



Dear Colleagues,

It is my great pleasure to welcome you to New York City and the 28<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS).

Over 1,700 technical papers will be presented in oral and poster sessions during the Conference. Numerous workshops and special sessions from Virtual Rehabilitation to Systems Biology and the latest in medical devices are available throughout the Conference. We have many distinguished plenary and keynote speakers in addition to over 15 Mini-Symposia presentations. Our keynote speaker is Dr. Nora D. Volkow, Director of the NIH National Institute of Drug Abuse (NIDA).

This outstanding conference was organized and its program developed through the dedicated and tireless efforts of Drs. Atam Dhawan, Andrew Laine, Ki Chon and Metin Akay and their EMBC'06 Conference Committee. I would like to extend my sincere thanks to all the volunteers who have contributed to the success of the EMBC'06.

With this depth and breadth in the EMBC'06 program, I am sure that you will enjoy learning about cutting-edge research, development, translational efforts and clinical applications in all major areas of biomedical engineering. EMBS encourages you to participate in the extra activities provided for attendees, particularly the student events and Graduates of the Last Decade (GOLD). This is an extraordinary opportunity to meet the future biomedical engineers and emerging leaders around the world. I also hope that you have some time to enjoy the attractions of our host city and celebrate the life and vibrancy of the Big Apple, New York City.

I would like to thank NJIT, Columbia University, SUNY Stony Brook and Rutgers University for their support of EMBC'06. In particular, EMBS recognizes all its volunteer members, who work hard to make EMBS events the successes they are, year in and year out. Very special thanks to NJIT and IBM for its generous sponsorship of the Student Activities of EMBC'06.

EMBS, the EMBC'06 Conference Committee and our local Chapters welcome you to the EMBC'06 Conference! We trust that you will have a productive, informative and enjoyable time in Manhattan.

Best regards,

A handwritten signature in black ink, appearing to read 'Y. Kim'.

Yongmin Kim  
IEEE EMBS President, 2005-2006



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**Engineering in Medicine and Biology**

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Dear Colleagues:

On behalf of the organizing committee, it is our pleasure to welcome you to the 28<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society and to the city of New York, *the Big Apple*. As you explore New York City, you will find that it represents a fusion of cultures from all parts of the world. It is indeed a great place for us to meet for the largest international conference of biomedical engineers and scientists in the world.

Last several decades have witnessed the continued revolution and scientific advances in technology development in the field of medicine and biosciences improving our understanding of physiological processes from molecular to organ levels for better health care. As the ***Engineering Revolution in BioMedicine*** continues, the scientific program of the EMBC 2006 presents an outstanding spectrum of over 1700 research papers from more than fifty countries worldwide, emerging from multidisciplinary areas such as biology, physics, chemistry, electrical engineering, mechanical engineering, chemical engineering, nanotechnology, computational sciences and many more to focus on the challenges of developing future technologies for biomedical engineering and medicine.

We are proud to bring you a great synergy of expertise from internationally renowned scientists and pioneers in medicine, biomedical engineering and biosciences through keynote and plenary speakers representing academic, industry, health care, and government sectors. Special pre-conference workshops, mini-symposiums and special sessions throughout the conference are focused on addressing the current and future trends and challenges in scientific research, technology development, and clinical practice. The scientific program is targeted to provide tangible benefits and networking opportunities to current researchers; it also provides a tremendous environment for younger scientists and students to learn about future prospects and professional development activities.

The keynote address by Nora Volkow, M.D., Director of the National Institute of Drug Abuse will emphasize the importance of the development of technologies for understanding the physiological processes from molecular to behavioral levels. In addition, the scientific program includes plenary talks from Michael Phelps, Ph.D., Director of Crump Institute of Molecular Imaging, UCLA; Van Mow, Ph.D., Director, Liu Ping Laboratory for Functional Tissue Engineering, Columbia University; John Donoghue, Ph.D., Chair, Dept. of Neuroscience, Brown University; Jennifer West, Ph.D., Director, Institute of Biosciences and Bioengineering, Rice University; Joseph Jasinski, Ph.D., Director, Life Sciences, IBM; David Goldenberg, Sc.D., M.D., Chairman, Immunomedics, Inc; and Ernest Takafuji, M.D., MPH, Director, Biodefense Research, NAID, NIH.

In addition to the outstanding scientific program, we hope that you will find time to explore New York City and the surrounding areas. New York City is a great place to tour and explore on your own. Please take advantage of this opportunity during your stay in the City. We hope that you will enjoy the charming multi-cultural atmosphere of Times Square and stimulating environment of the Hudson river, and will join the feeling, *"I Love New York"*.

Regards,

Atam P. Dhawan, Ph.D., *Conference Chair*  
New Jersey Institute of Technology

Andrew F. Laine, Ph.D., *Program Chair*  
Columbia University

Metin Akay, Ph.D., *Conference Co-Chair*  
Arizona State University

Ki H. Chon, Ph.D., *Program Co-Chair*  
State University of New York at Stony Brook