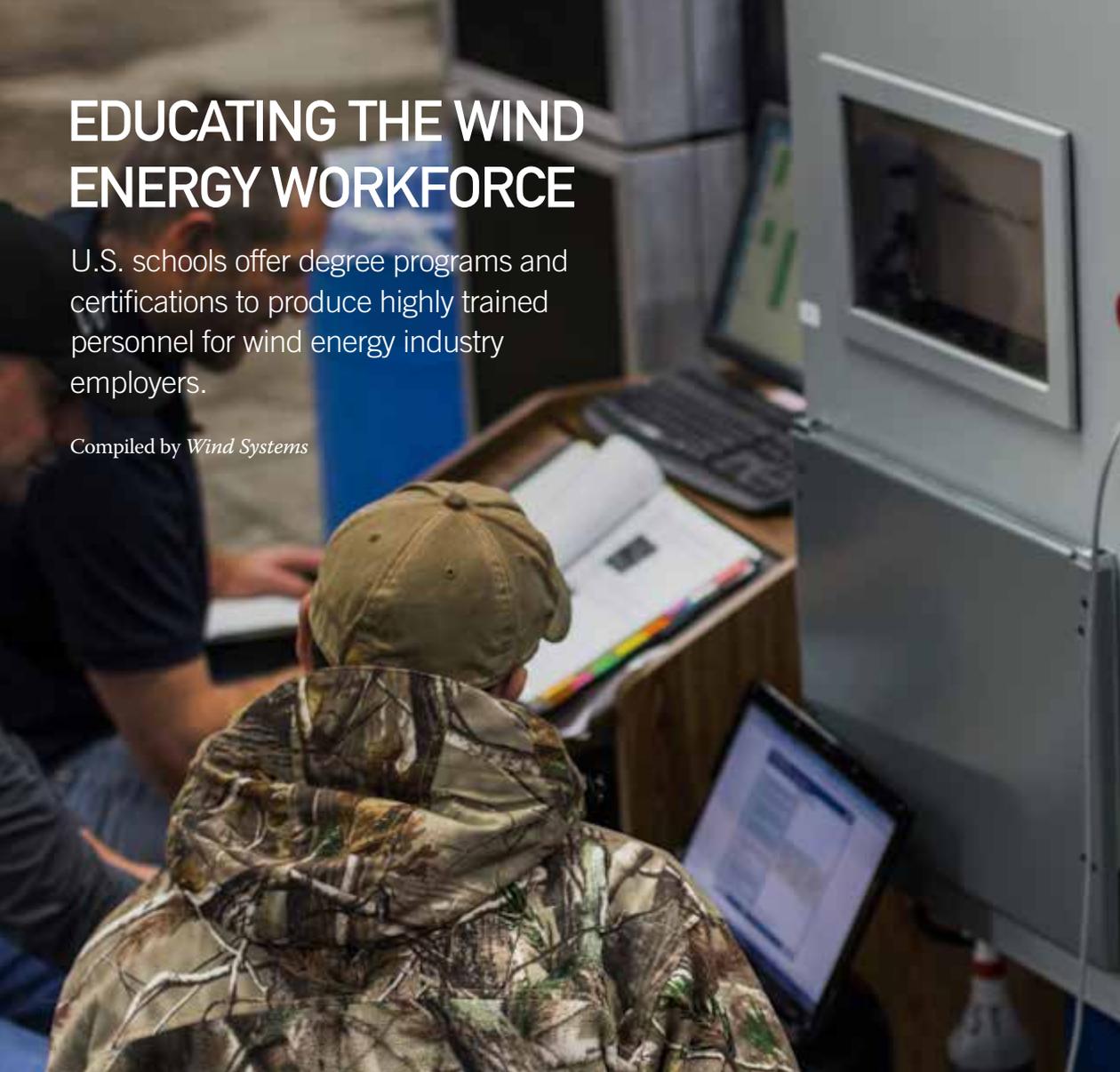


# EDUCATING THE WIND ENERGY WORKFORCE

U.S. schools offer degree programs and certifications to produce highly trained personnel for wind energy industry employers.

