**Lewis Integrative Science Building (LISB)**

The LISB is a LEED platinum-certified facility that opened in 2012. It is home to multi-disciplinary researchers from Psychology, Biology, Chemistry, Neuroscience and Physiology. It also houses the Robert and Beverly Lewis Center for Neuroimaging (LCNI) and Animal Care Services (ACS) core research facilities used in this application, and several core facilities not used here.

Laboratory: The LISB houses the LCNI research core facilities as well as individual lab laboratory space for XXXXXX. It is where the proposed project will be housed. There is more than 30,000 sq. ft. of laboratory space, shared between faculty to promote interaction between multi-disciplinary researchers.

Clinical: There are a number of interview/testing rooms for behavioral experiments and several EEG booths uniquely shielded for noise shared between investigators.

Animal: The LISB houses a large animal facility on the first floor, with direct indoor access to the LCNI.

Computing: Data acquired at LCNI is stored on high-performance computing systems managed by The University of Oregon’s Research Advanced Computing Services (RACS), a department within Information Services, as well as UOCloud Provisionable Storage. These services provide secure and compliant storage options for MRI data. Additionally, RACS provides programming tools and packages to enable data analysis for researchers after data acquisition at LCNI.

Office: The LISB contains office space for 46 multi-disciplinary faculty as well as postdoctoral fellows, graduate students, and research assistants. It is directly connected to other buildings as part of the Lokey Science Complex, allowing interaction with investigators across other a range of disciplines.

**Lewis Center for Neuroimaging (LCNI)**

The LCNI is a core-research facility under the auspices of the Office of the Vice President of Research and Innovation designed to enhance access to state-of-the art MRI-related research to the UO faculty and surrounding research community. The center, with its own private entrance is housed in the Lewis Integrative Sciences Building (LISB) and contains two Siemens 3T magnets in the same building; a Skyra and a Prisma, both of which are dedicated to research. A generous endowment by the Lewis family provides unparalleled infrastructure support for staff and equipment dedicated to center activity. LCNI has four full-time staff members who are partially supported by the UO. The staff includes a director, an MRI radiology technologist, an MR physicist, and administrative staff. The technologist has 15 years of experience with scanning children and adolescents in clinical and research settings.

Laboratory:

*Siemens MAGNETOM Prisma 3T MRI*

The substantial growth at the Lewis Center for Neuroimaging (LCNI) over the past decade has advanced the need to have two 3T MRI systems for research demands. As such, LCNI installed a second 3T Siemens magnet, a MAGNETOM Prisma, which became operational in September 2020. The Prisma contains the strongest gradient set of any 3T FDA-approved scanner in the industry, allowing for improved detection of signal (i.e., better signal-to-noise (SNR) ratio) when conducting cognitive neuroscience research and is the gold-standard for multi-site fMRI research. A Siemens 64-channel head coil, a 32-channel head coil and a 20-channel head coil are available for use on the Prisma. The Prisma is the most commonly used magnet in large-scale, multi-site imaging studies around the world. Mac and PC presentations are supported with a high-resolution HDMI-projector system. Two 5-fingered response boxes are provided for collecting response data from subjects while scanning.

*Siemens MAGNETOM Skyra 3T MRI*

The Siemens MAGNETOM Skyra 3T MRI machine is approximately 9 years old and has been upgraded with both Product and WIP multi-band sequences, including multi-echo options for multiband. A Siemens 32-channel coil and 20-channel head coil are available for use on the Skyra magnet, with optimized sequences based on published work from multi-site studies such as the Human Connectome Project and the Adolescent Brain Cognitive Development.. We support both Mac and PC presentation with a projector system aligned with 5-fingered response boxes for both hands. Retention of this Skyra magnet ensures that longitudinal studies supported by the center will continue to collect data on the same magnet at subsequent visits.

*Mock Scanner*

If desired, participants may undergo a session in the mock scanner environment. The mock scanner acclimates participants to the scanner environment, thereby reducing anxiety, densensitization to noise, and head motion. The mock scanner environment is equipped with hardware to simulate the MR scanner environment: a 53cm bore and scanner opening, replica of the Siemens 32-channel head coil, coil-mounted mirror, fiber-optic button box, LCD projector, and Lucite screen.

*Computing and Clinical resources*: The LCNI also has a large electronics laboratory for custom coil design and hardware construction location directly adjacent to the console room. A separate room contains a MR-simulator used to acclimate participants to the MR-environment with moveable participant table, full visual/audio presentation and response measurement capabilities, and accurate auditory simulation of EPI sequences. The LCNI maintains a variety of computing equipment, including a dedicated image analysis room. The LCNI has space for private physical exams, pre-testing, and interviews across the hall from the magnet room, equipped with an interview table, chairs, and three Mac minicomputers for pre-testing.

*Offices:* The LCNI has a dedicated and regularly staffed reception area with a separate entrance to facilitate participant access and comfort. The center has two reserved parking spots adjacent to the building. This provides an exceptionally professional feel typically not seen in research settings, which can be especially helpful when scanning sensitive populations including children and clinical populations who may have family or caregivers joining them. The computing resource room may also serve as a space for families with young children participating in research studies, including pediatric toys and games for entertainment. An online calendar resource (<https://lcni.calpendo.com>) allows research groups to reserve any of the above resources in support of data acquisition.

Additional office space for all center staff and related trainees is available adjacent to the Prisma bay and down the hall from the Skyra bay. The hallway that connects the two magnet bays contains two bathrooms with lockers for participants to store belongings during scans. A wall-mounted detector for screening subjects is also placed in the hallway adjacent to the bathrooms. This proximity allows center staff to provide maximal interaction with investigators and be accessible for any troubleshooting or problem solving.