ShaleNET TAACCCT Grant Third-Party Evaluation

Interim Report

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Cover Photo: In PCT's Floorhand and Roustabout noncredit programs, students work extensively on PCT's rig simulator and aerial lift equipment—both purchased with grant funds—to learn and practice hand placement, safe operation, and the fundamental components of operating a drilling rig. In this picture, Roustabout students use the rig simulator to learn how to pull a drillstring (including the drillpipe) out of the drilling hole and replace it with a new one. PCT's rig simulator is one of only two in the United States owned by a college.

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Training Program Development and Delivery

Enrollment

- The ShaleNET consortium had **enrolled 963** unique students in **twenty credit** and **four noncredit[1]** programs as of December 31, 2014.

  - As a result of this level of enrollment, the **consortium was able to meet its goals for each year of the grant thus far** and 89 percent of its total enrollment goal, with more than a year left of operations.
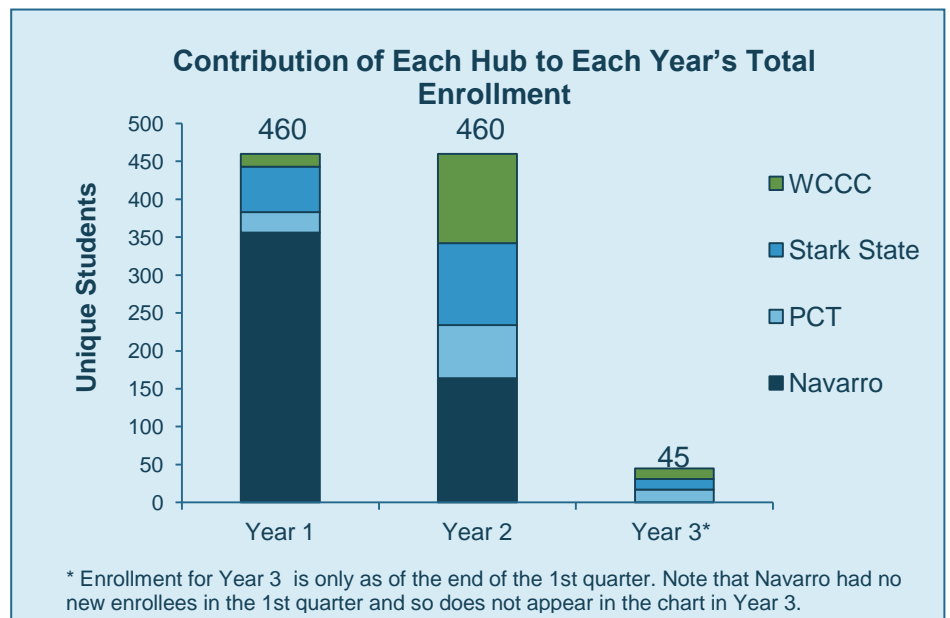
  - **The majority of ShaleNET students were enrolled in credit programs**: 649 students enrolled in Tier 3 (certificate programs of one year or less) and 430 students in Tier 4 (associate's degrees), versus only 219 in Tiers 1 and 2 (noncredit programs).

  - **Each of these programs was stackable**, meaning that each is part of a sequence of programs leading to credentials and skills that students can accumulate over time in order to help them move up a career ladder. Most commonly **students enrolled in multiple**

Contribution of Each Hub to Each Year's Total Enrollment

* Enrollment for Year 3 is only as of the end of the 1st quarter. Note that Navarro had no new enrollees in the 1st quarter and so does not appear in the chart in Year 3.

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[1] One ShaleNET hub, WCCC, actually runs a hybrid version that combines two of these programs; however because this hybrid program is simply a combination of two programs, we have not chosen to count it as a separate program.

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for-credit programs, typically both a **Tier 3 and a Tier 4** program.

- Among hubs, although **Navarro had enrolled the most students**, each of the **other hubs**, particularly Stark State and WCCC, **experienced significant growth in enrollment** over the first nine quarters of the grant.

New Program Development

- ShaleNET hubs together developed **twenty new credit training programs** across all four hubs. **Twelve** of these were **Tier 3** programs and **eight** were **Tier 4**.

  - Although each hub developed at least one new program, **Stark State developed the greatest number** of new programs **(ten),** followed by **WCCC (eight).**

  - As of early 2015, all hubs were still developing new credit and non-credit programs and courses, including customized training for industry partners.

Enhancement of Training Programs

- ShaleNET hubs substantially **enhanced most new and existing programs and courses**, typically through acquiring new equipment for use in hands-on practice activities**. ShaleNET hubs collectively spent more than 1.7 million dollars** of TAACCCT grant funds on this new equipment and **received at least $282,000 in donated equipment from industry partners**.

  - **Student focus group participants reported that the chance to use this new equipment was one of the best and most useful aspects of their ShaleNET training.** However, a few of these students also reported that labs and courses were not well developed and that hubs took a long time to give students access to the new equipment.

  - Hubs are now **focusing on developing and enhancing course and lab curricula** to ensure this new equipment is well integrated into training programs.

- The consortium has been **working with a contractor** to **develop a suite of 3-D immersive simulation software** that instructors can use to create opportunities for virtual, hands-on practice. This software should be available for use by mid-2015.

- **Work with a contractor to allow students at remote locations to view equipment** has been **challenging, due to limited Internet bandwidth** among other problems.

> Based on conservative estimates, ShaleNET hubs had received approximately $282,000 in equipment donations from the oil and gas industry as of December 31, 2014.

> *"… actually doing the work would be difficult without having the hands-on learning provided by the program."*
> — ShaleNET student, PCT

- **All hubs have developed articulation agreements with each other**, so that students can easily articulate into ShaleNET programs at another hub, **including into PCT's Applied Technology bachelors degree program.**

Student Support

- ShaleNET **career counselors have provided** ShaleNET students with **support** that they could not have received elsewhere at their hubs. The most common such assistance included:

  - Confirmation that **students understood the requirements and expectations of ShaleNET programs and gas and oil industry careers**, probably resulting in fewer program dropouts.

  - **Help with class** schedules to ensure that students took the classes they needed to complete programs; student focus group participants said that **this assistance was best provided by ShaleNET counselors,** who understood program requirements.

  - **Assistance with finding jobs and internships in the oil and gas industry**; student focus group participants at three hubs praised **career counselor industry connections** that **made it easier for them to find jobs**—sometimes even before program completion. Some hubs complemented career counselor efforts with assistance on generic job search topics from the college's career center. Students at one hub reported that they need more of this assistance.

- **Noncredit students appeared to receive more assistance from career counselors than credit students**

  - This was partly because **noncredit students could not access any other sources of support on campus**.

  - But it also likely stemmed from the fact that **unlike noncredit students, credit students did not always meet with career counselors prior to enrollment.** Indeed, student focus group participants **at one hub** who did not have an initial meeting with a career counselor **did not realize that career counselors were available to help them**.

Partnerships

Gas and Oil Industry Partnerships and Support

- **Gas and oil industry partners were very supportive and involved in ShaleNET**, providing extensive and various

"[The ShaleNET career counselor] was always helpful …. She helped me wade through any problems and helped me wade through the paperwork, so I could focus on school and my course work."
— ShaleNET student, Stark State

"[The career counselor] has given me job leads, and even scheduled an interview for me as well with [an oil and gas company], and now I have a permanent position with [the company] upon completion of the program. You can't ask for more than that."
— ShaleNET student, WCCC

"Their [ShaleNET] programs really meet our needs in terms of the coursework and the hands-on training that the college provides."
— Industry partner, Stark State

types of support valued at approximately $770,000 including:

- **Financial support, particularly for scholarships, provided by industry partners** valued at approximately $232,000 in scholarship funds.

- **In-kind donations of equipment from industry partners**, conservatively valued at $282,000, **and of industry partners' staff member time** to participate in meetings, assist with finding instructors—or even serve as instructors themselves—review and provide feedback on program curricula and structure, and provide work-based learning opportunities such as internships and facility tours.

- **Hiring ShaleNET students**; generally **employers expressed great satisfaction with the ShaleNET completers** they had hired; they also **appreciated having career counselors who served as a single point of contact** for hiring at hubs, making it very "easy" for employers to hire ShaleNET students.

Educational Partnerships

- **Two hubs were established in new states** under the TAACCCT grant, **in Ohio at Stark State** and **in Texas at Navarro**; and **one new non-grant-supported hub** was **established** in mid-2014 **at Pierpont Community and Technical College in West Virginia**.

- **ShaleNET hubs developed new educational partnerships:**

  - **Navarro developed a partnership with Texas A&M Kingsville to provide noncredit ShaleNET** programs, and Stark State and WCCC were in discussion to establish a similar partnership with Hazard Technical and Community College in Kentucky.

  - **Stark State was in the process of developing a "one and one" credit program partnership with Hocking College** in Ohio, which would allow students to complete their first year of a ShaleNET AAS program at Hocking, primarily taking required general education courses, and then to transfer to Stark State to complete their degree.

- **In addition to the articulation agreements developed between hubs, other articulation agreements were developed or were in the process of being developed with several other colleges offering bachelor's degrees,** including Ohio University, University of Phoenix, and California University of Pennsylvania.

> *"Overall, I love working with [ShaleNET]. The career counselor always sends me quality students that are willing to work hard. The ease of working with her makes [ShaleNET] a great asset to me. They are very responsive, which is what I love."*
> — Industry partner, WCCC

> *"Possibly [I'll go on for] more education, for a B.S. in mechatronics, but I'll likely work first so I can save up some money."*
> — ShaleNET student, WCCC

- Many student focus group participants expressed interest in being able to make use of these articulation agreements to "stack" their ShaleNET AAS degrees for two years of credit **toward achievement of a B.S**.; indeed, students at one hub complained that few of these articulation agreements had as yet been established.

Public Workforce System Partnerships

- **All ShaleNET hubs attempted to develop partnerships with the public workforce system**, and **three of the four hubs were fairly successful** in doing so, particularly in building relationships with local WIBs.

  - Respondents from **65 percent of WIBs in ShaleNET hub regions reported that they were "very" or "somewhat" involved in ShaleNET,** and **95 percent** reported **that ShaleNET was "somewhat" or "very" valuable to their local workforce area**.

Local Government Partnerships

- **PCT has received $165,000 of Act 13 impact fee dollars from three counties** in Pennsylvania to support scholarships for noncredit ShaleNET training programs.

Hub and Consortium Operations

Staffing

- **Each hub employed four to five staff members to administer grant operations and multiple full- and part-time faculty members**; these personnel were **overseen by one or more non-grant-funded college administrators.**

  - **It was critical for all hub personnel to have gas and oil industry experience**; for instructors, it was also important that they have strong teaching skills. Although a number of staff members and instructors did have these backgrounds, **hubs have had difficulty quickly finding and hiring instructors and staff members who met these qualifications**.

  - **Hiring challenges have been compounded by significant turnover among both staff and faculty**. However, **turnover was less common among non-grant funded administrators** and they have provided critical leadership to keep the initiative moving forward.

"The natural gas industry is booming in Central Pennsylvania. The success of the ShaleNET program is evidenced in the placement rate for PCT in finding jobs for the local workforce with family-sustaining wages."
— WIB Staff Member

"The faculty have been the best part of the program because they come from industry and understand what we need to know [for a successful oil and gas career]."
– ShaleNET student, WCCC

Consortium

- **ShaleNET hub and consortium leaders communicated extensively, especially early on** during the TAACCCT grant, via in-person retreats, conference calls, and ad hoc phone calls and emails. **More recently**, because many grant deliverables have been achieved, **consortium leaders have been meeting less often.**

Early Participant Outcomes

Program Retention and Completion

- **Completion rates** across all ShaleNET hubs for **noncredit programs were 96 percent or higher**.

- Although **most credit students were still enrolled** in their ShaleNET programs as of the end of 2014, **relatively few students had withdrawn**.

Employment

- Based on data from three hubs, **about 73 percent of all completers across hubs were** reported to be **employed**.

I. INTRODUCTION

In July 2013, Social Policy Research Associates (SPR) was awarded a contract to serve as third-party evaluator for the ShaleNET initiative. Currently funded by a Round 2 Trade Adjustment Assistance and Community College and Career Training (TAACCCT) grant from the U.S. Department of Labor (USDOL), the ShaleNET initiative is aimed at expanding the breadth and effectiveness of the training options and career pathways through which participants can work towards careers in the shale oil and gas industry. The TAACCCT-funded portion of the initiative is administered by a consortium of four educational institutions located in or near four major shale gas and oil production plays: the Marcellus Shale Play (parts of Pennsylvania, West Virginia, Ohio, and New York), the Utica Shale Play (most of Ohio), the Barnett Shale Play (much of northwest Texas), and the Eagle Ford Shale Play (much of southern Texas).[2] The members of the consortium are Pennsylvania College of Technology (PCT), Westmoreland County Community College (WCCC) in Pennsylvania, Stark State College (Stark State) in Ohio, and Navarro College (Navarro) in Texas. PCT is the leader of the consortium. The locations of the consortium colleges, or "hubs," are displayed in Exhibit I-1.[3]

Shale gas and oil production has grown significantly in the United States in recent years due to an extraction technology called hydraulic fracturing (also known as "fracing" or "fracking"). Unlike typical conventional oil and gas (hydrocarbon) extraction processes, in which reserves flow freely from reservoir rocks into wells, hydraulic fracturing targets oil and gas that is trapped within microscopic pores in fine-grained rocks, such as shales. Hydraulic fracturing has been used commercially since the 1940s, but recent improvements in technology have resulted in increasing domestic use of it, particularly since the mid-1990s.

> **The ShaleNET initiative is aimed at expanding** the breadth and effectiveness of the training options and **career pathways** through which participants can work towards careers **in the shale oil and gas industry**.

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[2] A play is a shale formation that contains significant accumulations of natural gas.

[3] Within the ShaleNET consortium, all of the TAACCCT-funded colleges are referred to as "hubs" because they are meant to take the lead on ShaleNET activities in their respective regions, both in developing partnerships with other educational institutions and coordinating among those partners.

Exhibit I-1: Hub Locations
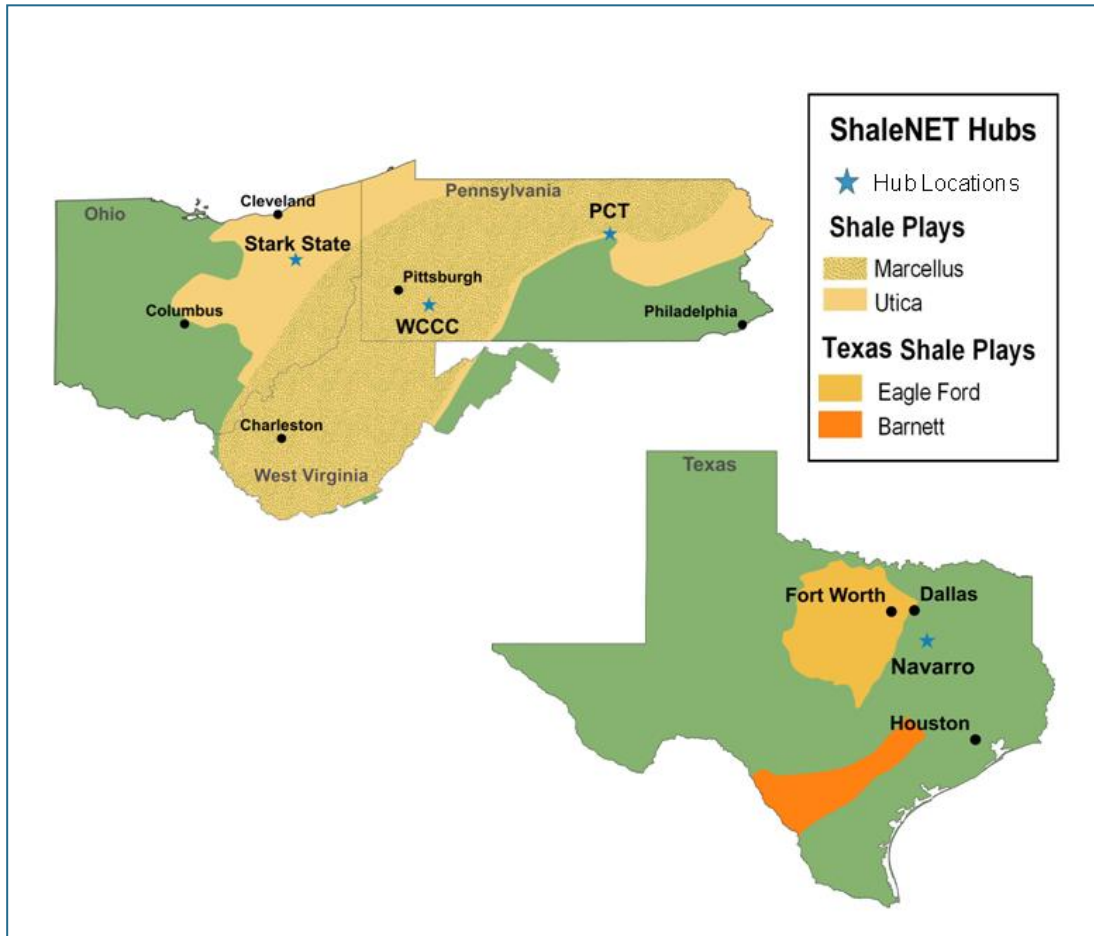
The Shale Oil and Gas Industry in ShaleNET Hub Regions

Three of ShaleNET's TAACCCT-funded consortium schools are located in the Appalachian Basin, which contains two major shale plays. One of these is the Marcellus Shale Play, which covers much of Pennsylvania, West Virginia, eastern Ohio, and southern New York, and has been a major source of economic activity in most of these states (see Exhibit I-1). According to Pennsylvania's Department of Labor and Industry, activities related to the Marcellus Shale Play became a rapidly growing segment of the state's economy beginning in 2008. From the second quarter of 2010 to the second quarter of 2014, employment in "core" Marcellus Shale-related industries increased 96.7 percent and

during the same period, 1,133 Marcellus Shale-related business establishments were added.[4]

Other states in the Appalachian Basin have experienced recent shale-related economic booms as well. In Ohio, core shale-related employment increased more than 98 percent from the second quarter of 2011 to the second quarter of 2014, and 195 core shale-related business establishments were added. Drilling and production in the Utica Shale Play began in Ohio in 2011; since then, 1,855 horizontal permits have been issued and 1,393 horizontal wells have been drilled on these plays, as of March 12, 2015. The Utica Shale Play lies thousands of feet under the Marcellus Shale Play and covers a much greater geographic area. Much of the drilling activity in the Utica Shale Play has occurred in eastern Ohio, where favorable conditions have resulted in wells that yield significant amounts of natural gas liquids and crude oil.

Texas, where the remaining TAACCCT-supported ShaleNET hub is located, is also home to major shale plays. The most active of these is the Eagle Ford Shale Play in south Texas, which has experienced a similar recent surge in shale oil and gas production and processing. The growth of new active wells in the Eagle Ford Shale Play has been substantial; according to the Texas Railroad Commission, from 2011 to 2014, Texas issued 16,988 drilling permits in the area. However, the Eagle Ford Shale Play is located about 250 miles from Navarro, home of the ShaleNET hub college. Much closer is the Barnett Shale Play, a major shale formation in north Texas that began production in 1999.[5] From 2011 to 2014, Texas issued 5,134 drilling permits for this play, with the number of drilling permits issued in a single year peaking in 2008 (4,065 permits). However since 2008, the production outlook for the Barnett Shale Play has not been as promising as the Eagle Ford Shale Play, at least partly because a major portion of the Barnett Shale Play is in urban areas, which complicates future development.

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[4] "Core industries" are those that perform the main work of hydraulic fracturing (e.g., drilling and extraction of natural gas).

[5] The Barnett Shale Play is approximately fifty miles from Navarro. There are other shale plays in Texas (including the Haynesville/Bossier Shale Play, which is approximately 150 miles from Navarro and extends into Louisiana) but as Barnett and Eagle Ford are the closest and most active shale plays, respectively, to the ShaleNET initiative hub, we focus solely on them here.

The increased rates of hydraulic fracturing in these regions have generated a major need for skilled labor within the shale oil and gas industry. For example, in a recent survey of Marcellus Shale Coalition members, 55 percent of respondents reported that a shortage of skilled workers was a significant barrier to meeting their workforce needs.[6] Furthermore, 80 percent of survey respondents reported that they intended to hire in the southwest Pennsylvania region; about one third of survey respondents anticipated hiring in Ohio, West Virginia, and in central, northeast, and southeast Pennsylvania.

Background on the ShaleNET Initiative

The ShaleNET initiative originated well before the consortium received the Round 2 TAACCCT grant, and was supported by several preceding federal and state grants. One of these grants was a one-year, $250,000 USDOL Regional Innovation Grant (RIG) awarded to the Westmoreland-Fayette Counties Workforce Investment Board (WIB) in 2007. The grant funded the Westmoreland-Fayette Counties WIB to work with WCCC and the Allegheny Conference on Community Development (ACCD) to prepare southwest Pennsylvania to capitalize on the increased activity related to the Marcellus Shale Play.[7] Around the same time, PCT received a Career Opportunity grant funded by the Pennsylvania Department of Labor and Industry to develop noncredit, entry-level training programs for the oil and gas industry. Building on these two grants, in 2010, WCCC, PCT, and ACCD worked together to obtain a $4.96 million USDOL-funded Community-Based Job Training (CBJT) grant. Through this CBJT grant, these partners—led by WCCC—developed the initial ShaleNET model, which finalized the creation of four short-term, noncredit training programs for the oil and gas industry. WCCC and PCT, serving as the first two ShaleNET hubs, provided these training programs both directly and through a network of more than nineteen other public training providers, primarily community colleges, throughout the Appalachian Basin. One of these training providers was Stark State.

> **55 percent of Marcellus Shale Coalition members felt that a shortage of skilled workers was a significant barrier** to satisfying their workforce needs.

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[6]   Founded in 2008, MSC is a 501(c)(6) membership organization registered in Pennsylvania, whose members primarily represent companies involved in the shale oil and gas industry.

[7]   Founded in 1944, the ACCD works with public and private sector partners to create a competitive economic climate and market the Pittsburgh region. Its affiliate organizations are the Greater Pittsburgh Chamber of Commerce, the Pennsylvania Economy League of Greater Pittsburgh, and the Pittsburgh Regional Alliance.

With the intention of further developing the ShaleNET initiative, WCCC, PCT, and ACCD joined again to apply for a Round 2 TAACCCT grant in 2012, this time with PCT serving as the ShaleNET consortium lead. To strengthen ShaleNET's presence in Ohio and expand it outside the Appalachian Basin, the ShaleNET stakeholders approached Stark State to serve as the ShaleNET hub for Ohio, and Navarro as the hub for Texas.

Overview of the Current ShaleNET Initiative

The current ShaleNET initiative seeks to achieve a number of outcomes and impacts at the system, industry, and participant levels (these outcomes are graphically displayed in the right-hand box of the initiative's logic model, in Exhibit I-2). At the system level, key expected outcomes include new and enhanced training program curricula; enhanced supports for participants; enhanced partnerships with educational institutions, industry, and the public workforce system; and national dissemination of new curricula. For the shale oil and gas industry, expected benefits from the ShaleNET initiative include shortening the time it takes for companies to fill vacant positions with qualified workers; ensuring that newly hired workers are more productive and less likely to quit; and, due to these improvements, increasing profitability. Finally, participants who undertake the new or enhanced ShaleNET training opportunities are expected to earn increased numbers of credit hours and be more likely to complete their programs, to obtain relevant credentials, and to secure careers in the shale oil and gas industry.

Exhibit I-2: ShaleNET Logic Model

CONTEXTUAL FACTORS

Economic Factors
- Growth of shale gas and oil extraction
- Industry's needs for trained workers

Partnership Factors
- Prior collaboration
- Barriers
- Recent initiatives by partners

Educational Factors
- Strengths/limits of existing curricula
- Strengths/gaps in institutions' ability to implement change
- Unmet training needs of TAA eligibiles, vets, and others

PARTNERS

Educational Institutions
- Hubs (consortium colleges)
- Universities and colleges
- K–12 systems

Public Workforce Systems
- LWIBs
- One-stop career centers
- State workforce agencies

Industry
- Industry partners
- Industry associations

Other Partners
- ACCD

PARTNER CONTRIBUTIONS
- Resources
- Leadership
- Staffing
- Recruitment
- Systems development
- Curriculum
- Information sharing

SERVICE MODEL

Strategy 1
- Enhance TMS/ShaleNET.org
  – Improved info on shale gas and oil careers
  – Referral to hubs

Strategy 2
- Add or enhance shale oil and gas training programs:
  – Entry-level certifications
  – One-year or less certificate programs
  – Associates degree programs

Strategy 3
- Hire career counselors
  – Assess participants
  – Provide participants with academic support, career counseling, case management, and placement services

Strategy 4
- Enhance collaboration through consortium activities
- Enhance partnerships through hub and consortium activities

OUTCOMES/IMPACTS

System
- New and enhanced curricula
- Enhanced supports for participants
- Enhanced partnerships with industry
- Enhanced partnerships with public workforce system
- National dissemination of new curricula

Industry
- Hiring needs filled
- Increased productivity
- Lower rates of worker attrition

Participants
- Increased number of credit hours earned
- Increased rates of training completion
- Increased number of credentials earned
- Increased rates of entering employment
- Increased post-program earnings

The middle panel of Exhibit I-2 shows the key strategies of the current ShaleNET initiative's service model. One of these key strategies is to develop and enhance a series of stackable credentials that allow workers to follow various career pathways in the shale oil and gas industry. ShaleNET's "stackable credential" model, displayed in Exhibit I-3, has five tiers. These tiers include short-term, noncredit, entry-level oil and gas training leading to

Exhibit I-3: ShaleNET Stackable Credential Model

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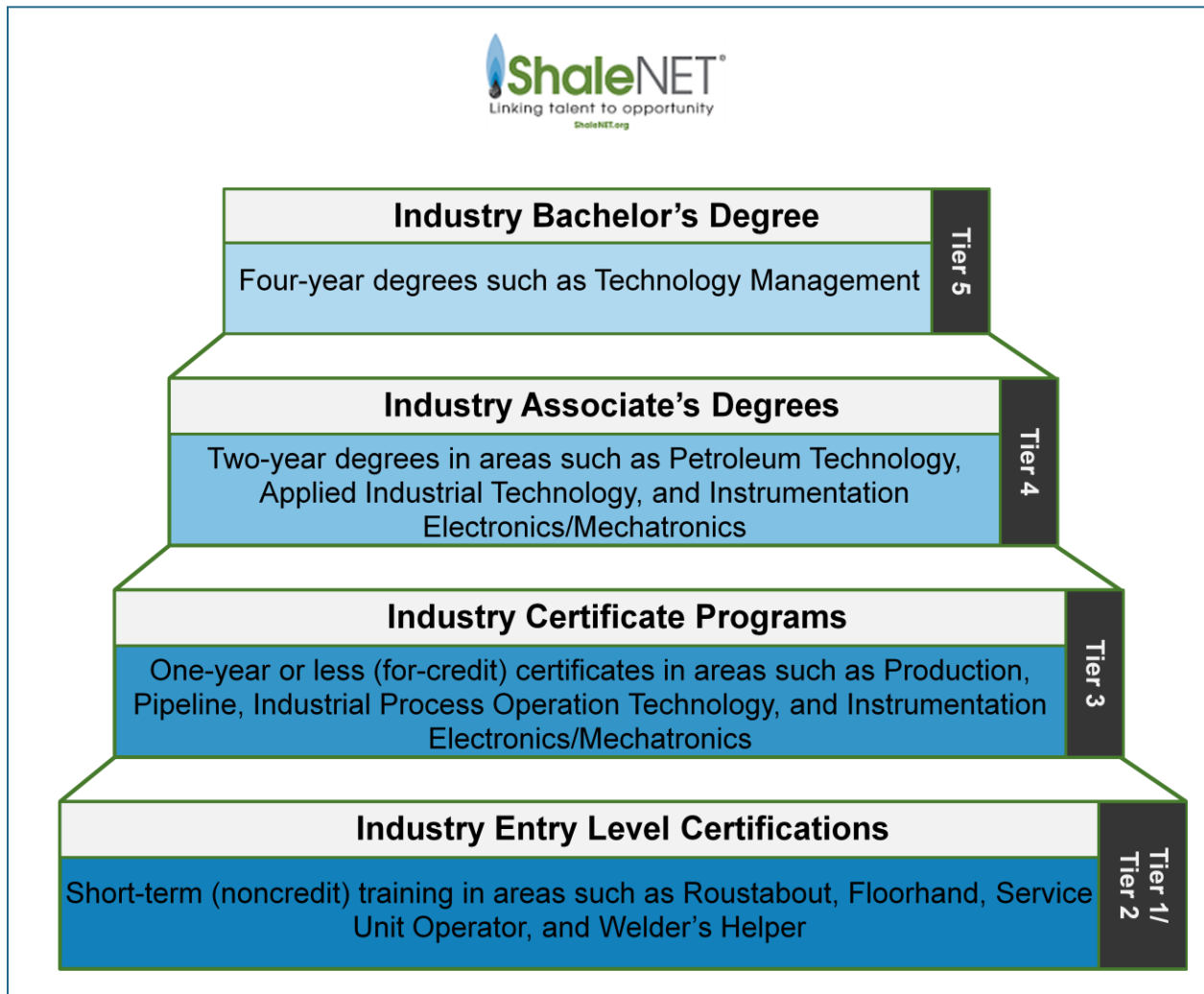
basic industry-recognized certifications (Tiers 1 and 2), credit certificate programs of one year or less (Tier 3), two-year associate's degree programs (Tier 4), and bachelor's degree programs (Tier 5).[8] This iteration of the ShaleNET initiative focuses primarily on Tiers 1, 2, 3, and 4.

