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QuickTakes!

TCNJ Opens New State-of-the-Art STEM Building, Chemistry Addition, and Forum

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New Jersey Governor Chris Christie, Ewing Mayor Bert Steinmann, and TCNJ President R. Barbara Gitenstein and Mercer County Executive Brian Hughes took part in a ribbon cutting ceremony on Thursday, October 12, 2017, to officially open the college's new, state-of-the-art STEM building, Chemistry addition, and Forum.

The cost of the project, which broke ground in July 2015, was $76,211,000 including $40 million provided through the Building Our Future Bond. An additional $1.075 million in funding came from the New Jersey Higher Education Technology Infrastructure Fund. The college funded the balance through a variety of sources, including philanthropy.

"This is an investment that is paying off," said New Jersey Senate President Stephen M. Sweeney, who authored the Building Our Future Bond Act. "This project – like others around the state – generated immediate benefits from the jobs associated with its planning and construction and will provide significant, long-term benefits through education, research, and development. The 2012 bond act was New jersey's first investment in higher education in a quarter century, and will pay dividends for generations to come for Garden State students, colleges and universities, and for New Jersey's growth and prosperity. We need to continue to invest in our future by providing resources today."

"These facilities are helping us prepare a new generation of graduates for the demands of the STEM economy," Gitenstein said. "They have enabled us to expand programmatic growth for the institution, support the job development needs of the state, and boost our capacity to prepare the undergraduates who are part of the state's critically important health science pipeline."

The 89,000-square-foot STEM Building is the heart of the project. It houses the Department of Biomedical Engineering, Department of Computer Science, and the Department of Mechanical Engineering. It also contains state-of-the-art laboratories and prototyping facilities including:

- *The Biomedical Engineering Research Suite* allows for advanced design and analysis in microscopy, psychological data acquisition and modeling, tissue and biomaterial mechanics and characterization, neural engineering, tissue engineering and cardiovascular fluid mechanics. The research facilities include the first research facilities on campus designed for work with human derived tissues and cells.

- *The Computer Science Faculty-Student Collaborative Research Suite* accommodates a wide array of research areas including computer networking and security, artificial intelligence, machine learning, grid computing and computational journalism, and human-computer interaction.

- *The Robotics Laboratory* will be used for design, research, and studies that span across both software and hardware design.

- *The High-Performance Scientific Computing Center* strings together approximately 200 servers, and provides a platform for the intensive computing needs of student and faculty and researchers, including big data, high-performance computing (HPC), graphic processing unit (GPU)-based calculations and modeling, and virtualization.

- *The Mechanical Engineering Design Studio* enables students to fully develop their complex designs from concept through validation. Specialized spaces for prototyping, systems validation, material testing, and other advanced testing support both student and faculty research and design efforts.

- Additional spaces include a Computer Science Student "Workshop" Lab, Thermo-Fluids Lab, a Solid Mechanics and Vibration/System Dynamics Lab, a Metal Fabrications and Assembly Workshop, a Physiology Lab, and many *informed learning spaces*, including student commons, open study rooms, and closed study rooms.

The 26,300-square-foot Chemistry Addition houses:

- *The Multidisciplinary Super Laboratory Suite* that includes synthetic, multipurpose, instrumentation, dry and prep labs. This combination will allow for seamless transition between computational, experimental, and analytical activities.

- The *Organic Chemistry Laboratory Suite*, including two interconnected laboratories, and a unified prep lab, provides state-of-the-art pedagogical space and instrumentation for core and advanced chemistry courses.

TCNJ's Chemistry Department is in the top 4 percent in the U.S. and first in New Jersey in graduation of American Chemical Society-certified bachelor's degree chemistry graduates.

The glass-enclosed Forum connects the new STEM Building with the existing Biology Building, creating a unified interdisciplinary STEM Complex. A flexible two-story student commons with café, tables and soft seating, will function as a campus-wide "living room," allowing for cross disciplinary interaction in a casual, creative setting.