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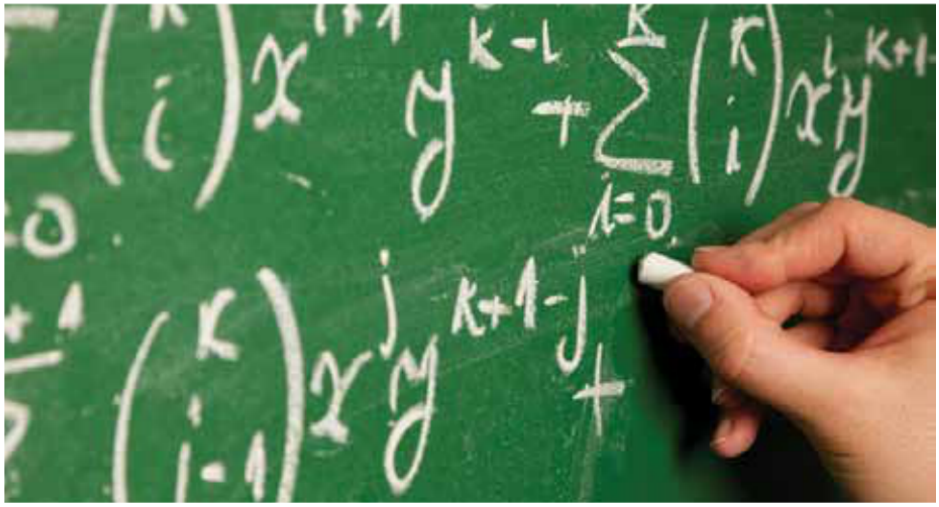

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A Glimpse Into a

State Technical College System's POS Pathways

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BY STEPHANIE D. FRAZIER AND N. MARIA SWYGERT

To the average eyes, a whiteboard full of Xs, Ys, and square root signs might stir memories, pleasant or unpleasant, of past experiences with "algebra." However, for Ken and Quintin Anderson, these letters and symbols represent the promise of a successful future. Friday mornings find them both studying nuclear math on the second floor of the Engineering building at Midlands Technical College (MTC), one of sixteen public two-year colleges that comprise the South Carolina Technical College System (SCTCS). The father and son pair is enrolled in the college's Nuclear Systems Technology program. Ken, the father, worked in the banking industry for several years and found himself out of a job when the economy took a turn for the worse. His brother, already working in the nuclear field at a local facility, encouraged him to look into MTC's program. Impressed by the curriculum and potential job prospects, he decided that a career in the nuclear industry could help him provide financial security for his family. Ken's enrollment in the program would be a deciding factor for his son, Quintin, to do the same. His uncle had always enjoyed his job, and his dad seemed to enjoy his classes.

"When representatives from MTC and SCANA [Corporation] came to the [high] school and discussed the program," Quintin says, "I knew I could find a stable, rewarding career."

MTC Leading the Way into Lucrative Employment

Quintin's family connection to the nuclear industry was augmented by his participation in Project Lead the Way (PLTW) in high school. Developed in the late 1990s, PLTW addresses the country's need for more leaders in science, technology, engineering and mathematics (STEM). Since 2006, MTC's participation in PLTW has allowed high school students like Quintin to earn transferable credits toward specific engineering and science programs at MTC. Perkins IV mandates to adopt a Program of Study (POS) prompted the college to expand its PLTW partnerships in 2007, strengthening the pathway for more students to enter the college. Eight secondary school districts are involved in the POS partnership, and there is a new focus on transferring students into the college's Nuclear Systems Technology program. (Approximately 30 percent of PLTW graduates enroll in the nuclear program after high school.)

Program graduates should find employment without too many problems. According to recent employment reports, the growing nuclear technology industry provides a bright spot amidst the nation's economic woes. Over the next 20 years, the nationwide nuclear workforce is expected to need 40,000 trained technicians and engineers, with more than half of that need based in the Southeastern United States. In response to this anticipated demand, MTC implemented the Nuclear Systems Technology program in 2009 through the help of a National Science Foundation (NSF) grant. Clint Chandler, administrator for MTC's nuclear program, is the principal investigator for the $3.1 million NSF grant which funded a Regional Center for Nuclear Education and Training. This collaborative agreement between 15 colleges and 27 industry partners is designed to provide quality training for nuclear technicians.

"While nuclear energy remains controversial," Chandler says, "nuclear plants are job generators and the world continues to demand more energy."

In South Carolina alone, two new nuclear reactors are in the works at the SCANA/V.C. Summer Nuclear Station. MTC is focused on training and pathways to make sure students can connect to those opportunities. The return on investment promises to be rewarding. According to Chandler, "a single new nuclear plant once operational can add 400 to 700 permanent jobs and millions of dollars to a local economy."

Business and Industry Support Key to MTC's Success

Located in the state's metropolitan capital, Columbia, MTC has much support from the local business and industry for its POS. A portion of Perkins funding supports the college's consortium partnership with the Midlands Education Business Alliance. Businesses such as SCANA, Michelin, CMC Steel, and Blue Cross, Blue Shield provide relevant training, job-shadowing opportunities, field studies, career fairs and industry tours for students and faculty. Connections with Duke Energy and Southern Company are also being developed. Furthermore, the college uses social media sites like Facebook to highlight businesses that use alternative forms of energy. A recent post focused on a small company in downtown Columbia that installed a solar tree sculpture that is being used to power the store front (see page 42).

