

Summary of Testimony before the House Energy and Commerce Committee

Subcommittee on Energy and Power

“Title II: 21st Century Workforce”

Tracy L. Brundage, Ph.D., Vice President of Workforce Development

Pennsylvania College of Technology

April 23, 2015

The focus of this testimony is ShaleNET, a successful partnership of training providers, economic development, the public workforce system, employers, and trade associations who responded to the call from the energy industry for a trained workforce.

As a direct response to industry demand, **ShaleNET** was created in 2010 with a \$4.96 million award from the US Department of Labor’s Community-Based Job Training Grant initiative and a subsequent award of \$14.96 million in October 2012 from the US Department of Labor’s Trade Adjustment Assistance Community College and Career Training (TAACCCT) Round II. This grant combines the short-term programming of the initial ShaleNET grant with college credit offerings in a stackable credential model to ensure that students secure jobs in the energy industry upon completion.

The ShaleNET Hubs include Penn College, Westmoreland County Community College in Pennsylvania, Stark State College in Ohio, Navarro College in Texas and Pierpont Community and Technical College in West Virginia (as an affiliate). ShaleNET reached out to industry, state and local government for funding to augment traditional financial aid and received commitments of over \$700,000 in public/private partnership funds for scholarships. This includes a \$460,000 pledge from Chevron and its Appalachian Partnership Initiative secured by the Allegheny Conference on Community Development, a key economic development partner in this initiative.

The most successful component of ShaleNET is the partnerships that have been developed and strengthened which have resulted in training opportunities for students who are now employed in jobs with family sustaining wages. This is a best practice model that can be deployed and implemented in other areas because it is competency based and can be easily replicated. For future programs intended to meet energy workforce needs, it is imperative to establish public/private partnerships that become the backbone of developing a broad array of training options across the United States. It is also imperative that funding be directed where the impact is greatest to support energy training initiatives that secure jobs for America’s workforce.

Testimony before the House Energy and Commerce Committee
Subcommittee on Energy and Power
“Title II: 21st Century Workforce”

Tracy L. Brundage, Ph.D., Vice President of Workforce Development
Pennsylvania College of Technology
April 23, 2015

Thank you Subcommittee members for the opportunity to speak about the need for workforce development and training in energy and related industries.

My name is Tracy Brundage. I am the Vice President for Workforce Development at the Pennsylvania College of Technology (Penn College), a special mission affiliate of The Pennsylvania State University, committed to applied technology education. Penn College enrolls nearly 6,000 students in bachelor, associate and certificate programs relating to more than 100 different career areas and manages the state’s largest worker training program through its Workforce Development and Continuing Education unit.

My testimony will focus on ShaleNET, a partnership of training providers, economic development, the public workforce system, employers, and trade associations who responded to the call from the energy industry for a trained workforce.

At the onset of shale development in the Marcellus Shale Play, employers struggled to find workers with the necessary skills and specialized work ethic to be successful in the industry. While offering excellent wages, employers struggled with turnover rates of 90-100%, employees with the wrong skill sets and a lack of legacy knowledge regarding employer expectations. This caused

employers to publicly question the work ethic of our residents and a continued reliance on importing workers from areas outside of the Appalachian Basin.

As a direct response to industry demand, **ShaleNET** was created in 2010 with a \$4.96 million award from the US Department of Labor's Community-Based Job Training Grant initiative. A collaborative between industry, educators, economic development and the public workforce system, ShaleNET created an effective and efficient entry level training program for five high demand upstream occupations that could be scaled quickly across both urban and rural areas.

Pennsylvania College of Technology (Penn College), Westmoreland County Community College in Pennsylvania and 18 other training providers across Ohio, Pennsylvania, West Virginia and New York deployed a three-week, non-credit training program which exposed students to expectations of the industry related to job readiness skills, safety and technical awareness. The curriculum was designed and written with input from industry, stressed consistency of content and awarded competency-based and industry-recognized certifications. Though the program was open to all, special efforts were directed to recruit veterans, the unemployed and under employed. Veterans received priority of service in the ShaleNET program and they were able to use their educational benefits towards training costs.

The results for the first ShaleNET grant were stellar. Over 14,000 individuals explored the Talent Match website which provides realistic job profiles of energy occupations and information about

the industry; 1,177 completed practical training and 3,421 obtained jobs. The placement rate was 79% and retention, three quarters after placement, was 82%.