Compiled by *Wind Systems*



For a more comprehensive listing of wind energy programs at colleges and training academies, visit [www.windsystemsmag.com](http://www.windsystemsmag.com)

**EDUCATION AND TECHNICAL TRAINING** is an essential part of the wind energy workforce. Within the United States, there are a large number of educational programs offering a wide range of certifications and degrees. Below, Wind Systems has chosen to highlight a few of these programs from all over the country in order to connect these programs with potential students. Information was provided by institutions and compiled by Wind Systems.

## TEXAS TECH UNIVERSITY

Born out of a grant by the Texas Workforce Commission, the Wind Energy program at Texas Tech University is a multidisciplinary program that seeks to train wind energy

industry personnel at both bachelor's, graduate and general workforce levels.

The university, located in Lubbock, Texas, was chosen by the Commission because of a more than 40-year history in wind science and engineering, coupled with emerging studies in wind energy production. In addition, the Commission wanted the university to create a program that could be offered not only in an on-campus setting, but for distance education learners as well.

Consisting of a highly multidisciplinary curriculum pulling from resources throughout multiple colleges within the university, the wind energy program offers a Bachelor's in Wind Energy. Also available is a five-course



For information regarding admission to Texas Tech University, visit [www.ttu.edu/admissions](http://www.ttu.edu/admissions) or call 806.742.2011.

### **OKLAHOMA STATE UNIVERSITY – OKLAHOMA CITY CAMPUS**

Oklahoma State University offers several associate's level degrees relating to the wind energy industry at its Oklahoma City campus. Courses of study include: Wind Turbine Technology, Power Transmission and Distribution, Renewable/Sustainable Energy and Electrical Power Technology. The program is normally completed in five semesters and includes an internship option.

The purpose of the Wind Turbine Technology degree is to prepare individuals to work in the increasingly important field of wind energy. As the shift from fossil fuels to renewable resources of energy generation such as wind power gathers momentum, there will be an increasing need for technicians to service the wind turbines. Meeting the demand for these technicians is well-aligned with OSU-Oklahoma City's statewide mission to provide technical training that enhances Oklahoma's workforce.

Course curriculum provides exposure to the Maintenance and Operations, Diagnostics and Troubleshooting, and Regulatory and Construction operations of Wind Farm operation. Additional courses focus on Hydraulics, Electro Mechanical, and SCADA and Networking operations. Our program features certified trainers from Capital Safety, HyTorc, Snap-On Industrial, Medic First –Aid, and The Crane Institute of America.

The program provides an enhanced "hands-on" approach to adult technical education. The WTT offers instruction in theory and application and delivers unique lab opportunities with advanced training on the Wind Turbine Simulators for nacelle, generator control, and hub operations. Students will receive the best of both worlds from an academic perspective and from industry standards, those industry related standards are created and monitored by our Advisory Team from local power generation, transmission and regulatory sectors.

Centrally located, OSU-OKC provides ample opportunity to experience field trip and internship opportunities at the numerous wind farms within 100 miles of the university, as well as the growing wind operations in the Heartland of the U.S.A.

Enrollment at OSU-OKC is open and ongoing, and courses are offered on a semester basis. Potential students interested in applying to the programs are encouraged to call the Division of Science and Engineering Technologies at 405- 945-3222, or email [science.engineering@osuokc.edu](mailto:science.engineering@osuokc.edu).

For more information about the programs offered at OSU-OKC, visit [www.osuokc.edu/engineering](http://www.osuokc.edu/engineering) or [www.osokc.edu/wind](http://www.osokc.edu/wind).

### **WIND MONTANA — MONTANA STATE UNIVERSITY SYSTEM**

Wind Montana is a statewide, capacity-building project for programs in Sustainable Energy Technology (SET) and In-

graduate certificate with either a technical or managerial concentration. An 18-hour minor as well as a 10-hour undergraduate certificate are also available.

The first graduates of the bachelor's program — nine in total — graduated in December 2012. The program is one of the most robust enrollment-wise in the nation, with about 100 majors in the undergraduate program, and roughly 40 students per semester enrolled in the graduate certificate program. Total course enrollments per semester in the wind energy program top 500.

