

Research Development Fund – Fall 2023

Application Title: Acquisition and Support of a PET/CT Imaging System at the Translational Imaging Center

Lead contract for RDF Application:

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Key Participating Units:

School of Veterinary Medicine & Biomedical Sciences, College of Engineering, Health Science Center, College of Arts & Sciences, College of Agricultural & Life Science

Anticipated Request Amount: \$3,916,644

Executive summary of this application to use Research Development Funds: We seek funds to purchase and support (for five years) a new state-of-the-art positron emission tomography / computed tomography (PET/CT) imaging system for continued support of research at the Translational Imaging Center (TIC) located within the Texas A&M Institute for Preclinical Studies (TIPS, **Fig. 1**). A PET/CT imaging system can function both as a traditional CT scanner (anatomical imaging) and as a combined PET/CT scanner (anatomical imaging with physiological information superimposed, **Fig. 2**). This capability would be a game-changer for biomedical researchers at TAMU. Cardiac-gated CT would be a powerful tool to evaluate devices and animal models of cardiac diseases. The ability to perform PET/CT imaging would allow researchers to estimate tissue metabolism (biomarker) and drug biodistribution. The metabolic information provided by PET/CT is incredibly useful for imaging of cancer (determining extent and monitoring therapeutic response), neurological disorders, and inflammation. The major users of this PET/CT imaging system have ongoing and well-funded research programs (amounting to more than \$10M). Their research will be accelerated with the addition of PET/CT imaging. This is a first-time RDF submission.



Fig. 1. The Texas A&M Institute for Preclinical Studies (TIPS) building provides translational researchers unique access to expertise in all major medical and scientific disciplines including surgery, biomedical engineering, and diagnostic imaging.

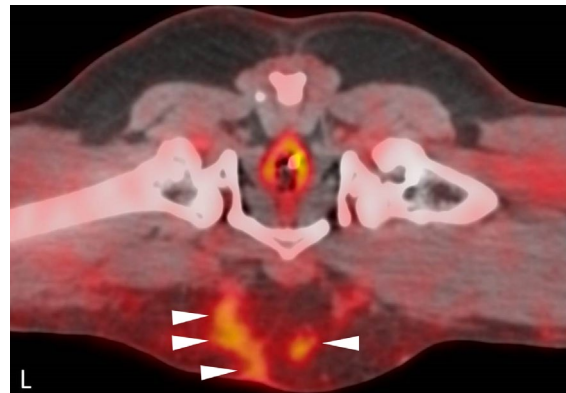


Fig. 2. PET/CT image of a dog with metastatic cancer (arrowheads). The orange areas indicate areas of high glucose metabolism, which is a distinguishing feature of cancer. The gray and white background is the CT image. This helps the clinician know exactly where the cancer is located and how metabolically active it is. This image was acquired on the old PET/CT imaging system at TIC.