As the natural gas and oil industry in the northeast United States matures, occupational demand is growing to reflect a need for a workforce with increasingly more technical skills, concentrating not only on upstream, but mid and downstream jobs, as well.

In October 2012, ShaleNET was awarded a US Department of Labor Trade Adjustment Assistance Community College and Career Training (TAACCCT) Round II grant for \$14.96 million, which combines the short-term programming of the initial ShaleNET grant with college credit offerings. The Hubs of ShaleNET include Penn College, Westmoreland County Community College in Pennsylvania, Stark State College in Ohio, Navarro College in Texas and Pierpont Community and Technical College in West Virginia (as an affiliate). The Hubs are located in areas where the majority of large oil and gas exploration companies are involved in shale plays nationally and globally. The corporate partners and trade associations involved in ShaleNET include: Chevron, Anadarko Petroleum Corporation, Chesapeake Energy, Shell, XTO Energy, Marathon, Pennsylvania Independent Oil and Gas Association (PIOGA), and the Ohio Shale Coalition. These companies require a well-trained, safe and productive workforce adhering to common industry standards in all locations. The Allegheny Conference on Community Development, a key partner in the grant, serves as a critical liaison between these companies and the educational hubs.

With this grant, individuals are shown a career path using a stackable credential model where, for example, a roustabout could enroll in a one-year, credit-bearing certificate and then continue his/her education through an associate's degree in petroleum technology, mechatronics or industrial maintenance. Short term training produces a number of industry recognized credentials. The stackable credential model, along with credit for prior learning and articulation agreements among partner schools provides students with the essential tools for career mobility across multiple segments of the energy industry.

Several innovative strategies are being deployed by ShaleNET to bring blended, technical curriculum to remote areas and underserved populations. One strategy uses state-of-the art 3D immersive technology and artificial intelligence to assess and teach more advanced technical skills related to natural gas and oil production in a simulated environment. These methodologies create enormous cost savings for colleges (e.g. not having to build and equip their own technical labs), embrace leading edge technology honed by the US Department of Defense to train and assess competencies and make capacity building more feasible and efficient.

Building capacity within the Hub schools and across other shale plays remains a hallmark of the grant. Navarro College shared its two-year Petroleum Technology degree program as a best practice to the other Hubs. Stark State College developed curriculum for one-year certifications and a two-year Industrial Maintenance degree. With financial assistance from the State of Ohio, Stark State College opened a 7,000 square foot Well Site Training Center in downtown Canton. Westmoreland County Community College opened its Advanced Training Center and offers

Applied Industrial and STEM training for the natural gas and oil industry and related occupations. Pierpont Community and Technical College broke ground on a 20-acre natural gas and oil training site to blend classroom with hands-on instruction. Penn College has incorporated an energy curriculum into its advanced manufacturing programs and created a Mechatronics degree and short term training that has applications in energy and manufacturing industries. Penn College also secured a drilling rig trainer at its 5 acre, \$1.3 million Energy Technology Education Center that provides students with hands-on instruction mirroring what they would experience on the job. Additional discussions about replicating the ShaleNET instruction model were held with representatives from the states of Colorado, Kentucky, Illinois, Montana and countries including the United Kingdom, Ukraine, Mexico, Australia, Azerbaijan and Kenya.

Since covering the cost of tuition is not permitted with TAACCCT grant funds, ShaleNET has reached out to industry, state and local government for funding to augment traditional financial aid. Stark State College received \$50,000 from America's Natural Gas Alliance (ANGA) for entry level training. Underscoring the importance of having economic development as a key partner, ShaleNET, through the Allegheny Conference on Community Development in Pittsburgh, received a commitment of \$460,000 from Chevron and its Appalachian Partnership Initiative for both credit and short-term training. The Conference plays a critical role as liaison between ShaleNET and corporate drivers in the energy industry to foster effective public/private partnerships.

This public/private partnership has resulted in ShaleNET achieving the following metrics from October 2012 through December 2014 across four Hub schools:

- **948** unique participants served (86.5% of goal with one year remaining)
- **356** students have completed a ShaleNET program and earned a degree or certificate in that program of study
- **17,482** total credit hours completed by students
- **1,227** industry recognized credentials earned by students
- **239** students were employed (self-reported) after program of study completion

ShaleNET at Penn College secured additional funding from three neighboring county governments committing close to \$200,000 in Pennsylvania Act 13 Impact fees for short-term training for residents. From July 2013 through mid-March 2015, 110 students have been trained.

