Senior Post-Doctoral Fellow
Frederick National Laboratory for Cancer Research

The Frederick National Laboratory is dedicated to improving human health through discovery and innovation in the biomedical sciences, focusing on cancer, AIDS, and emerging infectious diseases.

PROGRAM DESCRIPTION

The Laboratory Animal Sciences Program (LASP) provides exceptional quality animal care and technical support services for animal research performed at the National Cancer Institute (NCI) at the Frederick National Laboratory for Cancer Research (FNLCR). LASP executes this mission by providing a broad spectrum of state-of-the-art technologies and services that are focused on the design, generation, characterization and application of genetically engineered and biological animal models of human disease, which are aimed at the development of targeted diagnostics and therapies. LASP contributes to advancing human health, developing new treatments, and improving existing treatments for cancer and other diseases while ensuring safe and humane treatment of animals.

The Small Animal Imaging Program (SAIP) utilizes non-invasive in vivo imaging techniques to support the NCI investigator to characterize mouse models which are then used to perform efficacy studies, characterize new molecular imaging targets for early detection and effectiveness of therapy; assist the FNLCR Nanotechnology Characterization Laboratory to analyze nanoplatforms as part of their assay cascade; and support the Division of Cancer Treatment and Diagnosis initiatives in developing standards in small animal imaging, characterize patient derived xenograft mouse models, and integrate imaging into drug development.

The SAIP/FNLCR is a state-of-the-art non-invasive in vivo imaging core facility (>7,500 sq ft) incorporates a clinical 3T MRI utilizing specially designed rodent coils and multi-nuclear spectroscopy, multi-modality Positron Emission Tomography/Single Photon Emission Tomography/X-ray Computed Tomography [PET/SPECT/CT] and a 1T MRI/PET, optical scanners (bioluminescence and fluorescence), two high frequency (40 MHz) rodent ultrasound scanners, a gamma-well counter, and two high-end image processing workstations.

KEY ROLES/RESPONSIBILITIES

- Develop Magnetic Resonance Spectroscopy Imaging (MRSI) acquisition and analysis standard operating procedures to characterizing Hyperpolarize (HP) $^{13}$C biomarkers (i.e. $^{13}$C-Pyruvate) for evaluating drug effectiveness in rodent xenograft and genetically engineered mouse models.
- Develop standard operating procedures for in vitro evaluation of HP $^{13}$C molecular markers.
- Characterize and implement new HP $^{13}$C molecular markers.
- Assist in the design and experimental procedures for quantitative HP $^{13}$C MRSI studies in collaboration with NCI investigators.
- Amend pertinent regulatory procedures: i.e. Animal Study Protocols, Institutional Biosafety Committee submissions, and radiation safety program protocols.
- Assist in the operation of all SAIP functions: experimental study design and setup, acquisition, analysis, cost estimates, budgets, and reports to FNLCR and NCI administration and investigators.
- Present research at national meetings and publish in peer-reviewed journals.
• Assist in managing the $^{13}$C metabolic imaging users committee.
• This is also a mentoring position to develop skills for managing a preclinical imaging program/laboratory.

BASIC QUALIFICATIONS

• Doctorate degree from an accredited college/university in a discipline related to biomedical research. Foreign degrees must be evaluated for U.S. equivalency.
• In addition to educational requirements, completion of at least three (3) years of postdoctoral research and training is required for appointment at this level.
• Must be able to obtain and maintain a security clearance.
• Must have experience in Magnetic Resonance Imaging (MRI) and Magnetic Resonance Spectroscopy Imaging (MRSI) (acquisition and analysis).

PREFERRED QUALIFICATIONS

• Several years’ experience in Magnetic Resonance Spectroscopy Imaging (MRSI) (acquisition and analysis).
• Experience with production and in vivo evaluation of hyperpolarized $^{13}$C molecular imaging probes.
• Imaging and handling experience with animal models.

This position is located in Frederick, MD

If you are interested in this position, please apply using the link below: