

*Stephenson School of Biomedical Engineering
Seminar Series Presents*

**TRANSLATING FOCUSED ULTRASOUND DIRECTED
NANOPARTICLES AND IMMUNOADJUVANTS FOR
CHEMO-IMMUNOTHERAPY OF SOLID TUMORS**



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Friday, Sept. 11, 2020 | 9:00 a.m.



zoom

Meeting ID: 985 6427 7693
Passcode: 61878953

ABSTRACT:

Magnetic resonance and ultrasound (US)-guided focused ultrasound (FUS) is a clinically relevant therapeutic technology that provides a spatially accurate mechanical stress and heating of a solid tumor, without causing collateral toxicity to healthy tissues. FUS can also promote immunogenic recognition of tumor cells by aiding the translocation of damage associated membrane proteins. Our research has shown that FUS-induced local heating and stress and combination with lipid-based nanoparticles can modify the tumor microenvironment to impart several benefits including enhanced solid cancer chemotherapy, tumor antigen release, and anti-tumor immunity compared to conventional therapy in pre-clinical models. In this seminar, I will discuss the concepts and techniques, and also provide examples of clinical translation in canine cancer treatment.

BIO:

Ranjan is the professor and endowed chair in the College of Veterinary Medicine, Oklahoma State University. Ranjan earned his veterinary medicine degree from Madras Veterinary College, in Chennai, India. He earned a doctoral degree in biomedical and veterinary sciences from Virginia Tech. Ranjan was a visiting fellow at the Center for Interventional Oncology, Department of Radiology and Imaging Sciences at the National Institutes of Health. His research interests are in the application of device directed nanoparticles for solid tumor chemo-immunotherapy. His lab is actively engaged in preclinical and bench to bedside veterinary clinical trials, and has received funding from several federal, state and private sources. Ranjan has received the NIH Merit, OSU distinguished faculty, regents research, and president's fellow awards in the recent years. He also serves in the Scientific Advisory Board of Focused Ultrasound Foundation, and several NIH panels.