# NATIONAL ACADEMY OF ENGINEERING REGIONAL MEETING

Government-University-Industry
Partnerships in Regional
Innovation and
Entrepreneurship

**APRIL 18, 2012** 



# Government-University-Industry Partnerships in Regional Innovation and Entrepreneurship

REGIONAL MEETING
UNIVERSITY OF MARYLAND
COLLEGE PARK

#### PROGRAM O O O

1:00 PM WELCOME

C. D. (Dan) Mote, Jr.

CHAIR, NAE REGIONAL MEETING

TREASURER, NATIONAL ACADEMY OF ENGINEERING; REGENTS PROFESSOR, UNIVERSITY OF MARYLAND

1:05 PM REMARKS

Charles Vest

PRESIDENT, NATIONAL ACADEMY OF ENGINEERING

1:15 PM INTRODUCTIONS

C. D. (Dan) Mote, Jr.

SESSION I "Government-University-Industry

Partnerships in Regional Innovation and Entrepreneurship: What Works

and What Doesn't?"

1:30 PM PLENARY SPEAKER

Kevin Plank

FOUNDER, PRESIDENT, CEO AND CHAIRMAN,

UNDER ARMOUR, INC.

1:55 PM PANEL DISCUSSION

Robert Fischell

CHAIRMAN, FISCHELL BIOMEDICAL AND CHAIRMAN,

ANGEL MEDICAL SYSTEMS

Patrick Gallagher

UNDER SECRETARY OF COMMERCE FOR STANDARDS AND TECHNOLOGY AND DIRECTOR, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Sudhakar Kesavan

CHAIRMAN AND CEO, ICF INTERNATIONAL

Thomas Scholl

GENERAL PARTNER, NOVAK BIDDLE VENTURE PARTNERS

Allan Will MODERATOR

PRESIDENT, CEO AND CHAIRMAN, EBR SYSTEMS, INC.

3:25 PM BREAK

SESSION II "Educating Next Generation

Innovators and Entrepreneurs: Expanding Beyond Business, Science and Engineering."

3:40 PM PLENARY SPEAKER

Philip Weilerstein

EXECUTIVE DIRECTOR, NATIONAL COLLEGIATE INVENTORS AND INNOVATORS ALLIANCE

4:05 PM PANEL DISCUSSION

David Baggett

FOUNDER AND PRESIDENT, ARCODE

Dean Chang MODERATOR

DIRECTOR, MTECH VENTURE PROGRAMS AND DIRECTOR, TECHNOLOGY ADVANCEMENT PROGRAM,

UNIVERSITY OF MARYLAND

James Green

DIRECTOR, ENTREPRENEURSHIP EDUCATION AND

HINMAN CEOS PROGRAM

SENIOR LECTURER AND ASSOCIATE DIRECTOR, MTECH,

UNIVERSITY OF MARYLAND

Thomas Miller

EXECUTIVE DIRECTOR, ENTREPRENEURSHIP INITIATIVE,

NORTH CAROLINA STATE UNIVERSITY

Holden Thorp

CHANCELLOR, UNIVERSITY OF NORTH CAROLINA AT

CHAPEL HILL

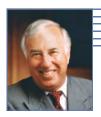
5:35 PM RECEPTION

### **SPEAKERS** O O O O O O O

#### C. D. (Dan) Mote, Jr.

REGENTS PROFESSOR AND GLENN L. MARTIN INSTITUTE
PROFESSOR OF ENGINEERING, UNIVERSITY OF MARYLAND

Dan Mote is past President, at the University of Maryland. He serves as an officer of the National Academy of Engineering, on the National Research Council Governing Board and on NRC committees concerned with issues of innovation and national competitiveness in engineering and science. He served on the 2005 Rising Above the Gathering Storm committee. He chaired the Committee on Global Science and Technology Strategies and Their Effect on U. S. National Security that authored the



report S&T Strategies of Six Countries. At the University, Mote has emphasized global engagement through research and joint programs, education and exchanges, entrepreneurial programs and competitiveness, and services to, and partnerships with governments globally. He was at the University of California, Berkeley for more than 30 years where he received his undergraduate and graduate degrees.

