

Research Development Fund – FALL FY17 Cover Page Template

SUBMISSION DEADLINE: September 12, 2016 at 12 noon CDT to rdf@tamu.edu

(All cover pages will be posted for the campus community to view at <http://rdf.tamu.edu/abstracts>)

Application Title: Acquisition of a 7T Whole Body MRI for Texas A&M.

Lead contact for RDF Application:

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Key Participating Units:

Texas A&M Engineering Experiment Station

Texas A&M College of Veterinary Medicine & Biomedical Sciences

Texas &M Health Science Center

Texas A&M College of Liberal Arts

Texas A&M College of Education and Human Development

Anticipated Request Amount (\$): 4,200,000

Executive summary of the intended application to utilize Research Development Funds.

This proposal aims to support emerging interest in imaging in many units across the campus. Specifically this proposal covers the acquisition of a 7 Tesla MRI human sized MRI and supporting equipment to enable advanced neuroimaging. This would provide cutting edge high-field imaging to support basic research, with a clear path to translation to clinical research on the 3T MRI systems at the CVM. Presently, only a single 7T MRI exists in the southwest United States, at the University of Texas Southwestern Medical Center in Dallas. 7 Tesla MRI provides not only unparalleled resolution and sensitivity in clinical neuroimaging, but also the potential to perform in-vivo spectroscopic studies of metabolic pathways in diseases. During the development of TIPS, the building was designed to house an unshielded 7T scanner, which required specialized infrastructure. That infrastructure still exists and the room is currently used only for storage. Thus, essentially no infrastructure will need to be added to house the proposed scanner. TAMU currently has three Siemens 3T scanners available for use, two in the CVM and one, owned by St. Joseph, but administered by the Texas Brain and Spine Institute, which has close ties to the TAMUHSC. A 7T scanner would provide unique imaging facility dedicated to research in many fields across campus.

Presently TIPS is predominantly an outstanding facility dedicated to providing imaging services. The facilities requested would increase the research focus. If space were available, it may be possible to move one or more of the MRI scanners in the TEES Magnetic Resonance Systems Lab to the TIPS facility to support this concept. 7T is the current leading edge in MRI technology research, functional MRI research, study of metabolic pathways, and many forms of cancer research. We believe that such a system, together with existing facilities in the CVM and TEES, could establish Texas A&M as a leading imaging research center and position us well for NIH, CPRIT and many other funding sources. This system would be a focal point for researchers in: 1) functional fMRI (Psychology), 2) Metabolics and Aging (Kinesiology), 3) Imaging technology (TEES), 4) high resolution animal imaging and spectroscopy (CVM), 5) cancer and cardiovascular imaging (Medicine, TEES, others) among many others. We believe that this highly unique facility would support many follow-on proposals in all of the associated units.