Other key strategies that are part of the current ShaleNET initiative's service model include: (1) enhancing the ShaleNET website and Talent Match System (TMS) to provide additional information and direct links to hub career counselors for prospective ShaleNET participants;[9] (2) adding or enhancing training programs and curricula at hub schools by acquiring new training equipment and establishing new industry-recognized training programs based on standardized competencies; (3) providing a career counselor at each hub to assess prospective participants and provide enrolled participants with academic support, career counseling, case management, and placement services; and (4) enhancing collaboration among hub members and partners through ShaleNET consortium and hub activities such as articulation agreements, hub and advisory committee meetings, consortium planning retreats and conference calls, and other types of outreach.

As the left-most panel of the logic model in Exhibit I-2 shows, a wide range of partners are part of the initiative and their contributions are key to its success. These partners include the hub colleges, the universities and colleges with which the consortium members develop articulation and training provider agreements, K-12 pipeline schools, the public workforce development system, the shale oil and gas industry and industry associations, and other partners such as the ACCD.

The top portion of the logic model details the important contextual factors in which the ShaleNET initiative operates. It acknowledges that the initiative was developed in the context of an existing economic and educational environment that includes the nation's

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[8] Note that only PCT offers a Tier 5 program, as it is the only consortium hub to offer bachelor's degrees. Articulation agreements between the hubs allow ShaleNET participants from other institutions to access PCT's bachelor's degree program. In addition, hubs have developed and are developing articulation agreements with other four-year degree-granting institutions. These agreements are discussed in more detail in chapter VI.

[9] TMS is ShaleNET's management information system. It captures information entered by both website users and ShaleNET staff members.

need for trained workers in the shale oil and gas industry. It also notes the presence of some relevant preexisting institutional infrastructures, such as the ShaleNET website, relevant training programs developed under prior grants, and existing relationships among consortium hubs as well as between hubs and actors in the industry. Also relevant as context is the fact that workers receiving Trade Adjustment Assistance (TAA), veterans, and others have pressing unmet training needs.

Overview of the Evaluation

SPR's third-party evaluation of the TAACCCT-funded components of the ShaleNET initiative is focused on answering the following high-level research questions:

- What administrative and partnership structures were established to guide the initiative?
- What was the nature of outreach to and assessment of prospective ShaleNET students, including TAA-eligible workers, veterans, and others?
- How was each of the initiative's major components developed and launched?
- What were the initiative's outputs, outcomes, and impacts?

To examine these research questions, SPR is conducting a multi-method evaluation that includes an implementation study, an outcomes study, and an impact study. Data collection for the implementation study will include three rounds of site visits to each hub (two rounds of which have already been conducted), observations of consortium planning retreats and conference calls, data extracts from TMS and consortium colleges, reviews of key initiative documents, and data from surveys of local WIB directors and employers. The outcomes study will describe and analyze outcomes at the system, employer, and participant levels, using data extracts from TMS and consortium colleges, data collected during site visits, and data from a survey to be conducted in the evaluation's final year of local employers who have recently hired ShaleNET graduates. Finally, using quasi-experimental methods, the impact study will use data collected from the hubs, TMS, and state workforce agencies to compare the educational and labor market results of ShaleNET participants with those of matched comparison group members.

This Interim Report is the first major deliverable resulting from SPR's third-party evaluation of the TAACCCT-funded aspects of the ShaleNET initiative. It uses data collected by research team members through the end of December 2014. In chapter II of this report, we describe the management structure and administration

of the TAACCCT-funded ShaleNET initiative thus far. In chapter III, we describe ShaleNET's outreach and enrollment procedures for students. Chapter IV describes the training programs and services provided by the ShaleNET initiative during the first nine quarters of the grant, as well as grant-funded activities that aim to develop and enhance its training programs. Chapter V describes the counseling and student support services offered by hubs to ShaleNET students, including job and internship placement assistance. In chapter VI, we describe the ShaleNET partnerships that were developed and enhanced during the period of the grant. Finally, chapter VII concludes the report with a brief description of early outcomes from the initiative.

II. Structure and Management of the ShaleNET Initiative

As discussed in the introduction, the ShaleNET consortium is made up of four colleges, called hubs, each of which conducts grant-supported training programs and activities (described in subsequent chapters). To carry out these programs, each hub has multiple grant-supported staff members. Hubs, in turn, are supported by two additional staff members based at PCT, who carry out grant management activities, and by support from ACCD, which assists the consortium with industry engagement, marketing, and sustainability. (See Exhibit II-1 for a visual representation of the ShaleNET consortium's TAACCCT-funded components.) This chapter describes the leadership and staffing of each hub as well as the role of the cross-hub staff members located at PCT and ACCD.

Exhibit II-1: ShaleNET Consortium's TAACCCT-Funded Components
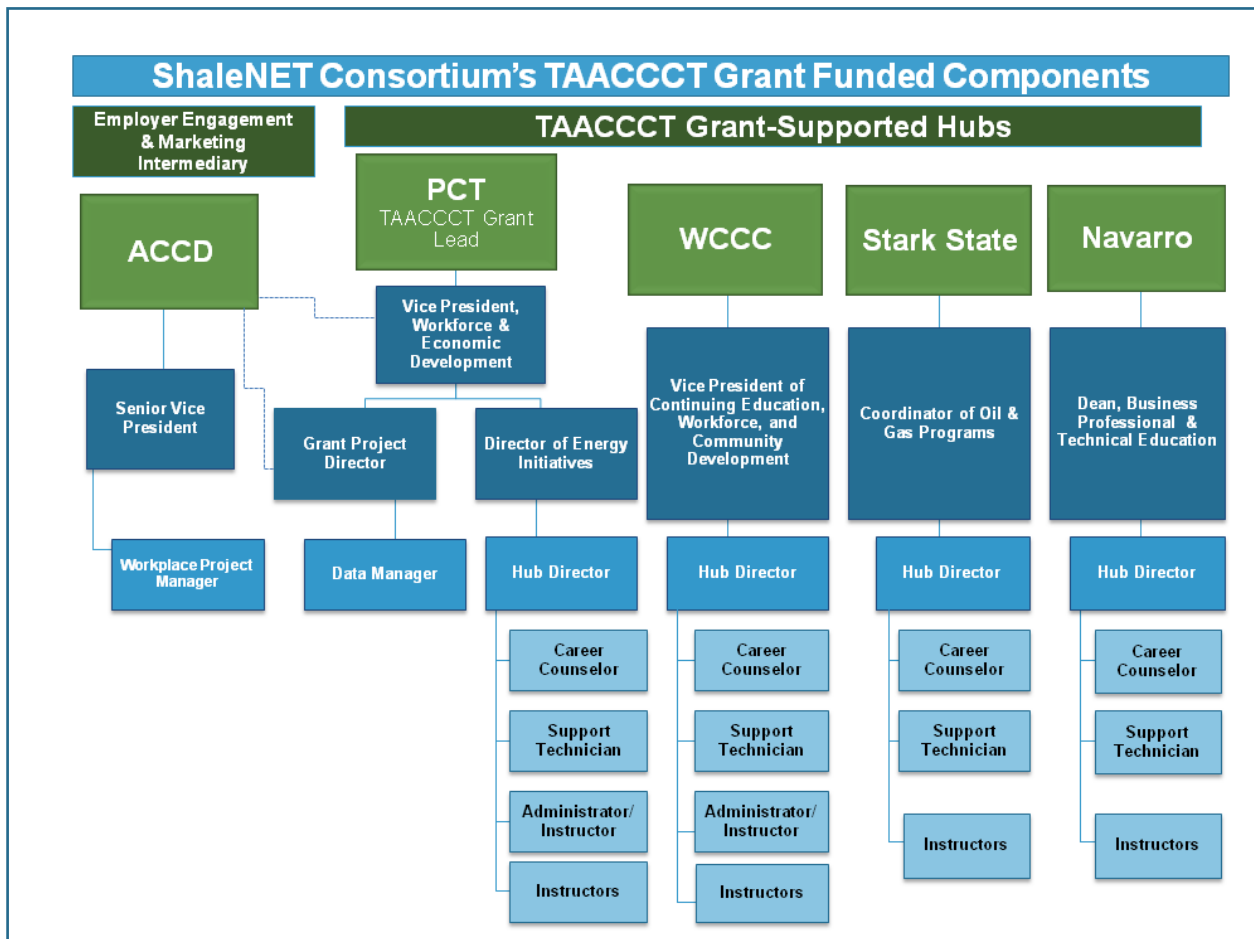
Hub-Level Leadership, Staffing, and Operations

As displayed in Exhibit II-1, ShaleNET activities at each hub are under the direct supervision of one or more primarily non-grant-funded college administrators (with titles ranging from vice president of workforce development, to dean, to coordinator of oil and gas programs). These administrators play important roles in ShaleNET operations at each hub. At most colleges, one of their key roles is to supervise the hub director's work. In addition, at the three hubs where these administrators have deep knowledge of the oil and gas industry, they have played key roles in making connections to partners, particularly those in industry, and have helped develop training curricula. Another critical role of these administrators—one shared with the hub director—is to represent and promote the ShaleNET initiative to senior college leaders, such as the college president. This communication with senior college leadership has been important in assisting hubs with overcoming challenges. Finally, these administrators, as permanent rather than grant-funded college staff members, also help provide continuity in grant management and activities when key grant-funded positions turn over, as well as institutional memory about how ShaleNET and the college operated prior to the TAACCCT grant.

Under the leadership of these college administrators, ShaleNET programs and activities at each hub are primarily carried out by a small team of three to four full-time grant-funded administrative staff members (see Exhibit II-2) and by five or more grant-funded instructors. The most senior of these staff members is the hub director, who, in addition to supervising other grant-funded staff members, also oversees and manages grant- and ShaleNET-related tasks, including developing course offerings and schedules, hiring instructors, conducting outreach and recruitment of students, overseeing data entry and reporting, managing equipment needs, and sometimes teaching classes. Hub directors—working with career counselors—also play a primary role in developing partnerships with the oil and gas industry, the public workforce system, and educational partners.

In all four hubs, the primary staff members supervised by the hub director include the ShaleNET career counselor and support technician. Across all hubs, the career counselor serves as the primary liaison with ShaleNET students and is principally responsible for outreach and enrollment activities, as well as

> Communication with **senior college leadership** has been important to **assist hubs with overcoming challenges.**

Exhibit II-2: Number of Full-time Grant-Funded ShaleNET Staff Members at Each Hub as of December 31, 2014

Positions	PCT	WCCC	Stark State	Navarro
Hub directors	1	1	1	1
Career counselors	1	1	1	1
Support technicians	1	1	1	1
Other hub staff members	2	1		
Total	5	4	3	3

providing all types of student support, including academic coaching, job search assistance, and internship and job placement. By contrast, the role of the support technician varies across hubs. At two of the hubs, the support technician provides administrative support to the hub director and career counselor by coordinating class schedules, assisting with data entry, processing paperwork, documenting student attendance, coordinating meetings, and talking to prospective students. At the other two hubs, the support technician is primarily responsible for setting up and maintaining ShaleNET equipment, and assisting instructors with scheduling and preparing for labs.

Both PCT and WCCC have one additional grant-funded hub staff member. These staff members, who have different titles at the two hubs, have assisted their hubs with a variety of ShaleNET activities, including developing curricula, purchasing and setting up equipment, and teaching ShaleNET courses.[10]

Finally, each hub uses TAACCCT grant funds to hire multiple instructors to teach the technical classes required for ShaleNET training programs. The abilities needed by ShaleNET instructors are highly specialized, requiring a blend of industry experience, technical knowledge, and teaching skills. Because of these

> The abilities needed by **ShaleNET instructors** are highly specialized, and **require a blend of industry experience, technical knowledge,** and **teaching skills.**

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[10] The hubs differ in the titles they use for these staff: at PCT, the position titles for these staff members are ShaleNET Consultant/Instructor II and ShaleNET Consultant/Instructor I, while at WCCC, the position title is ShaleNET Director of Education Services.

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requirements and challenges related to working within the college system, ShaleNET instructor positions are most often filled by adjunct or contract staff rather than full-time faculty, in a ratio of approximately 4:1 (see further discussion under "Hub Staffing Challenges").

Hub Staff Member and Instructor Qualifications

Prior to being employed under the current ShaleNET grant, most hub staff have multiple years of experience working in either higher education or the oil and gas industry. For example, three of the four hub directors have private sector experience in the oil and gas industry, as do both of PCT's consultant/instructors. In addition, three of the hub directors, three of the career counselors, and three of the support technicians have multiple years of experience working either for their ShaleNET hub college or for another higher education or vocational training institution. In particular, the career counselors and support technicians at WCCC and PCT served in very similar roles under the first (CBJT) ShaleNET grant as they do under the TAACCCT-funded grant, providing those hubs with significant continuity.

Similarly, ShaleNET instructors typically possess between ten and forty years of oil and gas or manufacturing industry experience, as well as one or more years of teaching experience at a community college or other similar vocational training institution. The educational background of instructors varies from possession of a graduate degree to possession of a high school diploma.

Student focus group participants expressed their appreciation for the level of industry knowledge and experience of staff members and instructors and talked about how that benefitted them. For example, one ShaleNET student at Stark State commented that "It really helped to have [the career counselor and hub director] around because they know about the [gas and oil] industry and can…steer us in a direction that meets our needs" in terms of both pursuing the right training program and the right career. Students also commented on how ShaleNET staff members, especially career counselors, have "tons of contacts in the industry" that they can use to help students find employment. Another student at WCCC commented on the value of having ShaleNET instructors with deep industry experience: "The faculty have been the best part of the program because they come from industry and understand what we need to know [for a successful oil and gas career]."

"The faculty have been the best part of the program because they come from industry and understand what we need to know [for a successful oil and gas career]."
– ShaleNET student, WCCC

Hub Staffing Challenges

All of the ShaleNET hubs have faced challenges related to hiring and retaining hub staff members and instructors, as well as keeping staff members' workloads manageable.

Hiring Challenges

ShaleNET hubs have confronted multiple challenges related to hiring hub staff members and instructors. One ubiquitous challenge has stemmed from the slow and complicated hiring policies of hub colleges, which include requirements that hiring pools cannot close until a certain number of candidates have applied, that multiple rounds of interviews must be conducted, and that very stringent standards be met in composing hiring committees. These practices, all relatively typical for colleges, have made it difficult for hubs to quickly hire qualified candidates.

Competition with the oil and gas industry for skilled staff members and instructors with industry experience has been another major challenge for hubs. Hub colleges are not able to offer the high salaries that are typical within the industry. Further, when hubs have been able to find instructors with industry experience, sometimes those instructors have lacked strong teaching skills. Some hubs have been further hamstrung by college-level human resources policies that limit the salary ranges for certain positions, even when funding has been available from the grant to offer higher salaries.

A further barrier noted by respondents at one of the colleges is that being located in a relatively rural area limits the pool of qualified applicants who are interested in working at the college.

However, based on significant efforts by both hub and college leaders, hubs were eventually able to bring on capable staff members and meet key grant deliverables. For example, at one hub, communication between the hub director and the college's president helped to mitigate these problems. The hub director informed the president about the major challenges the hub faced in hiring an instructional designer, due to restrictive hiring policies, including a particularly low mandated salary range, though the grant could afford to pay a higher salary. Following this conversation, the hub director was able to gain approval for certain exceptions to college hiring policies, and shortly thereafter, was able to hire the needed instructional designer.

Retention Challenges

These hiring challenges have been compounded by staff turnover. For example, since the beginning of the grant, three of the four

> **ShaleNET hubs have** confronted **multiple challenges related to hiring** hub staff members and instructors.

> **Hiring challenges have been compounded by turnover** problems faced by the ShaleNET hubs.

hubs have had to replace their hub director—in one case because he transitioned back into the oil and gas industry. In addition, two hubs have had to replace their original career counselors—one of whom was also hired away from ShaleNET by an oil and gas industry employer—and one hub has had to replace its support technician. Finally, a key technical advisor at Navarro—the founding chair of the college's Petroleum Technology Department, who originally brought ShaleNET to the school—also left to return to private industry early in the second year of the grant. As a result of this extensive turnover, ShaleNET hub staff members reported challenges related to lost institutional memory about data collection and partner relationships, as well as program delays and lack of capacity caused by the need to recruit, hire, and train new staff.

In addition, for various reasons such as faculty union restrictions and required course loads, ShaleNET hubs have hired most instructors on a temporary and part-time basis. However, as many of these instructors would prefer full-time positions and none are contracted for more than a term at a time, most hubs have also experienced some turnover in instructors and have at times had to scramble to cover certain courses.

Happily, with the exception of Navarro's Petroleum Technology Department chair, the non-grant-funded college administrators that oversee ShaleNET hub staff members have been much less likely to turn over. Consequently, as discussed above, they have often been able to mitigate the challenges caused by grant staff turnover, providing much-needed continuity to grant operations. Indeed, at one hub the supervising non-grant-funded administrator, who had decreased his involvement with ShaleNET under the TAACCCT grant once again began playing a much more involved role in the grant when the hub director at his college took another job, helping maintain grant operations until a new hub director was hired, and supporting that new hub director once he came on board.

Challenges in Keeping Workloads Manageable

Finally, career counselors at two of the colleges reported heavy workloads created, at one, by the need to do extensive recruiting due to the newness their ShaleNET program, and at the other by the large number of students they needed to support. At one of these hubs, the hub director was able to ameliorate this overload

Non-grant-funded college administrators that oversee ShaleNET have been **much less likely to turn over**.

partially, first by hiring a temporary staff person to assist the career counselor and then by bringing on a second full-time career counselor.[11]

Consortium-Level Leadership Structure, Staffing, and Activities

To carry out and manage most consortium-wide grant operations, PCT, as the lead college for the ShaleNET TAACCCT grant, has hired two staff members. One of these staff members is the project director for the grant, who directs and coordinates all activities for the grant across consortium colleges. She also serves as the grant's primary point of contact with USDOL, develops grant-wide policies and procedures, and manages the contracts and work of all grant-wide contractors (except the third-party evaluator and the website and data system contractor). The other consortium-wide staff member, the data manager, has primary responsibility for collecting and reporting performance data to USDOL and managing the third-party evaluation and website and data system contracts. She also provides support to the grant project director.

The ShaleNET consortium also receives substantial assistance from two ACCD staff members, the senior vice president of special projects and the workplace project manager. These ACCD staff members assist the ShaleNET consortium in two primary ways: (1) brokering relationships and supporting partnerships between the consortium and the oil and gas industry and policymakers and (2) providing the consortium with marketing materials and branding assistance (these ACCD contributions are discussed in detail in chapters III and VI).

In addition to providing this support, another key consortium activity is maintaining and updating the ShaleNET website (www.shalenet.org). This duty is shared between the contractor (Five-Star Development, Inc.) that developed the site under the previous ShaleNET grant and continues to host it, and the consortium data manager.

> **ACCD staff members assist** the ShaleNET consortium **by** (1) **brokering relationships and supporting partnerships with the oil and gas industry and policymakers** and (2) **providing** the consortium with **marketing materials and branding assistance**.

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[11] However, when the hub director at this college left a few months later, one of the career counselors was promoted to hub director; consequently, as of December 31, 2014, this hub once again had only a single career counselor.

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The website serves both as a key recruitment tool for the initiative and as the online platform for Talent Management System (TMS), the ShaleNET initiative's system for capturing and storing data on current and prospective ShaleNET students.[12] TMS, which was also developed under the previous ShaleNET grant by Five-Star Development, Inc., was reconfigured at the start of the TAACCCT grant to enable it to capture most of the data needed for required reporting to USDOL as well as for SPR's evaluation. As of the writing of this report, TMS was designed to capture the following data:

- **For all visitors to the ShaleNET website (whether or not they actually enroll in a ShaleNET program)**:
  - Contact information
  - Demographics
  - Work history
- **For all ShaleNET students:**
  - Courses taken
  - Credits earned
  - Major
  - Credential earned
  - Career counselor services received
  - Employment after program completion

To minimize the burden on hub staff members of entering these data, the system encourages prospective ShaleNET students to enter their own contact, demographic, and work experience data themselves by "registering" on the website (this process is discussed in more detail in chapter III). It is also designed so that information on courses taken and credentials and credits earned can be batch uploaded from each hub college's student information system rather than entered by hub staff members.

Unfortunately, the consortium has faced a number of TMS-related challenges. First, the process of uploading data from college student information systems has not worked reliably, so data on

> The **ShaleNET website** serves both as a **key recruitment tool** for the initiative and as **the online platform for Talent Management System**, the ShaleNET initiative's system for capturing and storing data

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[12] As the recruitment function of the website is described in detail in chapter III, that function is not described here.

the courses taken and credits earned by ShaleNET students is largely missing from TMS. In addition, a number of students, particularly those enrolled in ShaleNET credit programs, have not entered their demographic and background data into TMS, and consequently those data either remain missing or have had to be entered by hub staff members. As a result of these challenges, neither hub staff members nor the consortium data manager are able to use TMS for reporting to USDOL, keeping track of their students, or managing their programs. Instead, hub staff members have generally relied on hub-developed Excel spreadsheets or data pulled from their student information systems to provide the data needed for USDOL reporting.

Consortium Coordination Activities

PCT staff overseeing consortium activities use several mechanisms to facilitate grant coordination and peer exchange among consortium members, especially hub directors. Key among these mechanisms have been the regular consortium webinars and in-person retreats (see Exhibit II-3). Ad hoc contact via phone calls between directors, the grant project director, and the data manager have also been common. Finally, consortium stakeholders use a SharePoint site to share documents and resources across sites, as well as a Dropbox account to share curricula.

> Key among these **coordination and peer exchange** mechanisms have been the regular **consortium webinars and in-person retreats**.

Topics addressed during these interactions among consortium members frequently included some of the following subjects:

- **Marketing**. Consortium members have regularly discussed marketing efforts, including new materials developed by ACCD, and efforts to conduct outreach to veterans and other USDOL targeted populations.

- **ShaleNET website and TMS**. Consortium members have discussed what additional elements to add to the initiative's website and talent match data system, and have provided feedback on those elements once they were added.

- **Training curriculum and competencies**. Consortium members have regularly discussed program curricula and developing program competencies for each ShaleNET tier.

- **Employer and partner engagement**. Consortium stakeholders have regularly discussed cross-consortium efforts to engage and gain the support of key industry-leading companies.

- **Sustainability**. Consortium members have focused extensively on developing strategies for sustaining key elements of the ShaleNET model after the end of the TAACCCT grant.

Exhibit II-3: Cross-Consortium Coordinating Activities

Activity	Participants	Description	Frequency
Consortium calls/webinars	All hub directors, ACCD staff, and relevant project contractors; key supporting college administrators also typically participate	Hosted by PCT via webinar and conference call, these meetings provide opportunities for check-ins and short discussions of relevant topics.	Initially biweekly; since mid 2014, monthly
In-person retreats	All hub directors, ACCD staff, and relevant project contractors; key supporting college administrators also typically participate	Hosted in different regions on a rotation schedule, these in-person meetings provide opportunities for in-depth strategic planning and discussion of project deliverables.	Initially quarterly; since mid-2014, three times a year
Virtual communication	All consortium members	A SharePoint online repository; Dropbox account; frequent email and phone correspondence.	Regular/ frequent

Among the consortium connection activities, hub staff members identified the in-person retreats as particularly useful, especially for building relationships and trust across members of the consortium. In addition, since the retreats are hosted by different hubs on a rotating basis, they have provided consortium members with the opportunity to see how other schools operate their ShaleNET programs and how they have set up their facilities and instructional labs.

Despite the usefulness of these retreats, in mid-2014, consortium members opted to formally change the frequency of retreats from quarterly to three times per year. They did so because, with grant operations more than halfway to completion and many grant deliverables implemented, they felt that they no longer needed to meet as often. At around the same time, and for similar reasons, they also opted to reduce the frequency of consortium conference calls, from bimonthly to monthly.

> Hub staff members identified the **in-person ShaleNET retreats** as **particularly useful,** especially for **building relationships and trust** across members of the consortium.

III. Outreach and Enrollment in ShaleNET

Thus far, the ShaleNET initiative has been quite successful in achieving its TAACCCT-grant enrollment goals. This chapter presents those enrollment results, as well as the outreach methods used to recruit ShaleNET students and the processes by which students enrolled in the ShaleNET initiative.

