

Table 1.7.e.1 Specialized Laboratories and Equipment, College of Public Health and Health Professions

Laboratory Name and Description	Equipment	Dept
<p><u>Global Pathogens Laboratory</u></p> <p>This consists of 1300+sq-feet of an <u>open bay BSL2 laboratory</u> and a 200sq-ft <u>BSL2+ flex laboratory</u> for work with human and animal pathogens</p>	<p>The <u>open bay BSL2 laboratory</u> is equipped with a class II A2 biological safety cabinet and 4 humidified incubators hard plumbed to an in-house CO₂ supply for uninfected tissue culture work, three -80 freezers, 3 -20 freezers, an inverted light microscope, a bright-field microscope, a rocking egg incubator, a walk-in refrigerator, 2 microcentrifuges, shaking incubators, a Metler analytical balance, an Acculab digital balance, an inverted microscope, two BioRad sub-cell GT agarose gel electrophoresis platforms, a BioRad Protean II SDS-PAGE and western blot platform, BioRad CHEMIDOC XRS+ chemiluminescence imagine system a NanoDrop spectrophotometer, a Molecular Devices microarray scanner, BioRad iCycler with iQ5 real-time PCR platform, BioRad MyCycler PCR thermal cycler, Thermo KingFisher nucleic acid purification instrument, BioTek EL406 plate washer with 50 plate capacity BioTek plate stacker and BioTek PowerWave 340 microplate spectrophotometer with an attached 50 plate capacity BioTek plate stacker. Adjacent shared equipment include a lab-dishwasher, two autoclaves, a Millipore water purification system, an ice machine, BioRad CFX96 real time PCR platform, and an AKTA-FPLC with FRAC 950 fraction collector. The <u>BSL2+ flex laboratory</u> has single pass HVAC and is equipped with two certified class II A2 biological safety cabinets with in-house vacuum and 4 humidified incubators hard plumbed to an in house CO₂ supply, a combination 20/4°C freezer refrigerator, a refrigerated bench-top centrifuge and an inverted microscope.</p>	<p>EGH</p>
<p><u>USDA Enhanced BSL2+</u></p> <p>Operating at a BSL2 USDA enhanced level, this area consists of 1200+ sq-ft of BSL3 (USDA Ag-enhanced) laboratory space with single pass HEPA-filtered exhaust. The BSL2+ USDA-enhanced space consists of three procedure rooms (~200 sq-ft each)</p>	<p>Two of the procedure rooms are equipped with thimble connected Class II A2 and the third with a hard ducted Class II B2 biological safety cabinet each equipped with a foot switch activated vacuum aspiration pump. Each of the three rooms contains dual stacked humidified CO₂ incubators and a combination -20/4°C freezer refrigerator. A bench-top refrigerated centrifuge, a -80°C freezer and a networked computer connected to a printer/scanner are located in the</p>	<p>EGH</p>

