

Joint Universities Consortium on Biomedical Engineering (JUCBE)

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Tissue Engineering: The Science, the Technology, and the Industry

Professor Robert M. NEREM

Georgia Tech/Emory Center for the Engineering of Living Tissues
Petit Institute for Bioengineering and Bioscience
Georgia Institute of Technology, Atlanta, Georgia
USA

Date : 12 February 2008 (Tuesday)
Time : 5:30 – 6:30pm
Venue : Room PQ306, 3/F, Core P, The Hong Kong Polytechnic University

Abstract:

Tissue engineering, what today is sometimes called regenerative medicine, continues to emerge as a science and a technology, with the beginnings of an industry. The goal is the repair, replacement, and/or the regeneration of tissues and organs. The potential here remains enormous; however, there is no question but that this field has been burdened by unrealistic expectations. This notwithstanding, the sciences and the research advances being made continue to be exciting. Even so, scientific barriers remain. These include such critical issues as cell source, scaffolds/matrix, and immune acceptance. As one moves from benchtop research towards commercialization, there are additional issues that must be faced. These technology issues include scaling up the manufacturing process, ensuring quality control, and preserving living-cell products so as to provide off-the-shelf availability to the clinician. The real opportunity, however, may be in addressing chronic diseases as well as the transplantation crisis, i.e. the tremendous disparity between the patient need for vital organs and donor availability. Equally important is the challenge of neural repair. These are the grand challenges; however, success will not be achieved unless the community mobilizes itself in order to translate the benchtop science to the patient bedside.

Brief Biography:

Prof. Nerem joined Georgia Tech in 1987 as the Parker H. Petit Distinguished Chair for Engineering in Medicine. He currently serves as the Director of the Parker H. Petit Institute for Bioengineering and Bioscience, and he also is the Director of the Georgia Tech/Emory Center (GTEC) for the Engineering of Living Tissues, an NSF-funded Engineering Research Center. He received his Ph.D. in 1964 from Ohio State University and was promoted to Professor in 1972, serving from 1975-1979 as Associate Dean for Research in the Graduate School. From 1979 to 1986 he was Professor and Chairman of the Department of Mechanical Engineering at the University of Houston. Professor Nerem is the author of more than 200 publications. He is a Fellow and was the founding President of the American Institute of Medical and Biological Engineering (1992-1994), and he is past President of the Tissue Engineering Society International. In addition, he was the part-time Senior Advisor for Bioengineering in the new National Institute for Biomedical Imaging and Bioengineering at the National Institutes of Health (2003-2006). In 1988 Professor Nerem was elected to the National Academy of Engineering (NAE), and he served on the NAE Council (1998-2004). In 1992 he was elected to the Institute of Medicine of the National Academy of Sciences and in 1998 a Fellow of the American Academy of Arts and Sciences. Professor Nerem serves on the scientific advisory board of AtheroGenics, Inc. (Alpharetta, GA) and Tengen (Winston Salem, NC). Research interests include biomechanics, cardiovascular devices, cellular engineering, vascular biology, and tissue engineering and regenerative medicine.

Any enquiries, please contact Miss Lillian Lee at 3400-8643.

All are Welcome!

