The George Washington University
Institute for Biomedical Engineering

Colloquium
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Room 736 Academic Center

Image-guided transbronchial biopsy with a new biopsy device

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The most common cause of death due to malignancy in the United States is lung cancer. Its overall 5-year survival rate-less than 15 percent-has not been significantly changed in 20 years. Surviving lung cancer is closely linked to its stage at the time of presentation. To improve the chance of survival, it is vital to locate lesions early and to obtain tissue samples in sufficient quantities to establish the diagnosis. A more accurate way to perform lung biopsies is being developed with state-of-the-art technologies based on electromagnetic tracking and three-dimensional visualization. An image-guided system that enables pulmonologists to accurately biopsy target tissue samples is required. To accomplish this, a biopsy forceps/a biopsy needle that can be electromagnetically tracked is being built. With this device, the image-guidance system can provide additional information to pulmonologists, for example, where biopsy targets are located in context of video images.

BIO: Dr. Choi received his PhD in Computer Science from Seoul National University (SNU), Seoul, Korea, in February 2001. From December 1998 to May 2000, Dr. Choi was part of the Surgical Robotics and Image-Guided Therapy research division at ISIS as a Visiting Scholar. During that time, Dr. Choi developed the first image analysis software for the group and led the development of the I-SPINE (ISIS Spine Procedures Imaging and Navigation Engine) software package. Subsequent to his postdoctoral work at the ISIS Center, Dr. Choi developed a state of the art 3D imaging system as a part of a successful commercial enterprise. Dr. Choi subsequently returned to Korea and completed his PhD, then became the Chief Technical Officer for a spin-off company where he worked on developing 3D medical imaging applications. In April 2004, Dr. Choi returned to the ISIS Center, this time as a Research Assistant Professor of Radiology, to work in the Surgical Robotics and Image-Guided Therapy Division where he is now responsible for developing a program in surgical planning at Georgetown University Hospital and the Imaging Science and Information Systems (ISIS) Center, working with radiologists and surgeons to support a surgical planning capability in areas such as transplant and tumor resection.

A pizza lunch will be provided.