary Medicine, and Emerging Pathogens Institute in Gainesville. UF CARES is part of the AHRQ registered Community Based Research Network and collaborates with investigators in Gainesville and Jacksonville.

**UF Genetics Institute.** Promotes genetics and genomics at the UF by building community, facilitating collaboration and creating opportunities for intellectual exchanges among investigators working in diverse taxonomic systems but with a common set of approaches in genetics and genomics; supporting recruitment and retention of outstanding faculty in the areas of genetics and genomics; supporting graduate education in the areas of genetics and genomics; and enhancing the ability of researchers at the UF to compete for multidisciplinary research grants in the area of genetics and genomics. More than 240 UFGI faculty members represent seven different colleges and 49 different academic departments. Their research spans a broad array of organisms from prokaryotes to eukaryotes and a diverse collection of disciplines and approaches from strictly computational to laboratory and field studies. The UF Genetics Institute occupies one wing (approximately 60K square feet) of the Cancer & Genetics Research Complex, completed in 2006. Thirty-three faculty members are housed in UF Genetics Institute space, which provides a variety of shared equipment for molecular biology, biochemistry and genetics, as well as shared resources such as animal facilities, grow chambers for controlled environmental studies of plants, and a greenhouse facility.

**UF Graduate Program in Biomedical Sciences.** A predoctoral educational experience that trains experimentalists and scholars for a wide range of careers in biomedical science. The curriculum is designed to provide maximum flexibility for the training of biomedical research scientists. 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.

**UF Graduate School.** Since 1964, overall responsibility for graduate education at UF has been officially vested in the Graduate School. More than 12,000 graduate students 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 is accomplished in 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. They are typically supported by designated staff members. In 2007, the Graduate School became a unit in the Office of the Provost. Henry T. Frierson was named Dean of the Graduate School and Associate Vice President of the University. In addition to oversight for graduate education university-wide, and standards and policies governing all graduate programs, his charge was to grow the graduate education enterprise, support quality improvement among the programs, support the programs in their efforts to improve graduate student recruitment, retention and degree completion, and increase the representation of minorities, women and other underrepresented population groups in the university’s graduate programs.



An aerial view of the UF Health Gainesville campus

**UF Health.** The UF academic health center is closely affiliated with UF Health, part of the University of Florida Health System, with seven hospitals including two academic medical centers in Gainesville and Jacksonville, a children’s hospital, three community hospitals, two specialty hospitals, and more than 80 outpatient primary and specialty care practices across North Florida, all linked through a fully integrated electronic health record system. UF Health is the state’s leading healthcare referral system and one of the Southeast’s most respected health-care providers with close to 80,000 hospital admissions, 155,000 emergency room visits and 930,000 outpatient visits annually. More than 1,500 UF faculty and community physicians representing more than 100 medical specialties work to provide patient care not only within UF Health Shands HealthCare but also at the Veterans Affairs Medical Center located right across the UF Health campus.