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	common corridor. One of the three procedure rooms also contains two dry shaking incubator and an inverted microscope with digital point and shoot camera. This area has shower out capabilities, and features a pass-through autoclave and decontamination chambers to facilitate the removal of large equipment from the laboratories.	
<p>BSL3+</p> <p>Operating at a BSL3+ level, this area of 1200+ sq-ft of BSL3 (USDA Ag-enhanced) laboratory space with single pass HEPA-filtered exhaust. The BSL3+ features four procedure rooms (200 sq-ft each)</p>	Two of the procedure rooms are equipped with thimble connected Class II A2 biological safety cabinets and the third with a hard ducted Class II B2 biological safety cabinet, all equipped with foot switch activated vacuum aspiration pumps. These three procedure rooms also contain dual stacked humidified CO ₂ incubators and a combination -20/4°C freezer refrigerator. A secure -80 freezer, a refrigerated bench-top clinical centrifuge and microcentrifuge are housed in the fourth procedure room And walk in environmental growth chamber The common corridor houses a computer and printer/scanner combination connected to a secure intranet. This area also houses an inverted microscope outfitted with a CCD camera. This area has shower out capabilities, and feature a pass-through autoclave and decontamination chambers to facilitate the removal of large equipment from the laboratories	EGH
<p><u>The Microbial Epidemiology Lab within the Emerging Pathogens Building</u></p> <p>The primary research focus of the lab is on contributions of commensal microbiota to human health. The lab is performing a variety of analyses on the effects of dietary components on microbiota and potential correlations with health status. We also link distortions in normal microbiota composition with health outcomes.</p>	The lab is equipped with all necessary microbiological and molecular biology tools that include PCR machines, qPCR machine, DGGE apparatus etc. all under BSL-2 safety. In addition we maintain an anaerobic chamber for the cultivation and characterization of anaerobic microbes.	EPI
<p><u>PHHP College Research Complex PT Labs</u></p> <p><u>Motor Function Testing Laboratory:</u> This 320 sq. ft laboratory, located in the PHHP Research Complex, is used for the collection of electrophysiological and isokinetic data.</p> <p><u>Exercise Physiology Laboratory:</u> Metabolic and respiratory research is conducted in this laboratory space (525 sq ft), located in the PHHP Research Complex.</p> <p><u>Movement Analysis Laboratory:</u> This 1,398 sq ft laboratory is used to perform</p>	<p>Vigor Body Weight Support System with harness</p> <p>Biodex rehabilitation treadmill</p> <p>Biodex isokinetic and MedX lumbar dynamometers</p> <p>Grass stimulators</p> <p>multiple 8-channel EMG systems</p> <p>Motion Analysis movement analysis system</p> <p>AMTI force plates</p> <p>GAITMAT</p> <p>1 Treadmill and 6 cycle ergometers</p>	PT

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<p>general and gait specific movement analysis, as well as other projects related primarily to physical therapy interventions.</p> <p><u>Locomotor Training/ Intervention Laboratory</u>: a 716 sq ft laboratory, located in the PHHP Research Complex used for conducting research studies dealing with therapeutic outcomes in Parkinsonism, stroke and spinal cord injury.</p> <p><u>Manual Therapy Interventions Laboratory</u> : Located in the PHHP Research Complex, this laboratory conducts research testing pain sensitivity responses following manual therapy interventions. (450 sq. ft).</p> <p><u>Center for Pain Research and Behavioral Health Laboratory</u>: 880 sq ft in the PHHP Research Complex used to investigate and understand the experience of pain in humans.</p>	<p>Electrocardiograph Pulmonary function testing equipment Cardiac crash carts, 5 quantitative sensory testing units Handheld dynamometers Kinesthesiometer Fitts tapping unit, Pursuit rotor units Accelerometers</p>	
<p><u>The Neural Control of Movement Laboratory</u></p> <p>Located in the Malcom VA Medical Center, the lab investigates human motor physiology and neuromechanics. (500 sq. ft).</p>	<p>Two custom split-belt instrumented treadmills Custom overhead partial bodyweight support system Lokomat robotic gait orthosis Telemetered and tethered emg systems Biodex system 3 isokinetic dynamometer 2 vicon motion analysis 12 camera systems Stepwatch activity monitors Two grass s8800 dual channel electrical stimulator systems Gaitrite Cosmed portable breath-by-breath metabolic analyzer Tekscan system for measuring in-shoe pressures. Acoustic data recording workstations Respiratory function equipment such as digital spirometers Impulse oscillometry units Pressure/ transducers with ranges from 0 to 300 cmh₂O, Pneumotachograph masks Kay elemetrics digital swallow workstation Transcranial magnetic stimulation device</p>	<p>PT</p>
<p><u>Muscle Physiology Laboratory</u>: This 700 sq ft laboratory is located in the McKnight Brain Institute and determines the effect of therapeutic interventions on muscle force, muscle histology and muscle size. This laboratory is set up for exercise interventions in animal models, <i>in situ</i> and <i>in vitro</i> force mechanics,</p>	<p>11.74 tesla (500 Mhz) 5.2 cm vertical bore system 14.1 tesla (600 Mhz) 5.2 cm vertical bore system two 17.6 tesla (750 Mhz) 8.9 cm vertical bore systems 4.7 tesla (200 Mhz) 33 cm horizontal bore system 11.74 tesla (500 Mhz) 40 cm horizontal bore system</p>	<p>PT</p>

