



## CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:  
RP120611

Project Title:  
Small Animal Cancer Imaging Core

Award Mechanism:  
Core Facility Support Awards

Principal Investigator:  
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Entity:  
The University of Texas Medical Branch at Galveston

### Lay Summary:

Molecular imaging is a powerful diagnostic tool that can be used to visualize and target tumors in small animal models enabling cancer researchers to assess the efficacy of new diagnostic and therapeutic strategies in preclinical models prior to translation to the clinic. Bioluminescence and fluorescence imaging is a high sensitivity and high throughput molecular optical imaging modality for whole body small animal imaging where it is now possible to use genes encoding luciferase and fluorescent proteins that can be engineered into cells and small animal models enabling cells produce light that can then be visualized through the tissues in living animal. The objective of this proposal is to significantly expand the capabilities of imaging resources that are currently available for cancer research within UTMB by purchasing IVIS Spectrum, a whole body bioluminescence and fluorescence imaging system. We anticipate that the requested imaging system will be rapidly incorporated into existing cancer related research projects that are aimed at developing better understanding of the biology of cancer and tumor progression as well as the development of new diagnostic and therapeutic approaches for wide range of diseases including liver, colon and oral cancer. Furthermore, the Spectrum can be used to import and fuse images from our existing instruments including micro-CT, PET and SPECT with fluorescence or bioluminescence images yielding complementary anatomical, functional and molecular images. Initially the requested shared instrument will be used by 11 investigators. The acquisition of Spectrum will help UTMB recruit new faculty in cancer research and vaccine development for cancer prevention as well as to retain its best investigators. Furthermore, the requested instrument will be extremely important as we work toward the development of imaging probes that can be safely used in human for early detection and staging of cancer as well as treatment monitoring.