#### **Charles Vest**

PRESIDENT, NATIONAL ACADEMY OF ENGINEERING

Charles Vest is the President of the National Academy of Engineering. He served as MIT's president from 1990 through 2004. He earned a B.S. degree in mechanical engineering from West Virginia University in 1963. He received his M.S. and Ph.D. degrees in 1964 and 1967, respectively, from the University of Michigan, where he later held the positions of dean of engineering, provost and vice president for academic affairs. He is the recipient of 17 honorary doctoral degrees and received



the 2006 National Medal of Technology. In 2011, he received the Vannevar Bush Award from the National Science Board. He served on the President's Committee of Advisors on Science and Technology (PCAST) during the Clinton and Bush administrations. Selected as a member of the bipartisan Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, which completed its report in 2005, he brought a strong science and engineering background to the analysis. He led a U.S. Department of Energy task force on the future of science programs in 2002-2003 and chaired a presidential advisory committee on the redesign of the International Space Station in 1992-1994. He was vice chair of the Council on Competitiveness for eight years, is a former chair of the Association of American Universities, and served on the U.S. Secretary of Education's Commission on the Future of Higher Education and the Secretary of State's Advisory Committee on Transformational Diplomacy.

Kevin Plank
FOUNDER AND CEO, UNDER ARMOUR



As special teams captain for the University of Maryland football team in the summer of 1995, Kevin Plank had the idea for a T-shirt that wicked sweat and kept athletes cool, dry, and light. He had become frustrated by having to change his sweat-soaked cotton T-shirt over and over again, and the idea hit him: "There has to be something better." Upon graduating from Maryland in 1996 with a bachelor's degree in business administration, he began the business of making that idea a reality and changing the way athletes

dress. He went on a mission to find the perfect fabric-performance synthetics-and the perfect fit-compression-and ultimately launched Under Armour in 1996 as the performance alternative to old athletic apparel. It all started in the basement of his grandmother's townhouse in Georgetown. His new business headquarters was literally underground, forcing him to hit the road to spread the Under Armour gospel. With his new shirts in the back of his beat-up Ford Explorer, Plank proceeded to phone every equipment manager in the Atlantic Coast Conference and reached out to his former football teammates, giving them samples and asking them to spread the word about his innovative product. After 15 years of imploring athletes to "Protect this House," Plank oversees a company with nearly 5,000 employees. Under Armour athletic performance apparel, footwear, and accessories are sold worldwide and worn by athletes at all levels—from youth to professional—on playing fields around the globe. He was most recently ranked #3 on Forbes' "Most Powerful CEOs 40 And Under" and #12 on Fortune Magazine's prestigious "40 Under 40" list, which accounts for influence, power and future potential.

## Robert Fischell PROFESSOR OF THE PRACTICE AND CHAIRMAN, FISCHELL BIOMEDICAL



Scientist and engineer Robert Fischell has had two pioneering careers: his current one inventing life-saving medical devices, and a former one helping create the modern era of space satellites so critical to communications, entertainment, business and national security. He holds more than 200 patents and is the father of modern medical stents, lifetime pacemaker batteries and implantable insulin pumps. He received his B.S. in mechanical engineering from Duke University in 1951, and an M.S. in

physics from the University of Maryland in 1953. He was awarded an honorary doctoral degree from the University of Maryland in 1996. He is a member of the National Academy of Engineering and has received numerous awards and recognitions including induction into the Space Technology Hall of Fame and the A. James Clark Innovation Hall of Fame. In 2006, the Fischell Department of Bioengineering was named after him. He serves on the Clark School Board of Visitors and the University of Maryland, College Park Foundation Board of Trustees.

#### **Patrick Gallagher**

DIRECTOR, NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Patrick Gallagher was confirmed as the 14th Director of the U.S. Department of Commerce's National Institute of Standards and Technology (NIST) on Nov. 5, 2009. He also serves as Under Secretary of Commerce for Standards and Technology, a new position created in the America COMPETES Reauthorization Act of 2010. He provides high-level oversight and direction for NIST. The agency promotes U.S. innovation and industrial competitiveness by advancing measurement science,



standards, and technology. He received his Ph.D. in Physics at the University of Pittsburgh in 1991. His research interests include neutron and X-ray instrumentation and studies of soft condensed matter systems such as liquids, polymers, and gels. He has been active in the area of U.S. policy for scientific user facilities and was chair of the Interagency Working Group on neutron and light source facilities under the Office of Science and Technology Policy. Currently, he serves as co-chair of the Standards Subcommittee under the White House National Science and Technology Council.

