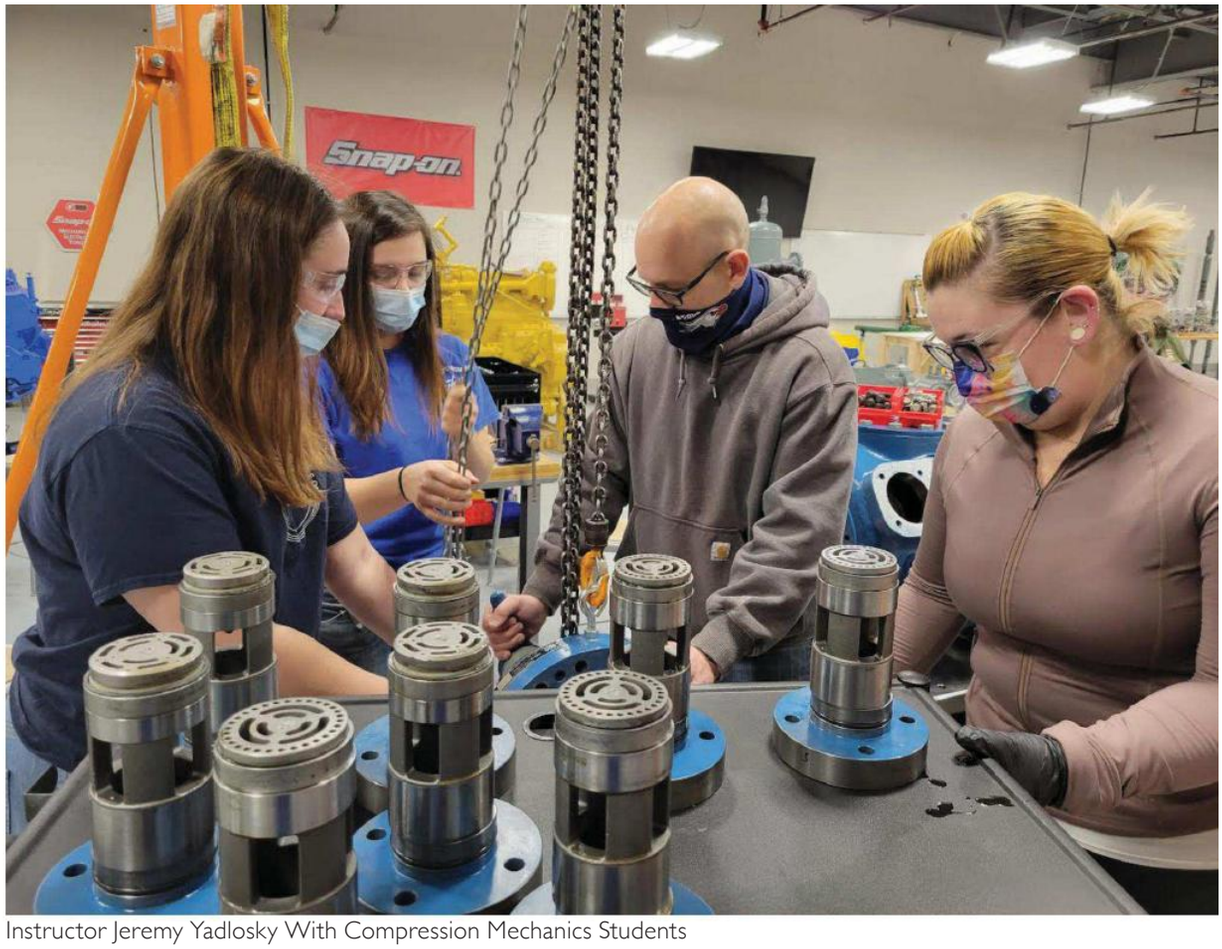
TRAINING THE NEXT GENERATION OF OIL AND GAS WORKERS