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<p>immunohistochemistry and magnetic resonance imaging (MRI) of skeletal muscle.</p> <p><u>Respiratory Neurobiology and Neuroplasticity Laboratory:</u> This is a translational research laboratory (approximately 710 sq ft) located in the McKnight Brain Institute with an emphasis on neuroplasticity and the control of breathing. This lab uses gene therapy, cell transplantation and other strategies as rehabilitative tools.</p>	<p>3T whole body MR system 7 tesla (300 Mhz) 5.2 cm vertical bore system All magnets are equipped with the latest software Vector impedance analyzers Noise figure meter Laser scanning confocal microscope Optical sectioning deconvolution microscopes Computer-assisted motorized morphometric microscope Light/immune-fluorescence microscopes Laser capture micro-dissection Optical coherence tomography Near-field scanning optical and atomic force microscopes Transcranial magnetic stimulation device</p>	
<p><u>Molecular, Cell and Tissue Biology Laboratory:</u> Located in the Biomedical Research Building, this wet lab is used for biochemical and molecular analysis of muscle and neural tissue. Manipulation of rodent neural stem cells for basic studies and pre-clinical transplant models.</p> <p><u>Muscle Physiology:</u> Lab focusing on Muscle dissection and immunohistochemistry.</p> <p><u>Respiratory Neurobiology and Neuroplasticity:</u> This lab uses gene therapy, cell transplantation and other strategies as rehabilitative tools.</p>	<p>Cell culture hoods and CO2 incubator for cell culture, Electrophoresis equipment Electroporator (BTX) for electrotransfer of plasmid DNA Hybridization oven Luminometer Fluorescent microscopes with digital camera Microm cryostat for tissue sectioning Microplate reader (uv/vis) Tissue homogenizing equipment Transilluminator for viewing dna Autoclave Walk in cold room High-speed ultra centrifuge Odyssey system for imaging</p>	PT
<p><u>Muscular Dystrophy Laboratory</u></p> <p>The CTRB provides a home for a network of multidisciplinary collaborators committed to finding a cure for Duchenne muscular dystrophy. Research programs are designed to characterize disease progression and evaluate novel treatment strategies in preclinical models and in patients. A primary focus of this group is the development of magnetic resonance imaging and spectroscopy as a biomarker for future clinical trials in muscular dystrophy.</p>	<p>2 data analysis rooms, a research participant consenting/ screening room, a waiting room, and a functional assessment room. Specialized strength assessment equipment including a Biodex.</p>	PT
<p><u>The Auditory Protection Lab within the Communicore Building</u></p> <p>The primary research focus for the Auditory Protection Lab is micronutrient-</p>	<p>New 4-chamber Hamilton-Kinder system for measuring the acoustic startle reflex in rodents</p>	SLHS

