



Bioengineering: The Engineering Discipline of the 21st Century?

by

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Date: 18 October 2005, Tuesday

Time: 3:00 PM

Venue: TY Wong Hall, 5/F, Ho Sin Hang Engineering Building, CUHK

Abstract

Bioengineering is the fastest growing engineering discipline in the U.S. The areas of research and education/training covered in Bioengineering are vast: from biomedical imaging to bioinformatics and from therapeutic devices to molecular bioengineering and tissue engineering. Unique integration of biology, engineering, nanotechnology, information technology and medicine has been underway in Bioengineering, continuously creating new frontiers and opportunities in both research and education. Also, Bioengineering has taken (and will continue to expand) a key role in translation of biomedical science and technology research into the clinic and/or home to enable improvements in prevention, diagnosis and therapy, ultimately transforming the delivery of health care and enhancing the quality of our lives.

Biography of Speaker

Dr. Yongmin Kim received the B.S. degree in electronics engineering from Seoul National University, Seoul, Korea, in 1975, and the M.S. and Ph.D. degrees in electrical engineering from the University of Wisconsin (Madison), in 1979 and 1982, respectively.

From 1982 to 1986, he was Assistant Professor of the Department of Electrical Engineering at the University of Washington, Seattle. From 1986 to 1990, he was Associate Professor of Electrical Engineering and Adjunct Associate Professor of Bioengineering and Computer Science. From 1990, he was Professor of Electrical Engineering, and Adjunct Professor of Bioengineering, Radiology, and Computer Science and Engineering. From March 1999, he 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 taught parallel computers, digital electronics and computer design, advanced microcomputer system design, digital image processing and applications, multimedia algorithms and systems, mediaprocessors, computer image generation, technology innovation and commercialization, and weekly seminar series on image computing, medical imaging and bioengineering. Also, he has offered various continuing education courses on image computing and multimedia, mediaprocessors, and advanced digital systems to many engineers around the world.

His research interests include medical imaging and computing, ultrasound systems, electronic medicine, distributed diagnosis and home healthcare, and molecular imaging. 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). He has supervised 30 Ph.D. dissertations and 101 Masters theses, and

currently is working with 14 Ph.D. students in Electrical Engineering, Bioengineering, and Computer Science & Engineering. Dr. Kim and his research group have made 85 inventions that have led to 70 patents, transferred the invented technologies to industry with 23 licenses, and helped commercialization of these technologies. He edited a book, Handbook of Medical Imaging (SPIE Press, 2000) and is a contributing author to many books. He has more than 400 research publications, and he is the editor of 11 Conference Proceedings.

He was a member of the Advisory Board for IEEE Transactions on Pattern Analysis and Machine Intelligence from 1985 to 1994 and has been a member (Chairman during 1993-1994) of the Steering Committee of the IEEE Transactions on Medical Imaging from 1990 to 1996. He has been a member of the Editorial Board of Proceedings of the IEEE, the IEEE Transactions on Biomedical Engineering, the IEEE Transactions on Information Technology in Biomedicine, the IEEE Press series, and the Annual Reviews of Biomedical Engineering. He is the director of both the Image Computing Systems Laboratory at the University of Washington and several University of Washington Image Computing Library (UWICL) Consortia. He was awarded the 1988 Early Career Achievement Award of the IEEE Engineering in Medicine and Biology Society for his contributions to medical imaging and the 2003 Ho-Am Prize in Engineering. In Oct. 2005, he will receive a Distinguished Achievement Award from the University of Wisconsin-Madison College of Engineering.

He was the Program Chairman of the 1989 IEEE EMBS Conference and Conference Chair of the SPIE Medical Imaging Image Display Conference from 1990 to 1999. Also, he was Symposium Chair of the SPIE Medical Imaging consisting of seven conferences from 1998 to 2001. He will chair the first conference on Distributed Diagnosis and Home Healthcare on April 3-4, 2006 in Washington, D.C., which is sponsored by IEEE, ASME, AMA, RSNA, HIMSS and other organizations. 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 has served on the Board of Directors and the Technical Advisory Board of several companies. He is a member of the Department of Biomedical Engineering External Advisory Board for the Cleveland Clinic Foundation and University of Wisconsin and an external reviewer for many academic programs. He has been an IEEE/EMBS distinguished lecturer since 1991 and Chair of the Distinguished Lecturer Committee in 1997 and 1998 and the Awards Committee in 2001 and 2002. Since 1992, he has been an ABET (Accreditation Board for Engineering and Technology) program evaluator for computer engineering and bioengineering. He was a member of the IEEE Fellow Committee from 1998 to 2001. He was the Chair of the IEEE/EMBS Fellows Committee in 2003 and 2004. He was the President-Elect of the EMBS in 2004. He is the President of the EMBS in 2005 and 2006.

Dr. Kim is a Fellow of the IEEE and a Fellow of the American Institute for Medical and Biological Engineering. He is a member of Tau Beta Pi and Eta Kappa Nu. And he is also a member of Advisory Board for Shun Hing Institute of Advanced Engineering, CUHK.

******* ALL ARE WELCOME *******

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