For more information regarding the Wind Energy Program at Texas Tech University, visit [www.depts.ttu.edu/uc/windenergy](http://www.depts.ttu.edu/uc/windenergy).

dustrial Technology, establishing programs in sustainable energy at Great Falls College MSU, City College at MSU Billings, MSU Northern, and Highlands College of Montana Tech. The project's focus has been to enroll students and track their progress; prepare curriculum materials and expertise for exportation; and develop and integrate an early college program in industrial technology.

The target group served by Wind Montana is underemployed/unemployed workers and secondary/postsecondary students interested in energy production and related fields.

"Our approach is a collaborative effort between education, industry and government with capacity building goals to provide workforce training to the energy industry," said Mel Lehman, Wind Montana project manager at Great Falls College - Montana State University. "Montana is located in an energy-rich region of the U.S. and by taking our approach we endeavor to provide highly-trained and skilled workforce to meet industry needs in both the short and long term."

Wind Montana started with development of programs on four campuses to train entry-level technicians for operation and maintenance jobs with initial focus on commercial scale energy production. The program currently has a one-year certificate and two-year associate's degree sustainable energy technician (SET) training programs. For students with specific interest in wind jobs, wind-specific training is offered in the second-year program. The SET program instructional mix is about 1/3 safety training, 1/3 mechanical training and 1/3 electrical training. There is also more electrical training in the second-year program.

Wind energy specific courses in the program include: Wind Technician Safety, Wind Turbine Equipment, and Wind Turbine Operations and Maintenance.

For more information about the Wind Montana Sustainable Energy Technician programs, including admissions and program details, visit one of the system websites: [www.msugf.edu](http://www.msugf.edu), [citycollege.msbillings.edu](http://citycollege.msbillings.edu), [www.msun.edu](http://www.msun.edu), [www.mtech.edu](http://www.mtech.edu), or [www.coe.montana.edu/wind](http://www.coe.montana.edu/wind).

## WALLA WALLA COMMUNITY COLLEGE

The sharp rise in energy consumption and the increasing interest in sustainable resources have fueled the renewable energy industry. Recognizing this expanding growth, Walla Walla Community College's president Steve VanAusdle has fast tracked the college's Wind Energy Technology program. VanAusdle, on an advisory board for Pacific Power well understands the demand for educated and skilled workers. Named one of the top five community colleges in the nation by the Aspen Institute, the Walla Walla, Washington community college has a well-earned reputation for graduating skilled workers.

In 2010 VanAusdle tapped PacifiCorp's James Bradshaw, to build the Wind Energy Technology program at WWCC. Bradshaw says, "We have a new 5000 square foot expansion for wind specific training. All of our mechanical, safety and rigging courses will take place there. We are equipped with Amatrol trainers for mechanical drive and shaft alignment

skills. There are also simulators for operations, interface and troubleshooting of wind turbines. Last year we installed a twenty station PLC (Programmable Logic Controller) lab which features state of the art Allen-Bradley trainers. All of our wind, electrical and HVAC students use that lab."

Washington's Innovation Partnership Zone program contributed significantly to expansion facility's energy efficiency. Bradshaw said, "Our solar thermal heating system and a utility scale wind turbine are a result of that partnership. The wind turbine is slated to be installed on our North Campus. We'll capture electricity to offset costs and give our students more hands on and specific training on utility scale wind turbines."

Bradshaw concludes, "I strive to be the best at whatever I do. Right now I am helping WWCC build the Wind Energy Technology program. We have a great vision and the resources to put out quality technicians."

The Wind Turbine Technology program at WWCC provides entry level training for wind energy and wind turbine generator technicians with emphasis on the emerging wind energy industry. Programs offered include a two-year Associate in Applied Arts and Sciences in Wind Energy Technology degree, as well as a three-quarter Wind Energy Technology Certificate. The two-year technical training focuses on safety, power generation, distribution, electrical theory and control mechanisms, mechanical systems, along with crane rigging, bolt torque, and general education components.

Enrollment at WWCC is on a quarterly basis for program prerequisites. However, application for acceptance into the Wind Energy Technology program is required in the fall of each year. Potential students should contact program director James Bradshaw, Jr. at [james.bradshaw@wwcc.edu](mailto:james.bradshaw@wwcc.edu) or 509.524-5186 with admission inquiries.

For more information about programs offered by Walla Walla Community College, visit [www.wwcc.edu/wind](http://www.wwcc.edu/wind).