Enrollment Results

As of December 31, 2014, the ShaleNET initiative had enrolled 948 students, 150 percent of its cumulative enrollment goal for the first two years of the TAACCCT grant, and 87 percent of its goal for the entire grant with six quarters of grant operations remaining (see Exhibit III-1).[13]

Exhibit III-1: ShaleNET Actual Enrollment versus Goals (Cumulative)

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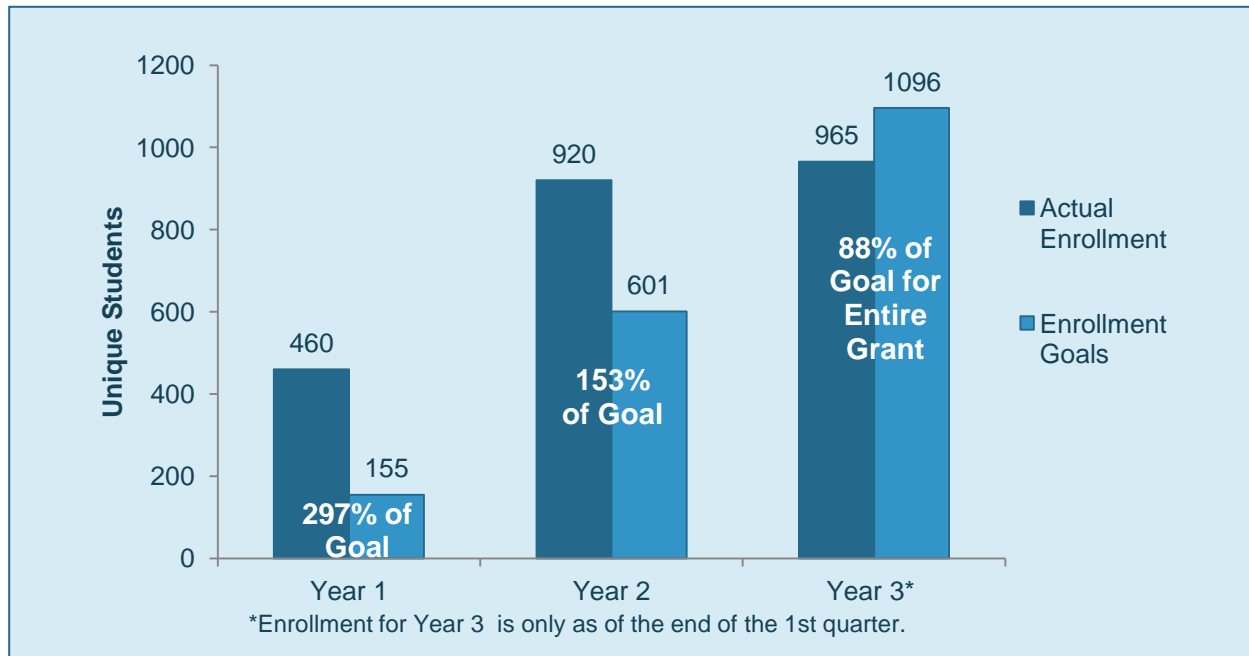
[13] Although operations funded by the ShaleNET TAACCCT grant were scheduled to cease as of September 30, 2015, USDOL has granted the initiative a two quarter extension.

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Although 77 percent of the initiative's total enrollment in the first year was generated by a single hub (Navarro), by the end of the grant's second year, enrollment at the other three hubs had grown rapidly, while Navarro's had leveled off, resulting in more equal contributions to total enrollment by each hub (see Exhibit III-2).

Exhibit III-2: Contribution of Each Hub to Each Year's Total Enrollment

* Enrollment for Year 3 is only as of the end of the 1st quarter. Note that Navarro had no new enrollees in the 1st quarter and so does not appear in the chart in Year 3.
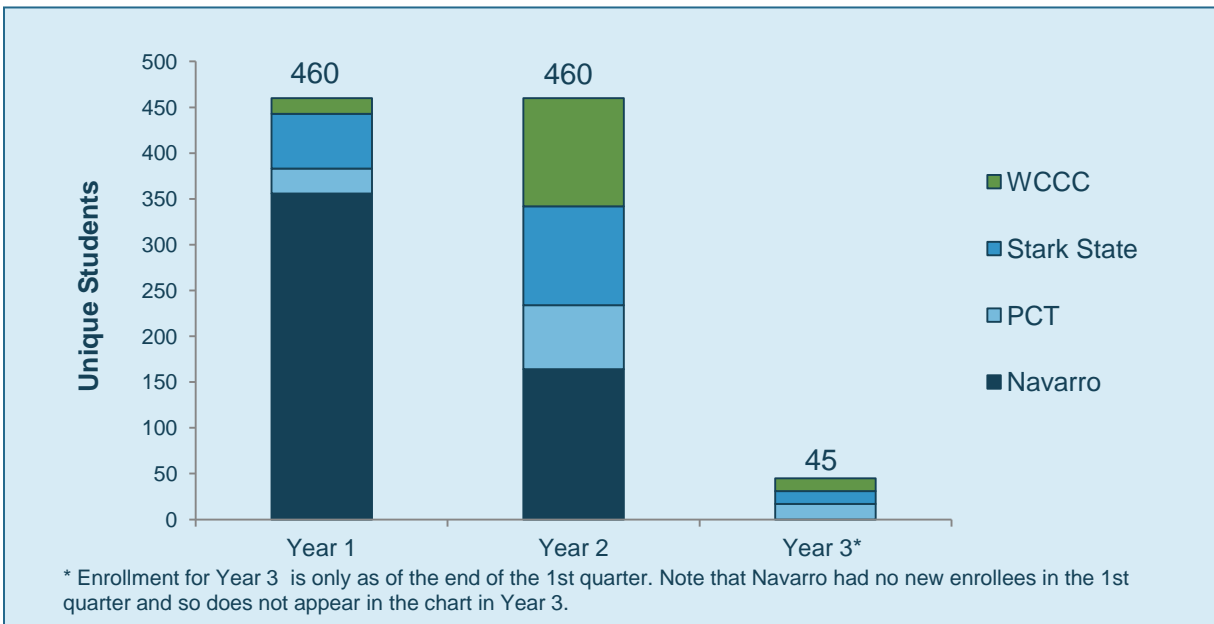
Outreach Methods
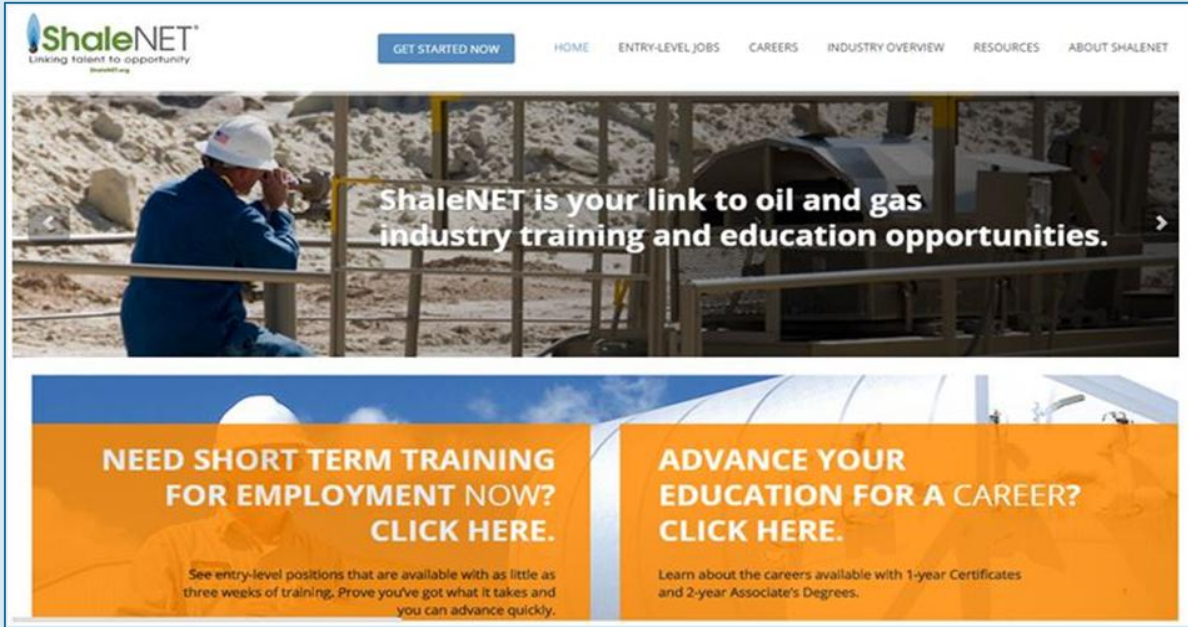
The ShaleNET initiative used a variety of outreach strategies to achieve its enrollment goals. The most common of these according to hub staff members and student focus group participants were use of the ShaleNET website, word-of-mouth referrals, outreach activities conducted at hubs, and virtual activities conducted via email and social media.

ShaleNET.org Website

A key outreach tool used by all hubs is the ShaleNET website. Interested individuals typically find this site through Internet searches for oil and gas industry training programs or through referrals from ShaleNET hub staff members or partners. Although some hubs relied on this tool less than others, the website has received significant traffic, with 43,654 unique individuals visiting it since its development under the prior ShaleNET grant.

Once on the ShaleNET website's homepage (depicted in Box III-1), individuals can learn about the shale gas and oil industry via a series of short videos, as well as about careers in the industry. The site also has extensive information about the credit and noncredit ShaleNET training programs available at each hub, and contact information so that prospective students can contact hub staff members to learn more.

Box III-1: ShaleNET.org Website

On the ShaleNET.org home page (pictured above), users can access the following features:

- An industry overview, consisting of five short videos that provide basic information about the oil and gas industry, including the location of the largest shale plays and a description of the entire process of producing energy from shale rock, from extraction of gas via hydraulic fracturing to distribution to end users

- Detailed job descriptions and videos describing the shale oil and gas jobs available to those who complete each tier of ShaleNET training

- A resource section containing a searchable and downloadable Career Guide, which contains information on forty-seven available shale oil and gas careers

- Information about the ShaleNET consortium and the TAACCCT grant

- Contact information for each hub, including the names and email addresses of career counselors and hub directors

For recruitment purposes, one of the key features of the website is that visitors are encouraged to register, initially by providing only their name, email address, zip code, and a password. Once they have provided this basic information, the ShaleNET website

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encourages individuals to go through the full, four-step registration process, which includes completion of a "Personal Profile" page reporting demographic information, and a "Work History" page. Once this full registration process is complete, the website automatically generates an email to the nearest ShaleNET career counselor and this information is saved in TMS for use by hub staff members, first for recruitment purposes, and then later—if the individual actually enrolls in a ShaleNET program—for reporting and case management purposes. As an example of how these registration data can be used to recruit students, one career counselor said that she uses them to search for registered individuals located within a two-hundred-mile radius of her hub, and then contacts those individuals by phone to discuss their interest in the gas and oil industry and provide detailed information about ShaleNET programs.[14]

Word-of-Mouth Referrals

Another common recruitment strategy used by hubs was to rely on word-of-mouth recommendations. These recommendations typically come from students who are already enrolled or have completed a ShaleNET program, such as a student focus group participant at Stark State who said: "I believe so much in the program that I recommended to a friend of mine that he apply."

"I believe so much in the program that I recommended to a friend of mine that he apply." --- ShaleNET student, Stark State

Although reliance on word-of-mouth worked best for the hubs that had offered ShaleNET programs for a longer period of time, all hubs reported relying on it to some extent and about half of all student focus group participants (nine of seventeen) reported learning about ShaleNET through this method. At Navarro, a hub that has offered most of its ShaleNET programs for several years, this strategy has been so successful that it has been the hub's primary recruiting strategy.

Outreach within ShaleNET Colleges

A third often-used recruitment strategy was to conduct outreach within hub colleges. For example, career counselors from two hubs marketed ShaleNET at their colleges' career fairs and other

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[14]   Even if an individual completes only the first of the four steps to full registration, the system captures enough information to allow ShaleNET career counselors to follow up with that individual for recruitment purposes.

college-sponsored events. Three hubs reported working closely with various college departments, like student affairs, admissions, and financial aid, to orient staff in those departments to ShaleNET, so that they could refer suitable students. Staff in these three hubs noted that a wide spectrum of college departments help students to make career decisions, so they felt that it was important to inform multiple departments about ShaleNET to ensure adequate enrollment levels. Finally, all hubs used their college's own websites for recruitment, providing detailed descriptions of their hubs' ShaleNET programs or links to the main ShaleNET website.

Social Media Outreach

Career counselors reported that they used the ACCD-created ShaleNET Facebook page extensively as a way to recruit students, particularly for noncredit programs (see Box III-2). They did so by posting information and pictures about ShaleNET training programs, including key dates for upcoming noncredit programs. Respondents said that the Facebook page was an effective marketing tool because program alumni have used it to post about the program and about the jobs they got after completing it. Indeed, one noncredit student reported that he chose the ShaleNET program after he visited the initiative's site on Facebook and read the reviews of ShaleNET students, which highlighted their post-program jobs and salaries.[15] By contrast, the ACCD-created ShaleNET LinkedIn page has been much less used. As of March 17, 2015, ShaleNET's Facebook profile had

Box III-2: ShaleNET Facebook Page

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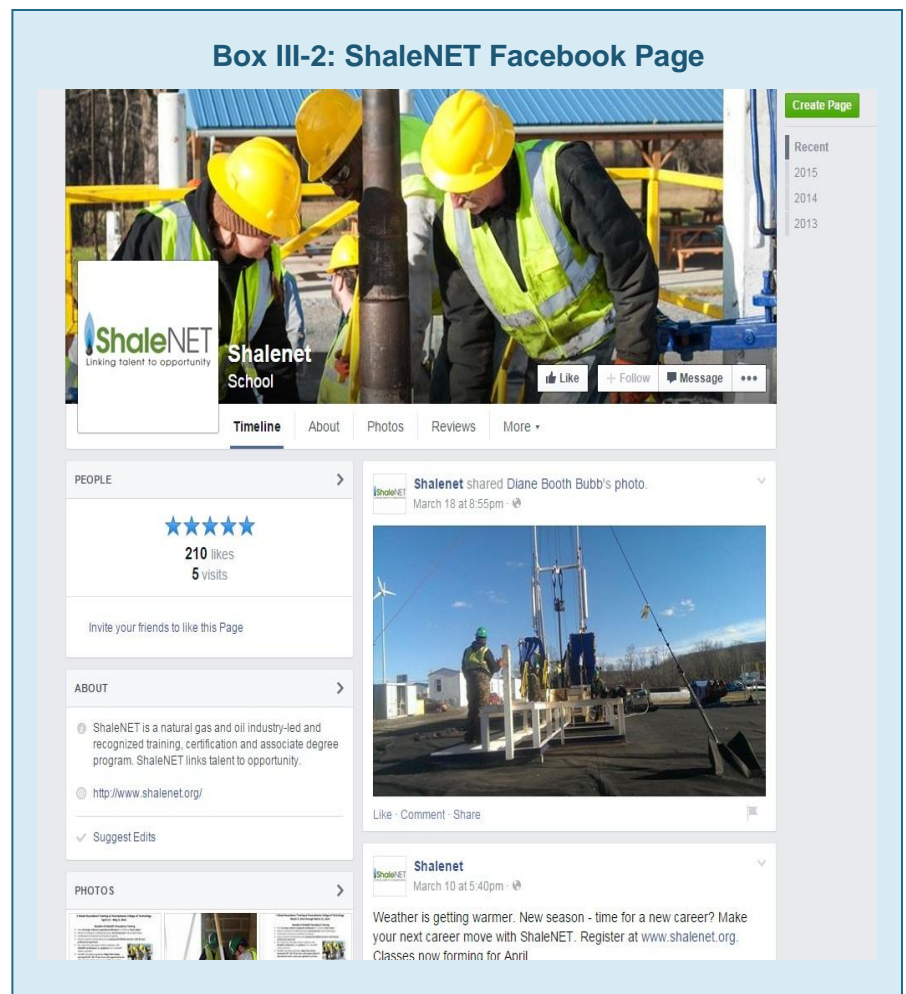
[15] Student focus group participants at two other hubs also commented that ShaleNET completers' post-program employment and salary outcomes were a major selling point for the program.

207 "likes," while the ShaleNET profile on LinkedIn had only 27. One respondent reported that the greater success of the Facebook page was likely due to the age and background of typical ShaleNET students.

Other, Less Common Outreach Strategies

ShaleNET hubs also used other outreach strategies. These included:

- Making presentations to high school students and guidance counselors and providing outreach materials and information on ShaleNET to college recruitment staff who conduct outreach to K-12 students.

- Making presentations to American Job Center (AJC) staff members, local WIBs, and other local workforce development partners.

- Participating in local career fairs, some of which were specific to veterans.

- Advertising ShaleNET programs in local newspapers.

ACCD Outreach Activities

As discussed in chapter II, ACCD has a contract with ShaleNET to assist with marketing and outreach, and the consortium and hubs have relied heavily on ACCD's expertise in designing and developing materials to help market ShaleNET programs to interested applicants and industry representatives. Below we describe several key types of marketing and outreach assistance provided by ACCD:[16]

- **Participation in industry tradeshows and career fairs.** ACCD staff participated in approximately six career fairs each year to promote the ShaleNET programs within the greater metropolitan area of Pittsburgh. ACCD also promoted ShaleNET at regional oil and gas tradeshows, increasing the industry's awareness of the program.

- **Production and distribution of ShaleNET electronic newsletters**. ACCD produced ShaleNET's quarterly electronic newsletters, which were emailed to a mailing list and posted on the ShaleNET website. ACCD recently increased the ShaleNET newsletter's mailing list from 750 recipients to

> **ACCD** recently **increased** the **ShaleNET newsletter's mailing list** from **750 recipients to over 7,000, while maintaining an opening rate of 22 percent**, which is higher than average for similar publications.

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[16] Note that ACCD's employer engagement activities are not included here, as they are described in chapter VI.

over 7,000, while maintaining an opening rate of 22 percent, which is higher than average for similar publications.[17] It increased the newsletter mailing list primarily by asking hubs to contribute additional email addresses for the list, particularly those of local and state policymakers and educational institutions.

- **Development of outreach toolkits and other materials**. ACCD created an outreach toolkit for the hubs to use at conferences and meetings, including letterhead, cut sheets, banners, folders, one-page fact sheets, brochures, and report covers. ACCD also designed shirts and hats with the ShaleNET logo for staff to wear at events in order to increase awareness of the ShaleNET brand. ACCD has also developed videos of students who have participated in the ShaleNET program that can be used for outreach purposes.

Five-Star Development, Inc. Recruitment Video
- In addition to hosting and maintaining the ShaleNET website and TMS, Five-Star Development, Inc. has also worked with the ShaleNET consortium to develop a recruitment video that includes footage of students, grant-purchased equipment, and employer partners. This video should be finalized in spring 2015.

Outreach Efforts Targeted at Special Populations

In addition to the general outreach activities described above, ShaleNET's hubs developed specific outreach strategies and made extensive efforts to recruit members of USDOL's priority populations for the TAACCCT grants: veterans and TAA-eligible individuals. These efforts are described below.

Veterans. ShaleNET career counselors used several strategies to recruit veterans and the eligible spouses of veterans. These included briefing local Disabled Veterans' Outreach Program specialists, Local Veterans' Employment Representatives (LVERs), and local Veterans Administration staffs on the ShaleNET initiative to enable these veteran-serving staff members to make referrals. ShaleNET career counselors also made presentations at meetings of local veterans' organizations and attended veteran-focused events such as career fairs. For example, Stark State's ShaleNET career

> ShaleNET's hubs developed **specific outreach strategies** and made **extensive efforts** to **recruit veterans and TAA Eligible individuals.**

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[17] According to the "2013 Email Marketing Metrics Benchmark Report" from IBM's SilverPop Company, the average unique open rate for nonprofits was 17.2 percent, www.silverpop.com/marketing-resources/white-papers/all/2013/2013-EM-Benchmark/.

counselor attended a local Red, White, and Blue job fair for veterans to share information about ShaleNET. In addition, each

of the hubs has attempted to gain approval for their noncredit programs to be eligible for G.I. Bill funding, and two (PCT and Stark) had gained that approval as of the end of 2014, while the other two hubs were still working on that approval.[18] As a result of these efforts, ShaleNET hubs have enrolled ninety veterans, comprising about nine percent of all ShaleNET students, which is higher than the percentage of veterans (about six percent) residing in the states of Ohio, Pennsylvania, and Texas (see Exhibit III-3).[19]

Individuals Receiving TAA. To recruit individuals receiving TAA, ShaleNET hubs have attempted to work with both state and local public workforce system partners. For example, career counselors from all hubs visited local American Job Centers to provide information on ShaleNET to local staff members who provide TAA services. In addition, in fall 2014, ShaleNET staff members also met with state-level TAA program coordinators for both Pennsylvania and

Exhibit III-3: Enrollment of Veterans and Eligible Spouses of Veterans

Unique Students	Veterans
WCCC	13
Stark State	15
PCT	16
Navarro	46

90 (9%)

Ohio. At these meetings, ShaleNET representatives provided state TAA coordinators with information on the ShaleNET initiative and elicited guidance on how best to coordinate with local staffs that provide both rapid response and TAA services. PCT also demonstrated to ShaleNET hub directors how to access information about trade-affected companies from the USDOL website.

Despite these extensive recruitment efforts, as of the end of 2014, ShaleNET hubs' had succeeded in enrolling only five TAA-eligible students in ShaleNET (.5 percent of total enrollment). ShaleNET hub staff members attributed this lack of success with TAA eligible individuals to the following reasons:

- Small numbers of TAA-eligible individuals residing in the regions served by ShaleNET hubs

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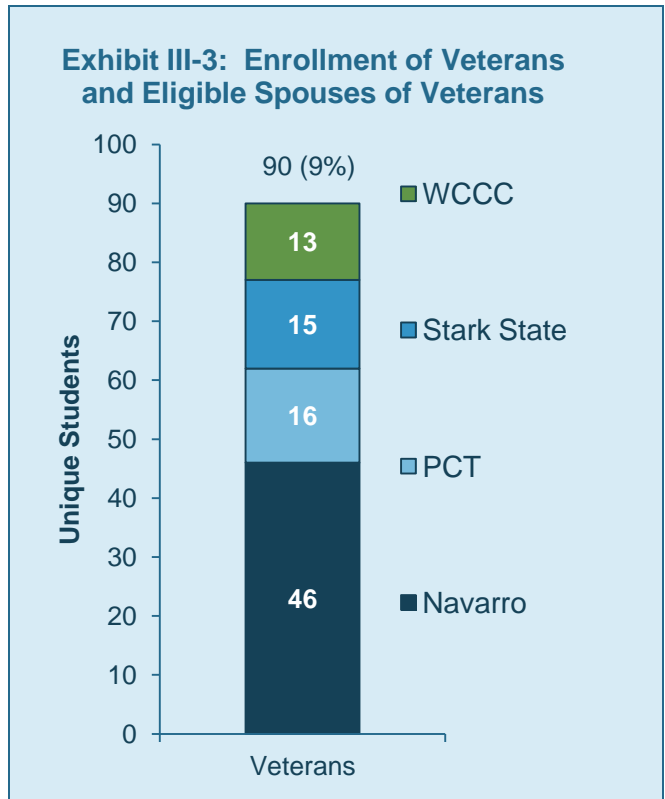
[18] Note that ShaleNET for-credit programs are automatically G.I. Bill approved.

[19] Source: US Census data.

- A lack of interest in gas and oil industry careers by TAA-eligible individuals, fueled by a perception among these individuals (and AJC staff members who work with them) that all jobs in the industry are "dirty, greasy," and physically strenuous (despite the fact that some oil and gas jobs may not be any of these)

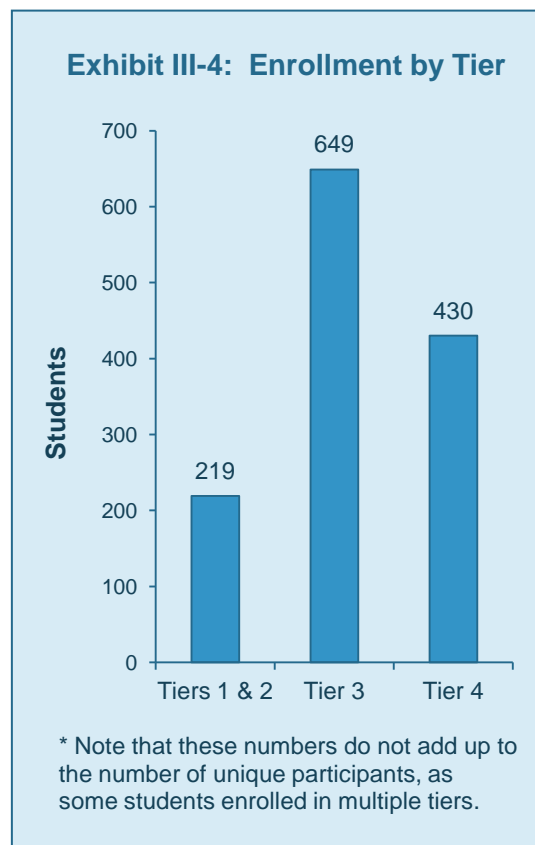## Amount of Time Spent on Outreach

During the first nine quarters of the TAACCCT grant, ShaleNET hub staff members—primarily career counselors—spent between 10 and 60 percent of their time on outreach activities. This variation in the amount of time spent on outreach across hubs was primarily due to two factors:

- **How well established ShaleNET training programs were at the hubs.** Hubs with new ShaleNET programs needed to spend more time conducting outreach than did hubs with programs that predated the TAACCCT grant.

- **Whether and to what extent hubs offered credit (Tiers 3 and 4) versus noncredit (Tiers 1 & 2) programs.** For a variety of reasons, hubs found noncredit programs harder to recruit for than credit programs (this issue is discussed in more detail below). Thus, hubs that directly offered noncredit programs spent more time recruiting.

Other Outreach and Recruitment Challenges

In addition to the successful recruitment strategies discussed above, ShaleNET staff reported that they have faced two major recruitment challenges.

- **Recruitment for noncredit programs.** Some hubs have had difficulty recruiting students for noncredit (Tiers 1 & 2) programs and as a result have enrolled fewer students in these programs than expected (see Exhibit III-4).[20] Hub staff members reported several reasons for these challenges:

  – Many applicants interested in these entry-level programs had difficulty meeting these programs' rigorous enrollment requirements (e.g., passing a

Exhibit III-4: Enrollment by Tier

*Note that these numbers do not add up to the number of unique participants, as some students enrolled in multiple tiers.

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[20] Note that some hubs *have* been successful in recruiting students for noncredit programs.

drug test, a background check, and a physical exam).

– When informed about the long hours and physically strenuous, outdoor nature of the work, many prospective applicants chose not to pursue the program.

– These programs are not eligible for most Federal financial aid and thus students who are not eligible for other more limited tuition assistance (such as that provided by industry partners) would have to cover all program costs out of pocket and many prospective applicants cannot afford to do so.

- **Inadequate staffing for outreach and recruitment.** Respondents from three hubs reported that their staff members were too busy with other duties to focus on outreach as much as was needed, particularly outreach directed at USDOL's priority populations.

