Leading the Way

CEPS researchers excited about NH BioMade grant

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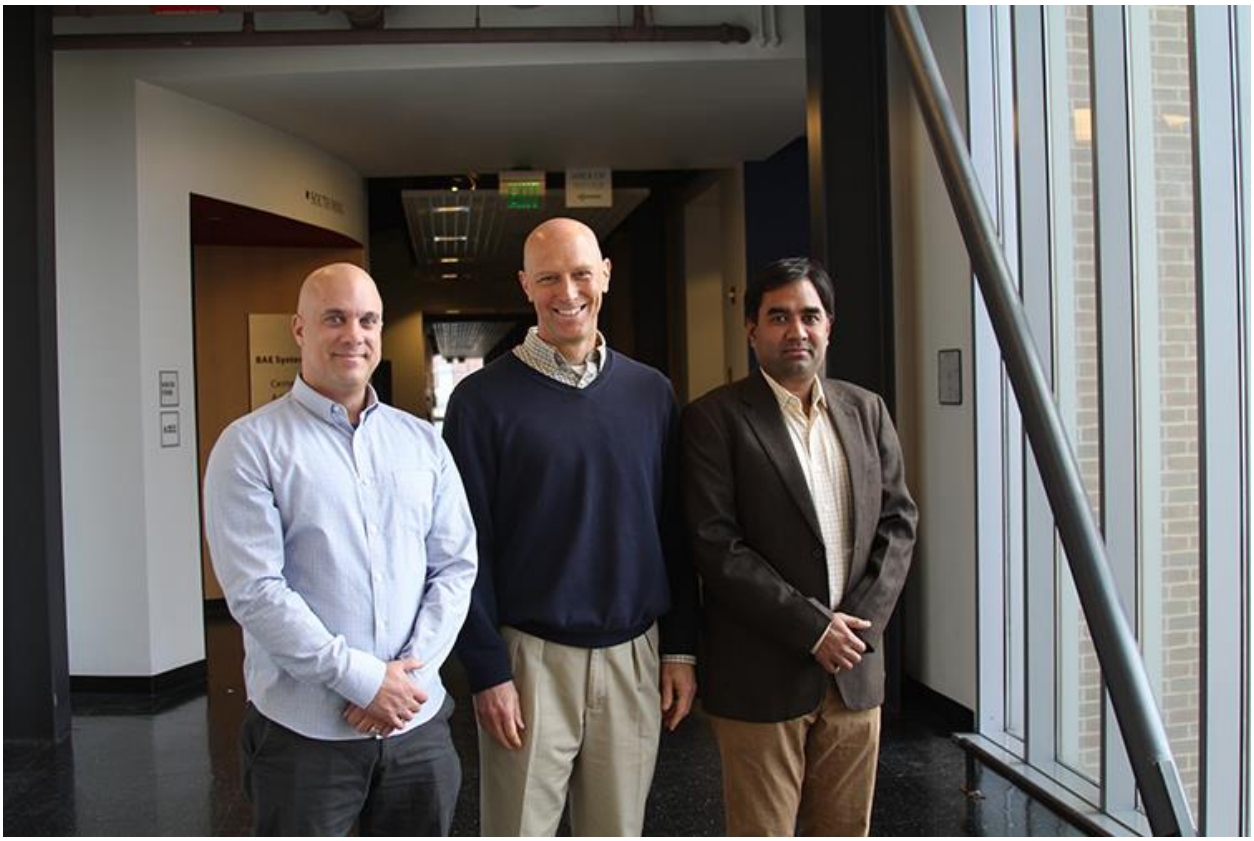

PROFESSORS JOHN TSAVALAS, BRAD KINSEY AND HARISH VASHISTH (L-R) ARE LEADING THE WAY ON THE NH BIOMADE EFFORT AIMED AT ADVANCING BIOMATERIALS. KINSEY IS THE PRINCIPAL INVESTIGATOR OF THE PROJECT, WHILE TSAVALAS AND VASHISTH ARE THE TWO CO-PRINCIPAL INVESTIGATORS OF THE PROJECT FROM UNH.

Faculty members from the College of Engineering and Physical Sciences (CEPS) are leading a statewide research effort to advance biomaterials with the potential to save patient lives and improve overall quality of life as part of the five-year, $20 million NH BioMade grant.

The effort, officially titled the New Hampshire Center for Multiscale Modeling and Manufacturing of Biomaterials, is an EPSCoR research infrastructure improvement (RII) project funded by the National Science Foundation.

“As the lead institution on the project, UNH of course has a critical role in the success of the effort,” says Brad Kinsey, who is the principal investigator for the NH BioMade project. Kinsey is also a professor of mechanical engineering and materials science and interim director of the John Olson Advanced Manufacturing Center.

A key component to the project will be engaging industrial partners and other stakeholders. NH BioMade has research, education/workforce development and industrial engagement components. Kinsey is also enthusiastic about the opportunities it will bring to UNH.

“This RII award will lead to long-term benefits for faculty and students with respect to building research and educational capacity at UNH and across the state,” he says, “as well as through subsequent funding opportunities.”

Kinsey is the lead on the research thrust sheet metal for trauma fixation, one of the project’s four research thrust areas, which also include sheet metal for composites for orthopedic bearings, scaffolds for tissue regeneration and porous, conductive structures for biosensor applications.

NH BioMade also features two additional CEPS co-principal investigators: John Tsavalas, associate professor of chemistry and materials science, and Harish Vashisth, assistant professor of chemical engineering.

The thrusts are led by researchers from UNH and Dartmouth, including nine researchers from CEPS. Nearly two dozen UNH faculty and staff members are contributing to NH BioMade.

“This award is an excellent way to formalize relationships, leverage experience and open doors to new opportunities in the future,” says Tsavalas, who is the lead for the scaffolds for tissue regeneration research thrust and also supports the porous, conductive structures for biosensor applications effort.

In addition to the award’s scope being multi-institutional and multidisciplinary, Tsavalas notes it addresses scientific and engineering challenges across a wide range of scales — six orders of magnitude — from atomistic to tangible product dimensions.

“NH Biomade is truly a synergistic effort toward high-impact goals that otherwise would be unlikely to be achieved by smaller teams,” says Tsavalas. “We are quite enthusiastic about this opportunity and optimistic for our success.”

Vashisth, who leads NH BioMade’s user facility on high-performance computing, says the project has already made a positive impact in research infrastructure improvements and the recruitment of doctorate students and postdoctoral scholars to carry out research on the project. Vashisth is also a lead on the scaffolds for tissue regeneration research thrust.

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