#### Sudhakar Kesavan

CHAIRMAN AND CEO, ICF INTERNATIONAL

Sudhakar Kesavan serves as the Chairman and Chief Executive Officer of ICF International. In 1997, he was named President of the ICF Consulting Group when it was a subsidiary of ICF Kaiser. His leadership in global environmental issues helped ICF International to become the first professional services firm in the world to go carbon neutral and to achieve recognition by the United Nations as one of the first firms to participate in the Climate Neutral Network. He is a Board Member



Emeritus of the Rainforest Alliance, a New York based nonprofit environmental organization committed to protecting ecosystems by transforming land-use practices, business practices, and consumer behavior. He is also vice chairman of the Northern Virginia Technology Council (NVTC), the largest technology council in the United States. In addition, he is an active supporter of IIMPACT, a nonprofit focused on primary education for girls from economically- and socially-underprivileged rural areas of India. He was named a "Tech Titan" and "industry leader" by *Washingtonian* magazine in 2011. He received his M.S. from the Technology and Policy Program at the Massachusetts Institute of Technology, his postgraduate diploma in Management from the Indian Institute of Management, Ahmedabad, and his Bachelor of Technology degree (chemical engineering) from the Indian Institute of Technology, Kanpur.

Thomas Scholl
GENERAL PARTNER, NOVAK BIDDLE VENTURE PARTNERS



Tom Scholl has been active in the high-tech start-up scene in the Washington metro area for years. He founded Telogy Networks, award-winning products with world-class customers such as Cisco, Motorola, Samsung, Nortel, Alcatel and NEC. He was Cofounder and Chairman of Cognio, Director of Torrent Networking, and Senior Vice President of Engineering at Hughes Network Systems. He is a recipient of the Venture Capital Award "Friend of the Entrepreneur" by the *Washington Business Journal* and

recognized as the Joseph A. Sciulli "Entrepreneur of the Year" by the Maryland High Technology Council. He is a Trustee of the University of Maryland College Park Foundation and Chairman of the Board of Visitors of the A. James Clark School of Engineering. He graduated from Purdue University and is a recipient of Purdue's Distinguished Alumnus Award in 2009.

Allan Will
CHAIRMAN, PRESIDENT & CEO EBR SYSTEMS,
CHAIRMAN, SETPOINT MEDICAL, AND FOUNDER, THE FOUNDRY



Allan Will is an operating executive with extensive experience founding, funding, operating, and selling medical device companies. He currently serves as Chairman, President and CEO of EBR Systems and Chairman of Setpoint Medical. He was the Founder, Chairman and CEO of The Foundry, an incubator dedicated to transforming medical device concepts into companies where he co-founded 11 companies including among others Ardian, Evalve and Concentric Medical. He is an inventor on

over 20 issued patents. He earned his M.S. in management at the Massachusetts Institute of Technology in 1981 and his B.S. in zoology from the University of Maryland in 1976. He currently serves as a member of the MIT Entrepreneurship Center Shareholders Board and on the University of Maryland's President's Committee on Innovation and Entrepreneurship. In 2008 he received the Astia/Deloitte Leadership in Mentoring Award for mentoring women executives.

#### **Philip Weilerstein**

EXECUTIVE DIRECTOR, NATIONAL COLLEGIATE INVENTORS AND INNOVATORS ALLIANCE

As an entrepreneur in a not-for-profit organization, Phil has grown the NCIIA from its founding as a grassroots group of enthusiastic university faculty to an internationally known and in-demand knowledge base and resource center that supports and promotes technology innovation and entrepreneurship to create experiential learning opportunities for students, and successful, socially beneficial businesses. NCIIA does this by providing a linked sequence of programs that move faculty and student



entrepreneurs from innovative ideas to launching start-up companies. He began his career as an entrepreneur as a student at the University of Massachusetts. He and a team including his advisor launched a start-up biotech company. This experience, coupled with a lifelong passion for entrepreneurship, led to his work with the National Collegiate Inventors and Innovators Alliance. He is a founder of the Entrepreneurship Division of the American Society of Engineering Education and is a recipient of the 2008 Price Foundation Innovative Entrepreneurship Educators Award.

