President of the University of Maryland, C. D. “Dan” Mote, Jr. earned three degrees in mechanical engineering at the University of California Berkeley, and spent 31 years on the faculty. In 1998, Dan Mote was appointed president of the University of Maryland and Glenn L. Martin Institute Professor of Engineering. In this capacity, he has made the University an integral part of the State of Maryland’s high-tech economy, especially in information, bioscience and biotechnology, energy, language, security, and nanotechnology. He has greatly expanded the University’s partnerships with federal laboratories and led the founding of a research park on 130 acres adjacent to the campus, the largest in Maryland and Greater Washington D.C. The new NOAA National Center for Weather and Climate Prediction will be located there. Dr. Mote is now leading a $1 billion capital campaign to build excellence and maintain affordable access to higher education.

President Mote is a member of the U.S. National Academy of Engineering, and received its Founder’s Award. He was elected to Honorary Membership in the American Society of Mechanical Engineers International, and received its International J. P. Den Hartog award in 2005. Dr. Mote is a Fellow of the American Academy of Arts and Sciences, the International Academy of Wood Science, the Acoustical Society of America, and the American Association for the Advancement of Science. He has also received the Humboldt Prize of the Federal Republic of Germany and served on the Woodruff School’s Advisory Board from 1984 to 1996.

Dan Mote’s research focuses on dynamic systems and biomechanics. Internationally recognized for work on the dynamics of high-speed rotating and translating materials and the biomechanics of snow skiing injuries, he has authored and co-authored more than 300 publications, holds patents in the U.S., Norway, Finland and Sweden, and has mentored 58 Ph.D. students.
Innovation is the use of a new idea to introduce a better way of doing something. Innovation refers to a change in thinking, products, ideas, processes, or organizations that leads to a better implementation. Successful implementation is fundamental to innovation. The scales of innovation implementation range from tiny to enormous depending on what is being done.

Innovation occupies our attention today because the solution of almost every major problem is thought to depend on innovation. How will we raise the quality of life for every citizen? The answer is through innovation. How will we increase the standard of living? How will we sustain a competitive national economy? How will we increase the safety of foods, increase productivity, develop alternative energy, combat global warming, ensure national security, fight poverty, reduce health care costs, fight pandemics, provide affordable education, reverse environmental degradation, and so on? The answer given is always through innovation.

While much is known about particular innovators and innovative companies, less is known about the culture that nurtures innovation and how that culture can be enlarged so that innovation can address the global problems relying on it. Two great challenges confronting innovation for the world’s problems are: (1) How can the pace of innovation be accelerated to keep up with the rate of discoveries in science, creations in technology and product development for the market place? (2) How can innovation take on the complex global challenges—problems like clean water, national security, terrorism, food security, energy, environmental degradation, and climate change?

Today we will discuss nurturing innovation in a connected world that is experiencing accelerating scientific and technological changes. We will review the history that has led to the state of innovation today. The global connectivity among individuals, organizations, and governments has expanded both the pace of innovative development and the scale of problems requiring innovative solutions. We will view innovation in societal layers that will help us see the changes that will be needed for innovation to effectively address the great global challenges.