



Kitchener-Waterloo Section



**IEEE Engineering in Medicine and Biology Society
Dept. of Systems Design Eng. - University of Waterloo**

Distinguished Lecture

MEDICAL IMAGING AND COMPUTING IN THE 21ST CENTURY

Professor Yongmin Kim

President of IEEE EMBS

Professor and Chair of Department of Bioengineering

University of Washington in Seattle

Date: Dec 1, 2006

Time: 10:00 Am, EST

**Location: Centre for Environmental & Information Technology EIT-3142,
University of Waterloo**

Abstract: Imaging technology has become pervasive in many facets of our lives: whether it is a digital camera or swallowable camera-in-a-capsule to take pictures as it travel through the digestive track; whether it is an X-ray CT, MRI or ultrasound scanner. Due to tremendous progress in IC, computing and algorithms, medical imaging has advanced over the past four decades from only conventional X-ray systems to today's wide array of medical imaging modalities. To enable this widespread use, there have been significant technological advances in improving the image quality and introducing new diagnostic capabilities. Recent progress and future trends will be presented in this talk, including panoramic imaging, real-time strain (elasticity) imaging, distributed screening and diagnosis, 3D and 4D imaging, ultrasound molecular imaging, and programmable ultrasound machines and their applications.

Dr. Kim is Professor and Chair of Bioengineering, Professor of Electrical Engineering, and Adjunct Professor of Radiology and Computer Science and Engineering. Currently, he is the W. Hunter and Dorothy L. Simpson Endowed Chair in Bioengineering. He has participated heavily in the architecture definition and optimization as well as algorithm simulation and system development for Texas Instruments TMS320C80 Multimedia Video Processor (MVP) and Hitachi/Equator Technologies Media Accelerated Processor (MAP). Dr. Kim and his research group have made 85 inventions that have led to 70 patents. He edited a book, Handbook of Medical Imaging (SPIE Press, 2000) and is a contributing author to many books. He has more than 420 research publications, and he is the editor of 11 Conference Proceedings. He has been a consultant to NIH, NSF, U.S. Army, MITRE, Texas Instruments, Intel, Siemens, Hitachi, Fujitsu, Canon, Samsung, Micron, and many other companies. He is a member of the Department of Biomedical Engineering External Advisory Board for the Cleveland Clinic Foundation, University of Wisconsin, and University of Utah and an external reviewer for many academic programs.