



Daniel G. Nocera
Professor of Energy, MIT

February 7
“The Global Energy Challenge”
4:00-5:00 pm
123 Nieuwland Science Hall

Dr. Nocera is the Henry Dreyfus Professor of Energy at the Massachusetts Institute of Technology, Director of the Solar Revolutions Project and Director of the Eni Solar Frontiers Center at MIT. His group pioneered studies of the basic mechanisms of energy conversion in biology and chemistry with primary focus in recent years on the generation of solar fuels. Solar fuel reactions require the coupling of multielectron processes to protons, which are energetically uphill, thus requiring a light input. Nocera has pioneered each of these areas of science. Most examples of multielectron photoreactions have originated from his research group in the past decade. This work has relied on the generalization of the concept of two-electron mixed-valency in chemistry. He created the field of proton-coupled electron transfer (PCET) at a mechanistic level with the publication of the first ultrafast laser study of an electron transfer through a hydrogen bonded interface. With the frameworks of multielectron chemistry and PCET in place, he has recently accomplished a solar fuels process that captures many of the elements of photosynthesis outside of the leaf. This discovery of artificial photosynthesis sets the stage for a storage mechanism for the large scale, distributed, deployment of solar energy.



Dr. Nocera has won numerous awards including, most recently, the Elizabeth Wood Award in 2010 for his contributions to the development of renewable energy. He is a member of the American Academy of Arts and Sciences and the U.S. National Academy of Sciences. He was named as Times Magazine 100 Most Influential People in the World. He is a frequent guest on TV and radio, and is regularly featured in print. He sits on several advisory boards and is currently working with artists, actors, producers, and major business leaders to help them develop a position that contributes positively to the energy and sustainability challenge confronting this planet.

Other presentations of possible interest:
Feb 8, “The Chemistry of Solar” and
Feb 9, “Personalized Energy for the Non-Legacy World” —
4:00-5:00pm, 123 NSH

NAE



Milton Levenson
National Academy of Engineering

February 8
“The Science, Engineering, and Politics of Nuclear Reactor Safety”
10:00-11:00 a.m.
117 DeBartolo Hall

February 9
“The History of the Early Manhattan Project: A Participant’s Perspective”
2:30-3:30 p.m.
131 DeBartolo Hall

Milton Levenson was elected to the NAE in 1976 for “contributions to fast reactor technology, nuclear fuel reprocessing, and especially the first remote-handling completely closed fuel-cycle plant.” He has been involved in much of the history of nuclear science and engineering in the USA. He worked at Oak Ridge during the early Manhattan Project, led the technical team that re-



sponded to the Three Mile accident in 1979, and served on a special Soviet commission that investigated the Chernobyl accident. He held research and operations positions at Oak Ridge National Laboratory, Argonne National Laboratory, Electric Power Research Institute, and Bechtel, where he retired after being a vice president.

Levenson has served on more than 30 National Academy panels, including seven panels that he chaired. He has published more than 150 articles and holds three U.S. patents. He is Fellow and past president of the American Nuclear Society, Fellow of the American Institute of Chemical Engineers, and has been awarded the American Institute of Chemical Engineers' Robert E. Wilson award.



The University of Notre Dame Energy Center, the Sustainable Energy Initiative, and the Student Chapter of the American Chemical Society are pleased to present a series of educational programs devoted to the topic of

ENERGY



Richard L. Stanley
Vice President and General Manager
Engineering Division of GE Energy

February 14
“A New Age for Power Generation”
7:00—8:00 p.m.
101 Jordan Hall of Science

During the next 20 years, the world’s demand for electricity will double. The demand for clean water will triple. And the world will need to develop the equivalent of 6 new Saudi Arabia’s for oil and gas supplies. This presentation will explore GE’s unique perspective of the rapidly changing landscape for the Energy industry. A complete mix of power generation technologies will be discussed, including their potential benefits as well as challenges. The need for innovation and engineering capabilities has never been greater – we are at the dawn of a new age for power generation.

A graduate of The University of Notre Dame with a Bachelor’s degree in Mechanical Engineering, Rick joined GE Aircraft Engines in 1980. With GE, he pursued his Masters Degree in Aerospace Engineering from the University of Cincinnati and is a graduate of GE’s Advanced Engineering Program. He has held numerous assignments in aircraft engine turbomachinery blade, rotor, structures and combustion design and systems engineering. In 2003, he was elected a corporate officer of GE and promoted to Vice President and General Manager of the Aviation Engineering Division. In 2005, Rick was appointed Vice President and General Manager of the Engineering Division for GE Energy, with responsibilities for all engineering including research, development, technology, and product design activities spanning the GE Energy portfolio. Rick has been awarded 5 patents. He is an Associate Fellow of the AIAA, a member of the ASME, and the 2005 recipient of the Distinguished Alumni Engineering award from the University of Notre Dame.



Randy Ebright
Engineering Director
D. C. Cook Nuclear Plant

February 21
“Nuclear Energy: A Clean, Reliable and Safe Energy Option”
7:00-8:00 p.m.
101 Jordan Hall of Science

Randy F. Ebright is the Director of Engineering for American Electric Power’s Nuclear Generation. Mr. Ebright rejoined American Electric Power (AEP) in February of 2008. Mr. Ebright has management responsibilities for all engineering functions at the D.C. Cook Nuclear Power Plant including nuclear fuels, probabilistic risk analysis, design engineering, engineering systems, nuclear safety analysis, engineering programs and equipment/component reliability.

Mr. Ebright is a graduate of the U.S. Navy Nuclear Power Program and has worked for over 30 years in the nuclear industry as a Reactor Operator, Senior Reactor Operator, Training Instructor/Supervisor, and Engineering Supervisor/Manager. He has held both a Nuclear Regulatory Commission Reactor Operator License as well as a Senior Reactor Operator License. He has a Bachelor of Science Degree in Nuclear Engineering Technology from Thomas Edison State College and has completed the Strategic Leadership training program at The Fischer College of Business - Ohio State University.



Michael G. Morris
Chairman, President & CEO
American Electric Power

February 28
“The Future of Power Generation”
7:00-8:00 p.m.
101 Jordan Hall of Science

Michael G. Morris joined AEP as chairman, president and chief executive officer on January 1, 2004. He was chairman, president and CEO of Northeast Utilities System from 1997 to 2003, where he led the company during its \$1.3 billion sale of the Millstone Station nuclear plant in 2001, a \$679 million merger with Yankee Energy System Inc., and the acquisition of Connecticut Valley Electric Co. He was also heavily involved in the formation of ISO-New England. Before joining Northeast Utilities, Morris was president and CEO of Consumers Energy, principal subsidiary of CMS Energy, and president of CMS Marketing, Services and Trading. He was previously president of Colorado Interstate Gas Co. and executive vice president of marketing, transportation and gas supply for ANR Pipeline Co. Morris was the founder and president of ANR Gathering Co., one of the first gas marketing companies in the United States. Morris is chairman of the Columbus Downtown Development Corporation & Capitol South. He serves as a director of the boards of Alcoa, Battelle, Nuclear Electric Insurance Limited, and The Hartford Financial Services Group, Inc.

Morris graduated from Eastern Michigan University with both bachelors and masters degrees in biology. He received a law degree, cum laude, from the Detroit College of Law and is a member of the Michigan Bar Association. He is a past member of the Board of the Detroit College of Law.

