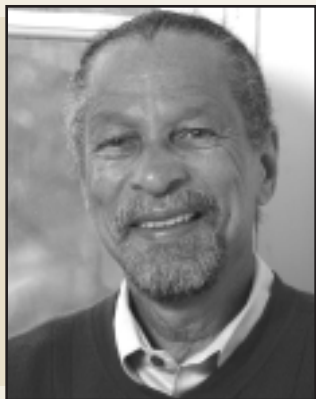


The George W. Woodruff School of Mechanical Engineering at Georgia Tech

Presents

The Annual

Harold W. Gegenheimer Lecture Series on Innovation



Featuring:

Dr. James E. West

Research Professor
Johns Hopkins University
Baltimore, Maryland

Speaking About:

***Noise in Hospitals:
Effects and Cures***

Tuesday, December 2, 2008, 11:00 A.M.

Ferst Center for the Arts
Georgia Tech Campus, Atlanta, Georgia

There will be a reception after the lecture in the Galleries of the Ferst Center.



To arrange for parking, please call (404) 894-3200 by Monday, November 24th.

Synopsis of the 2008 Gegenheimer Lecture

Noise in hospitals is a significant problem that is generally getting worse, even in new construction. High noise levels in hospitals can potentially contribute to stress and burnout in hospital staff, reduced speed of patient wound healing, and there is legitimate concern that hospital noise can negatively affect speech communication and cause an increased number of medical errors.

There are several interesting issues that impact hospital noise. Since 1960, there has been a clear trend for rising hospital noise levels. The situation has been worsening steadily. Also, none of the published results show compliance with established standards for hospital noise. For example, the World Health Organization suggests different noise levels during daytime and nighttime that are commensurate with health promotion. In addition, there is remarkably little variation throughout the world for noise levels in different types of hospitals, from major research facilities to smaller community hospitals. This suggests that the problem of hospital noise is universal, and that noise control techniques might also be expected to be applied broadly.

Conventional acoustical treatments are used sparingly in hospitals because it is believed that sound absorbing materials with pores harbor bacteria. Instead, smooth, hard, flat surfaces are used because they are easy to clean. Consequently, these surfaces are acoustically reflective and serve to aggravate existing noise problems. Any acoustical treatments in hospitals not only face great noise abatement challenges, but must also meet the most stringent hygienic standards. At Johns Hopkins University Hospital, we are collaborating with industry to develop new materials.

Biographical Sketch

James E. West is currently Research Professor at Johns Hopkins University, Department of Electrical and Computer Engineering and the Department of Mechanical Engineering. He was formerly a Bell Laboratories Fellow at Lucent Technologies. His pioneering research on charge storage and transport in polymers (the electrical analogy of a permanent magnet) led to the development of electret transducers for sound recording and voice communication.

Dr. West holds more than 50 U.S. and about 200 foreign patents on various microphones and techniques for making polymer electrets and transducers. He was inducted into The National Inventors Hall of Fame in 1999 for the invention of the electret microphone.

Dr. West is a member of the National Academy of Engineering; a Fellow, past President, and past member of the Executive Council of Acoustical Society of America (1998-2001); and a Fellow of the IEEE. He is a member of the Board of Directors of The National Inventors Hall of Fame, past member of the National Academy of Engineering's Committee on Diversity in the Engineering Workforce, and a member of the Scientific Advisory Committee of The International Symposium on Electrets.

Dr. West is the recipient of the Acoustical Society of America's Silver Medal in Engineering Acoustics (1995), and he was the Audio Engineering Society Richard C. Heyser Memorial Lecturer in 2002. He was awarded the John William Strutt, 3rd Baron of Raleigh Award (2003) from the Mexican Institute of Acoustics, the Acoustical Society of America's Gold Medal (2006), an honorary Doctor of Engineering from Michigan State University (2006), and the National Medal of Technology (2006).

About the Lecture Series

The Lecture Series on Innovation was established in 1995 through an endowment from Mr. Harold W. Gegenheimer (Class of 1933) to support student programs that encourage creativity, innovation, and design. Through the lecture series and support of capstone design projects, students are exposed to processes that stimulate creativity and lead to inventions and patents. The previous Gegenheimer lecturers were:

- 1995 **Dr. Jerry M. Woodall**
Distinguished Professor of Microelectronics at Purdue University
- 1996 **Mr. Burt Rutan**
President and CEO of Scaled Composites, Inc.
- 1997 **Dr. Jim Adams**
Professor at Stanford University
- 1998 **Dr. George N. Hatsopoulos**
Founder of Thermo-Electron Corporation
- 1999 **Mr. Richard Teerlink**
Retired President and CEO of Harley Davidson, Inc.
- 2000 **Dr. Woodie Flowers**
Pappalardo Professor of Mechanical Engineering at MIT
- 2001 **Dr. Leo Beranek**
Co-Founder, Past President, and CEO of BBN
- 2002 **Dr. Roger L. McCarthy**
Chairman of Exponent, Incorporated
- 2003 **Dr. Steven L. Stice**
Professor and Eminent Scholar at the University of Georgia
- 2004 **Dr. Malcolm Swinbanks**
Chief Scientist, Vibration and Sound Solutions, Ltd.
- 2005 **Dr. James DeLaurier**
Professor, University of Toronto Aerospace Studies
- 2006 **Mr. Mark Jenks**
Wing Team Leader, The Boeing Company
- 2007 **Mr. Chris Miller**
Director, *Shrek The Third*

About the Woodruff School

Mechanical Engineering is the oldest degree granting program at Georgia Tech. Today, the Woodruff School of Mechanical Engineering offers academic and research programs in mechanical engineering, nuclear and radiological engineering, medical physics, bioengineering, paper science and engineering, and robotics. The current enrollment is 1806 undergraduate (including co-ops at work) and 705 graduate students. Studies are directed by a full-time, tenure track faculty of 92 professors, including eleven joint appointments from other schools on campus. There are also 24 research faculty and six academic professionals. Support is provided by 52 staff members. The George W. Woodruff School of Mechanical Engineering is the only educational institution to be designated a Mechanical Engineering Heritage Site by the American Society of Mechanical Engineers.

For additional information, contact Dr. William J. Wepfer, Eugene C. Gwaltney, Jr.
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The Annual Harold W. Gegenheimer Lecture Series on Innovation

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