The success of PLTW and the nuclear POS has not been without challenges. Chandler attributes any setbacks to common issues such as the lack of time and money. Additionally, a rigorous process for regulatory approval of the new nuclear plant took longer than expected. For students, the promise of the nuclear program is the employment opportunity; however, that becomes an issue when there is a delay in the completion of plants in the area. Nevertheless, MTC has successfully placed 60 percent of its nuclear program graduates, and anticipates that this number will increase once the new plants are completed.

Tri-County Technical College's Health Care POS

While MTC's POS is focused on the STEM cluster, other parts of the state are focusing on health care. The South Carolina Department of Employment and Workforce reports that heath careers top the list for high-demand jobs within the state. Specifically, openings for registered nurses and physical and occupational therapists are most prevalent. The increasing demand for health care professionals has had a tremendous influence on Tri-County Technical College (TCTC), located in the upper western part of South Carolina. This originally agrarian area has, over the last 30 years, shifted its concentration toward more industrial efforts and now toward training health professionals. According to a TCTC report from Economic Modeling Specialists Inc., the number of new and replacement Licensed Practical Nursing (LPN) jobs increased by 26 percent between 2007 and 2011.

Rising to meet the needs of the community, TCTC developed partnerships with the three school districts in its service area to offer a program of study called *LPN to Professor*, funded initially through a Duke Endowment grant. Lynn Lewis, dean of health education at TCTC, states that the program allowed the college to cultivate those community partnerships needed to develop a seamless transition for nursing students through multiple educational levels; the goal is to increase the workforce population of nurses at the baccalaureate and higher degree level.

Lewis says, "The ultimate goal is a higher level of education for the nursing workforce to positively impact patient outcomes. We are strengthening the ladder of success."

The *LPN to Professor* program allows juniors and seniors in high school to earn

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▲▲ Above Left: Amy Bibb and Rebecca Cawthon of Tri-County Technical College practice their skills.

▲▲ Above: Keith and Quintin Anderson are a father and son team in the Nuclear and Alternative Energy Program at Midlands Technical College.

◀◀ Left: This is a solar tree added at Half Moon Outfitters, a business in Columbia, South Carolina.

PHOTO COURTESY OF MIDLANDS TECHNICAL COLLEGE

PHOTO COURTESY OF N. MARIA SWYGERT

▲▲ Above: A simulation machine that is part of the lab in the Midlands Technical College Nuclear and Alternative Energy Program.

their general education credit through dual enrollment courses offered on the TCTC campus. Upon entering TCTC, they can enroll in upper-level clinical courses. This dual enrollment POS leads directly into the LPN diploma, and encourages transfer credit from Tri-County into neighboring Clemson University.

The Duke Endowment grant allowed TCTC to add nursing faculty members and one Health Education Division-dedicated admissions counselor. The additional faculty enabled the school to launch a January admission for the associate degree nursing program, giving students more educational flexibility. Another benefit was a stronger partnership with the surrounding hospitals, leading to a more rigorous curriculum and higher overall graduate placement. TCTC's 89.41 percent pass rate on the National Council Licensure Examination exceeded the state (83.05 percent) and national (87.06 percent) averages. When asked about the challenges facing the program, Lewis responded, "The biggest challenge to maintaining the program is money. The endowment helped get the staff and equipment in place. We have to now focus on the resources for updating the equipment and maintaining the staff."

Two Colleges Invest in Industrial Technology and Welding POS

The need for skilled labor is vital for the rebuilding of the state's infrastructure, thus many colleges in South Carolina offer Programs of Study in industrial technology and welding. Two colleges, Williamsburg Technical College (WTC) and Florence-Darlington Technical College (FDTC), have found that partnerships extend not only with the local industry, but with each other. Both campuses offer similar POS, but in very different communities. WTC struggles to guide a community suffering from drastically changing industries and an extreme economic downturn. This area has experienced greater unemployment than many other areas of the already hard-hit state. WTC is the only postsecondary provider in its service area, and it stands as a beacon of hope to the community.

In comparison, FDTC, though struck hard by the economy, has a stronger industrial base of support to weather the economic storm. The two colleges have worked together to identify means of developing partnerships that will benefit both POS. WTC's dual-enrollment programs in industrial technology and welding allow qualified students to potentially earn up to 24 credit hours towards an industry certificate. WTC's programs help enrich the local economy by providing highly skilled, industry-trained employees. With so many industries closing their doors, this can be a daunting task.

"We have seen many of our large industries leave the area," said Sylvia Cumbie of WTC. "However, new industries are beginning to develop. They recognize WTC's efforts to advance the

skills of the area's labor market…It is about creating partnerships with the local industries, and utilizing their resources and services to provide on-the-job training. We want our students to be ready."

POS Promote Stronger Economy, Skilled Labor Force

The SCTCS has strived, over the last 50 years, to foster a bridge between business and education. The colleges coordinate and facilitate partnerships to deliver information, resources and services to students, educators, employers and the community. The POS implemented through Perkins are strengthening the alignment between secondary and postsecondary education, so that students experience a seamless transition towards attaining their educational dreams and obtaining well-paying jobs. The Perkins POS mandate is complemented by the state's Economic and Education Development Act (EEDA) of 2005; EEDA places extended emphasis on technical career clusters, personal pathways and partnerships between education, business and industry (read article on EEDA's role in South Carolina's POS on page 24).

Additionally, the state was recently awarded a state longitudinal data system grant that will assist in the development of systems to better track students as they matriculate through the K-20 system. Ultimately, the SCTCS is committed to providing a united front focused on service and strong support of our workforce and economic development priorities: building a bigger and brighter future for the state. Through existing and emerging partnerships, South Carolina's educators are paving the way towards a stronger economic base and a better skilled labor force. T

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