

Grants

Bay Path Paragus (\$94,500) - STCC students work with peers at Bay Path University and Paragus IT and other local companies learning skills necessary for IT careers.

NSF Discovery Research (\$1,108,984) - **Beth McGinnis-Cavanaugh** and **Sonia Ellis** are working to design curriculum for educator professional development, and implement in partnership with Springfield Public Schools. **Isabel Huff** is the Outreach Coordinator to SPS. Website Developer Tunnel 7 will serve as consultant (\$120,000 over 4 years). Small amount of funds for travel/supplies each year.

NSF ATE (\$599,388) - **Gary Mullett (PI)** and **Ed Bigos (Co-PI)** on NSF grant designed to improve STEM undergraduate education focusing on computers, electronics, and networking technology. Funds allocated each year for consultants, participant support, travel to conferences, supplies, and UMass sub-award for Dr. Aura Ganz.

NSF APMPBL (\$551,202) - **Nick Massa (PI)** and **Gary Mullett (Co-PI)** on NSF grant creating workshops/curriculum. Additional part time staff responsible for conduct outreach to schools, give tours of lab, and handle daily project tasks. Funds allocated each year for travel to conferences, consultants, supplies, and sub-award to the New England Board of Higher Education.

STEM Starter Academy (\$265,000) - STCC professor **Reena Randhir** serves as the coordinator for the STEM Starter Academy, which runs during the summer. The grant covers the cost of the classes, and also pays stipends to the students upon completion of the program. Funds are allocated each year for supplies for on campus events, bus transportation to events, and program evaluation.

NSF STEM Scholars (\$634,889) - STCC professors **Brian Candido** and **Sharon Sheng** are Co-PI's on the NSF STEM Scholars grant, which provides tuition scholarships to students in STEM field. Additional funds are available for supplies and travel to local STEM companies.

Skills Capital Grant (\$500,000) - the funding allows STCC to acquire new medical patient simulation training equipment, which allows a larger number of students to enroll in the health science program and new robotic arms for the electrical engineering technology program, which will provide

hands-on experience on equipment students will encounter in advanced manufacturing facilities.

HSI:STEM (\$3,378,480) - Hispanic and Low Income Transformed Education in STEM (HiLITES). **Dean Barbara Washburn** serves as Director, working with **Dr. Felicia Griffin-Fennell**, Activities Director, are working to increase the percent of Hispanic and low-income students entering, progressing, completing and transferring in STEM disciplines.

HSI STEM Update

Since October 2016, STCC has been engaged in numerous activities through its federal HSI STEM grant, whose goal is to increase the number of Hispanic and low-income students who enter, progress, complete, and transfer in STEM disciplines. This has led to a number of projects around campus that have focused on youth exposure to educational and employment opportunities, as well as faculty professional development and course redesign for student academic success. Continuing in the pursuit of increased access and academic success for students, STCC will open the doors of the new STEM Center in fall 2019.

Summer of STEM

STCC relaunched the **College For Kids** program, a summer program that exposes participants between 11 and 17 to learning opportunities available in science, technology, engineering and math (STEM) fields. Additional programs focus on arts and sports.

HSI:STEM grant held a Matheneers program over the summer and the **SSA grant held a summer bridge-construction program.**

STEM Center

Similar to other college campuses across the country, STCC is investing in the success of its students in STEM courses through the launch of a dedicated space on campus to support STEM related offerings. Located in the former Testing and Assessment Center in building 17, room 425, the STEM Center serves students, faculty, and staff through its activities and resources. Students can use computers stocked with software packages that support STEM classes in the computer lab. There is a student lounge where students can work together in groups or with a tutor to review course material. Faculty members can also meet their students in the student lounge for one-on-one or group meetings. The multipurpose room, outfitted with a wall-mounted, touchscreen panel, can be used for faculty lectures, talks by invited speakers,

documentary screenings and discussions, or even student club or faculty meetings. For students, faculty, and staff, STEM Center supported in-house professional development opportunities will be offered throughout the year.

New Degree and Certificate Programs - Fall 2019

Internet of Things Certificate of Completion in Computer Systems Engineering Technology department. The Internet of Things (IoT) is a blend of electronic sensors or actuators, networks of small energy efficient computers, and the data centers used to collect the data from the IoT nodes or control the devices. IoT requires skills from engineering, electronics, security, and information technology. While these disciplines are typically separate and distinct, this certificate bridges the knowledge and skills necessary to create and administer secure Internet of Things systems.

Building Automation option to the AS in Energy Systems Technology. Building automation refers to the automatic centralized control of a building's heating, ventilation and air conditioning (HVAC), lighting and other systems through a building management system or building automation system. The objectives of building automation are improved occupant comfort, efficient operation of building systems, reduction in energy consumption and operating costs, and improved life cycle of utilities.