Enrollment Processes

Once potential applicants were recruited, they had to complete the appropriate ShaleNET enrollment process. These processes differed greatly depending on whether an individual was seeking to enroll in a Tiers 1 & 2 (noncredit) program or a Tier 3 or 4 (credit) program. Based on strong encouragement from industry partners to ensure that ShaleNET students are fully vetted to work in the oil and gas industry even prior to program enrollment, noncredit applicants are required to pass a drug test, a background check, a physical exam, and show proof of having a valid driver's license, while credit program applicants are held to none of those requirements (see Exhibit III-5). However, credit applicants did have to go through all of the steps required to enroll in their hub college, such as submitting an application and transcripts, completing an academic skills assessment test, and enrolling in classes. The only enrollment steps that were supposed to be completed by both types of students at most hubs were paying tuition, registering on the ShaleNET website, and meeting with a ShaleNET career counselor—and many credit students bypassed the career counselor meeting by enrolling in courses or programs online or through the admissions office.

Exhibit III-5: Enrollment Steps and Requirements, by ShaleNET Program Type

Program Type	Enrollment Steps and Requirements
Tiers 1 & 2 (Noncredit Programs)	These steps generally occur in this order: • **Complete ShaleNET.org registration** • **Meet with career counselor one-on-one** or in a group (or both) to assess suitability and be oriented to program requirements • Complete enrollment paperwork • Pass background check • Pass drug test • Show proof of valid driver's license and clean driving record • Pass physical exam • **Pay tuition**

Tier 3 and 4 (Credit Programs)	These steps can occur in any order:
	• Enroll in hub college:
	  – Submit completed college application and transcripts, and **pay tuition** and fees
	  – Complete academic skills assessment test (if required)
	  – Enroll in classes
	• **Meet with career counselor one-on-one to assess suitability and be oriented to program requirements (did not always occur because students registered for classes without going through career counselor)**
	• **Complete ShaleNET.org registration (required at 3 hubs)**

** Bold items were required for both credit and noncredit students.

Some ShaleNET respondents reported that they were concerned that these differences in enrollment requirements for noncredit versus credit students might not be understood by employers, especially those that had previously hired only noncredit completers. These employers might expect that all ShaleNET students had gone through the same rigorous background checking and drug testing requirements and might be dismayed to find that they had not. However, due to their colleges' open enrollment requirement, all of the hubs that operated credit programs reported that they could not exclude students from their programs or courses because those students had failed a drug test, background check, or physical exam, or because they lacked a valid driver's license.

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IV. Training Programs

Two primary focuses of the ShaleNET TAACCCT grant were to develop and enhance credit programs, and to enhance and expand the use of noncredit curricula developed under the prior ShaleNET grant. This chapter describes the credit and noncredit ShaleNET training programs that were developed and delivered during the first nine quarters of the TAACCCT grant, as well as how those programs were developed or enhanced. It also describes the programs and curricula enhancements still under development as of the end of 2014.

Credit Training Programs (Tiers 3 and 4)

The TAACCCT-supported ShaleNET hubs enrolled students in a total of twenty stackable credit programs during the grant's first nine quarters (see Exhibit IV-1). These programs included ten certificate programs of one year or less (Tier 3) and ten two-year associate (AAS) degree programs (Tier 4). In addition to awarding academic credentials for completion of these programs, some hubs also offered industry-recognized credentials as well, including OSHA 40-hour HAZWOPER, OSHA 30-hour General Industry, OSHA 10-hour Construction Safety, and OSHA 8-hour HAZWOPER Refresher.

At three hubs, nearly all of these credit programs were newly developed under the ShaleNET TAACCCT grant. By contrast, three of the four ShaleNET credit programs at Navarro were developed prior to the grant, although two of these preexisting programs were reconfigured slightly (and one was renamed) after the grant was received.[21]

All of these credit programs emphasized opportunities for hands-on training. In the technical courses offered within these programs, students spent about half of their time receiving hands-on training in instructional labs using standard industry equipment.

> ShaleNET hubs enrolled students in a total of **twenty stackable credit** programs during the grant's first nine quarters.

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[21] For example, after receipt of the grant, one of these preexisting programs, Industrial Equipment Maintenance and Repair, was reconfigured to include certain new oil and gas industry-relevant courses, such as pneumatics, while other classes, such as computer programming, were no longer required. The program was renamed the Industrial Technology Certificate program.

Exhibit IV-1: ShaleNET Credit Programs (Tiers 3 and 4) Operating as of December 31,2014

Hub	Certificate Programs (Tier 3)	New or Existing	Associate's Degree (Tier 4)	New or Existing
Navarro	Oil and Gas Training (40 credit hours)	Existing	Petroleum Technology (68 credit hours, includes cooperative education requirement)	Existing
	Industrial Technology (30 credit hours)	Existing		
	Automation (28 credit hours)	New August 2013		
PCT	None		Mechatronics Engineering Technology (66 credit hours)	New January 2013
Stark State	Pipeline Technician (34 credit hours)	New April 2013	Technical Science with major or minor in Petroleum Technology (63 credit hours)	Existing
			Petroleum Technology Pipeline Technician (63 credit hours, includes cooperative education requirement)	New July 2013
	Petroleum Industrial Mechanics Technology (34 credit hours)	New December 2012	Petroleum Industrial Mechanics Technology (63 credit hours)	New January 2013
	Industrial Process Operation Technology (32 credit hours)	New December 2012	Industrial Process Operation Technology (62 credit hours)	New January 2013
	Petroleum Technology – Instrumentation Electronics Technician (34 credit hours)	New November 2013	Petroleum Technology – Instrumentation Electronics Technician (63 credit hours, includes cooperative education requirement)	New November 2013
WCCC	Petroleum and Industrial Process Operation Technology (16 credit hours)	New August 2013	Applied Industrial Technology with oil and gas components (65 credit hours)	Existing
	Mechatronics Systems (16 credit hours)	New August 2013	Mechatronics (65 credit hours)	New August 2014
	Mechatronics Systems Technician I (16 credit hours)	New August 2014	Petroleum Technology (63 credit hours)	New August 2014
	Pipeline Mechanic (16 credit hours)	New August 2014		

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In addition, three of the currently operating ShaleNET AAS degrees require students to complete internships (officially referred to as "cooperative education"), either over the summer or during one semester. Staff members at these hubs and interviewed employers asserted these internships are highly valued as a way to provide real "in the field" learning experiences, and often lead to full-time jobs after program completion. Said the chair of Navarro's Oil and Gas Advisory Committee, "…the internship [requirement] is what sets this program apart from other programs out there…The internship is something we feel strongly about as employers."

Because they receive academic credit for these internships, students must document what they learn and have their skill levels assessed by their supervisors. At Navarro, students in internships are required to submit a total of six lab reports about their experiences on a biweekly basis and their work-site supervisors must assess their skills and progress through two surveys.

Despite the value of internships, ShaleNET hub staff members, student focus group participants, and employers all reported that developing sufficient numbers of internship placements has been extremely challenging. As one employer reported, "Now with the regulations for health care and safety, it is hard to bring individuals into the organization for work experience opportunities like… internships." As a result, hubs are exploring ways for students to participate in other work-based learning experiences if they cannot secure an internship.

As discussed in chapter I, all ShaleNET programs are stackable, meaning that they are part of a sequence of programs leading to credentials that students can accumulate over time to help them move up a career ladder.[22] This stackable approach provides students with the option of working toward higher-skilled credentials, such as associate's or bachelor's degrees, in shorter "chunks" or modules: they can return to the labor market after each completed module to earn much-needed income or gain work experience, while also receiving an employer-recognized credential for completion of that module. These students can then seamlessly continue pursuit of their desired associate's or

> *"The internship [requirement] is what sets this program apart from other programs out there…The internship is something we feel strongly about as employers."*
> – Industry partner, Navarro

> **All ShaleNET programs are stackable**, meaning that they are part of a **sequence of programs** leading to credentials **designed to help students move up a career ladder**.

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22   USDOL Employment and Training Administration Training and Employment Guidance Letter 15-10.

bachelor's degree at a later date by completing the next stacked program and credential in the sequence. As one ShaleNET student at WCCC put it, "Possibly [I'll go on for] more education for a B.S. in mechatronics, but I'll likely work first so I can save up some money."

Within ShaleNET hubs, most of the opportunities for stacking involve students completing Tier 3 programs and stacking those programs to earn associate's degrees. However, the number of Tier 3 certificate programs that need to be "stacked" to earn an AAS degree differs across the three hubs that offer both Tier 3 and Tier 4 programs.[23] At the two hubs (Navarro and Stark State) that provide one-year certificate courses (requiring from twenty-eight to forty credit hours for completion), students need to complete only one certificate program, plus required general education courses, to obtain a ShaleNET associate's degree.[24] By contrast, at WCCC, which offers certificate programs that are only sixteen credit hours in length (and last for only a semester), students need to complete multiple certificate programs to meet the technical requirements for a ShaleNET AAS. For example, WCCC's Mechatronics System AAS requires students to complete the Mechatronics Systems Technician I and II certificate programs, as well as general education courses and some additional academic mechatronics courses, before they can receive the AAS degree.

In addition to stacking one or more Tier 3 programs to obtain a Tier 4 AAS degree, the ShaleNET initiative also allows students to stack their ShaleNET AAS degrees to earn two years of credit toward a bachelor's degree in Technology Management from PCT.[25] Because this bachelor's degree is available online as well as in-person, articulating into this ShaleNET Tier 5 program is a convenient option even for students who complete their AAS degrees at other hubs. Indeed, one participant in a student focus group at Stark State reported that he planned to enroll in the

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[23] Although as of the end of 2014, PCT did offer a ShaleNET AAS degree, it did not offer any Tier 3 ShaleNET certificate programs.

[24] Students may also need to take additional technical courses, depending on which certificate they complete and which AAS degree they choose to pursue.

[25] PCT is the only ShaleNET hub that offers bachelor's degrees. Each of the other TAACCCT grant-supported hubs has developed an articulation agreement with PCT for this degree program.

online Technology Management degree program at PCT in the summer of 2015.

New Credit Programs That Were Not Yet Operational

In addition to the nineteen credit programs described above, as of December 31, 2014, ShaleNET hubs had also developed and received approval for four additional credit programs but had not yet enrolled any students in them. These new programs included three certificate programs (Tier 3) and one associate's degree program (Tier 4). (See Exhibit IV-2.) Hubs expected to enroll students in these new programs no later than fall 2015.

Exhibit IV-2: Approved ShaleNET Credit (Tiers 3 and 4) Programs That Had Not Yet Enrolled Students as of December 31, 2014

Hub	Certificate Programs (Tier 3)	When Approved	Associate's Degree (Tier 4)	When Approved
Stark State	Petroleum Technology Production Technician (31 credit hours)	April 2014	Petroleum Technology Production Technician (63 credit hours, includes engineering cooperative education requirement)	May 2014
WCCC	Mechatronics Systems Technician II (16 credit hours)	August 2014		
	National Gas and Oil Technology (18 credit hours)	Prior to TAACCCT Grant		

Process for Developing New Credit Programs

In total, as of December 31, 2014, ShaleNET hubs had developed eleven new certificate and seven new associate's degree programs (see Exhibit IV-3). Although all these were new programs, many of the required courses that compose them were already in existence prior to the grant, so hubs typically did not

> In total, as of December 31, 2014, ShaleNET hubs had developed **eleven new certificate** and **seven new associate's degree** programs.

Exhibit IV-3: Course Development for New Credit (Tiers 3 and 4) Programs

Hub	Program Tier	Program Title	Total Required Courses	Existing Courses	New Courses
Navarro	Certificate (Tier 3)	Automation	9	9	0
PCT	Associate Degree (Tier 4)	Mechatronics Engineering Technology	22	14	8
Stark State	Certificate (Tier 3)	Industrial Process Operation Technology	11	10	1
		Instrumentation Electronics Technician	11	10	1
		Petroleum Industrial Mechanics Technology	13	10	3
		Pipeline Technician	12	7	5
		Petroleum Technology Production Technician	11	6	5
	Associate's Degree (Tier 4)	Industrial Process Operation Technology	21	20	1
		Petroleum Industrial Mechanics Technology	21	20	1
		Petroleum Technology Instrumentation Electronics Technician	21	18	3
		Petroleum Technology Pipeline Technician	20	15	5
		Petroleum Technology Production Technician	21	16	5
WCCC	Certificate (Tier 3)	Petroleum and Industrial Process Operation Technology	4	1	3
		Mechatronics	4	0	4
		Mechatronics Systems Technician I	8	0	8
		Mechatronics Systems Technician II	8	0	8
		Pipeline Mechanic	5	2	3
		Natural Gas and Oil Technology	6	6	0
	Associate's Degree (Tier 4)	Petroleum Technology	23	18	5
		Mechatronics Systems	18	15	3

have to develop many new courses, and thus were able to pull these programs together quickly and efficiently. However, many of these preexisting courses were enhanced with new equipment, supplies, and lab curricula purchased through the TAACCCT grant.

ShaleNET hubs used a variety of strategies to develop the new curricula needed for the few new courses they did develop. One common curriculum development strategy was to purchase equipment and accompanying curricula from vendors. For example, each of the hubs purchased training equipment which came with materials and curricula. In other cases, hub faculty or staff members created curricula, either from scratch or based on materials provided by other hubs. For example, respondents at both Stark State and WCCC reported using materials provided by the former technical advisor at Navarro to help them develop the curricula for some of their new courses.

Hubs also received input and guidance from industry representatives on the development of new course curricula and for the overall structure of these new programs. Hub staff members and instructors solicited input from industry representatives during advisory or hub meetings (discussed below), and by phone or email or during one-on-one meetings.

Once new credit programs were developed, ShaleNET hubs had to obtain approval to operate them. Obtaining approval was often a lengthy and complicated process. Not only did ShaleNET hubs have to gain approval from their own colleges, but also at two of the hubs, new programs had to obtain additional approval from one or more external bodies. New programs at Stark State, for instance, had to gain approval from three entities: the Higher Learning Commission, the college's national accrediting body; the Ohio Board of Regents, a cabinet-level agency for the governor; and the Ohio Department of Education, a state-level agency responsible for oversight of education programs. Due to the complexity of these processes, some ShaleNET hubs benefited from having staff with prior experience in gaining approval for new programs.

Noncredit Training Programs

As discussed above, one goal for the TAACCCT-supported ShaleNET grant was to enhance and expand the use of the noncredit training programs—Floorhand, Roustabout, Welder's

> Many of the required courses in new programs existed prior to the grant, so **hubs typically did not have to develop many new courses**, and thus **could pull these programs together quickly and efficiently**.

> **Obtaining approval for new programs** was often a **lengthy and complicated process** and **ShaleNET** hubs **benefited from having staff with prior experience** in gaining approval for new programs.

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Helper, and Completion Technician—that were developed under prior grants.[26]

However, rather than provide all four of these noncredit training programs as originally developed, ShaleNET hubs instead used input from industry representatives, workforce system partners, and their own understanding of the realities of industry demand for labor to determine which of these programs to offer—or indeed, whether to offer any of them as originally developed. For example, based on feedback from local employers and their own knowledge of local shale oil and gas industry conditions, PCT and Stark State have run only two of the four available noncredit programs (see Exhibit IV-4). And, after running just one Welder's Helper program and a few Floorhand programs, Stark State opted to discontinue offering these noncredit programs due to the major challenges the hub faced in recruiting sufficient numbers of students. Stark State then attempted to work with a partner college, Kent State University at Tuscarawas, to provide Floorhand training. However, despite intensive recruitment efforts, Kent State University at Tuscarawas was also unable to recruit sufficient students to run the program. More recently, the hub, along with WCCC, has been in discussions with Hazard Community and Technical College in Kentucky to have that college provide Roustabout and Welder's Helper programs targeting displaced coal miners.

> **ShaleNET** hubs **used input from industry representatives, workforce system partners**, and their own understanding of industry demand **to determine which noncredit programs to offer.**

Likewise, hub representatives at Navarro, whose nearest shale play, Barnett, has seen decreased activity in recent years, also decided to not provide any noncredit programs at its campuses, but instead focused on developing a partnership with Texas A&M Kingsville, which is located in the very active Eagle Ford Shale Play, to have that college offer noncredit programs instead. (This partnership is also discussed in chapter VI.)

Finally, based on advice from local workforce system partners about how to maintain eligibility for Workforce Investment Act (WIA) funding, WCCC's ShaleNET hub made the decision to combine elements of the Roustabout and Floorhand programs into a hybrid version of these programs called Service Unit Operator.[27]

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[26] Although none of these programs provided student completers with academic credit, each did offer students five to six industry-recognized credentials (see Exhibit IV-7 for a list of these credentials).

[27] WIA funding can be used only to pay for training in occupations that are determined by states or local WIAs to be in demand by employers. When the state of Pennsylvania removed Roustabout and Floorhand from the state's in-demand occupation list, WCCC decided convert the Roustabout and Floorhand training

Exhibit IV-4: ShaleNET Noncredit (Tiers 1 and 2) Training Programs Delivered under the TAACCCT Grant as of December 31, 2014[28]

Hub	Tier 2 Noncredit Programs	Industry-Recognized Credentials
PCT	Roustabout	PEC / Safeland USA: Basic Orientation Crosby Group: Land-Based Fundamentals of Rigging Medic Plus: First Aid / CPR National Safety Council: Defensive Driving JLG: Safe Operation of Aerial Work Platforms JLG: Safe Operation of Rough Terrain Forklift PCT: Heavy Equipment Operator Certificate of Completion
	Floorhand	PEC / Safeland USA: Basic Orientation Crosby Group: Land-Based Fundamentals of Rigging Medic Plus: First Aid / CPR National Safety Council: Defensive Driving JLG: Safe Operation of Aerial Work Platforms JLG: Safe Operation of Rough Terrain Forklift
Stark State	Floorhand	IADC / Safeland and Safegulf: Rig Pass Heart Association: Basic First Aid / CPR National Safety Council: Defensive Driving Aerial Work Platform Rough Terrain Forklift
	Welder's Helper	IADC Rig Pass (Safeland and Safegulf) Crosby Group: Basic Rigging Heart Association: Basic First Aid / CPR National Safety Council: Defensive Driving Aerial Work Platform Rough Terrain Forklift
WCCC	Service Unit Operator (hybrid of Roustabout and Floorhand)	PEC / Safeland: Basic The Crosby Group: Basic Rigging CPR/Basic First Aid National Safety Council: Defensive Driving Aerial Work Platform Rough Terrain Forklift

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programs into a Service Unit Operator (SUO) training program, as SUO was on the state's in-demand occupation list.

[28] Note that Navarro College is not included in this table, as it had not delivered any noncredit ShaleNET programs as of the end of December 2014.

Instead of continuing to offer the previously developed ShaleNET noncredit programs, Stark State has instead focused on developing fourteen new career enhancement certificates (see Exhibit IV-5). These certificates are aimed at providing evidence to an employer of a student's mastery of a specific subject matter (e.g., Lease Operator, Basic Environmental Technician, etc.). They are designed so that students can pursue one or more programs either as a stand-alone series of courses or while pursuing a concurrent credit program.

Exhibit IV-5: Stark State Career Enhancement Certificates by Credit Hours
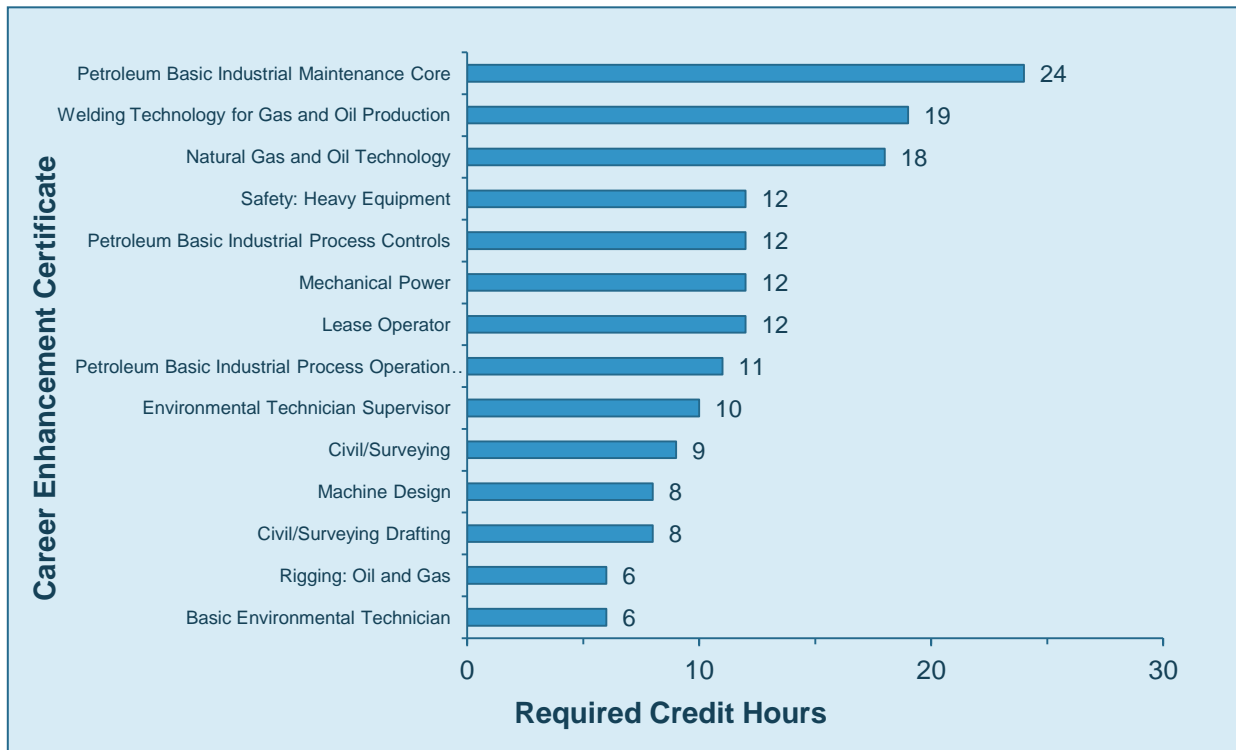
## Enhancement of Existing ShaleNET Programs

ShaleNET hubs also made significant enhancements to four already existing credit programs and all noncredit programs (see Exhibit IV-6). The primary way that they did so was through

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Exhibit IV-6: Existing Credit and Noncredit Programs Enhanced under ShaleNET

Hub	Program	Types of Enhancements
Navarro	Oil and Gas Training Certificate Industrial Technology Certificate Petroleum Technology AAS	• Equipment Upgrades • New Instructional Labs • Added programs other campuses
PCT	Roustabout (noncredit) Floorhand (noncredit)	• Equipment Upgrades • New Instructional Labs
Stark State	Floorhand (noncredit) Welder's Helper (noncredit)	• Equipment Upgrades • New Instructional Labs • Added New Training Facility
WCCC	Applied Industrial Technology AAS Service Unit Operator (noncredit)	• Equipment Upgrades • New Instructional Labs • Added New Training Facility

purchasing new equipment to be used in the programs. As shown in Exhibit IV-7, as of December 31, 2014, ShaleNET hubs had spent a total of $1,740,579 of their ShaleNET grant funds on the purchase of industry-specific equipment.

Exhibit IV-7: Total Equipment Expenditures, by Hub, as of December 31, 2014
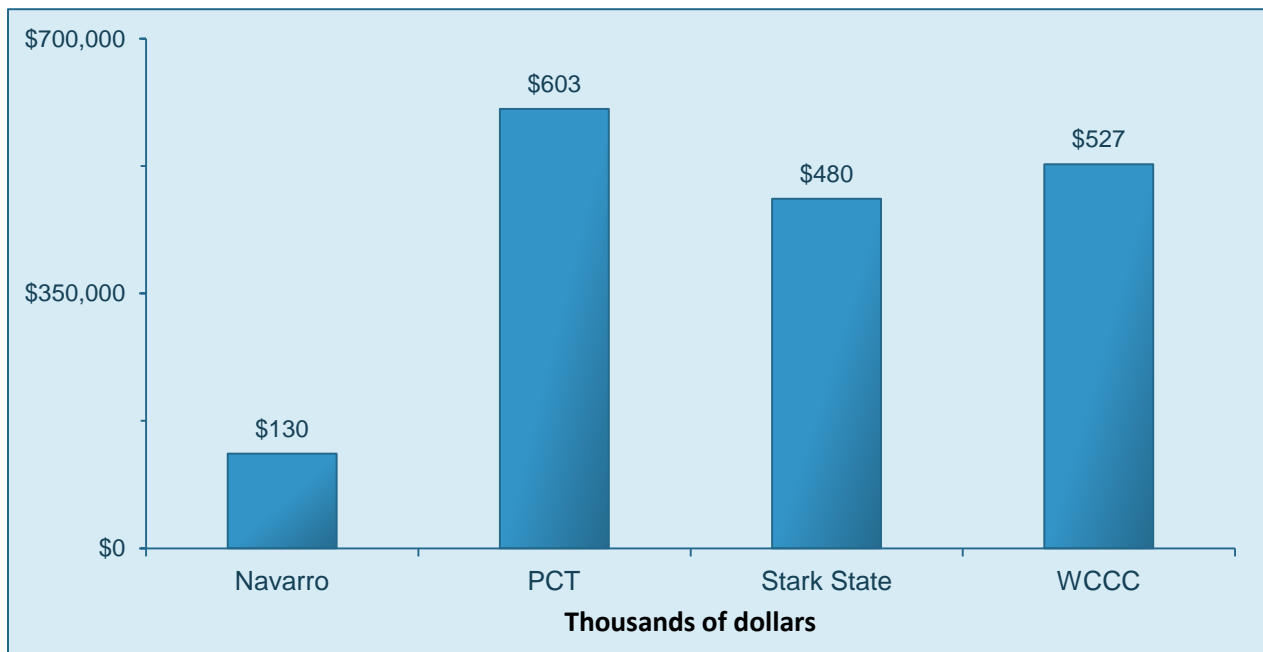
Note: Amounts rounded to nearest thousand.

Among the most expensive of these purchases were "trainers," specialized training equipment designed to give students the opportunity for safe, hands-on practice. ShaleNET hubs purchased trainers of many types, including production well site

trainers, mechatronics trainers, industrial electricity trainers, industrial wiring trainers, hydraulic trainers, and pneumatic trainers. In most cases, in addition to a specified number of student learning stations, these trainers also came with accompanying curricula. In addition to trainers, hubs also invested in other equipment such as gauges, relief valves, compressors, meter runs, and rigging equipment. (See Box IV-1 for examples of the equipment purchased with TAACCCT grant funds.)

Box IV-1: Examples of Equipment Purchased by ShaleNET Hubs

ShaleNET hubs purchased a wide variety of equipment to enhance their training programs. The examples below highlight just some of the equipment purchased under ShaleNET.

New cut-away gas production unit and separator purchased by Stark State to demonstrate the process of separating wet gas into different components.

Amatrol pump system trainer purchased by WCCC. This system helps students learn how to operate, install, maintain, troubleshoot, and analyze centrifugal pump performance.
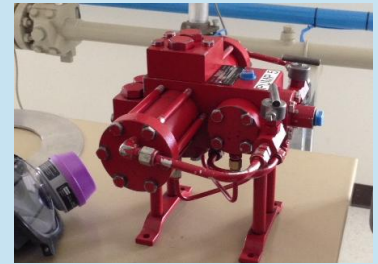
New pump valve purchased by Navarro to demonstrate the workings of similar pump valves in the field.

While the three Appalachian Basin hubs spent relatively similar amounts on equipment, Navarro spent much less, primarily because its ShaleNET programs were already largely in place prior to receipt of the TAACCCT grant.