LACKAWANNA COLLEGE IS FILLING WORKFORCE GAPS WITH HANDS-ON LEARNING AND INDUSTRY SUPPORT



Instructor Jeremy Yadlosky With Compression Mechanics Students

BY SUSAN MARDELE

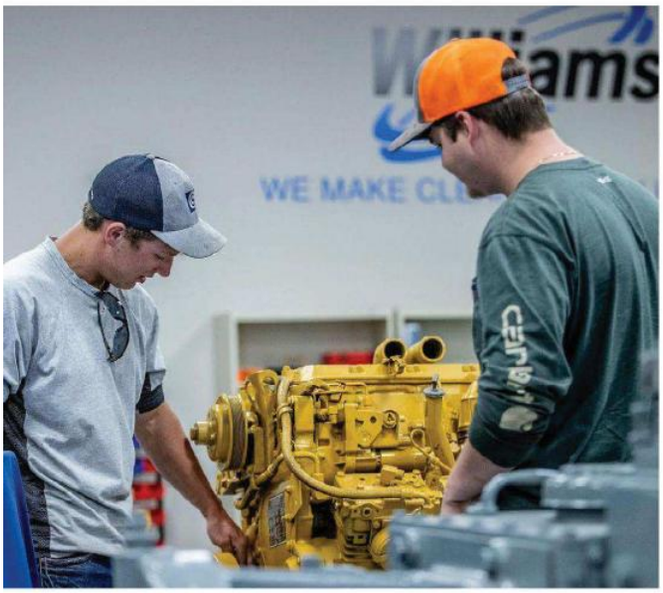
It's old news to anyone in the industry that oil and gas is experiencing a skilled labor shortage. Energy companies deal with it daily, trying to hire people for open positions. It's not a problem that will go away soon. A Reuters survey said that 43% of workers in the energy sector worldwide want to leave the industry within five years.

Lackawanna College and its industry partners are doing something about these workforce gaps. Lackawanna College School of Petroleum & Natural Gas in Tunkhannock, Pennsylvania, is training the next generation of oil and gas workers and providing lucrative career opportunities for local people. The college started the program in 2009 and has just built a new, centrally located facility in Tunkhannock.

Program Director Sue Gumble remembers when the oil and gas industry moved into the area. "I've lived here all my life, so as a landowner, I witnessed it. The gas companies came to town trying to get everybody to sign leases," she said. "It was a big deal around here. We're in a rural area of Pennsylvania, and there was nothing here. If you wanted a job, you had to work as a timber professional, in a stone quarry, or for a local store. Or you could travel to work in a factory. The industry's presence here in Pennsylvania has been a life-changer for the area in so many ways."

The industry had always known there was natural gas in the area. In 2008, drilling became feasible with the advent of horizontal drilling, making it possible to reach the pure methane that lay underground. In most locations, oil, gas, pentane, hexane, and methane are all combined, and the product must go to a refinery for separation. What makes this area so appealing is that the gas in the area is 98% methane and 2% water, so the product doesn't need to be separated. It can go straight into the pipeline and out to end users. In addition, currently, the area has no hydrogen sulfide, a considerable safety risk in drilling operations.

Gumble is no ivory tower academic creating pie-in-the-sky programs that fall short of what the industry needs. With her high school diploma, she started in a



PNG Students Troubleshooting A Caterpillar Engine

factory at US$5/hour, working up to plant manager after a few years. Gumble did that for 20 years and then took time off to be with her kids. As a single mother, she adopted three and fostered about 100 children. When her youngest was ready to graduate from high school, Gumble came to Lackawanna for her degree at Lackawanna's School of Petroleum and Natural Gas. She never left.

"I was a non-traditional student," Gumble said. "I ended up tutoring all my classmates through the program. When I graduated, the school asked me to stay on as a teacher's assistant. Because I worked for the college, I got free schooling. I got more degrees in business management. I made my way up to an instructor, manager of the instructors, degree manager, and I've been program director for almost three years now."

Gumble keeps tabs on the needs of the industry to determine what degree programs to offer at the college. "We offer two degrees, an AS in Petroleum and Natural Gas [PNG] Business Administration and an AS in PNG Technology. We used to have a natural gas compression program, but we changed it because students were more hirable trained in everything. Every student must have at least one compression class and one hands-on engine class."

Gumble believes that every student needs to know how the equipment functions and how to troubleshoot. In the compression class, students take a compressor entirely apart. They take all the measurements and calculations and put the equipment back together. At the end of the semester, a large part of the final exam involves the hands-on work with compression.

