Media Relations

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UNH Joins U.S. Engineering Schools in Transforming Engineering Education

DURHAM, N.H. - The University of New Hampshire's College of Engineering and Physical Sciences (CEPS) is among more than 120 U.S. engineering schools leading a transformative movement in engineering education announced at the White House today.

In the letter signed by CEPS Dean Samuel Mukasa and presented to President Barack Obama, UNH and peer institutions committed to establish special educational programs designed to prepare undergraduates to solve "Grand Challenges"—complex yet achievable goals to improve national and international health, security, sustainability and quality of life in the 21st century.

"We are delighted to be part of the initiative to address the engineering grand challenges facing humanity," says Mukasa. "UNH has world-class expertise among the faculty to take on several of these challenges."

Each of the 122 signing schools has pledged to graduate a minimum of 20 students per year who have been specially prepared to lead the way in solving such large-scale problems, with the goal of training more than 20,000 formally recognized "Grand Challenge Engineers" over the next decade.

Mukasa notes that the university is already tackling many of the 14 challenges identified by the U.S. National Academy of Engineering in 2008. These efforts include designing new materials to make solar energy conversion more efficient and affordable, providing water resources management skills for sustainable agriculture, building sustainable urban and rural infrastructure, innovating delivery of new drug therapies and helping to secure cyberspace.

"We have a number of colleagues who have invented analytical equipment that is going to help humanity and is vital to homeland security," Mukasa says. "The equipment can monitor chemical changes in the atmosphere caused by industrial and other human-caused activities, and detectors can discover gamma-ray emitting radioactive materials hidden in ocean-going shipping containers for sinister purposes."

Grand Challenge Engineers will be trained through special programs at each institution that integrate five educational elements: a hands-on research or design project connected to the Grand Challenges; real-world, interdisciplinary experiential learning with clients and mentors; entrepreneurship and innovation experience; global and cross-cultural perspectives; and service-learning. For details about the initiative visit www.nae.edu.

The College of Engineering and Physical Sciences offers an array of bachelor's, master's and doctoral degrees in engineering, mathematics, computer science, chemistry, Earth science and physics as well

as interdisciplinary programs in materials science, environmental engineering and ocean engineering.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,300 undergraduate and 2,200 graduate students.

Photograph available to download: http://www.unh.edu/news/releases/2015/03/images/mukasa-portrait--7007.jpg
Caption: Sam Mukasa, dean of UNH College of Engineering and Physical Sciences.
Credit: University of New Hampshire

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