ShaleNET hubs have also enhanced many of their programs using equipment and supplies donated by industry partners. Based on conservative estimates, ShaleNET hubs had received approximately $282,000 in equipment donations from employers and industry associations as of December 31, 2014 (partnerships between ShaleNET and the oil and gas industry are discussed in more detail in chapter VI).

The equipment purchased or received from industry partners enhanced both preexisting and new ShaleNET programs by increasing the availability of hands-on, experiential learning for

> Based on conservative estimates, **ShaleNET hubs had received approximately $282,000 in equipment donations from the oil and gas industry** as of December 31, 2014.

students. Trainers, for example, have been instrumental in ensuring that students have the opportunity to gain experience using equipment without placing themselves in harm's way. Other equipment has allowed instructors to demonstrate key shale oil and gas processes, such as cut-away separator tanks that show students how the components of wet gas are separated for different uses.

Typically, the lab curricula in which such equipment is used is designed to provide students with opportunities to operate it under normal conditions as well as to problem-solve when the equipment does not work properly. Reported one WCCC student describing a series of labs on electrical systems: "That was all hands-on training using a program designed to trouble-shoot so you could play around with the system."

Student focus group participants reported that the chance to use this new equipment was one of the best and most useful aspects of their ShaleNET training. One student in PCT's Roustabout program commented that the hands-on training was "very important" because even though he could learn information from a textbook, "…actually doing the work would be difficult without having the hands-on learning provided by the program." This student added that safety training, knowledge of the equipment, and the ability to operate the equipment were the most valuable pieces of the noncredit program. A student enrolled in a WCCC credit program echoed the importance of hands-on learning: "[I would rate ShaleNET] very highly. This class is much more hands-on and for me that is great. I learn better by doing." (See Box IV-2 for an example of the hands-on activities of ShaleNET students.)

Similarly, industry partners reported that ShaleNET programs' combination of hands-on practice and classroom learning made them very useful. As one industry partner put it, "Their programs really meet our needs in terms of the coursework and the hands-on training that the college provides."

However, some credit students across three hubs complained about the slow pace with which grant-purchased equipment was set up and made available to students for use in labs. One student in his second year of a ShaleNET AAS said that "we are just now getting our hands on the equipment; they have been in the process of hooking it up since I started." Other students complained that the curricula for integrating the new equipment into their courses was also not yet well developed. "I had assumed that the classes were already well thought out and labs were organized, but it is as if they are building them on the fly."

> *"… actually doing the work would be difficult without having the hands-on learning provided by the program."*
> — ShaleNET student, PCT

> *"Their programs really meet our needs in terms of the coursework and the hands-on training that the college provides."*
> — Industry Partner, Stark State

Box IV-2: Hands-on Learning Opportunities for ShaleNET Students

In WCCC's ShaleNET programs, students participate in many hands-on activities using actual oil and gas industry equipment, much of which was purchased or leased with TAACCCT-grant funds or was received as donations from industry during the period of the grant. These two pictures show students engaging in two such activities. In the left-hand picture, students are using special equipment to practice working in confined spaces and in the right-hand picture, they are using a forktruck rented with grant funds to move a compressor donated by an employer. As with most hands-on activities in ShaleNET programs, these activities are set up so that students have to work as a team to troubleshoot and solve problems, adhering to strict safety guidelines. For example, as the pictures show, students must wear hardhats, sturdy work boots, and safety vests whenever practicing with the equipment, just as they would if they were working for an oil and gas industry employer.

Finally, despite the significant amount of grant funding spent on new equipment for ShaleNET programs, students at one hub complained that the amount of equipment and supplies was still insufficient. "In our mechanical drive course, we had only three or four trainers for twenty students ….[For all students] to complete [one lab] project … one group had to go and tear their [project] apart and hand their bolts to the next group [so that they could in turn do the lab project]."

Use of Leveraged Funds to Develop New Facilities for ShaleNET Equipment

While two of ShaleNET's TAACCCT grant-supported hubs had existing space to house all of their new equipment, the other two hubs used leveraged state and industry funding to purchase and renovate new facilities to house their ShaleNET equipment and programs (see Box IV-3).

These new facilities—WCCC's Advanced Technology Center and Stark State's Well Site Training Center—were designed specifically for use in providing oil and gas training (and in the case of WCCC, other technical training programs), and thus provide optimal environments, with sufficient room, electrical power, and ventilation, for students and instructors to use the new equipment.

> Two hubs used **leveraged state and industry funding** to purchase and renovate new facilities to house their ShaleNET programs and equipment.

Box IV-3: New Hub Training Facilities Developed with Leveraged Funding

WCC Advanced Technology Center

- Opened August 21, 2014
- $14 million facility
- Located in Youngwood, PA
- Multi-use facility for industrial trades programs
- 73,500 square feet
- Houses the ShaleNET well-site trainer and a flex space lab with a number of trainers for mechatronics, hydraulics, and pneumatics

Stark State Well Site Training

- Opened August 1, 2014
- $2.3 million facility
- Located in downtown Canton, OH
- Dedicated oil and gas training facility
- 7,000 square feet
- Houses the ShaleNET well-site trainer and includes a pump jack/well head, gas production unit, stock tanks, a natural gas compressor, and a meter run/meter shed

In addition to providing these hubs with the space and amenities needed to house their new equipment, these new facilities have attracted the attention of employers and industry associations. For example, both hubs have been contacted by numerous

delegations of industry representatives requesting tours. In addition, industry representatives visiting Stark State's facility have expressed interest in using the space to host training sessions for their employees.

Another benefit of the Advanced Technology Center at WCCC is that the facility houses, in addition to ShaleNET, many of the college's other industrial programs. As a result, ShaleNET staff members and instructors have developed closer working relationships with faculty and staff members from these other programs. These improved relationships have benefited ShaleNET students, because instructors from these other programs—such as welding—now have a clearer understanding of how the skills they teach are used in the oil and gas industry.

Enhancement of ShaleNET Programs through Expansion to Satellite Campuses

At Navarro, another way that ShaleNET programs have been enhanced is through expansion to two of the college's satellite campuses, Waxahachie and Fairfield. The Waxahachie and Fairfield campuses are now both able to offer ShaleNET's Automation and Industrial Technology Maintenance certificates and the Fairfield campus now also offers the Petroleum Technology associate's degree. Both of these expansions were approved, as required, by the Texas Higher Education Commission.

Training Programs and Enhancements Still under Development by ShaleNET Hubs

In addition to the new and existing oil and gas training programs that have been developed and enhanced thus far during the TAACCCT grant, efforts were still underway as of the writing of this report to develop three new programs and to enhance others through the development of distance learning and simulation technology.

New Programs Currently under Development

At all hubs, ShaleNET staff members are still developing additional courses and programs, primarily noncredit customized training programs for employers. For example, at each hub staff members or instructors—either fully or partly funded by ShaleNET—have developed or were in the process of developing training programs for specific employer partners, typically for a fee. These training programs were on a variety of topics,

including defensive driving, motor mechanics, industrial maintenance, and basic burner management.

In addition, Stark State has developed and applied for approval from the Ohio Board of Regents to offer a ShaleNET Core Certificate, which would give students a certificate for completing both AAS general education courses at a partner school and Stark State's own online Introduction to Petroleum Technology course. These students could then transfer to Stark State College to take the technical courses required in order to complete one of the ShaleNET AAS degrees.

Development of Distance Learning Options

Due to the expense of setting up oil and gas training program labs, another goal for the TAACCCT grant was to provide remote access to ShaleNET hub labs via the Internet. The plan was that students at remote locations, such as other campuses, would be able to watch and listen via the Internet to an instructor using lab equipment to demonstrate key concepts, such as how a well head or a separator works. To carry out this approach, the ShaleNET consortium contracted with Applied Systems and Technology Transfer (AST2) to mount video cameras in each ShaleNET lab and to provide hubs with access to its proprietary StormTool software for sharing the video images captured by these cameras via the Web.

Although cameras had been mounted in labs at three hubs, no hub had yet been successful in using AST2's software to share images as of the end of December 2014. There were multiple reasons for this lack of success. Hubs have struggled with obtaining access to the amount of network bandwidth needed for the software to work properly, especially when it is accessed by multiple users at one time. In addition, AST2 has had to work with hub and college IT staff members to address bugs in its software. Further, there have been problems with the positioning and mounting of the cameras, including cameras falling off their mountings at one hub.

Despite these challenges, the ShaleNET consortium is continuing to work with AST2 to share images of ShaleNET labs using the contractor's software. To do so, the consortium has decided to focus on installation and troubleshooting primarily at PCT. In addition, other hubs have already begun to make backup plans to use other contractors to develop distance learning systems, if the implementation of AST2's system proves to be unworkable.

Other Ongoing Curriculum Enhancements

The ShaleNET consortium is also continuing to develop other types of curricula enhancements for its training programs. One such enhancement is the development of software that simulates oil and gas industry environments using immersive, 3-D technology. The aim of this software is to complement existing ShaleNET curricula by providing students with opportunities to practice the use of dangerous and expensive equipment in a virtual—and thus safe—environment, before going into labs to use real versions of the same equipment. (See Box IV-5 for an example of how hubs may use this new software in ShaleNET training.)

In August 2014, PCT contracted with Discovery Machine to move forward with development of a suite of software that could simulate the environment of a well site and allow instructors to create scenarios related to problems with well site equipment such as leaky or stuck valves. After the initiation of the contract, Discovery Machine Inc. collected data from industry representatives and representatives at two ShaleNET hubs, gathering information about well site design and operations. Once the customized software was developed, it was provided to all four hubs, which downloaded it onto their systems. As of May 2015, hub staff members and instructors have begun to develop specific lessons using the new software, for incorporation into future ShaleNET courses.

In addition, PCT plans to develop other oil- and gas-specific electives to offer to students in the ShaleNET Mechatronics Engineering Technology program to provide them with an understanding of the oil and gas industry and how mechatronics is specifically used in the industry. The time period for launching these courses has yet to be specified.

Box IV-5: Use of Simulation Software for ShaleNET Training

This is a 3-D image of a well-head and two valves created by Discovery Machine, Inc. as part of their development of a complete 3-D immersive well-site and pad that ShaleNET instructors can use to create instructional modules for students. The green arrows indicate that the valve in question could be turned either direction by a student depending on what the accompanying valve reads. Because turning a pressure release valve in the wrong direction in the real world could lead to an explosion, this technology provides students with a safe place to practice opening and closing such valves.

Finally, due to the amount of equipment purchased and received, hubs continue to develop and enhance curricula for use with this new equipment. In January 2015, Stark State was able to hire a curriculum developer to facilitate the development of this type of curricula. Stark State's hub director plans to share whatever ideas and curricula the developer creates with other consortium members. The consortium has arranged for hubs to use Dropbox as a more efficient way for to share this new curricula.

Development of Articulation Agreements for Access to Credit (Tier 4 or 5) Programs at Other Hubs

ShaleNET hubs also developed articulation agreements to allow streamlined access for students to BS or AAS programs offered at other hubs. As discussed above, each of the other TAACCCT grant-supported hubs—Navarro, Stark State, and WCCC— developed articulation agreements with PCT so that AAS graduates could readily transfer into PCT's already established BS

in Technology Management. In addition, Stark State developed an articulation agreement with WCCC so that Stark State students could readily transfer into the latter's AAS in Mechatronics Systems.

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V. COUNSELING AND STUDENT SUPPORT

In addition to developing and operating training programs, the ShaleNET TAACCCT grant focuses on enhancing the counseling and student support provided to ShaleNET students. This enhanced support is considered essential to the initiative's success because many community college students face significant barriers that can, if unaddressed, cause them to drop out.[29] These barriers include being unprepared for college-level coursework, having competing work and family obligations, lacking experience in navigating complicated bureaucratic systems, having unreliable transportation, and lacking the financial resources to cover their education costs.[30] Although a number of research studies have shown that additional counseling—especially when that counseling is required and provided throughout a program of study—is an effective way to improve student performance and increase completion rates, few community colleges have the resources to provide such assistance.[31]

By contrast, using TAACCCT grant funding, ShaleNET hubs have been able to offer additional counseling and support to ShaleNET students. This chapter describes how ShaleNET hubs provided this counseling during the first nine quarters of the TAACCCT grant. The chapter also details the types of support provided during counseling, including academic support, job search assistance, and job placement services.

> Using TAACCCT grant funding, **ShaleNET hubs have been able to offer additional counseling and support** to ShaleNET students.

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[29] Of the cohort of students that entered a certificate or AAS program in 2010, only 19.5 percent completed their programs within 150 percent of the expected normal time. National Center for Education Statistics, *Digest of Education Statistics*, http://nces.ed.gov/programs/digest/d14/tables/dt14_326.20.asp.

[30] Susan Schrivener and Erin Coghlan, "Opening Doors to Student Success: A Synthesis of Findings From an Evaluation at Six Community Colleges," MDRC (March 2011), www.mdrc.org/sites/default/files/policybrief_27.pdf. Community College Research Center, "What We Know About Nonacademic Student Supports," Teachers College, Columbia University (September 2013).

[31] Ibid. See also Eric Bettinger and Rachel Baker, "The Effects of Student Coaching in College: Evaluation of a Randomized Experiment in Student Mentoring," NBER Working Paper 16881, www.nber.org/papers/w16881.pdf.

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How and to What Extent ShaleNET Students Received Counseling and Support

Under ShaleNET, the majority of counseling and student support has been provided by career counselors. During most of the first nine quarters of the grant, each hub had just one career counselor to support all ShaleNET students, in both credit and noncredit programs.

ShaleNET's Approach to Student Support

ShaleNET's approach to student support is generally similar in credit and noncredit programs, as well as across hubs. Before prospective students enroll in a ShaleNET program, career counselors try to meet in person with each prospective student at least once. These meetings are important for several reasons. First, career counselors can make sure that students understand the requirements of both the program and the industry and are a good fit for the career they seek. For example, one student focus group participant at PCT reported that "During the in-person meeting, she [the career counselor] kept asking me: 'Are you sure this is what you want?'…Seeing her face-to-face made me more comfortable about what I was getting into."

Career counselors also use these meetings to help students develop class schedules that are convenient and minimize student commuting time and costs, and to ensure that students do not enroll in classes that will not count toward program completion. Student focus group participants commented on how helpful this assistance was to them. For example, one Navarro student said: "There are some classes that count for the same requirements, so if you take both you are basically wasting your time—I refer to it as double-dipping. Unless they meet with [the ShaleNET career counselor], a lot of students double-dip."

Finally, these meetings help career counselors establish relationships with students and ensure that students understand what help is available. Having an established relationship makes students more likely to seek help from counselors after enrollment.

While the intention was to offer this counseling to all prospective students, during the first half of the grant, credit students often did not meet with career counselors before enrollment. This was due to the greater flexibility that credit

> *"During the in-person meeting, she [the career counselor] kept asking me: 'Are you sure this is what you want?' Seeing her face-to-face made me more comfortable about what I was getting into."*
> – ShaleNET student, PCT

> *"There are some classes that count for the same requirements, so if you take both you are basically wasting your time—I refer to it as double-dipping. Unless they meet with [the ShaleNET career counselor], a lot of students double-dip."*
> – ShaleNET student, Navarro

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students have in the ways that they can enroll in a ShaleNET program or course. While the only way to enroll in a noncredit program is to first meet with a ShaleNET career counselor, credit students can enroll in ShaleNET courses or programs in a variety of other ways, including online or through college admissions departments.

Once students are enrolled in a ShaleNET program, ShaleNET does not require meetings or other interaction with career counselors, but instead relies on students to seek out career counselors when they need assistance. Career counselors also reported that they occasionally visited classes and informally checked in with instructors about student progress.

The one major intentional difference in the support offered to credit and noncredit students is that ShaleNET's noncredit programs include built-in interaction between career counselors and students either at the beginning or the end of each program. This interaction consists of approximately two days of classes taught by the career counselor that focus on job search skills, and help to develop relationships between students and career counselors.

Extent to Which ShaleNET Students Accessed Support from Career Counselors

Due at least partly to these two differences in the support provided to credit and noncredit students, career counselors at the hubs that had provided both types of programs said that noncredit students were more likely to receive assistance from career counselors. Indeed, some credit student focus group participants who did not have pre-enrollment meetings with career counselors said they did not realize that the career counselors were there to assist students—they thought career counselors were just available to assist faculty. Another reason for the difference in use of ShaleNET career counselor support is that noncredit students cannot access similar support elsewhere on campus, while credit students can.

The career counselor at one hub reported that certain types of students, such as first-generation college students and immigrants, also needed more assistance from her. This assertion is backed up by studies that have shown that first-generation college students (many of whom are immigrants) are less prepared for post-secondary education, perform at a lower level academically, and have a lower graduation rate. To overcome

For-credit students often did not meet with career counselors before enrollment. This was **due to the greater flexibility that for-credit students have to enroll** in a ShaleNET program or course.

Noncredit students were more likely to receive assistance from career counselors.

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these barriers to success, these students typically need more support than others.[32]

Modes of Interaction between Career Counselors and ShaleNET Students

Career counselors not only met in person with students, since many classes were held in the same location as the career counselors' offices, but also communicated with students over the phone and via email and text messages. In general, career counselors and students noted that career counselors made themselves quite available to students. For example, one career counselor reported that she responded to phone calls and emails every day, including late at night and on weekends. Student focus group participants affirmed that career counselors were generally quite accessible, with one PCT student commenting that the hub's ShaleNET career counselor is "pretty much available anytime."

> *"She [The ShaleNET career counselor] is pretty much available anytime."*
> – ShaleNET student, PCT

Specific Types of Support Provided by Career Counselors

During the first nine quarters of the grant, career counselors at ShaleNET hubs provided support to students in four different areas: academic coaching, career coaching, job search and placement assistance, and life issues. This section describes each of these types of support, including whether and how they differed for credit and noncredit students. The section then presents a case study highlighting the amount of each type of support provided by career counselors at Navarro and PCT during the second year of the grant.

Academic Coaching

ShaleNET career counselors provided students with several types of academic support: assistance with selecting courses and with setting up class schedules, and providing study skills assistance and access to tutoring.

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[32] Jennifer Engle, Adolfo Bermeo, and Colleen O'Brien, "Straight from the Source: What Works for First-Generation College Students," Pell Institute for the Study of Higher Education, www.tgslc.org/pdf/files-sfts_what_works.pdf.

- **Assisting with course selection.** At ShaleNET hubs that offered credit programs, career counselors worked with some credit students at the beginning of each semester to help them select classes. They did this to make sure that students did not waste time on classes that would not count toward completion of their programs of study.

- **Assisting with class schedules.** ShaleNET career counselors also sometimes assisted credit students with setting up class schedules that were as convenient as possible. For example, for students who lived far from Stark State, the career counselor there helped to set up their schedules so that they only had to attend classes two or three days a week. This assistance has been particularly important for students who are dealing with barriers such as significant work or family obligations or transportation difficulties.

- **Providing study skills assistance and access to tutoring.** Career counselors across all hubs provided students with various types of assistance to help them succeed in their courses. For example, noncredit students usually received some information at the beginning of their programs about effective note-taking. Career counselors also commonly helped credit students with their study skills, and coordinated their access to tutoring offered elsewhere on campus.

Career Coaching

ShaleNET career counselors prepared students for the job search process by assisting them with developing or improving their resumes and by providing information on how to look for jobs and succeed in interviews.

- **Providing assistance with resume writing.** At all ShaleNET hubs, career counselors worked with students to create or revise their resumes. For noncredit students, this assistance was provided individually as well as during the two class days focused on job search skills. With credit students, career counselors either worked one-on-one with students on resumes or referred students needing resume assistance to workshops facilitated by the college-wide campus career center. Students were quite appreciative of the resume assistance provided by ShaleNET career counselors. For example, one Stark State student who said that the career counselor and the hub director had helped him with his resume, said: "It [the resume] looked a lot better after they helped me than when I first handed it to them."

> The **career counselor** at Stark State **helped student s to set up their schedules so that they only had to attend classes two or three days a week.** This was **particularly important for students with barriers** such as significant work or family obligations or transportation difficulties.

> *"It [the resume] looked a lot better after [the career counselor and hub director] helped me than when I first handed it to them."*
> – ShaleNET student, Stark State

- **Providing information on conducting job searches and interviewing.** Career counselors at all hubs also provided ShaleNET students with training or information about how to conduct successful job searches and how to succeed in interviews. For noncredit students, training on these topics was embedded in the two program days dedicated to job search skill development. Other topics covered during these two days included the importance and process of researching employers and reviewing job descriptions carefully. Perhaps as a result of this training, one employer partner commented that ShaleNET noncredit students' greater knowledge of her company had helped them to stand out during interviews. credit students at one hub could receive this information one on one from the career counselor as needed, while at two others, career counselors (assisted by other hub staff members) instead arranged for the college's career center to provide optional workshops to credit students on these topics.

Assisting Students with Job Searches and Providing Placement Assistance

Career counselors at all hubs provided ShaleNET students with assistance in finding suitable job or internship placements.

- **Assisting students with their own independent job searches.** At all ShaleNET hubs, career counselors conducted online job searches and created lists of available oil and gas positions and shared these with students in binders or via email—or at one hub, via Facebook. Students were then encouraged to contact these employers and to apply for the positions independently.

  – **Matching students to appropriate job or internship placements.** Career counselors at all hubs attempted to match ShaleNET students with appropriate jobs or internships. Typically, as a first step, career counselors talked with students about their needs and preferences for a placement, including preferred locations, commuting distances, work environments, and shift schedules. For example, the career counselor at WCCC had students rank a list of specific job characteristics. Next, career counselors reviewed student skills (including transferable skills from experience in other industries), prior education, and work experience. Career counselors then used several strategies to identify specific job openings that would be a good fit for each student:

    – *Recommending students to specific employers.*
    Career counselors contacted suitable employers that they

"[The hiring managers] were really impressed [at the students' preparation] …. They were prepared when they came in [to interview]. They did their homework on who [our company] is."
— Industry partner, PCT and WCCC

"*[The career counselor has] reached out to me several times, letting me know that she has these candidates that will be graduating soon. They are good candidates, and I set them up for interviews.*"
— Industry Partner, PCT and WCCC

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had relationships with or cold called those that had appropriate open positions, to suggest that they consider particular students.

– *Coordinating hiring events or interviews onsite at hub colleges.* Career counselors contacted or were contacted by employers to set up interviews or hiring events at their hubs. For example, the career counselor at WCCC accepted "job orders" from employers. These employers let her know how many positions they needed to fill and she arranged for them to come to the hub and interview all of the students who she thought would be a good match for the employer's needs.

> **Employer satisfaction with career counselors has led to recruiting relationships that benefit both students and employers. One employer had the following to say about working with WCCC:**
>
> *"Their Oil and Gas Career [counselor] … is so good to work with and is just so proactive. If I have a job order I will send it.... She would contact me and say, 'Can you come next week, I have ten students lined up.' When I arrived for the interviews, she had the students' resumes and transcripts ready to go. She was just so proactive, I couldn't help but go there to recruit."*

Dealing with Life Issues

A final type of student support provided by career counselors was assistance in dealing with "life issues," such as challenges related to living arrangements, health, transportation, and family obligations.

- **Assisting students in dealing with life challenges.** Career counselors provided advice and counseling about how to deal with these difficulties, typically through one-on-one meetings. For example, career counselors routinely assisted out-of-area noncredit students with finding suitable housing for the duration of their training program. Focus group participants commented that this kind of assistance was particularly helpful.

- **Referring students to specific services such as financial aid, childcare, or transportation assistance.** For services that they could not provide directly, career counselors provided students with referrals to other departments or agencies. Credit students were typically referred to other on-campus offices or departments, such as the college's financial aid office. Since noncredit students were not eligible for such services, career counselors instead referred them to external agencies such as AJCs (One-Stop Career Centers), public assistance agencies, and nonprofit agencies.

Case Study: Extent of Different Types of Student Support Provided by Career Counselors at Navarro and PCT

Although data on career counselor support activities in TMS during the first nine quarters of the grant were limited, in this section we present data from two hubs during the second year of the grant, as a case study illustrating the relative amounts of each type of support that were provided and how this varied across hubs. In addition, since Navarro provided only credit programs and PCT's career counselor only worked with noncredit students during this time period, these data also demonstrate how services varied for students in credit versus noncredit programs.

As shown in Exhibit V-1, the majority of the assistance provided by the career counselor at Navarro during this period was academic coaching, with only a small amount of job search and life issues assistance provided, and no career coaching. By contrast, during the same period, PCT's career counselor provided nearly three times more job search assistance than academic coaching. These differences were likely due— at least in part—to the different needs of credit students (at Navarro) versus noncredit students (at PCT). For example, given that credit students have to take many classes over a one- to two-year period to complete a ShaleNET program, they would be likely to need more academic coaching to help them to select the correct classes and to succeed academically in those classes. Similarly, due to the short-term, primarily nonacademic nature of ShaleNET's noncredit programs, it makes sense that PCT's career counselor would be more focused on assisting students with their job searches rather than with academic issues.

In addition to variations in services resulting from the distinct needs of credit versus noncredit students, service delivery variations may also be partly due to differences in the skills developed during the prior work experience of each of these career counselors. For example, PCT's career counselor (like WCCC's), has extensive prior experience providing career coaching and job search assistance as a career counselor in the public workforce system. By contrast, the career counselor at Navarro during this period had extensive experience working as a financial analyst in the private sector, and so had much less experience providing job search assistance or career coaching.

> The **majority of the assistance** provided by **the career counselor at Navarro** during this period **was academic coaching**. By contrast, during the same period, **PCT's career counselor provided nearly three times more job search assistance than academic coaching.**

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Exhibit V-1: Career Counselor Student Support Activities at PCT and Navarro[33]
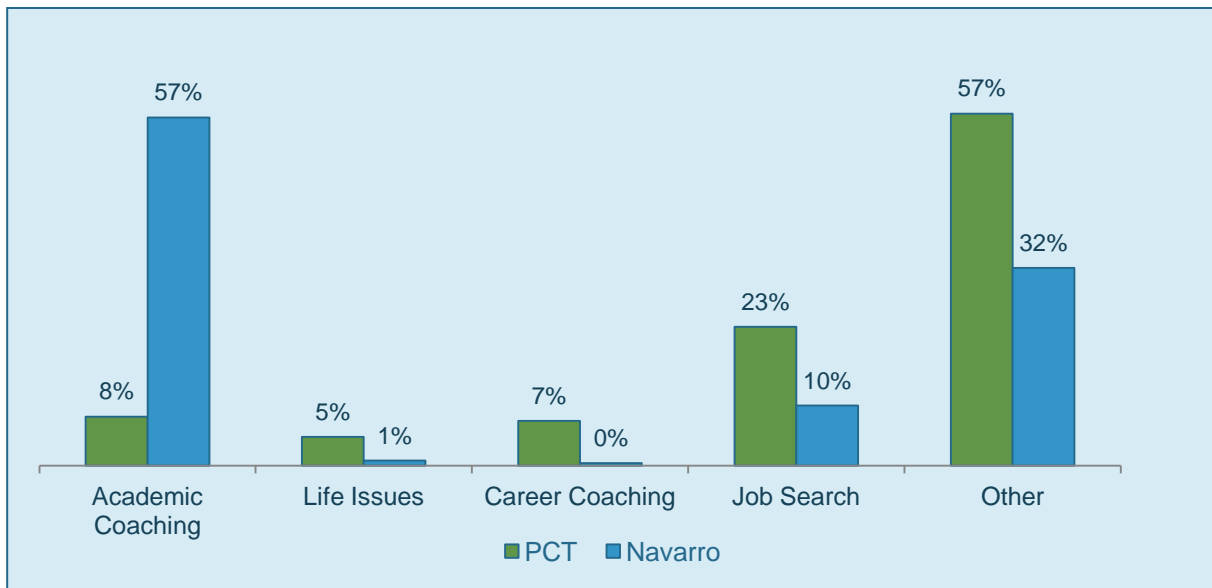
Other Sources of Support to ShaleNET Students

While career counselors were the main providers of student support, other hub staff members also provided some assistance to ShaleNET students. For example, instructors across all hubs provided students with academic advising, instructional assistance, and, in some cases, connections to employers for job or internship searches. For example, a student focus group participant at Navarro reported that he had met with a ShaleNET instructor there, "…a few times to discuss different programs and he has been really good about walking me through the various types of jobs I could pursue." In addition, at WCCC and PCT, support technicians sometimes assisted students by answering basic questions about the program. Finally, hub directors also provided some assistance to students, particularly when career counselors were unavailable. For example, at Stark State and Navarro, hub directors took over career counselor responsibilities during the months when those hubs had no career counselor due to staff turnover.