## EXCELSIOR COLLEGE

A fully on-line school located in Albany, NY, Excelsior College offers a Bachelor of Professional Studies in Technology Management with an area of focus in Renewable Energy Technology. Program durations vary based on a student's background which can include transfer credits from prior college courses, military training, and particular industry training such as the GE wind turbine technician training program. Many students complete their degree in 18 months to three years.

This program is one that not only offers a technical component but also offers a professional component. The core courses are business or professional and technology management courses, in addition to the student's renewable energy technology area of focus courses. This combination allows the degree to blend applied learning with technology and professional/management courses. The Bachelor of Professional Studies in Technology Management degree is comprised of three major components: arts and sciences, professional, and additional credit. The professional component includes a professional core, a technology manage-

ment core, and professional component electives. Of the total professional component electives, 15 must be earned in the Renewable Energy Technology area of focus. The renewable energy technology area of focus is comprised of the following five requirements: Electrical Theory, Electrical Power Distribution, Applied Instrumentation and Control, Renewable Energy Overview I, and Renewable Energy Overview II. This curriculum is taken completely on-line.

A minimum of 120 credits are required for the bachelor's degree: 30 in arts and sciences (including nine upper level); 45 in the professional component (including 15 upper level and 15 in information technology subjects); and 45 in the additional credit component (including information literacy and six upper level credits).

For more information, visit [www.excelsior.edu](http://www.excelsior.edu) or call 888-647-2388, ext 27. ✎

## STUDENT SHOWCASE

### Future graduate prepares for career near home at Lakeshore Technical College

Lakeshore Technical College, located in Cleveland, Wisconsin, offers a two-year associate's degree program in Wind Energy Technology.

The program consists of 70 hours of coursework and training. Upon completion of the program, graduates are equipped with the education and training required by a number of wind energy careers: including: tower climber, installation technician and O&M technician.

Lakeshore's program mixes classroom coursework with hands-on experience — including the opportunity to learn on the campus's four operational wind turbines. Hands-on experience is also gained through a summer field internship or combination site analysis/lab, which are requirements of the program.

Sam Schwochert is in his second year in the Wind Energy Technology program, and is expected to graduate in May.

We spoke with him about his background and aspirations.

**WIND SYSTEMS:** What attracted you to the Wind industry? Why did you choose LTC?

**SAM SCHWOCHERT:** I enrolled at LTC to specifically be a part of their Wind Energy Technology program. I chose Wind because it is an interesting, developing field where I can learn a lot, travel, and make a good living. The technology changes quickly, and I like staying "up on it." From the research that I did on schools that had renewable energy programs, LTC was one of the best, and it was also in my backyard, so this was an easy choice. My father has a long-standing interest in Wind turbines, and he's always encouraged me to do something that's both challenging and would allow me to make a living.

#### **WS: What are your expectations post-graduation with your degree from LTC?**

**SS:** After graduation this May, I would like to start by getting a job in "Big Wind" with any of the major players. Ideally I'll begin on a turbine maintenance crew, because I think that is the fastest way to learn as much as possible. I'd like to move to Texas if possible, and my ultimate goal is to become a Mechanical Engineer and help to design Wind turbines.

#### **WS: What is your prior experience?**

**SS:** I was raised in Elkhart Lake, WI; a little town about an hour North of Milwaukee. Ever since I can remember, I've had a love to anything that had some kind of mechanical function. I'm pretty sure this started by being around the family business, Rhine Auto, Inc. (a salvage yard), and working on my father and uncle's

stock car racing teams. We've won four out of the last six championships. Before starting school at LTC I worked as a landscaper and concrete laborer; I loved every minute of these jobs, but realized that that I wanted to get into something that had more of a mechanical bend to it, so here we are.

#### **WS: Can you talk about last summer's internship?**

**SS:** During the summer of 2012 I interned as a Wind Turbine Tech with Kettle View Renewable Energy out of Random Lake, WI. LTC and my Wind teacher, Matt Boor, contacted us [students] weekly with internship opportunities. The boss at KVRE, Randy Faller, gave me every chance to learn everything I could, and I'm thankful for that. Other KVRE employees were also really helpful and eager to help me learn; I learned a lot about the nuts and bolts of mainte-

nance, and LTC helped me quite a bit with the electrical side of things.

