

Research Centers in Minority Institutions (UTSA)  
Institute for Integration of Medicine and Science (UTHSCSA)  
Cancer Therapy & Research Center (UTHSCSA) &  
UTSA-UTHSCSA Joint Graduate Program in Biomedical Engineering  
invite you to attend



## Seminars in Translational Research

"Building the Capacity for Translational Research"

### Matthew Gdovin, PhD

Associate Professor of Physiology  
University of Texas at San Antonio

### Photodynamic Therapy Effective in Causing pH-induced Apoptosis in Multiple Cancers

Triple negative breast cancer (TNBC) represents one of the most aggressive, deadly forms of breast cancer, the leading cause of cancer death in women worldwide. A photodynamic technique has been developed which causes significant decreases in only intracellular pH (pHi) and concomitant pH-induced apoptosis. Preliminary data demonstrate that this technique is capable of causing pH-induced apoptosis in non-cancerous PC12 cells, as well as two breast cancer and one prostate cancer cell line *in vitro*. The use of this photodynamic technique was also effective at reducing the growth rate of TNBC and increasing survival in mice bearing TNBC tumors. Our lab has also developed an effective photo-upconversion nanoparticle capable of killing breast cancer cells *in vitro* following activation by near infrared light. We are currently working to develop a ligand-mediated upconverting nanoparticle capable of inducing significant cell death in a manner that many cancers, including multi-drug resistant cancers, cannot evade.

**Friday, March 25, 2016**

**9:00 — 10:00 AM**

**Biotechnology, Sciences & Engineering Bldg.  
Room 2.102**

For more information contact Cindy Russel, Institute for Integration of Medicine and Science  
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**UTSA RCMi**  
Research Centers in Minority Institutions

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**UT HEALTH SCIENCE CENTER**  
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