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[33] Due to career counselor turnover at Navarro, these data only cover October 2013 to August 2014 for that hub. No support activities were recorded in TMS in September 2014.

In addition (as discussed above), students in ShaleNET credit programs also had access to additional supports provided by other offices or departments at their colleges, such as career centers and financial aid offices. For example, at Stark State and Navarro, college-wide career center staff developed customized workshops specifically for ShaleNET students and provided individual assistance with resume writing and mock interviews. At Navarro, Pell Grant-eligible students could also access tutoring, textbook loans, on-campus childcare, and referrals to external agencies for additional supportive services from their college's Carl Perkins Career Center.

Successes and Challenges in Student Support

ShaleNET hubs faced a number of challenges related to providing student support, but also achieved some promising practices. Both are discussed below.

Promising Practices

- **At all hubs, career counselors were successful in providing many ShaleNET students with support in multiple areas.** These areas included academic coaching, career coaching, job placement assistance, and assistance dealing with challenges related to living arrangements, transportation issues, and family obligations. Multiple student respondents commented on how helpful they found this support.

- **Hubs were planning to create courses that offered other types of work-based learning opportunities for students who cannot secure an internship.** Staff members at both Navarro and Stark reported that to deal with the challenge of insufficient internship placements, they were planning to develop a course that involved other types of work-based learning opportunities such as visits to industry facilities, presentations by industry partners, and job shadowing.

- **Coordinating with college career services.** At Stark State and Navarro, which primarily serve credit students, hub staff members have worked closely with the college's existing career services departments to provide job readiness training and services to ShaleNET students. For example, career center staff provided customized resume writing and interviewing workshops for ShaleNET students. At Stark State, career center staff members also met individually with ShaleNET students to help students create portfolios showcasing their relevant job experience. This collaboration freed up ShaleNET career counselors to focus on other duties.

> **At Stark State**, **college career center** staff members also **met individually with ShaleNET students** to help them **create portfolios showcasing their relevant job experience**.

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Challenges

- **Challenging workloads prevented career counselors from more proactively reaching out to ShaleNET students to ensure they had sufficient support.** As discussed in chapter II, some career counselors had unmanageable workloads, which prevented them from reaching out to students to ensure that student had as much support as they needed. Said one student focus group participant, "The [the career counselor] didn't really advertise that she is here to assist us…It just seemed like she helped the instructors."

- **Two out of four ShaleNET hubs experienced turnover in the career counselor position.** As discussed in chapter II, this turnover disrupted the services available to students. Due to the lengthy hiring processes at these colleges, these positions remained unfilled for several months. During these times, hub directors tried to provide some of the services normally provided by career counselors, but were not able to offer the levels of assistance that would have been offered by full-time career counselors, due to the press of their other duties.

- **Due to enrollment processes for credit students, not all such students were connected to a career counselor.** Indeed, during a focus group at one hub, some students said that they were not even aware that the career counselor was there to assist them. As a result, these students sometimes took classes they did not need for program completion.

- **Hubs struggled to place students in internships.** As discussed in chapter IV, ShaleNET hubs have had difficulty finding enough internship placements. This was due to the many challenges employers have to overcome to offer internships. For example, intern job titles and wages have to be negotiated with employee unions; industry health and safety regulations make hiring an intern just as costly as hiring a permanent employee; and fluctuations in demand and pricing in the oil and gas industry means that the availability of internships varies from year to year.

- **Students at one hub complained that assistance with securing post-program employment was insufficient.** Said one focus group participant at this hub: "[Job search and job placement assistance] is the most critical part of the program...and they need to help us understand how to do it. I do not feel like I have the support I need."

VI. ShaleNET Partnerships

Strategic partnerships are a central element of the ShaleNET initiative. This chapter describes the partnerships developed under the ShaleNET initiative during the first nine quarters of the TAACCCT grant, including partnerships with the oil and gas industry, the public workforce system, and other educational entities.

Partnerships with the Oil and Gas Industry

During the first nine quarters of the TAACCCT grant, the ShaleNET consortium engaged more than sixty unique employers across all ShaleNET hubs and, based on conservative estimates, leveraged approximately $900,000 in contributions from employers and industry associations.

Hub-Level Industry Engagement

To generate industry engagement and support, ShaleNET hub staff members at all four hubs—primarily hub directors and career counselors, as well as supporting college administrators—reported spending considerable time and effort conducting outreach to oil and gas industry representatives. These ShaleNET representatives reported that they regularly communicated with individual employers and industry groups—both those who were already ShaleNET partners and those who were being recruited—by phone, email, and in person. Another common engagement activity for interested employers was to conduct tours of hub facilities to showcase newly obtained equipment. In addition, all four hubs invited industry representatives to attend their oil- and gas-related academic advisory groups and ShaleNET hub meetings. ShaleNET representatives also often participated in meetings of industry associations that were relevant to their hub regions, such as the Marcellus Shale Coalition and the Ohio Oil and Gas Association. They also sometimes attended nearby industry trade shows and conferences, as well as made visits to local employers' facilities in order to meet with industry representatives and drop off information about the ShaleNET program. Several career counselors even reported keeping notebooks in their cars in which to write down the names of oil and gas companies seen on trucks they passed on the road, as potential contacts.

> Hub directors and career counselors, as well as supporting college administrators, reported spending considerable time and effort conducting outreach to oil and gas industry representatives.

As a result of this outreach, hubs have been able to develop partnerships with numerous oil and gas companies, ranging from large, multinational firms to small, local service companies. These companies have supported ShaleNET hubs in a wide variety of ways and their involvement is discussed below (see Exhibit VI-1).

Exhibit VI-1: Oil and Gas Industry Involvement in ShaleNET, by Hub

Activity	Navarro	PCT	Stark State	WCCC
Participate in hub meetings and/or advisory councils	X	X	X	X
Advise on core competencies and curriculum development	X	X	X	X
Help identify instructors	X	X	X	X
Provide leveraged resources:	X	X	X	X
• Equipment and supplies	X	X	X	X
• Scholarships	X	X	X	X
Provide work-based learning opportunities	X	X	X	X

ShaleNET industry partners supported hubs in the following ways:

- **Participating in hub meetings or advisory councils**. Many employer partners participated in ShaleNET meetings, both advisory council meetings and quarterly hub meetings. These meetings provided industry representatives with opportunities to learn more about ShaleNET, to give their input about program design and activities, and to explore how ShaleNET training programs could help them to meet their workforce needs. One such industry partner reported that "the meetings are very useful because industry representatives come together and discuss our skilled labor needs and how the [hub] can fill that void."

- **Advising on core competencies and curriculum development**. All four ShaleNET hubs reported that employers and industry association representatives provided valuable input and feedback about core competencies and training components in their programs. For example, industry representatives were instrumental in helping ShaleNET hubs to set up their well site equipment, maintain it, and use it to provide meaningful hands-on learning. In addition, Navarro's industry partners were instrumental in helping the hub to establish internship requirements for its Petroleum Technology AAS program.

> *"The meetings are very useful because industry representatives come together and discuss our skilled labor needs and how the [hub] can fill that void."*
>
> — Industry partner, Navarro

- **Providing work-based learning opportunities for ShaleNET participants.** Oil and gas companies afforded ShaleNET students opportunities for work-based learning. At all four hubs, these opportunities have included tours of their facilities or well sites (see Box VI-1); at two hubs, employers have also provided students with paid internships. Several students in focus groups talked about the importance of these opportunities to get out into the field and interact with real industry equipment and workers.

Box VI-1: Industry Representatives Offer Tours to ShaleNET Students

Students at WCCC traveled to a nearby community to visit an oil and gas company's compressor facility. This tour provided students with a first-hand account of the work environments and employment opportunities available in the oil and gas industry. Students were also able to see the importance placed on safety training and equipment at this facility.

- **Helping to identify potential instructors for ShaleNET courses**. At all four hubs, ShaleNET staff members reported that industry representatives assisted them with identifying appropriate individuals to serve as ShaleNET instructors. In addition, at some hubs, industry representatives themselves teach certain classes, and as a result of their employment status are more readily able to take students on tours of their company's facilities and arrange for their colleagues to visit their classes. For example, at WCCC, a regional manager for a major oil and gas company teaches several classes and student focus group participants reported how he had arranged for various staff members from his company to visit and had taken his students on visits to several nearby company

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facilities. One of these participants commented about how important these field trips and visits have been: "After we learn something in class and do the labs, then he takes us into the field so we can match up the book-work with the real world."

- **Providing leveraged resources, by funding scholarships and donating equipment and supplies**. All four hubs reported generous support from employers and industry associations in the form of donated equipment and supplies and of training scholarships. As noted in chapter IV, by the end of 2014, ShaleNET hubs had received approximately $282,000 in equipment donations from industry partners. They had also received approximately $232,000 in scholarship funding.

  – Donating new and used equipment and supplies. Companies donated a wide variety of equipment and supplies, including pumps, control valves, controllers, hard hats, safety goggles, and gloves. Appendix A provides a list of leveraged resources and identifies which employer partners donated equipment and supplies to each hub. In addition, industry representatives aided ShaleNET hubs to secure better pricing on equipment by negotiating with industry suppliers on their behalf.

  – Funding student scholarships. Many industry partners assisted ShaleNET hubs by providing scholarships to offset the cost of training for students. At least one of these groups specifically targeted veterans for these scholarships.

Consortium-Wide Industry Engagement Efforts

In addition to these hub-specific industry outreach and employer involvement activities, the ShaleNET consortium also carried out industry outreach and engagement activities at the consortium level. These efforts were primarily conducted by ACCD, working in collaboration with the lead hub, PCT, and with other members of the consortium to develop a corporate outreach and engagement strategy.

ACCD's employer engagement efforts on behalf of ShaleNET included both general marketing to the oil and gas industry and concentrated relationship-building focused on industry-leading firms. General marketing efforts to employers are part of ACCD's overall marketing assistance to ShaleNET, which, as discussed in chapter III, includes producing a quarterly electronic newsletter that is emailed to many partners, including oil and gas industry representatives. ACCD also developed outreach kits and materials for hub staff members to use when they attend industry

"After we learn something in class and do the labs, [we go] ... into the field … to see real stuff and how it is being used … so we can match up book work with the real world."
— ShaleNET student, WCCC

ShaleNET hubs had received approximately $282,000 in equipment donations and about **$232,000 in scholarship funding from industry partners** by the end of 2014.

events; ACCD staff members use these materials themselves when they attend oil- and gas-related trade shows and events to market ShaleNET, most often in the greater Pittsburgh area.

In addition to this general marketing, ACCD has also worked to develop partnerships between ShaleNET and industry-leading multinational oil and gas companies. Recently, ACCD's efforts on this front resulted in a donation of $60,000 dollars in scholarship funds, to be shared among the three ShaleNET hubs located in the Appalachian Basin (PCT, Stark State, WCCC) and a new affiliate hub, Pierpont Community and Technical College (Pierpont), in West Virginia.[34] The firm that established this scholarship also invited ShaleNET staff and instructors to spend a day touring one of its major facilities and meeting with various company staff members to discuss changing field technology and workforce needs. Following this success, ACCD hopes to develop similar relationships with other major oil and gas companies that are active in and around ShaleNET hubs. However, the lead ShaleNET staff person at ACCD cautioned that developing such relationships takes time, and will be complicated by the decline in oil prices that began in late 2014.

> **ACCD's employer engagement efforts resulted in a donation of $60,000 in scholarship funds**, to be shared among the three ShaleNET hubs located in the Appalachian Basin (PCT, Stark State, WCCC) and a new affiliate hub, Pierpont Community and Technical College, in West Virginia.

Partnerships with Educational Institutions

ShaleNET hubs developed three types of partnerships with educational institutions under the TAACCCT grant. The first of these focused on expanding the reach of the ShaleNET stackable credential model by developing close working relationships with other educational institutions ("spokes") that could offer oil and gas training in the ShaleNET hubs' geographic locations. The second focused on expanding the geographic reach of the ShaleNET program by developing new hubs in target regions, and the third aimed at implementing articulation agreements between the hubs and schools that offer four-year degree programs.

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[34] The ShaleNET Consortium and ACCD are applying for additional funding of up to $400, 000 from this same industry partner.

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Expansion of ShaleNET Training Programs via "Spoke" Partners

ShaleNET has developed a unique "hub and spokes" model for developing partnerships with other educational institutions. The idea behind this structure, which was first developed under the prior ShaleNET grant, is to connect the primary institutional "hub" in each shale play region with numerous other institutional "spokes" located in other areas within the region. (See Exhibit VI-2 for a visual illustration of this model.) These spoke education partners can then provide either all aspects of a ShaleNET oil and gas training program—with students receiving technical training from hubs via distance learning—or just certain less technical portions, with students transferring to a hub college to complete the remaining program components. Each hub, in turn, is connected nationally to other hubs through the consortium, which stewards the ShaleNET brand.

Although under the current TAACCCT grant, most of the previously developed spokes have dropped away, three former spokes—Stark State, Navarro and Pierpont—have become hubs and other, new spokes have been developed.[35] One of these new spokes is the Eagle Ford Center for Research, Education, and Outreach (EFCREO) at Texas A&M University, Kingsville, which has partnered with Navarro to offer multiple entry-level, noncredit, Tier 1 and 2 programs (see Box VI-2).

Stark State has also developed three spoke partnerships, the first of which did not work out. This first partnership was with Kent State University, Tuscarawas (KSU-Tuscarawas) in Ohio. Much like the relationship between Navarro and EFCREO, the partnership between Stark State and KSU-Tuscarawas was intended to offer Tiers 1 and 2 ShaleNET noncredit training programs at a location closer to active drilling areas. Unfortunately, despite spending significant time and resources on recruiting, KSU-Tuscarawas was not able to recruit a sufficient number of students to run these noncredit training programs. More recently, Stark State and WCCC have been in conversations with Hazard Community and Technical College (Hazard) in Kentucky regarding a similar partnership, in which Hazard would deliver Tiers 1 and 2 noncredit training to laid-off coal miners.

> **ShaleNET has** developed **a unique "hub and spokes" model for developing partnerships** with other educational institutions.

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[35] Pierpont Community College, however, is not supported by the ShaleNET TAACCCT grant.

Box VI-2: ShaleNET Hub and Spokes Model
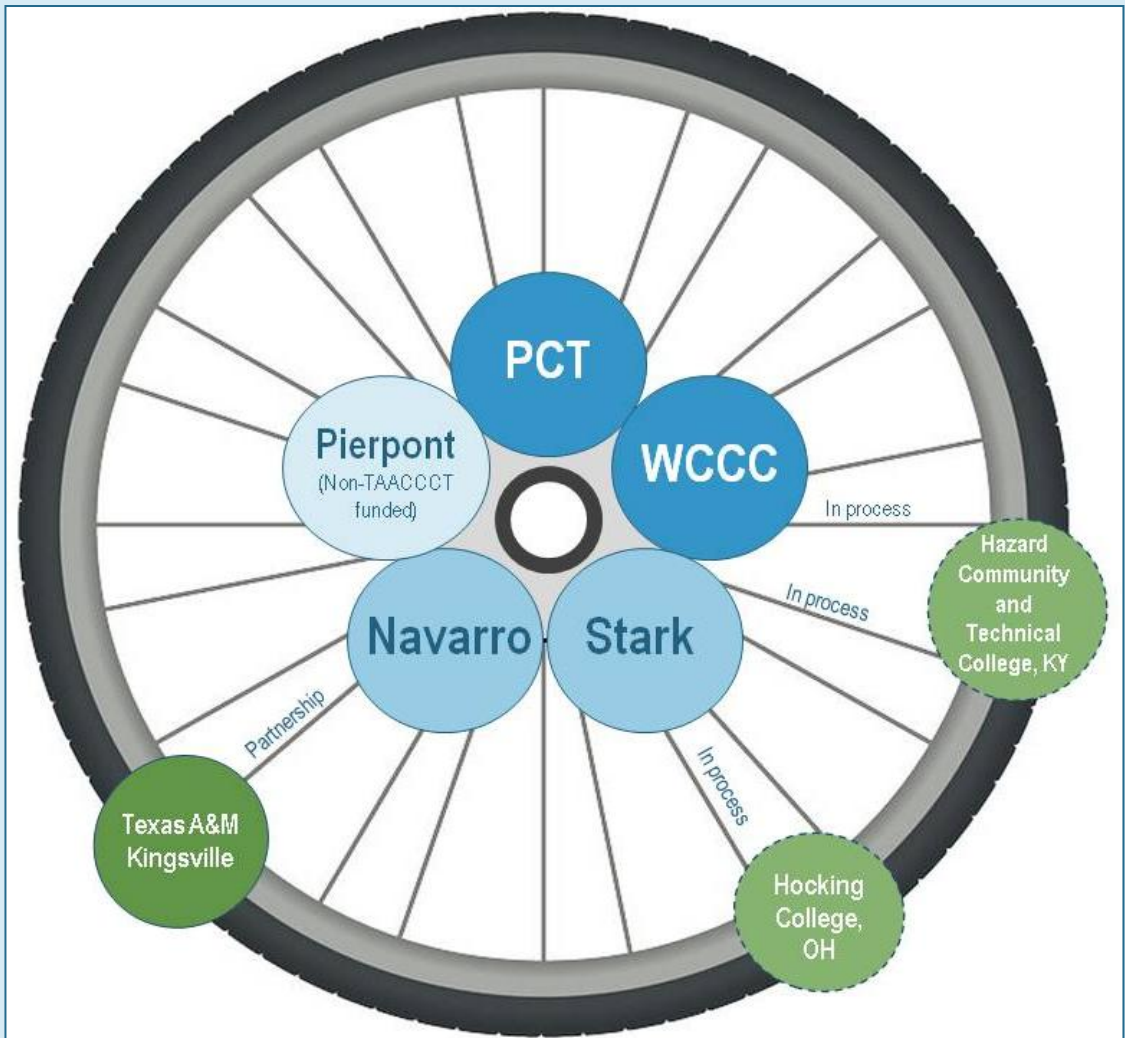
Navarro's Partnership with Texas A&M Kingsville
The Navarro ShaleNET hub responded to increased activity in the Eagle Ford Shale Play by developing a partnership with EFCREO, located at Texas A&M University-Kingsville, that allows EFCREO to offer ShaleNET's noncredit, entry-level training programs. This partnership models the type of expansion ShaleNET is interested in developing nationally, in which hubs link with other educational institutions to provide the education and training necessary to meet the needs of larger geographic areas within or near shale plays.

Stark State is also in the process of developing a different type of spoke partnership with Hocking College in Ohio. This "one and one" articulation partnership would allow students to complete

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their first year of a ShaleNET AAS program at Hocking, taking primarily required general education courses as well as Stark State's Introduction to Petroleum Technology course (either online or from Hocking instructors trained by Stark staff members). These students would then transfer to Stark State for their second year to take all of the required technical classes, thereby making use of Stark State's well-developed oil and gas lab space and equipment to complete their degree.

In addition to developing spoke partnerships with other colleges and universities, ShaleNET hubs are also developing partnerships with high schools in their geographic areas. For example, all four hubs now allow local high school students to dual enroll in classes that provide both college and high school credits and provide a basic introduction to the oil and gas industry. Staff members from these colleges stated that increasing middle and high school students' awareness and knowledge of the oil and gas industry is vital for increasing the pipeline of qualified job applicants. Although only introductory oil and gas courses were available for high school students as of the end of 2014, these hubs hope to expand their high school credit course selections moving forward.

Expansion to New Regions

In addition to developing new spoke partnerships, the ShaleNET consortium has also been engaged in efforts to expand its training programs into new target regions, and to network with interested domestic and international partners. A key element of such expansion efforts is the establishment of a hub college in the target region. For example, to lead ShaleNET's expansion into West Virginia in mid-2014, the ShaleNET consortium asked Pierpont to join the initiative as an affiliate hub (see Box VI-3).

Like other ShaleNET hubs, Pierpont has invested significant resources in improving its capacity to offer oil and gas training programs. It will open an advanced technology center (ATC) in summer 2015 and will also soon break ground on the Appalachian Petroleum Training Center, a nineteen-acre outdoor laboratory that will feature in-ground well training simulators and ancillary equipment that will allow students to receive hands-on training in shale oil and gas drilling, servicing, and production technologies.

Stark State is in the process of developing a "one and one" articulation partnership with Hocking College in Ohio.

Box VI-3: ShaleNET's Affiliate Hub, Pierpont Community and Technical College

In September 2014, Pierpont Community and Technical College in West Virginia became the fifth college and fourth state to join ShaleNET. Pierpont is working to further expand oil and gas training programs in West Virginia by creating certificate and associate's degree programs, in conjunction with West Virginia Northern Community College, as well as by offering industry-specific incumbent worker training programs. In summer 2015, Pierpont will break ground on an advanced technology center. An artist's rendering of this new facility is pictured to the left.

In addition to expanding into West Virginia, ShaleNET hubs have been actively engaged in meeting with representatives from both the United States and abroad regarding the ShaleNET training model. Hub staff members have communicated with interested colleges in number of states, including Colorado, Illinois, Kentucky, and Montana. Several hubs have also hosted numerous international delegations, from countries such as Brazil, Ukraine, and the United Kingdom.

Development of Tier 5 Articulation Agreements

To increase opportunities for ShaleNET students to obtain bachelor's degrees, beyond the Technology Management degree (Tier 5) already offered by PCT, ShaleNET hubs have developed or are in the process of developing articulation agreements with universities that offer oil- and gas- related bachelor's degrees. For example, Stark State developed an articulation agreement with Ohio University (OU), to make it easier for Stark State associate's degree graduates to enter four-year programs at OU. In addition, efforts are also underway between PCT, Stark State, and WCCC to develop an articulation agreement with the University of Phoenix, for the latter's bachelor's degree program in business administration with a concentration in energy management. WCCC has also been in discussions with California University of Pennsylvania (Cal U) regarding development of an agreement that would allow WCCC students to articulate into Cal U's new Mechatronics Engineering Technology bachelor's degree.

Despite these efforts by ShaleNET hubs, focus group participants at one hub expressed frustration about the fact that the initiative

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does not have articulation agreements with more four-year institutions, particularly for petroleum engineering bachelor's degree programs.

Other Educational Partnerships

ShaleNET hubs also received valuable input from other educational institutions about key pieces of the ShaleNET curricula, including the core competencies for each of the tiers within the stackable credential model and the design and setup of lab equipment. For example, ShaleNET staff members at PCT worked closely with Reading Community College in Pennsylvania to research lab design and equipment setup and to gain insight about establishing a mechatronics degree program. PCT also presented curricula for the ShaleNET stackable credential model at the University of Illinois Fabricated Geomembrane Institute to obtain peer review of its programs.

Partnerships with the Public Workforce System

ShaleNET hubs have also focused on developing partnerships with the public workforce system, including WIB members and staffs, as well as state and local staff members funded by WIA, TAA, and Jobs for Veterans State Grants (JSVG). The goal of developing partnerships with these public workforce system stakeholders is to enhance ShaleNET recruitment efforts, especially of USDOL target populations, such as veterans and individuals receiving TAA services.

Efforts to Engage with the Public Workforce System

ShaleNET staff initiated contact with public workforce partners by conducting visits to AJCs and WIBs and by making presentations about ShaleNET to staff affiliated with both. Efforts to engage AJC program staff and WIB members are displayed visually in Exhibit VI-3 and described below.

Exhibit VI-2: AJC Engagement with ShaleNET, by Hub

	Navarro	PCT	Stark State	WCCC
Posted information about ShaleNET in resource room		X	X	X
Referred prospective students	X	X	X	X
Funded training for eligible ShaleNET students (with TAA or WIA funds)		X	X	X
Provided job search and job placement assistance to ShaleNET graduates	X	X	X	X
Participated in ShaleNET advisory board/hub meetings		X	X	X

AJC Engagement. Staff from all four hubs visited their local AJCs to present information about ShaleNET to program partners, with three reporting that they conducted formal information sessions during these visits. Following these presentations, AJC staff members were able to advise job seekers about ShaleNET programs, recruiting individuals for program participation. Hub staff members reported that they concentrated their outreach efforts during these visits on specific public workforce programs, most often WIA, TAA, and JVSG. Two hubs—Stark and WCCC—reported that after these visits, AJC staff went beyond merely posting information in AJC resource rooms about ShaleNET, and instead actively marketed the initiative, even conducting individual information sessions for AJC customers about available ShaleNET training programs. Three of the four hubs also invited local AJC program staff to attend advisory board and/or hub meetings.

Two hubs reported that outreach to AJCs was made easier because their ShaleNET career counselors had previously worked at AJCs and thus understood the public workforce system and had well-established working relationships with staff at those centers. In addition, two hubs also had strong institutional relationships with their nearest AJCs—with one AJC even located on the college's campus—which helped with outreach and relationship-building efforts.

As a result of these partnerships, two of the hubs reported that a number of ShaleNET noncredit students had received WIA funding to help cover the cost of participating in training, and 74 percent of surveyed WIB staff members reported that ShaleNET

> As a result of partnerships with AJCs, **two of the hubs reported that a number of ShaleNET noncredit students had received WIA funding** to help cover the cost of participating in training.

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training programs were eligible to receive this funding (see Exhibit VI-4). In addition, 58 percent of these WIB respondents also reported that their WIA staff members referred customers to ShaleNET and 53 percent said that WIA staff provided information about ShaleNET to their customers.

Program-Specific Engagement via AJCs. ShaleNET staff at all four hubs reported making efforts to recruit veterans for their programs, including meeting with JVSG-funded LVERs and/or Disabled Veterans' Outreach Program specialists to discuss the ShaleNET grant and ways to connect with veterans and veterans organizations (e.g., American Legion, United Service Organization, etc.). These JVSG staff at AJCs near each of the four ShaleNET hubs confirmed that they had met with ShaleNET staff, discussed the ShaleNET TAACCCT-funded grant, and worked to develop relationships for referring veterans to ShaleNET programs. As discussed in chapter III, these efforts to develop partnerships with veteran-serving staff members and organizations have been fairly successful and have resulted in the enrollment of ninety veterans (about 9 percent of all students) in ShaleNET.