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mediated prevention of cell death in the inner ear, and the corresponding hearing loss, that is otherwise induced by noise or ototoxic insult.		
<p><u>Animal Auditory Research Laboratory at Communicore CB-86</u></p> <p>The primary purpose of this laboratory is to study changes in auditory perception including tinnitus following drug, noise and blast induced hearing loss and to evaluate drug treatments for noise and blast induced tinnitus</p>	<p>Double walled sound booth with hi-pressure acoustic blast generator Single walled booth with two behavioral chambers to study auditory perception Dedicated acoustic/cross-modal startle reflex chamber to study tinnitus in rats and mice Dedicated computer stations for data processing Micro-scale and mixers for preparation of drugs for research Workspace for fabrication of custom parts for research</p>	SLHS
<p><u>Upper Airway Dysfunction Laboratory (Dauer 49 and 37)</u></p> <p>The UAD engages in research aimed at improving health outcomes and quality of life associated with disorders of airway protection. To that end, we employ a two-pronged approach including both basic science and clinical research. Basic science research goals focus on developing a better understanding of the mechanisms underlying airway protection and its disorders. Clinical research goals are the development of novel and robust evaluation and treatment techniques for dystussia and dysphagia. Our current projects focus on multiple behaviors contributing to airway protection and the ability to modify those behaviors via non-pharmacological treatment paradigms. Research participants include healthy volunteers, people with Parkinson’s disease, other movement disorders, and ischemic stroke.</p>	<p>Fume hood; respitrace system; Powelabs (2); dosimeters (2); Nebulizers (10); Compressed air sources (2); Spirometers (2); Surface EMG systems (2); Tektronix oscilloscope; manometers</p> <p>Other miscellaneous: Filters, noseclips, capsaicin, beakers, pipettes, syringes.</p>	SLHS
<p><u>Cognition and Language Laboratory</u></p> <p>This laboratory investigates language and memory function in dementia and aphasia. We also conduct parallel investigations using functional and structural MRI in healthy young adults. Lab space is approximately 400 square feet distributed over 2 rooms in the basement of Dauer Hall.</p>	<p>120Hz Table mount SMI/R Eyetracker MRI Compatible Auditory Presentation Equipment (pneumatic); Additional equipment include light meter, decibel meter, EPrime Professional license, Neuropsychological test bank; Serial response box; Voice key</p>	SLHS
<p><u>Language over the Lifespan Laboratory</u></p> <p>The primary focus of the Language over the Lifespan Lab is on examining the interactions between changes in impaired language, impaired cognition and impaired movement in populations with either primary cognitive or primary linguistic impairments.</p>	<p>2 Sennheiser microphones Video camera Touch Screen monitor Wechsler Abbreviated Scale of Intelligence Wechsler Memory Scale Pyramids and Palm Trees Test</p>	SLHS

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Lab space consists of about 400 sq ft, devoted to patient testing, transcription, data coding and analysis located in Dauer Hall.	Boston Naming Test Wisconsin Card Sort Test	
<u>Swallowing Research Laboratory</u> The SRL is housed within the Speech and Hearing Clinic. The dedicated research space is the image analysis lab which is approximately 200 square feet. Other space overlaps with clinic functions using examination rooms within the speech and hearing clinic for data collection purposes. The SRL has been consistently funded by external grants since its inception in 2005 and conducts clinical research on both abnormal and normal swallowing processes.	The SRL image analysis contains 4 computer work stations equipped with specialized software to digitize and objectively measure endoscopic and fluoroscopic videos of swallow function. One computer station incorporates a 4 processor computer station with image processing and analysis software.	SLHS
<u>Auditory Physiology/ Hearing Research Laboratory</u> The primary focus of the Auditory Physiology Laboratory in Dauer Hall is to measure physiologic and behavioral responses to sound, and any transient changes in these responses associated with exposure to noise.	Double-walled sound attenuating chamber, GSI 16 Audiometer; Intelligent Hearing Systems Otoacoustic Emissions unit; GSI Tymstar Middle Ear Analyzer. Knowles Electronics Mannequin for Acoustic Research (KEMAR).	SLHS
<u>Fluency Research Laboratory</u> The primary focus of the Speech Fluency Lab is on examining the nature of normal fluency and fluency disorders such as stuttering. Recent research has addressed factors that affect treatment outcomes with adults who stutter, the effect of linguistic structure on stuttered speech, methods for improving efficiency in fluency assessment, and factors that affect listeners' perceptions of people who stutter. Lab space consists of about 175 sq ft., which is devoted to participant testing, data coding and analysis. The lab is located in Dauer Hall.	4 video cameras; audio recording and sound mixing equipment; wireless and stand-mounted microphones; two computer stations for data collection and analysis; software used in the analysis of language (phonology, morphology, and syntax); calibration equipment needed for fitting assistive technology that is used in the treatment of stuttering; formal tests of speech sound production, language functioning, fluency functioning, and quality of life.	SLHS

A few faculty members in Environmental and Global Health have laboratory space under the purview of other units:

- Dr. Sabo-Attwood operates in the Analytical Toxicology Core laboratory
- Dr. Kane operates in the UF Aquatic Pathobiology Laboratory
- Dr. Lednicky operates in a BSL2 laboratory
- Dr. Okech and Edsel Redden operate in the Haiti Laboratory

Note1: The Department of Behavioral Science has office and storage space for a study on colonoscopy screening

Note 2: The Occupational Therapy Department has research space allocated to an off-campus SmartHouse (not associated with wet lab research)