Of those trained:

- **94%** were placed in employment after training
- **79%** retained employment 12 months after placement
- **94%** were male
- **31%** were African American or Latino (US Census: Lycoming County, where Penn College is located, has a minority population of **4.7%**)
- Average wage was **\$16.15**
- **50%** were unemployed prior to training
- **19%** were veterans

A critical success measure for employers is retention in employment a year after placement which is demonstrated through participation in ShaleNET prior to hire. Employers value the return on investment of reduced onboarding costs knowing that a ShaleNET graduate has the hands-on technical awareness and safety training to bring him/her into production quicker. ShaleNET intervention before employment makes employees more likely to stay with that employer for a longer period time.

Many factors contribute to the success of ShaleNET. These successes are strengthened by the knowledge of many partners. ShaleNET has established strong partnerships with employers and their trade associations, Workforce Investment Boards and One-Stops, economic development agencies such as the Allegheny Conference on Community Development and local governments who share a common desire to place qualified candidates with employers in family-sustaining careers.

Many individual components of ShaleNET have contributed to the comprehensive success of the program. Short-term training programs have proven most successful when a robust selection and assessment process to evaluate student candidates is used. This process includes using industry criteria such as drug testing, criminal and driving background checks and physical capability assessments. ShaleNET uses a blended hands-on/classroom curriculum designed and written by industry and employs instructors that have years of oilfield experience and expertise. ShaleNET employs dedicated career counselors who are part of the onboarding team for industry. Their primary responsibilities are to work with employers to understand their needs, recruit and select good student candidates, shepherd these students through training, communicate with students on what is expected of them when working in this industry, coach students to get noticed when interviewing, assist with placement and follow-up with employers to ensure continuous improvement.

We are very proud of these accomplishments, but believe that ongoing evaluation and assessment of programs are critical components of continued success. In determining our future

direction, we look to the energy industry. When we ask executives what keeps them up at night, many will respond by expressing their concerns regarding “*The Great Crew Change*.” Over the next decade, almost 62% of the industry has the potential to retire or leave for other reasons.¹ Despite the well-reported reduction in the price of oil (\$63.45/barrel on April 20, 2015: Brent benchmark) and the effect this is having on capital expenditures and personnel, the energy industry is well aware that to succeed in the 21st century, it must continue to recruit and retain talent from a more diverse labor pool. The industry must be prepared for the inevitable departure of a large number of workers who are retiring.

To address this mass exodus of talent and prepare for the skill challenges that lie ahead, industry, government, the public workforce investment system, economic development agencies, education (secondary and post) and training providers must continue to collaborate toward comprehensive education and training programs that emphasize STEM concepts in the energy and manufacturing sectors of our economy. This can be accomplished by increasing funding specifically for these in-demand occupations using accredited schools with proven records of placing students in occupations for which they are trained. Additionally, in order to create a pipeline of workers to fill the jobs of the future we must continue outreach to K-12 students to make them aware of the opportunities that will exist within the energy industry.

¹ Center for Energy Workforce Development, Gaps in the Energy Workforce Pipeline, 2011 CWED Survey Results, Pg. 3.

The partners of ShaleNET are poised to meet these workforce challenges by deploying next generation technologies including 3D immersive and artificial intelligence science to assess skills and increase access of technical training to veterans, rural and/or underserved populations and secondary education focused on career and technical programming. ShaleNET will continue to develop one-year technical certifications and two-year technical degrees that apply to the oil and gas industry and to a broad industrial base including manufacturing, petrochemical, plastics, pharmaceuticals, food and beverage and water processing. Partnerships with employers and trade associations that represent mid and downstream segments of the energy industry are critical to future success. ShaleNET will foster energy by sharing what is learned with countries that are struggling with similar workforce issues.

With all the evidence presented, ShaleNET has and will continue to be a force in training for the natural gas and oil industry. The most successful component of ShaleNET is the partnerships that have been developed and strengthened that have resulted in training opportunities for students who are now employed in jobs with family sustaining wages. This is a best practice model that can be deployed and implemented in other areas because it is competency based and can be easily replicated. For future programs that are introduced to meet energy workforce needs, it is imperative to incorporate the need to establish partnerships that become the backbone of developing a broad array of training options across the geography of the United States. It is also imperative that funding be directed where the impact is greatest to support energy training initiatives that secure jobs for America's workforce.