



BIOMEDICAL ENGINEERING LECTURE SERIES

THURSDAY, SEPTEMBER 4, 2008, 10:00AM

**FIU Engineering Center
10555 West Flagler Street
Room 2300**

Y-90 MICROSPHERES: ENGINEERING A NEW LIVER CANCER TREATMENT

Liver cancer, primary or metastatic, is a deadly disease with challenging management issues requiring multimodality treatment strategies involving novel treatment options. Y-90 microsphere therapy is a novel approach for treating liver cancer by selectively targeting tumors with very short range radiation, while sparing the much needed healthy liver tissue. The accurate application of this novel therapy requires the active and collaborative efforts of engineers, scientists and clinicians. For example, the dose response to Y-90 microsphere treatment of metastatic liver cancer by quantitative analysis SPECT and PET images provides critical information towards optimal design of therapy and predicting prognosis. In addition to novel chemistry and drug design, advanced image processing techniques, including image acquisition, automated recognition and registration, respiratory gating, and dosimetry calculations may be employed to improve patient outcomes. This presentation will describe the basic principles of treatment and their relevance to biomedical engineering.

**SEZA GULEC, M.D.
FIU, COLLEGE OF MEDICINE**

Seza Gulec, MD, is currently Professor of Surgery and Radiology/Nuclear Medicine, Chief of Surgical Oncology and Director of Surgical and Nuclear Oncology Research at the FIU College of Medicine. He has authored over 70 peer reviewed journal papers, five book chapters and numerous abstracts and conference presentations. He serves on the editorial board of the Journal of Interventional Oncology. He has also been the recipient of numerous honors and awards. Before joining FIU in 2008 he was the head of the endocrine surgery, hepatic oncology, molecular imaging and position emission tomography programs at the Goshen Center for Cancer Care.