"Gas compression is a big thing right now, and there is a huge need for gas compression mechanics," Gumble said. "When the industry first came here, there were many jobs in upstream positions — well tenders and

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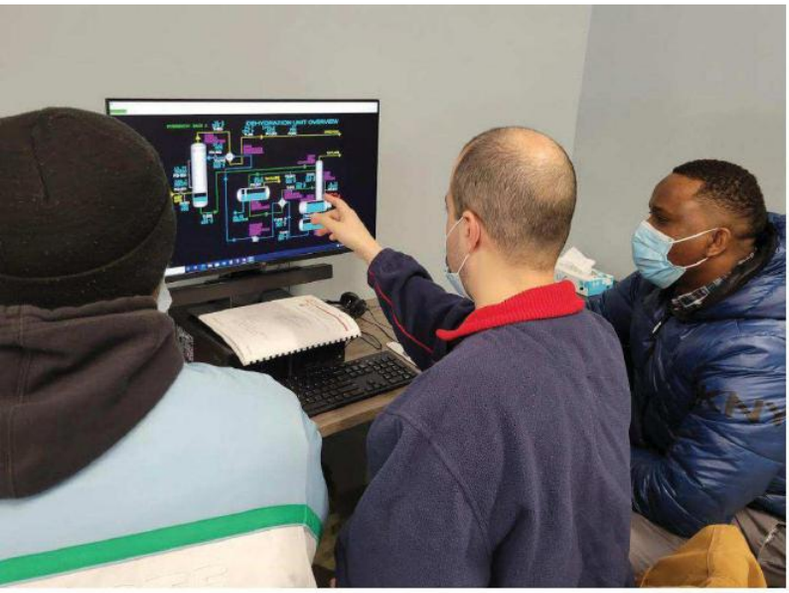

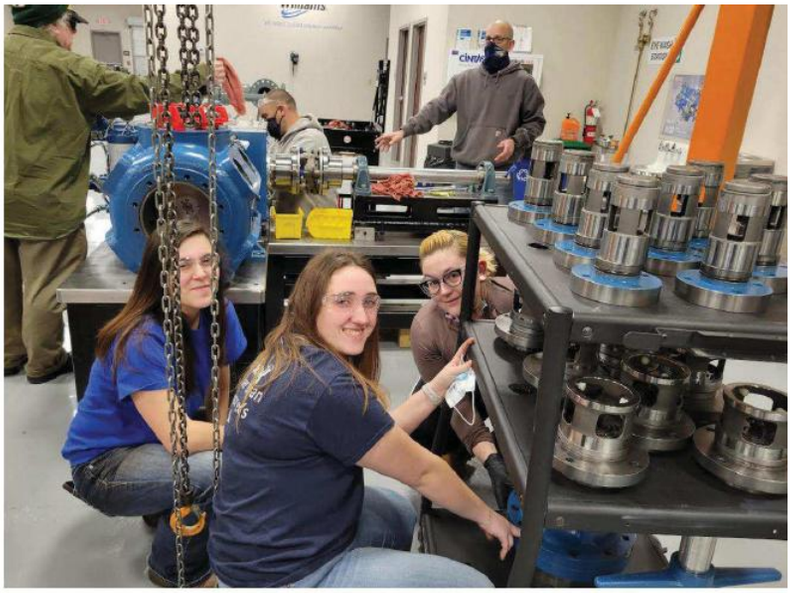

PNG Students In The New Simulation Lab (Left) And PNG Students Learning To Disassemble/Reassemble An Ariel Compressor (Right)

things like that. The wells they drilled 10 years ago are declining, so there's less pressure coming up from the ground to push the gas out. Now they're installing compressors on every well site to compress the gas and get it into the pipeline. Many wells are trying to put their gas in this pipeline, and if it's not at high pressure, it won't get in."

> "Not a week goes by that I don't get numerous inquiries saying, 'Please give us some of your students.'"

The school has two compressors, an Ariel JGJ-2 compressor and a Gemini 2-throw compressor. Engines include a Caterpillar 342, a Cummins ISX 12G, an International DT466, and an International T444e engine. Industry partners provide equipment, internships, scholarships, and immediate employment following graduation.

Students can go through the PNG programs at Lackawanna at a low cost. Between financial aid and industry scholarships, students graduate with little or no debt. Their internships help them pay off any debt they might accrue.

Lackawanna doesn't have a formal job placement program, but the way the program is structured, and because of the needs of the industry, students typically have jobs before they graduate. According to Gumble, during the program students have paid internships between their first and second year, earning US$20 to US$25/hour. Some continue with the same company after graduation, and others hire on with a different company.