* **UF Health Central Florida.** UF Health Central Florida, formerly known as Central Florida Health and acquired by University of Florida Health in January 2020, is an award-winning, locally owned and governed not-for-profit health care system and the largest, most comprehensive provider of health care services in the region. Patients in Lake, Sumter, and Marion counties are provided care through inpatient acute hospital services at UF Health The Villages® Hospital and UF Health Leesburg Hospital, inpatient rehabilitation services at UF Health The Villages® Rehabilitation Hospital, adult inpatient psychiatric services at the UF Health Leesburg Hospital Senior Behavioral Health Center and diagnostic laboratory services at several locations. As a premier health care provider, UF Health Central Florida takes pride in providing progressive, innovative technology, along with building strong relationships with patients, families, physicians and residents of the communities served.
* **UF Health Shands Hospital.** The Gainesville campus is home to UF Health Shands (Shands Teaching Hospital and Clinics Inc.). UF Health Shands has a total of 996 licensed beds and is staffed by 926 full-time faculty members of the UF College of Medicine. The campus is also home to 742 medical residents and fellows, six pharmacy residents and more than 558 students from the UF colleges of Medicine, Pharmacy and Nursing. It features a teaching hospital, UF Health Shands Hospital, which also includes UF Health Shands Cancer Hospital and UF Health Shands Children’s Hospital; four specialty hospitals, UF Health Shands Rehab Hospital, UF Health Shands Psychiatric Hospital, UF Health Heart & Vascular Hospital and UF Health Neuromedicine Hospital; a network of outpatient rehabilitation centers; and a home health agency. Each year, patients come to UF Health Shands from all 67 Florida counties, throughout the nation and more than a dozen countries.
* **UF Health Jacksonville**, located in Northeast Florida, is an academic health center providing education for health professionals, a hub for clinical research, and a venue for patient care. With 426 full time faculty, the academic health center in Jacksonville is the largest UF campus outside of Gainesville. The campus is also home to 357 medical residents and fellows, 10 pharmacy residents and more than 400 students from the UF colleges of Medicine, Pharmacy and Nursing. At 37 clinical sites throughout Northeast Florida, UF physicians tallied more than 600K outpatient visits and more than 34K inpatient admissions annually. UF Health in Jacksonville consists of UF Health Jacksonville, a 695-bed academic health center; UF Health Science Center Jacksonville, which encompasses three UF colleges in Jacksonville (Medicine, Nursing, and Pharmacy); and UF Jacksonville Healthcare, Inc., a network of primary and specialty care centers offering patient care throughout Northeast Florida and Southeast Georgia.
* **UF Health North** is the only state-of-the-art outpatient medical complex in North Jacksonville, featuring a full-service emergency room open 24/7, advanced imaging, including the area’s most advanced open MRI, an outpatient surgery center and more than 27 specialty services offered by top UF and community physicians. The 92-bed inpatient hospital, 70-acre campus is located on Max Leggett Parkway close to Jacksonville International Airport, River City Marketplace and the growing commercial area on and around Duval Road. It is approximately 15 minutes from Nassau County and less than 30 minutes from Georgia. In 2016, UF Health North has a total of 37,597 total ER visits, 3,050 outpatient surgeries and almost 50,000 specialty visits.
* **UF Health Shands Children’s Hospital.** UF Health Shands Children's Hospital is the premier academic children's hospital in north central Florida. As a recognized leader in pediatric medicine, it serves as a major destination for children worldwide with complex medical issues requiring specialized attention. The dynamic UF Health faculty is devoted to the best in patient care, research and education. The UF Health Shands Pediatric E.R. and UF Health Pediatrics After Hours services also provide families with a convenient, one-stop children's health center for urgent after-hours and emergency care. UF Health Shands Children's Hospital has been recognized as one of the nation's best hospitals for children in seven medical specialties, according to U.S. News & World Report rankings with over 20 pediatric specialties. 
  + **Neonatal Intensive Care Unit:** Since 1970, neonatal physicians, nurses and caregivers have provided specialized care to thousands of tiny patients, some small enough to fit in the palm of your hand. Their clinical expertise has led to U.S. News &World Report ranking the neonatology program among the nation's best. As a result, Shands faces an ever-increasing demand for neonatal care for tiny patients born here or infants transferred from throughout the state. The unit serves as a destination for specialized medical and surgical services, such as hypoxic-ischemic encephalopathy and complex congenital heart diseases, and is nationally renowned for its physician expertise with treating congenital diaphragmatic hernia. While the neonatal program was established in the 1970s, UF Health Shands Children's Hospital's NICU was built in 1984. At the beginning of 2016, the unit underwent renovations, and by spring 2017, it had expanded to its current 68-bed capacity. The NICU is a member of the Florida Regional Perinatal Intensive Care Centers.
* The **UF Health Science Center** celebrated its 60th year in 2016. It is one of the country’s few academic health centers with six health-related colleges located on a single, contiguous campus. The colleges, including Colleges of Dentistry, Medicine, Nursing, Pharmacy, Public Health and Health Professions, and Veterinary Medicine, teach the full continuum of higher education, enrolling more than 6,900 students and 1,100 interns and residents each year. The UF academic health center generated over 50% of UF’s total research awards in FY 16. In addition to the six colleges, there are seven major health-related research centers and institutes (CTSI, Institute on Aging, UF Shands Cancer Center, Emerging Pathogens Institute, McKnight Brain Institute, Institute for Child Health Policy, and Genetics Institute) designed to create synergistic and collaborative research opportunities.
* **UF Health Cancer Center:** Brings together more than 350 researchers and clinicians throughout UF and UF Health Shands to educate the next generation of cancer doctors and to carry out original research for the prevention, diagnosis and treatment of cancer. The UF Health Cancer Center expanded access to leading-edge cancer therapies and treatments for Floridians in 2014 through an innovative joint oncology program with Orlando Health. The center 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. UF Health’s cancer clinical enterprise utilizes a comprehensive care model, with 12 multidisciplinary cancer programs offering advanced treatment options, such as minimally invasive surgery, robotic surgery, radiotherapy, chemotherapy, proton beam therapy and participation in clinical trials.



