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IFMBE John Hopps Distinguished Service Award 2015

Dr. Nerem joined Georgia Tech in 1987 as the Parker H. Petit Distinguished Chair for Engineering in Medicine. He is an Institute Professor Emeritus, and he was the founding Director of the Parker H. Petit Institute for Bioengineering and Bioscience, a research institute established in 1995 to bring biochemistry, bioengineering, and biology faculty together so as to create a “convergent,” interdisciplinary culture. Dr. Nerem received his Ph.D. in 1964 from Ohio State University and is the author of more than 200 publications. Over the years he has served the community in a variety of ways. This includes his extensive involvement with the International Federation for Medical and Biological Engineering (IFMBE), serving as President from 1988 to 1991 and being the Founding President of the International Academy for Medical and Biological Engineering from 1997-2000. He also was the President of the International Union for Physical and Engineering Sciences in Medicine from 1991 to 1994. Dr. Nerem was the Founding President and is a Fellow of the American Institute for Medical and Biological Engineering (AIMBE). He has served on the advisory boards of a number of companies including startups, and from 2000 to 2003 he was a member of the FDA Science Board. From 2003 to 2006 he was a part-time Senior Advisor for Bioengineering in the National Institute for Biomedical Imaging and Bioengineering at the National Institutes of Health. In 1988 Dr. Nerem was elected to the National Academy of Engineering (NAE) and in 1992 to the Institute of Medicine of the National Academy of Sciences. In 1994 he was elected a Foreign Member of the Polish Academy of Sciences, in 1998 a Fellow of the American Academy of Arts and Sciences, and in 2006 a Foreign Member of the Swedish Royal Academy of Engineering Sciences. In 2008 Dr. Nerem was selected by NAE for the Founders Award, and in 2011 he was made an IFMBE Honorary Life Member.

Medical and Biological Engineering: Celebrating the Past, Envisioning the Future

Over the past half century engineers have made enormous contributions to both an increased understanding of biology and biological mechanisms and to improvements in clinical treatments. For these many contributions by engineers and physical scientists, there is much to celebrate. From the study of blood flow, to the role of hemodynamics in atherosclerosis and the role of the vascular endothelium, to the development of new medical devices, to regenerative medicine and stem cell technology, the contributions of the medical and biological engineering community have had a major impact. This includes everything from advances in pacemakers to continuing efforts to understand “the rules of life” that determine cell function. As one further envisions the future, although the application of engineering to the medical area will continue to be important, such new areas as energy, the environment, and food will be an expanded part of medical and biological engineering. Already we are seeing an industrialization of biology with the biomanufacturing of chemicals today becoming a significant element of the economy of the U.S. and there are efforts focused on creating biological machines, ones that might not even exist in nature. Over the past half century the International Federation of Medical and Biological Engineering (IFMBE) has had a major leadership role, and in the world of the future, IFMBE will have to evolve its role in order to provide the leadership necessary for the global community.