STCC's Growing OER Initiative

Thanks to grant funding and increased awareness, the use of open educational resources (OER) at STCC has expanded greatly over the last year. In 2018, the library received funds from the **National Network of Libraries of Medicine - New England Region (NNLM-NER) as well as Title III/HSI-STEM**, which were used to pay stipends to STCC faculty who redesigned their courses using free/ open materials. Stipends were awarded to 14 different faculty for 18 courses, resulting in a combined student textbook savings of over \$90,000. These projects bring the total number of free- textbook courses at STCC to 43, for a total annual savings of approximately \$317,742.

The NNLM-NER grant has been renewed for the current academic year and the funds will be used for a faculty fellowship program. Twelve STCC faculty will be selected to participate in this year-long professional development opportunity where they will learn about finding and using OER. They will also receive guidance as they redesign a course to use free/ open materials. The program will result in twelve new OER courses and the faculty fellows will also become excellent resources for other faculty who are

interested in OER. OER helps our students by reducing the cost of their education. The money students save can be used for other expenses like transportation, childcare, or taking more courses. Research shows that reducing or eliminating textbook costs has a positive impact on student retention and reduces drops, fails, and withdrawals. The effects are even greater for students who receive Pell grants and students from underserved populations.

Workforce Development Center

The new **Asphalt Academy** is possible through the providing of a mobile laboratory from the Massachusetts Aggregate and Pavement Association (MAAPA). Taking the lead on securing equipment for STCC was **Janet Callahan of Palmer Paving** who worked with MAAPA to steer this project. The lab was delivered in July, fitted out in August and offerings will begin in the fall.

STCC received \$30k from the Springfield Water and Sewer Commission to fund the development and offering of an online course. WDC then worked with the Massachusetts Water Works Association (MWWA) to convert its Concepts and Practices of **Drinking Water Treatment** course from a classroom based format to online. The course will be free to matriculated Massachusetts community college students from the participating workforce development units. The course will prepare students for the State Board of Certification exam thereby providing career opportunities for students seeking to enter the water utility industry. The first offering began September 9.

STCC helps shelter residents train for **assembler careers with CRRC**. The curriculum aligns with the job descriptions for mechanical and electrical assemblers, entry-level positions at CRRC, with is building new subway cars for the MBTA's Orange Line in Boston. Students learn how to connect wires and complete circuits, as well as read basic blueprints and engineering drawings, among other tasks that will give them the skills needed to get hired and assemble subway cars.

STCC Students intern at MIT Lincoln Lab

Two Springfield Technical Community College students served as summer interns at MIT Lincoln Laboratory, a U.S. Department of Defense research and development center in Lexington, MA. The Lincoln Lab selected **Douglas Bednarczyk, of West Springfield,** and **Shane Richardson, of Hebron, CT,** students from the Optics and Photonics Technology program at STCC.

STCC and Westfield State University develop Biotechnology degree pathway

The transfer agreement benefits students by providing an affordable option to enroll at STCC for two years and take high-level science courses that can be applied at Westfield State. With the agreement in place, students will have accurate and clear information regarding the transfer of their course work and credits.

STCC and Elms College develop accelerated IT degree pathways

The bachelor degree programs in Computer Science and Computer Information Technology and Security are completely online and accelerated, which means students can earn their degree in 14 months after obtaining an associate degree from STCC.

Carnegie Mellon graduate enrolls at STCC

Robin Song, earned her bachelor's degree, but "wanted a class that would teach beyond the basics. I thought STCC's class provided the most challenge and variety" She realized that a better understanding of machining processes and tools would help her design parts that were easier and thus cheaper to manufacture.

Community College Undergraduate Research Initiative (CCURI)

STCC students **Adam Lesieur** and **Altavise Chinn** said they were thrilled to get the opportunity to attend the annual meeting of the Community College Undergraduate Research Initiative (CCURI) in Glendale, AZ. Lesieur presented research on the impact of dams on watershed ecosystems. Chinn presented on emerging environmental contaminants and public health.

Women's engineering conference energizes STCC students

Keiry Marquez, Victoria Vredenburg, Maeliz Colon and **Aleah Pannell** attended the annual Society of Women Engineers conference in Minneapolis, where they networked with women engineers, spoke to recruiters, and learned how to position themselves for success in interviews and on internship applications.

STCC grad oversees construction of nuclear submarine

Tanner Glantz watched with pride as the \$2.7 billion nuclear-powered attack submarine, the future USS Vermont, was christened. As the ship's manager, Glantz is responsible for overseeing the construction of the vessel which one day will be packed with torpedoes and missiles and will carry out a variety of missions around the world. He works at General Dynamics Electric Boat in Groton, Conn. after earning a Laser Electro Optics Technology degree at STCC.

STCC grad transfers to UPenn

Michael Caine's decision not only was affordable and practical, but it helped pave the way to a top architecture program. Today, he is pursuing a master of architecture professional degree from the University of Pennsylvania School of Design – ranked as the seventh best architecture graduate program in the country.