The UF Health Cancer Center is located in the Cancer and Genetics Research Complex.

**UF Institutional Planning and Research.** Envisions UF as an institution whose plans, policies, and decisions are informed by a rich core of valid institutional data and a sophisticated understanding of the meaning of those data. The national and international image of UF is enhanced by presentation and reporting of data that document accurately its excellence and performance. The mission of the Institutional Planning and Research is threefold: to 1) provide the university leadership with information and analyses that support planning, policy formation and decision making; 2) serve as a comprehensive source for information about UF; 3) administer reporting of UF data to the state of Florida, federal government, and other major organizations such as the AAU. Institutional Planning and Research serves a broad base of institutional and external clients. Three operational strategies promote excellence and efficiency in achieving its mission: Institutional Planning and Research 1) enables many clients to obtain information on a self-service basis using its web, query, and reporting tools; 2) hires highly trained, knowledgeable professionals capable of conducting sophisticated analyses and creating useful models for clients; and 3) partners with other university offices in order to leverage the best sources of data and knowledge when creating its products and services.

**UF Research and Academic Center at Lake Nona** houses multidisciplinary teams of researchers, clinicians, teachers, and students with the goal of providing effective therapies and improving health for patients. Built in 2012, the 100K-square-foot facility has two functions: academic study and research. The facility has several distinct areas. It became the permanent home of the UF College of Pharmacy Orlando Campus, expanding the UF professional PharmD Program from 200 to 280 students over four years. It houses the College of Pharmacy’s Center for Pharmacometrics and Systems Pharmacology, which adapts sophisticated mathematical modeling and computer simulations to mimic clinical trials of new drugs. The Center for Pharmacometrics and Systems Pharmacology educates and trains doctoral students and post-doctoral fellows in the discipline of drug development and regulatory science. Also housed in the facility is the College of Pharmacy’s Center for Quality Medication Management. This center provides telephone-based communication service through experiential training in comprehensive medication reviews for Medicare patients and their health care providers. The facility houses the Institute for Therapeutic Innovation, which focuses on developing and testing new treatments and cures for a variety of infectious diseases caused by drug-resistant pathogens. Clinical research facilities, including equipped exam rooms, specimen processing area, interview rooms, a conference room and office space for study staff and monitors are available in the Lake Nona facility. The Center’s close proximity to research facilities at Sanford Burnham and to other Orlando Healthcare entities fosters collaboration and allows Floridians from the surrounding Orlando area to take part in clinical and translational research studies.



UF Research and Academic Center at Lake Nona