> Efforts to develop **partnerships with veteran-serving staff members and organizations have been fairly successful** and have resulted in the **enrollment of ninety veterans** (about nine percent of all students) **in ShaleNET**.

Hubs also worked to recruit trade-affected workers by connecting with both state-level TAA coordinators and local TAA staff. Staff members from PCT even traveled to Harrisburg, PA to meet with the state TAA coordinator in order to identify opportunities for engaging local TAA staff and to obtain recommendations about how best to recruit trade-affected workers for ShaleNET participation. ShaleNET staff at Stark State also contacted their state TAA coordinator to discuss TAA programs requirements and coordination with TAA staff in the local AJCs.

As a result of these meetings, state-level TAA contacts provided hubs with referrals to key local resources. For example, Pennsylvania's state TAA coordinator was able to connect PCT and WCCC staff with the regional TAA agencies that conduct basic readjustment information sessions for trade-affected workers throughout the state. Similarly, Stark State hub staff members learned from Ohio's state-level TAA coordinator that the state was working to identify and reengage trade-affected workers in order to bring them back into the local AJCs, called Ohio Means Jobs centers, through a letter and telephone campaign.

Unfortunately, as discussed in chapter III, these fairly intensive efforts have not been particularly successful thus far: ShaleNET had enrolled only five TAA eligible students as of the end of 2014.

WIB Engagement. ShaleNET hub staff members also sought contact with WIB members and their staffs to inform them about

ShaleNET programs. In total, ShaleNET hubs attempted to engage with a total of twenty-three WIBs, primarily in Ohio, Pennsylvania, and Texas.[36] Although all hubs made some effort to work with the WIBs in their regions, three of them made particularly concerted efforts to do so, spending significant staff resources on doing so. The outreach at these three hubs included conducting presentations at local WIB meetings and coordinating information sessions for WIB staff members about ShaleNET. ShaleNET staff also invited local WIB members and their staffs to participate in advisory board and/or hub meetings. Lastly, ShaleNET staff worked to keep local WIBs informed about the progress of ShaleNET initiatives by sending out the quarterly electronic newsletter produced by ACCD. While ShaleNET hubs conducted outreach to multiple WIBs within their states, most hubs reported that they had stronger working relationships with those WIBs that were in closer geographic proximity to their campuses.

Results from a survey of WIB directors conducted in August and September 2014 for the ShaleNET consortium show that these efforts have been fairly successful. For example, respondents from 85 percent of the responding WIBs reported being "somewhat" or "extremely" knowledgeable about ShaleNET programs, 95 percent reported that ShaleNET was "somewhat" or "very" valuable to their local workforce area, and 65 percent reported being "somewhat" or "very" involved in ShaleNET. However, some of these WIB respondents also had some recommendations for ShaleNET hubs, primarily requesting that hub staff members continue to reach out to them and promote the program.

Engagement with Other Public Workforce Partners. In addition to the efforts described above, ShaleNET staff worked to connect with state-level public workforce staff responsible for analyzing labor market information. PCT staff approached the Center for Workforce Information and Analysis (CWIA) unit of the Pennsylvania Department of Labor and Industry, with a request that it analyze both labor market demand and industry growth related to the state's Marcellus Shale oil and gas industry. Starting in July 2012, CWIA began publishing its *Marcellus Shale Fast Facts* publication, which provides the most

> Unfortunately, these fairly **intensive efforts to recruit TAA eligible individuals have not been particularly successful**: ShaleNET had enrolled only five TAA eligible students.

> Staff members from **85 percent of WIBs reported being "somewhat" or "extremely" knowledgeable about ShaleNET** programs and **95 percent reported that ShaleNET was "somewhat" or "very" valuable** to their local workforce area.

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[36] ShaleNET hubs in Pennsylvania also targeted one WIB in West Virginia for outreach.

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current available data on Marcellus Shale-related economic activity in Pennsylvania.[37] While CWIA uses several data sources to create the *Marcellus Shale Fast Facts* publication, its primary source is the state's Quarterly Census of Employment and Wages.

Exhibit VI-3: ShaleNET WIB Survey Results[38]

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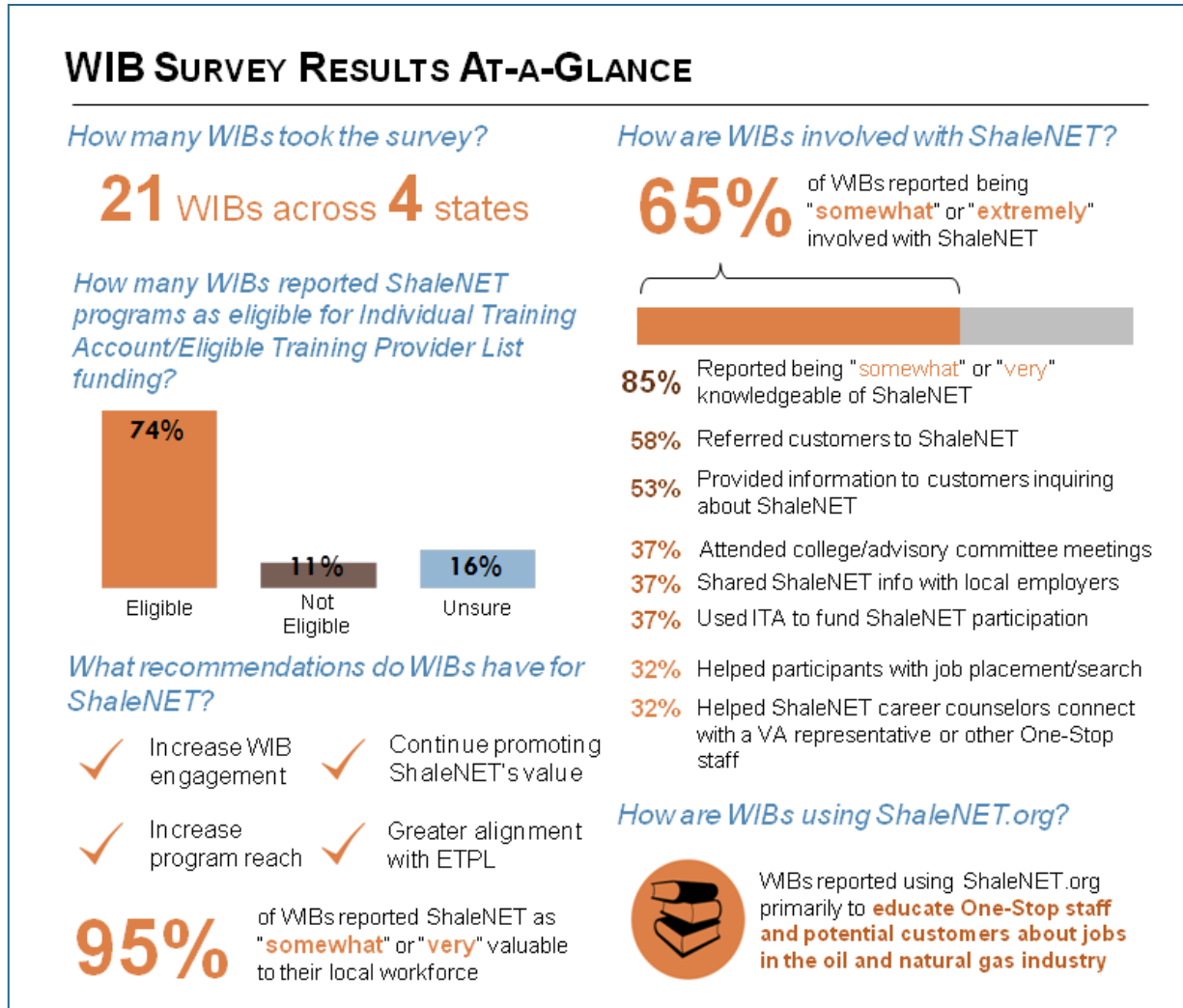
[37] To view *Marcellus Shale Fast Facts*, visit
www.portal.state.pa.us/portal/server.pt?open=514&objID=1222103&mode=2.

[38] Twenty-one of twenty-three WIBs responded to the survey, for a response rate of 91 percent.

Other Partnerships

ShaleNET hubs and ACCD conducted numerous information sessions and provided tours of their facilities for public officials at the federal, state, and local levels to inform them about the ShaleNET grant and available training opportunities. These information sessions have helped to heighten awareness of the ShaleNET program and to increase its credibility and support among public officials.

In Pennsylvania, these efforts led to additional funding for ShaleNET training, by means of Act 13 impact fees on oil and gas drilling in certain counties surrounding PCT. Act 13 provides for the imposition of an "unconventional gas well" fee (also called an impact fee) on hydraulic fracturing operations, and for the distribution of those funds to local and state governments, with provisions regarding how the impact fee may be spent. A significant portion of the funds collected is distributed directly to local governments to cover the impacts of drilling on local roads and water management systems. Under these provisions, PCT has received $165,000 to support scholarships for their noncredit ShaleNET training programs. Lycoming, Tioga and Bradford Counties provided these funds.

PCT has received $165,000 from Act 13 impact fees to support scholarships for their noncredit ShaleNET training programs.

As discussed in chapter IV, ShaleNET programs at Stark and WCCC received additional funding from their states and their colleges to fund the development of new oil and gas training facilities. WCCC received a Pennsylvania capital improvement grant for its new advanced technology center, as well as donations from a number of nonprofits. Stark State received a ten million dollar Ohio capital appropriation, which the college used to consolidate academic programs at several downtown locations into a single training center.

A final source of additional financial partnership for ShaleNET hubs was the National Energy Technology Laboratory (NETL), part of the U.S. Department of Energy (DOE) national laboratory system, which worked with the consortium, through PCT, to refine the ShaleNET curriculum by incorporating key geology components. NETL continues to partner with the ShaleNET consortium by participating in discussions about the ever-evolving oil and gas industry and contributing ideas about how to augment existing pieces of the ShaleNET stackable credential model curriculum.

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VII. Conclusion: Early Outcomes

This chapter concludes this report by summarizing certain early outcomes of the TAACCCT-grant supported components of the ShaleNET initiative. However, before presenting these results, a word of caution. As a result of certain data challenges and the timing of this report, they should be considered preliminary. First, these results are based on just the first nine quarters of the grant, and key data sources such as Unemployment Insurance system data on employment and wages have not been accessed yet. In addition, due to the challenges with TMS discussed in chapter II, the data for these results was acquired directly from hub staff members, who obtained them either from their college's student information system or from Excel spreadsheets they maintained themselves; as a result these data may not be completely comparable due to differences in how they were collected and captured. Further, as we were not able to obtain individual-level data for this report, counts of students may include inaccuracies, particularly double-counting.[39] Finally, only partial data was provided regarding career counselor activities at two of the four hubs.

Early Student Outcomes

As discussed in chapter I, the ShaleNET initiative aimed to achieve a number of outcomes for students, particularly those in certain targeted groups, including veterans and TAA-eligible individuals. The initiative also sought to meet targets for numbers of students enrolled, and to ensure that those students earned credit hours (if in credit programs), completed ShaleNET programs of study, and then either continued their studies or found employment in the oil and gas industry. This section reports on some initial results in each of these areas.

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[39] We expect to have individual-level data on ShaleNET students for the Final Report.

Characteristics of ShaleNET Students[40]

As of December 31, 2014:

- **ShaleNET hubs had served mostly male (91 percent) students, who averaged thirty-one years old.** Most of these students identified as white (69 percent), although about one fifth (19 percent) were African American (see Exhibit VII-1).

  - Just over half of all ShaleNET students (61 percent) were enrolled full-time in a training program, about one third were Pell-grant eligible.

  - As noted in chapter III, about nine percent of students were eligible veterans, and almost none were TAA eligible (1 percent) (see Exhibit VII-1).

Exhibit VII-1: Characteristics of ShaleNET Students

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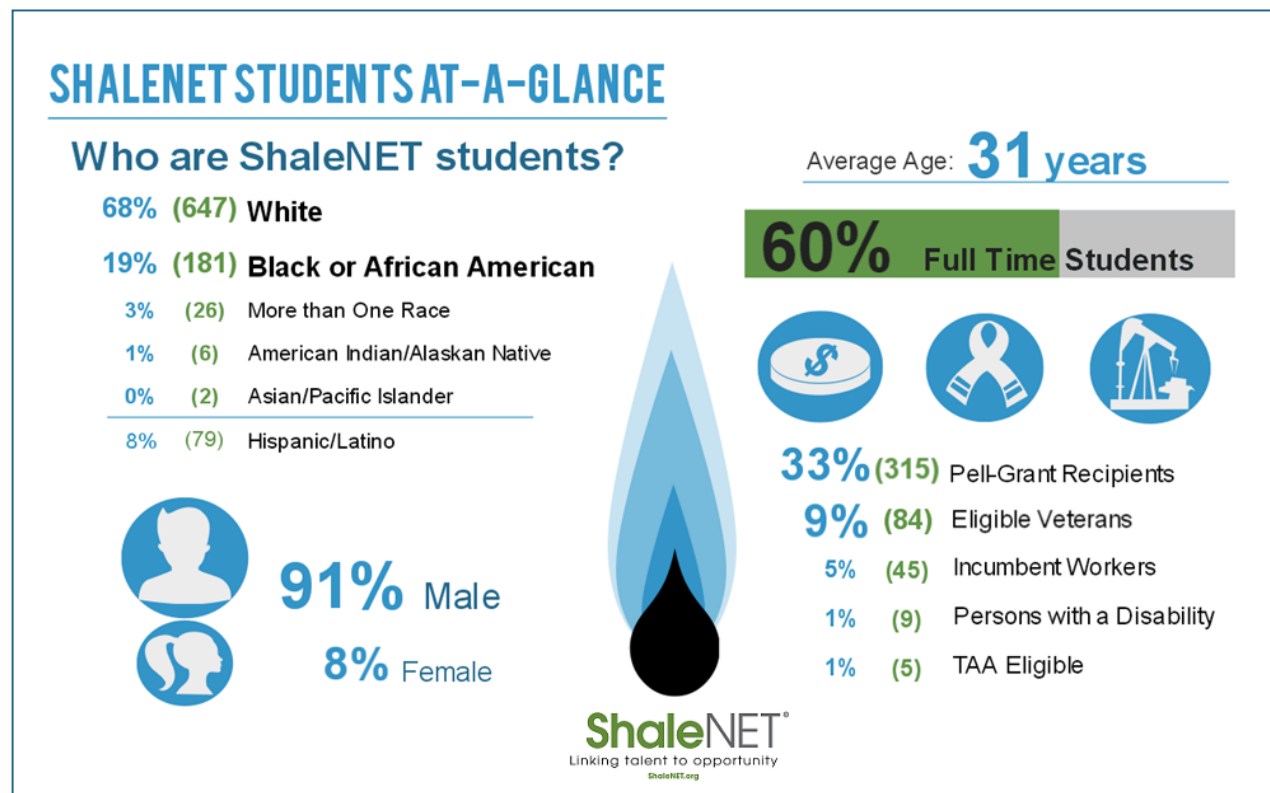
[40] Unless otherwise specified, the data in this chapter were provided by each hub.

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Enrollment in ShaleNET Training Programs

As of December 31, 2014:

- **ShaleNET hubs had enrolled 963 unique students in twenty-five ShaleNET training programs across four tiers**. As a result of this level of enrollment, the consortium was able to meet its goals for each year of the grant thus far and 89 percent of its total enrollment goal, with more than a year left of operations.

- **Tier 3 programs had the highest cumulative enrollment (649), followed by Tier 4 (430).** Exhibit VII-2 displays ShaleNET enrollment at each hub by tier.

Exhibit VII-2: ShaleNET Cumulative Enrollment, by Tier and Hub
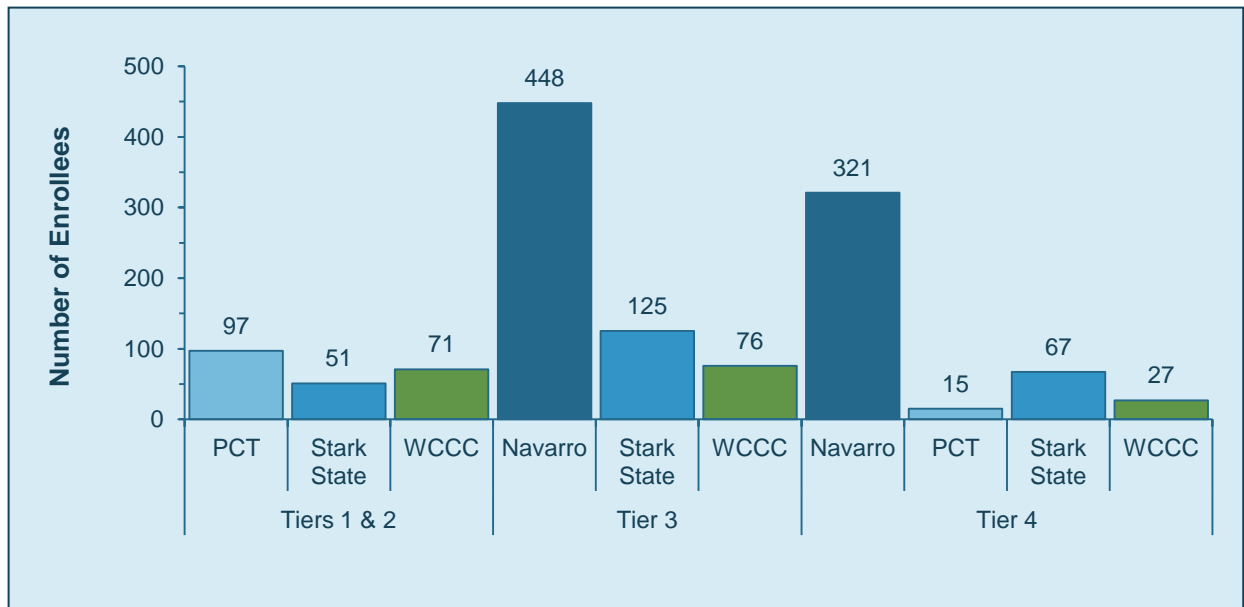
- By hub, Navarro had enrolled the most students in Tier 3 (448) and Tier 4 (321), while PCT had enrolled the most noncredit (Tiers 1 and 2) students.

- **ShaleNET hubs collectively had enrolled students in twenty-four programs: twenty credit programs (ten in Tier 3 and ten in Tier 4) and four noncredit (Tier 1 and 2) programs**. (See Exhibit VII-3.) Fifteen of these programs, all of them credit, were new.

  - Among hubs, Stark State operated the greatest number of programs (eleven), followed by WCCC (seven).

Exhibit VII-3: Number of ShaleNET Training Programs with Enrollees, by Tier and Hub
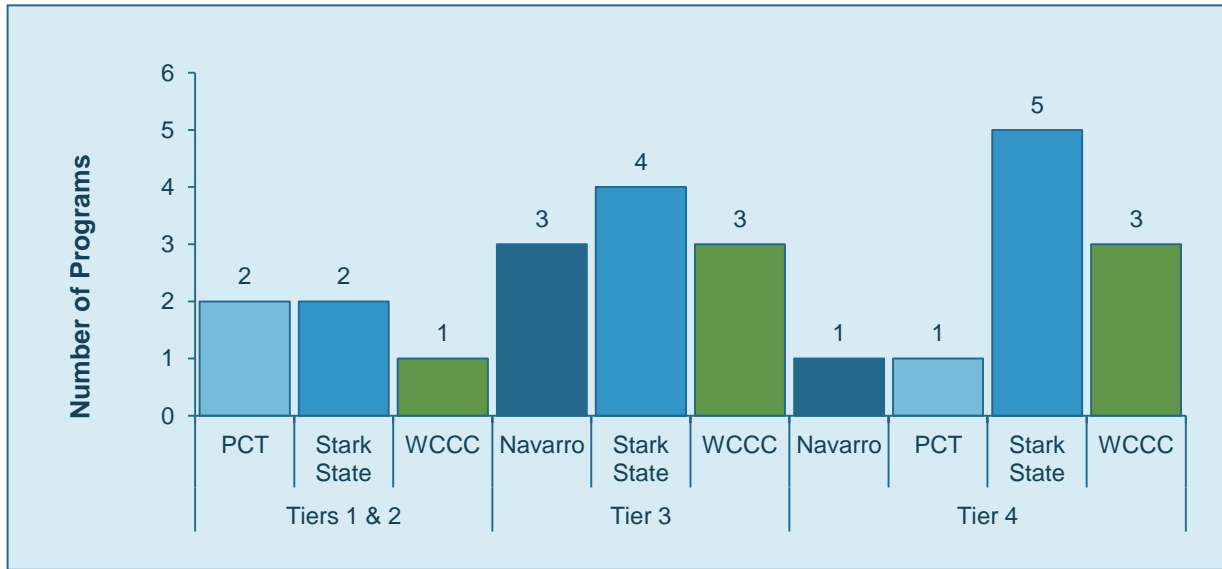

- **Numerous ShaleNET students, especially credit students, enrolled in programs across more than one program tier.** For example at WCCC, approximately 38 percent of credit ShaleNET students had enrolled in at least one Tier 3 and one Tier 4 program. Although comparable data were not available for Navarro or Stark State, hub staff members reported that it was common for students to enroll in programs in both Tiers 3 and 4, either simultaneously or consecutively. WCCC also reported that 8 percent (six) of its noncredit students had later enrolled in one of the hub's credit programs.

  – At WCCC, because ShaleNET certificate programs were only sixteen credits and sixteen weeks in length, many students enrolled in multiple Tier 3 certificate programs as well.

Credits Earned, Completion Rates, and Post-completion Employment for ShaleNET Students

As of December 31, 2014:

- **ShaleNET students as a whole had earned 16,015 credit hours and completed 1,154 credentials.**

- **Nearly all of those who enrolled in Tier 1 and 2 training programs completed their training** (see Exhibit VII-4). Completion rates for all three

Exhibit VII-4: Tier 1 & 2 Completers as a Percentage of Enrollees
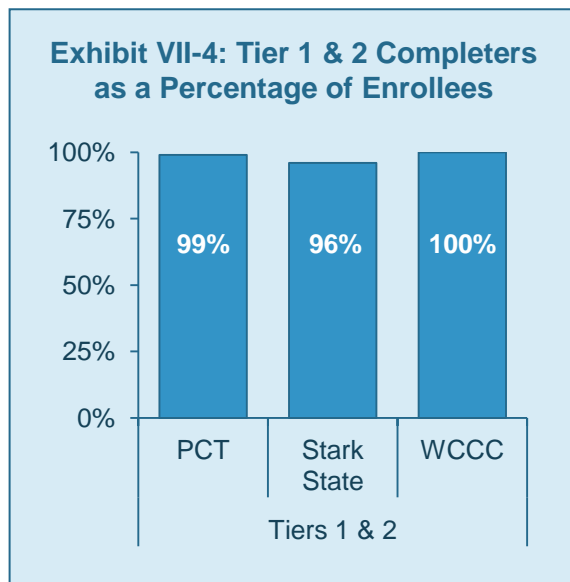
hubs that delivered these programs were higher than 95 percent.[41]

- **By contrast, the greatest share of Tier 3 and 4 students were still enrolled in their training programs** (see Exhibit VII-5). This was particularly true for Tier 4 students at all hubs except Navarro, as Tier 4 students typically need a minimum of two years to complete their AAS degrees and most of these students were enrolled in 2013 or 2014. At two hubs, a third to nearly half of credit students in these tiers had withdrawn.[42]

Exhibit VII-5: Withdrawal, Completion, and Ongoing Enrollment in Tiers 3 and 4, by Hub[43]


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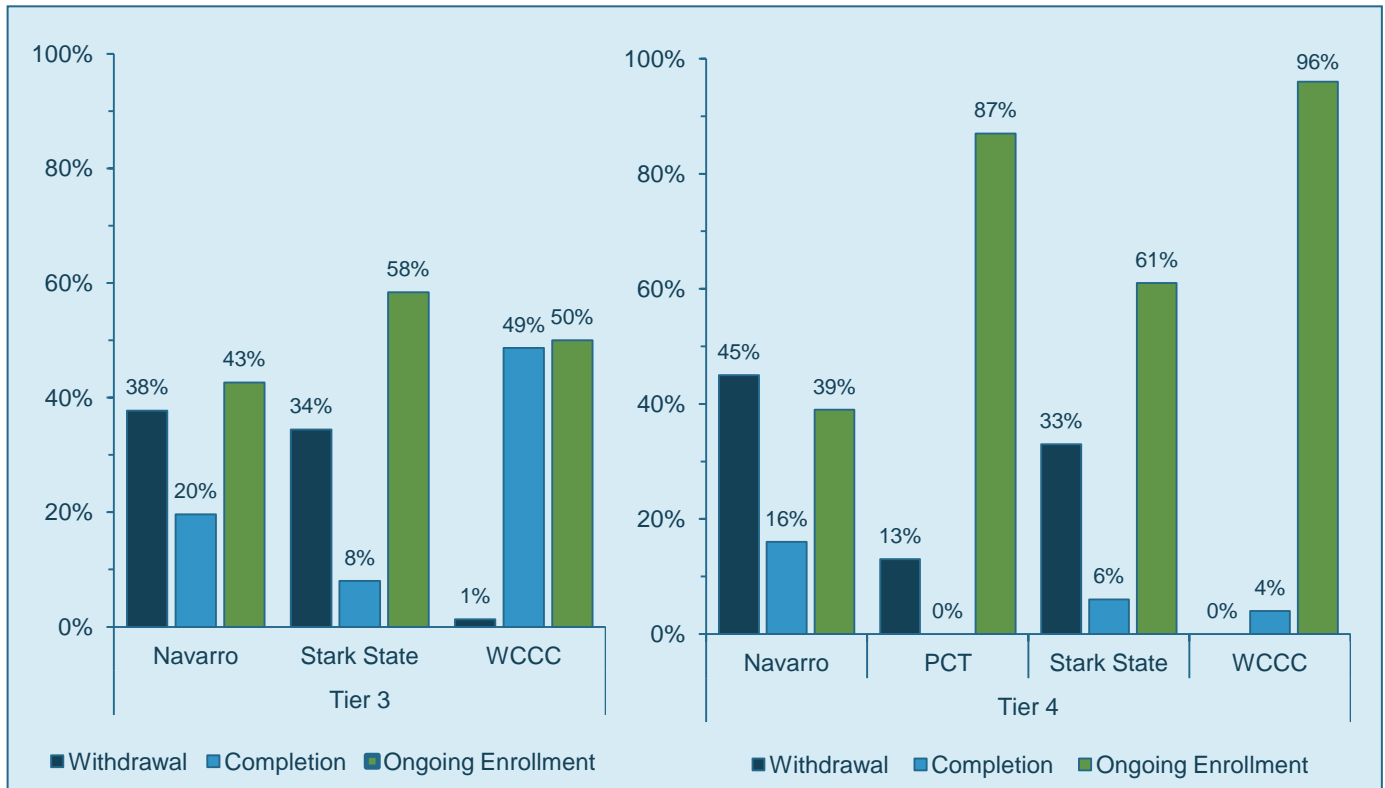
[41] Note that Navarro did not offer any noncredit programs during this time period.