#### **David Baggett**

FOUNDER & PRESIDENT, ARCODE

Dave Baggett has been writing and commercializing software since childhood, focusing on solving difficult, practical problems with software. He is the founder of Arcode, co-founded ITA Software, and co-created and co-developed Crash Bandicoot for Sony Playstation. He received an S.M. in computer science from the Massachusetts Institute of Technology and B.S./B.A. from the University of Maryland, College Park in computer science and linguistics. He received the University of Maryland, College



of Arts and Humanities, Distinguished Alumnus Award in 2009, and is a member of the University of Maryland, College Park Foundation, Board of Trustees. He is also a Board Member of Boston Microfluidics and SafeOperations.

Dean Chang
DIRECTOR, MTECH VENTURE PROGRAMS AND
DIRECTOR, TECHNOLOGY ADVANCEMENT PROGRAM



Dean Chang oversees all of Mtech's award-winning and nationally acclaimed venture creation programs at the University of Maryland, including the TAP incubator, the VentureAccelerator program, the UM Technology Startup Boot Camp, the UM \$75K Business Plan Competition, Entrepreneur Office Hours, Faculty Venture Fairs, and other related offerings at the University. A strong advocate of preparing students to compete in the 21st century by weaving technology, business, and entrepreneurship

together, he teaches technology entrepreneurship courses to UM students as well as to top high school students and was a co-founding director of UM's Executive Education Certificate in Innovation Management program. He holds over 30 U.S. and international patents in the field of haptics. He was a member of Pi Tau Sigma at the Massachusetts Institute of Technology where he earned a B.S. in mechanical engineering prior to earning both an M.S. and Ph.D. in mechanical engineering at Stanford University. He also holds an MBA with honors, and received the highest distinction of Palmer Scholar from the Wharton School of the University of Pennsylvania.

#### James V. Green

DIRECTOR, ENTREPRENEURSHIP EDUCATION AND HINMAN CEOS PROGRAM, AND SENIOR LECTURER AND ASSOCIATE DIRECTOR, MTECH



James V. Green leads the education activities of Mtech as the Director of Entrepreneurship Education with responsibilities for the Hinman CEOs Program, the Hillman Entrepreneurs Program, and the Entrepreneurship and Innovation Program. As a Senior Lecturer and Associate Director of Mtech, he designs and teaches undergraduate and graduate courses in entrepreneurship and technology commercialization. He is Co-Director of the Certificate in Innovation Management Program for executives

and leads Mtech's international entrepreneurship education initiatives that include establishing and managing partnerships with the Petroleum Institute in Abu Dhabi, UAE. He earned a Doctor of Management and an M.S. in Technology Management from the University of Maryland University College, an MBA from the University of Michigan, and a B.S. in Industrial Engineering from the Georgia Institute of Technology.

#### **Thomas Miller**

EXECUTIVE DIRECTOR, ENTREPRENEURSHIP INITIATIVE

Tom Miller is the executive director of the Entrepreneurship Initiative at North Carolina State University and leads its mission to empower students to become entrepreneurial leaders. He initiated the Engineering Entrepreneurs Program in 1992 and remains active in setting its academic goals and developing partnerships. Tom is also vice-provost for Distance Education and Learning Technology Applications (DELTA). He is a professor in the Department of Electrical and Computer Engineering, a



member of the Academy of Outstanding Teachers at NC State, a recipient of the Joseph M. Biedenbach Outstanding Engineering Educator award from IEEE, and a *News and Observer* "Tarheel of the Week." He earned his Ph.D. at the University of North Carolina at Chapel Hill.

#### **Holden Thorp**

CHANCELLOR, THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Holden Thorp is the University's 10th chancellor. A UNC graduate, Thorp has rapidly progressed through several leadership posts since joining the faculty in 1993. A native of Fayetteville, N.C., he is a Kenan Professor of Chemistry and an award-winning teacher and researcher. He is a member of the National Advisory Council on Innovation and Entrepreneurship and co-author of "Engines of Innovation—The Entrepreneurial University in the 21st Century," a UNC Press book that makes the case for the



pivotal role of research universities as agents of societal change. Royalties support innovation at UNC. Thorp has published 130 scholarly articles on the electronic properties of DNA and RNA and invented technology for electronic DNA chips.