"There's not a week that goes by I don't get numerous inquiries saying, 'Please give us some of your students,'" Gumble said. "We have new companies coming around that need compression techs. Last year, the garbage landfills around here started installing methane compression stations rather than venting into the air. They just took two graduates from the program."

In addition to its own campus, the college teaches dual-enrollment classes at career and technology centers (CTCs) in the public schools. The school will teach courses in the fall to high school juniors and seniors at four different county CTCs. Around 75% of the students in these classes come to the program after graduating.

"The students in the CTCs are the hands-on learners who succeed in this program. We have a 100% success rate, so we're doing well." Gumble said. "The industry fights over CTC students at internship interviews because they not only have our PNG education, but they also have a trade, whether carpentry, electronics, welding, etc. That's why we've targeted CTCs: we find the interest there."

Taking it one step further, the local oil and gas industry has a mobile learning unit (MOLU) for fifth and sixth graders. The MOLU has several workstations that introduce students to geology, structures and properties of matter, and other STEM-related concepts. It makes the students

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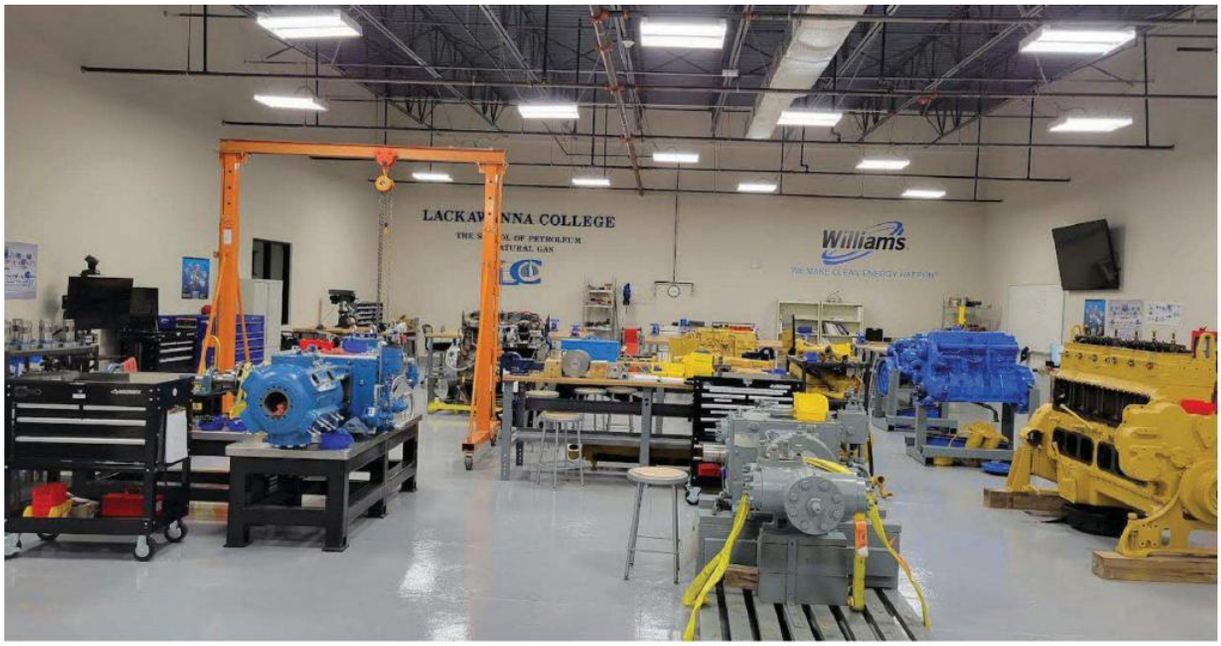

New Compression/ Engine Mechanics Lab

aware of everything made using petroleum products. Lackawanna and industry partners are letting students know from elementary school that there are options besides attending a four-year college.

Dedication and support from Lackawanna's administration, industry partners, local school systems, and students foreshadow a bright future for the school. It's easy to visualize the program continuing to grow, meet its goals, and offer direction and an excellent living to local people. It's also clear that the school is producing the new wave of skilled workers that the oil and gas industry desperately needs.

Currently, the program has 20 students enrolled in the first year and 20 in the second year, equally distributed between male and female students. Gumble likes to keep the classes small — no more than 10 students — so everyone has an opportunity for hands-on experience. There is room to expand. Gumble's first target is 40 students in each year the program. Then she aspires to reach 80.