[42] At WCCC, however, as these data were not drawn from the hub's academic student information system as they were for Stark State and Navarro, withdrawals in Tiers 3 and 4 may be underreported.

[43] Note that Tier 3 completers for WCCC, and possibly for Navarro and Stark State, are undercounted, because completers are not counted unless the student is not enrolled in any other ShaleNET program. Also, PCT is not represented in the Tier 3 chart since it delivered no Tier 3 programs.

- **About 73 percent of ShaleNET completers across all hubs were reported to be employed.** By tier, about 78 percent of completers in Tiers 1 and 2 were employed, 70 percent of those in Tier 4, and 70 percent of those in Tier 3 (see Exhibit VII-6).[44]

- **Employment for completers by hub was also promising:** at PCT, 80 percent (77 of 96) of completers were employed, at WCCC 65 percent (71 of 109) of completers were employed, and at Stark 66 percent (42 of 63) of completers were employed. [45]

Exhibit VII-6: Percent of ShaleNET Completers Employed, by Tier and Hub

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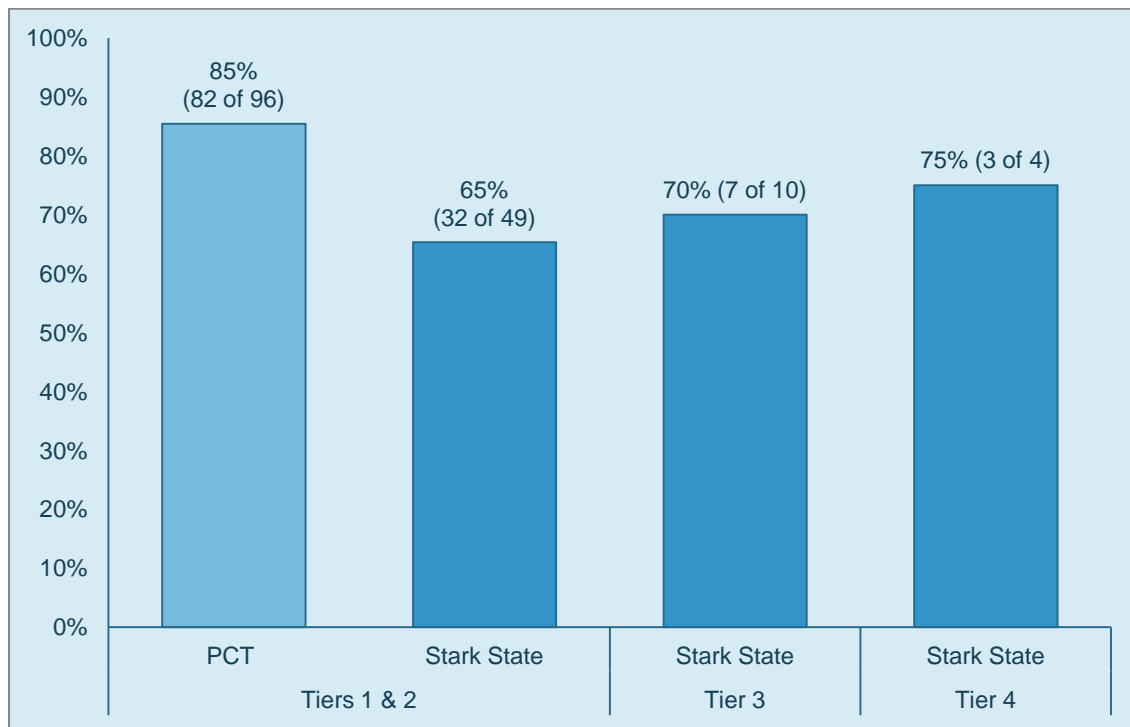
[44] These data were primarily collected by hub staff members (except at PCT, where UI data was used for completers from the first two years of the grant), primarily from student self-reports and thus are likely to undercount the number of employed students. No results are reported for Navarro or for WCCC students, as Navarro was not able to provide data on employment by tier for its completers and for WCCC, UI data on employment was provided only for the hub as a whole, not by tier. No data is presented on PCT's credit students as none of them had completed their programs by the end of 2014..

[45] The number of employed completers for the first two years at PCT and WCCC was derived from UI data received from the State of Pennsylvania. Self-reported completion numbers and employment numbers were used for the Stark State results and for results from the grant's ninth quarter for PCT and WCCC.

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Early System-Level Outcomes

In addition to achieving outcomes for students, the ShaleNET initiative also aimed to achieve a number of system-level outcomes, including operating and developing new credit training programs, enhancing existing programs, adding more intensive supports for students, and expanding training programs and curricula into new regions. The initiative also aimed to enhance partnerships with the oil and gas industry—at least partly by helping industry employers to meet their hiring and training needs—as well as to improve collaboration with the public workforce system. This section presents results for each of these outcomes.

Development and Enhancement of ShaleNET Training Programs
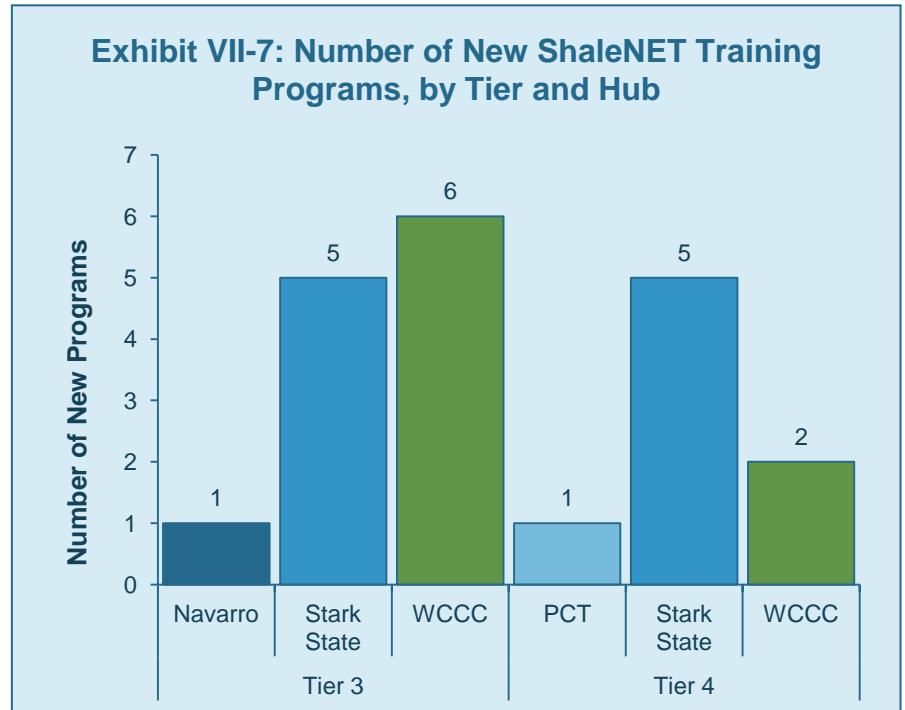
As of December 31, 2014:

- **ShaleNET hubs had developed twenty new training programs, all of which were credit** (see Exhibit VII-7). Four of these programs, although approved to begin enrolling students, had not yet done so by the end of 2014. However, students were expected to enroll in each of these programs no later than September 2015.

  - Among hubs, Stark State developed the greatest number of new programs (ten), followed by WCCC (eight).

- **Students were generally very positive about the delivery of these new programs**. For example, in student focus groups, when asked about the value of their ShaleNET programs, students typically responded with comments such as:
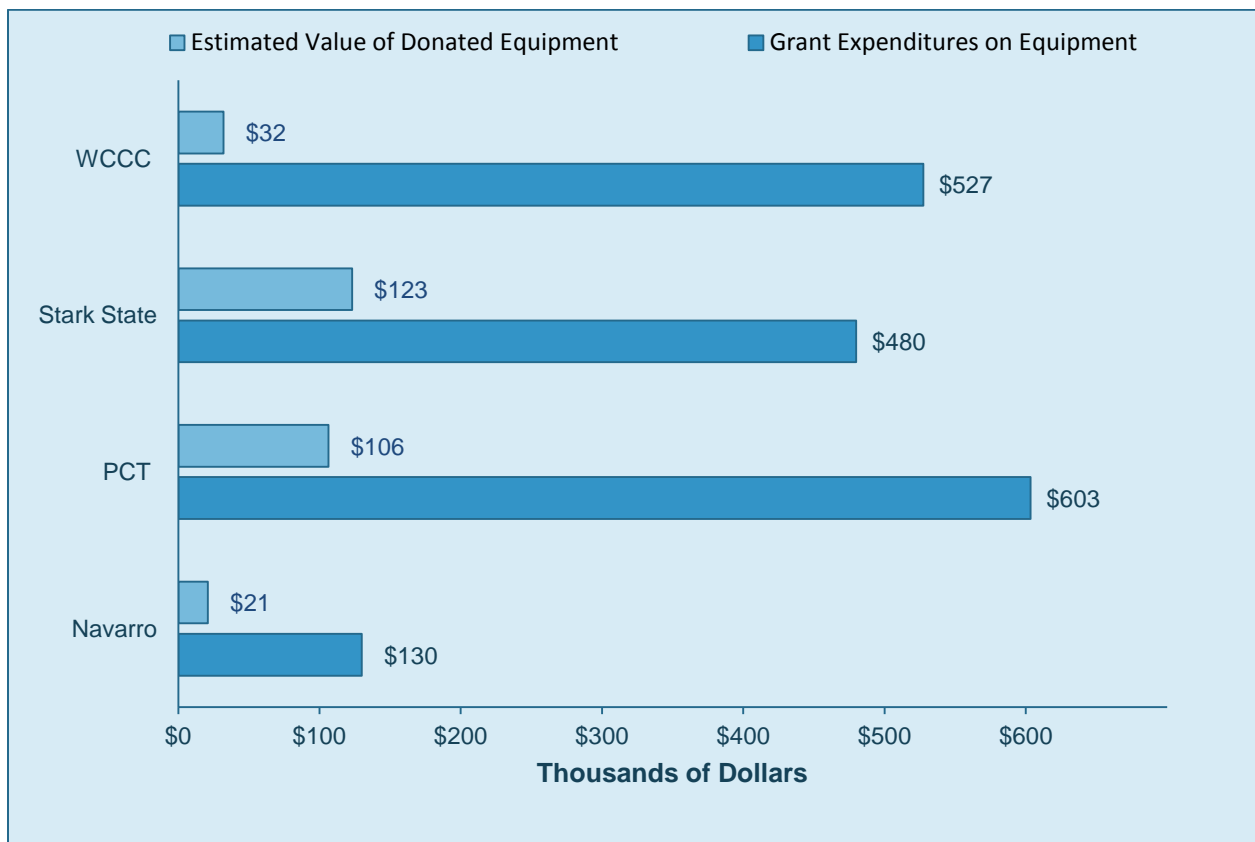
  - "I have loved this program." Navarro student

  - "Other programs have been just books—but this program is different. I think it's a great program." PCT student

Exhibit VII-7: Number of New ShaleNET Training Programs, by Tier and Hub

Tier 3			Tier 4		
Navarro	Stark State	WCCC	PCT	Stark State	WCCC
1	5	6	1	5	2

Y-axis: Number of New Programs (0–7)

- "The classes have been great as has the ability to work hands-on and meet industry representatives." WCCC student

- "I am very pleased with the program. I like the instructors and the hands-on training" Stark State student

- **However, students at two hubs did note that some courses and labs were not yet well-organized**. For example, one student focus group participant comment that his cohort of students, because they were the first, were a bit like "guinea pigs," and another stated that "a lot of course content and labs were still being set up" while he was taking courses, and "that hurt us [he and his classmates]."

- **ShaleNET hubs substantially enhanced most existing programs and courses, typically through the addition of new equipment for use in labs and in hands-on practice activities.** To obtain this new equipment, ShaleNET hubs collectively spent more than 1.7 million dollars of TAACCCT grant funds on new equipment and received at least $282,000 in donated equipment from industry partners (see Exhibit VII-8).

Exhibit VII-8: Value of Equipment Purchased with TAACCCT Grant Funds and Donated by Employers, by Hub

Legend: ☐ Estimated Value of Donated Equipment ☐ Grant Expenditures on Equipment

WCCC: Donated $32, Grant Expenditures $527
Stark State: Donated $123, Grant Expenditures $480
PCT: Donated $106, Grant Expenditures $603
Navarro: Donated $21, Grant Expenditures $130

Thousands of Dollars

- **Student focus group participants reported that the chance to use this new equipment was one of the best and most useful aspects of their ShaleNET training.** However, a few of these students also complained that labs and courses were not well developed and that hubs took a long time to give students access to the new equipment. For example, one student focus group participant complained: "We could go look at it [the new equipment], but we could not use it because the set-up wasn't complete."

  – Hubs are now focusing on developing and enhancing course and lab curricula to ensure that this new equipment is well integrated into training programs.

- **The ShaleNET consortium also used technology to enhance their training programs**. The consortium has been working with a contractor to develop a suite of 3-D simulation software that instructors can use to create opportunities for virtual, hands-on practice. This software should be available for use by mid-2015. The consortium has also been working with a different contractor to allow students at remote locations to view equipment; however this approach has been challenging, due to limited Internet bandwidth among other problems.

Provision of Additional Student Support

- **All hubs provided at least one career counselor who offered various forms of support to participants, including academic coaching, career coaching, job search, and problem-solving for life issues.**

  – Based on data from just two hubs (PCT and Navarro), credit participants received more academic coaching than noncredit students did, while noncredit students received more assistance related to finding a job than credit students did.

- **All hubs tried to require that students meet at least once with a career counselor prior to enrollment, but these meetings often did not occur for students in credit programs.** Both students in focus groups and hub staff members reported that students who did meet with a career counselor before enrolling were typically better informed about both the oil and gas industry and program requirements. In addition, these students may have been less likely to seek out help from the counselor later in the program. In the student focus group at one hub in which none of the participants

> "[The ShaleNET career counselor] was always helpful …. She helped me wade through any problems and helped me wade through the paperwork, so I could focus on school and my course work."
> — ShaleNET student, Stark State

had had a pre-program orientation with the career counselor, two of the three participants did not know that the career counselor was there to help students.

- **Most students in focus groups were very happy with the support they received from career counselors**. At one hub, students noted that the career counselor was available at essentially any time to offer support and job placement assistance. This sentiment is well summed up by the Stark student who said of that hub's career counselor: "She was always helpful …. She helped me wade through any problems and helped me wade through the paperwork, so I could focus on school and my course work."

  - **Several students talked about how much more responsive and attentive ShaleNET career counselors were than counselors they had encountered at other colleges or elsewhere at their hub colleges**. For example, one student at PCT talked about how he had gotten the "run-around" from a staff member at another college who took weeks to respond to him. He contrasted that with his experience with ShaleNET which ultimately convinced him to enroll: "When I texted her [the PCT ShaleNET career counselor] about the program, she quickly texted me right back and told me what I needed to know, and gave me a list of places to stay during the program. "

    Similarly, a student at Navarro described his experience using other counselors at his college versus the ShaleNET career counselor: "When I used the college's [non-ShaleNET] counselors, no one was paying attention to [whether I was taking the right courses]; but the ShaleNET counselors are… They [the college's regular counselors] do not understand all the nuances of the course [requirements for completion of ShaleNET programs]."

- **Student focus group participants at one hub discussed the need for more assistance related to finding jobs and internships.** Students at this hub reported that although career counselors provided some assistance in this area, more assistance was needed. One student at this hub said that "[the career counselor and hub staff members] help us, but they cannot get us hired or get us our internship. We have to do most of the legwork." These students recommended that this hub create a class to help students understand how to find internships and jobs on their own.

> "When I used the college's [non-ShaleNET] counselors, no one was paying attention to [whether I was taking the right courses]; but the ShaleNET counselors are… They [the college's regular counselors] do not understand all the nuances of the course [requirements for completion of ShaleNET programs]."
> — ShaleNET student, Navarro

> "[The career counselor] has given me job leads, and even scheduled an interview for me as well with [an oil and gas company], and now I have a permanent position with [the company] upon completion of the program. You can't ask for more than that."
> — ShaleNET student, WCCC

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- **This was in contrast to what student participants reported at the other three hubs.** These students' opinions were summed up by one noncredit student, who reported that the career counselor at his hub had "given me job leads, and even scheduled an interview for me as well with [an oil and gas company], and now I have a permanent position with them [the company] upon completion of the program. You can't ask for more than that."

Geographic Expansion of ShaleNET Educational Partnerships

As of December 31, 2014:

- **The ShaleNET initiative had added new hubs as well as several other new higher education partnerships, spreading the use of its noncredit curricula into Texas and its credit curricula into Pennsylvania, Ohio, and West Virginia** (see Exhibit VII-9).

  - Expanding from the original two ShaleNET hubs (PCT and WCCC, both in Pennsylvania), the initiative added the Navarro and Stark State hubs at the beginning of the TAACCCT grant in October 2012 and the Pierpont affiliate hub in mid-2014.

  - Stark State and Navarro had either developed or were developing new partnerships with other colleges—Stark State with Hocking College and Navarro with Texas A&M— to provide more students with access to ShaleNET programs.

  - Articulation agreements were put in place to allow students from all hubs to access each other's ShaleNET programs, including PCT's Applied Technology bachelor's degree program.

  - Articulation agreements were developed and were in the process of being developed between ShaleNET hubs and several colleges offering bachelor's degrees, including Ohio University, University of Phoenix, and California University of Pennsylvania. Many student focus group participants expressed interest in being able to make use of these articulation agreements to "stack" their ShaleNET AAS degrees for two years of credit toward achievement of a B.S.; indeed, students at one hub reported that few of these articulation agreements had as yet been established.

> *"Possibly [I'll go on for] more education, for a B.S. in mechatronics, but I'll likely work first so I can save up some money."*
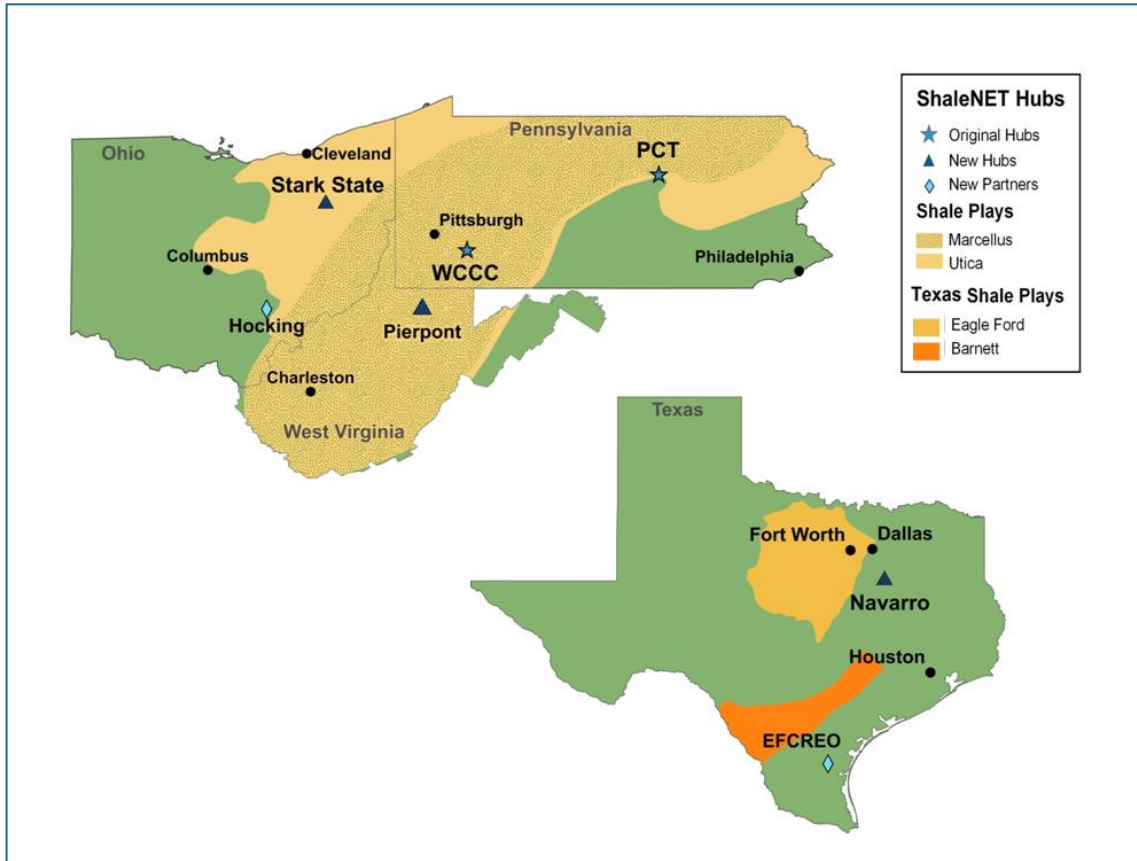> — ShaleNET student, WCCC

Enhancement of Partnerships with the Oil and Gas Industry

- **ShaleNET is relatively well known among employers, at least in the Appalachian Basin.** For example, 71

percent of MSC members who responded to the coalition's 2014 member survey reported that they had heard of ShaleNET.

Exhibit VII-9: ShaleNET Hubs and Partners

- **Across the four TAACCCT-supported hubs, employers reported that they utilized the hubs for many of their hiring needs.** Preliminary data from one hub (PCT) shows that over twenty months, fifty-four different employers hired ShaleNET graduates.[46] In addition, employers who were interviewed were pleased overall, both with candidates from the ShaleNET program and with their working relationship with the hubs.

This sentiment was aptly summed up by one employer who said, "Overall, I love working with [ShaleNET]. The career counselor always sends me quality students that are willing to work hard. The ease of working with her

> "Overall, I love working with [ShaleNET]. The career counselor always sends me quality students that are willing to work hard. The ease of working with her makes [ShaleNET] a great asset to me. They are very responsive, which is what I love."
> — Employer, WCCC

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[46] These data were provided by PCT's support technician. PCT hub staff members obtained these data directly from students or employers. Other hubs were not able to provide these data for all employed students.

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makes them [ShaleNET] a great asset to me. They are very responsive, which is what I love."

- **ShaleNET's industry partners demonstrated the strength of their relationship with ShaleNET by contributing significant resources to support the initiative.** These contributions, which were collectively valued at about $770,000, provided by sixty-one partners, included both in-kind contributions of time and resources, equipment, and funding, primarily for scholarships (see Exhibit VII-10).

    - Industry partners provided financial support to ShaleNET, particularly for scholarships ($232,000).

Exhibit VII-10: Value of Leveraged Resources Contributed by Industry Partners, by Hub
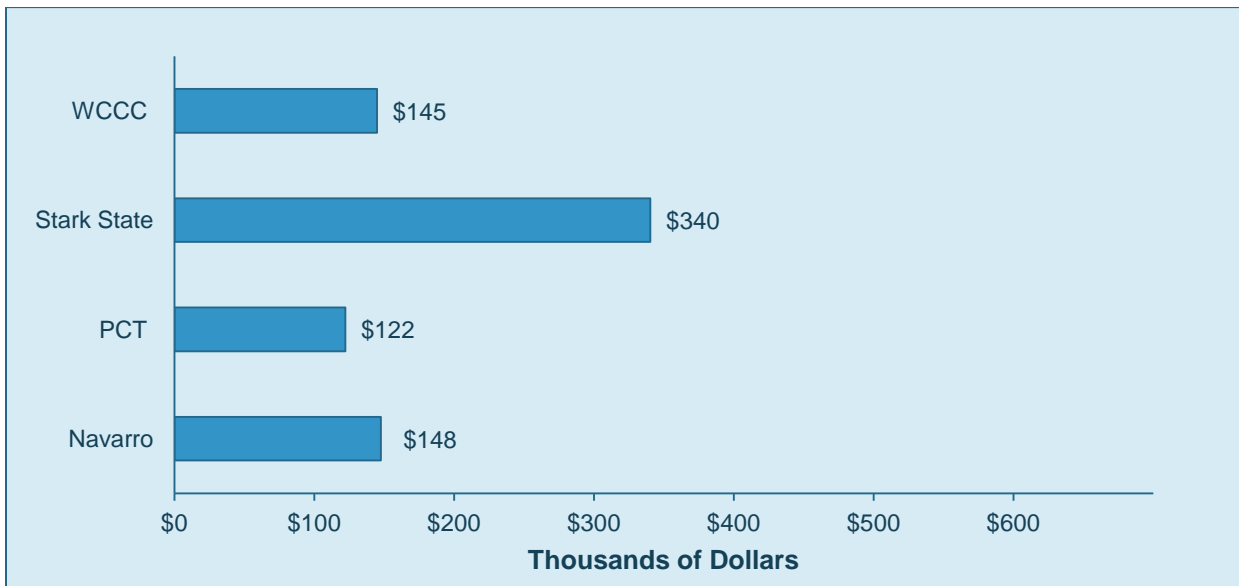
- Industry partners provided n-kind donations of equipment, conservatively valued at $282,000, time for their staff members to participate in ShaleNET meetings, assist with finding instructors—or even serve as instructors themselves—review and provide feedback on program curricula and structure, and provide work-based learning opportunities such as internships and facility tours.

Partnerships with the Public Workforce System

- **Most WIBs (85 percent) in ShaleNET hub regions reported being "somewhat" or "extremely" knowledgeable about the ShaleNET program.** Two-thirds of these WIBs also reported being

> *"The natural gas industry is booming in Central Pennsylvania. The success of the ShaleNET program is evidenced in the placement rate for PCT in finding jobs for the local workforce with family-sustaining wages."*
>
> — WIB Staff Member

"somewhat" or "extremely" involved with ShaleNET hubs.

- **All ShaleNET hubs attempted to develop partnerships with the public workforce system**, and **three of the four hubs were fairly successful** in doing so, particularly in building relationships with local WIBs.

  - Respondents from 65 percent of WIBs in ShaleNET hub regions reported that they were "very" or "somewhat" involved in ShaleNET, and 95 percent reported that ShaleNET was "somewhat" or "very" valuable to their local workforce area.

  - Levels of WIB and AJC involvement with ShaleNET hubs varied. Twelve WIBs in ShaleNET regions said that their WIA staff members referred customers to ShaleNET hubs and eleven reported that those staff members provided information about ShaleNET to customers who inquired about the program. WIBs also indicated that WIA staff at helped ShaleNET participants with job searches, funding searches, and navigation of ShaleNET.org. Three-quarters of them also reported that ShaleNET programs were featured on WIA Eligible Training Provider Lists (ETPL) and were eligible for ITA funding. Two ShaleNET hubs reported that they had had a number of ShaleNET students who had received WIA funding to support their ShaleNET training.

  - In addition to reaching out to WIB and WIA-funded staff members, each of the ShaleNET hubs reached out to AJC staff members serving TAA eligible individuals and veterans, visiting the centers and providing presentations to staff members.

Overall

As demonstrated above, it is evident that the TAACCCT-funded ShaleNET initiative has made progress toward achieving positive system-level and student outcomes during the first half of the grant. Consequently, it is likely that the initiative will continue to do well during the remaining seven months of grant support for operations, and thus that it will achieve positive outcomes and impacts overall. These outcomes and impacts will be the subject of this evaluation's Final Report, which will be completed in summer 2016.

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