Seungik Baek Receives NSF CAREER Award

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Seungik Baek, assistant professor in the Department of Mechanical Engineering at Michigan State University, has received a National Science Foundation (NSF) CAREER Award.

Funding from this five-year, $400,000 grant, which begins February 1, 2012, will support Baek's work in cardiovascular mechanics and characterization of biomaterials.

Vascular disease is the primary cause of death in the United States and western countries. Providing new technologies that could precisely estimate the stage of the disease and reliably predict the outcomes of clinical treatment could have a significant impact on medical care, social welfare, and economics.

The goals of this research project are to develop computational methods that integrate vascular disease models, prior knowledge, and patient-specific observations to predict vascular growth and remodeling for the individual patient; and to demonstrate the utility of the proposed approach in clinical management of abdominal aortic aneurysms. Long term, this could promote new collaborations between biomedical engineers and physicians by providing a systematic tool that could be integrated with their expertise.

The project's education plan focuses on outreach to students, the general public, and underrepresented groups. An interdisciplinary summer program will offer a diverse environment for high school, undergraduate, and graduate students, as well as high school teachers, to team up and create innovative ideas for biomedical research, public outreach, and K-12 curricula.

Baek received his PhD in mechanical engineering in 2003 from Texas A&M University, where he remained to conduct postdoctoral research in the Department of Biomedical Engineering until coming to MSU in 2006.

The Faculty Early Career Development (CAREER) Award is among the NSF's most prestigious honors, recognizing young faculty members who are effectively integrating research and teaching. Within the past three years, ten MSU College of Engineering faculty members have been named NSF CAREER Award winners.

View Baek's NSF award abstract

Learn more about Baek's work in MSU's Cardiovascular and Tissue Mechanics Research Laboratory.

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