#### **WS: Specifically, why do you like working on Wind turbines?**

**SS:** From what I've experienced so far, the job is something different every day. There is so much to learn that I haven't even touched yet, and this is really inspiring.

Lakeshore Wind Energy Technology instructor Matt Boor encourages employers, to contact him through the program should they have interests in employing LTC students and graduates, including Schwochert.

The enrollment deadline for the program is in early August. For more information about Lakeshore Technical College's Wind Energy Technology program, call 920-693-1127 or visit <http://www.gotoltc.com/Programs/windEnergy/>.

# SUCCESS STORIES

By Staff and press reports

## Kalamazoo Valley – Wind Turbine Technician Academy

The Wind Turbine Technician Academy is a competency based program providing graduates a multi craft credentials, uniquely aligned with skills needed by the wind power industry. This competency based program requires graduates to have demonstrated proficiency in the classroom, learning lab and in the field. Affiliations with working wind farms allow students to perform actual services on producing turbine during the course of the program.

The 24 week, 915 contact-hour Wind Turbine Technician Academy has earned the AWEA Seal of Approval and is the only U.S. school to be certified by the BZEE based in Husum Germany.

Those interested participating in the Wind Turbine Technician Academy will be required apply for admission. Applications are reviewed for pre-requisite knowledge and experience as well as employability factors unique to the industry. Applications are accepted year-round, and programs start in both January and July.

Some of the courses that are offered as part of the Wind Turbine Technician Academy are: Wind Energy Theory, Wind Turbine Safety, Rotor Blades – Inspection, Maintenance, and Repair, and Wind Turbine Maintenance, among others.

KVCC recently had the opportunity of catching up with two graduates of KVCC's Wind Turbine Technician Academy (WTTA) who have achieved success in the work force: Pat Tritschler and Ryan McLeod. As is common practice in the WTTA training program, graduates are asked to discuss real-life experiences with current academy students. Due to the ongoing accolades and accomplishments of the graduates, these interactions provide a very good window into the future for our current trainees. Their feedback is strong validation for our unique, hands on training approach and much needed

encouragement to work hard throughout the course as it will lead to success in your career.

### PAT TRITSCHLER

Pat came from a background working as a computer technician and automotive technician. His uncle, working for a wind turbine company, initially peaked an interest in him by positioning the wind industry as an up-and-coming field. After keeping wind technology in the back of his mind for about a year, Pat made a major life-changing decision to pursue it after reading multiple articles about KVCC's WTTA. He enrolled in the third WTTA class and graduated in June 2011. He was offered a position with Vestas as a Tech 1 — two months prior to graduation. After only six months with the company, Vestas promoted Pat to the level of Tech 2, making him the fastest person to reach that level at the time. Pat currently works in Illinois.

### RYAN MCLEOD

Ryan also came to the WTTA from an auto technician background and was in the third class. The key drivers in his pursuit of the academy were 1) Wind Technology industry being in a high growth mode and 2) the opportunity to travel around the country. Interestingly, Ryan selected KVCC's program over others (including one in his Seattle, Washington "backyard") because of the "hands-on" experience he would gain. As a contrast to Pat, Ryan was hired by a small wind technology service company and completed his initial training in Iowa. Ryan's current assignment is in Texas.

When asked about their experiences in the WTTA program and how they related to their current situations in the wind energy workforce, Pat and Ryan responded as follows:

**QUESTION: WHAT KEY ATTRIBUTES ARE ESSENTIAL TO SUCCESSFULLY COMPLETE THE WTTA TRAINING?**

**PAT TRITSCHLER:** Commitment and perseverance. Pat temporarily turned his life upside down to pursue this path for a long-term better life. In the end, the sacrifices he made were well worth the effort and yielded the desired employment opportunities.

**RYAN MCLEOD:** Adaptability. Students need to “hit the ground running” and deal with rigorous field and complex class training. The physical requirements are demanding.

**Q: HAVE YOU RECOMMENDED THE WTTA TO OTHERS?**

**PT:** Yes. Pat has been in communication with Vestas HR and leadership about WTTA graduates. As a result of his recommendations and the WTTA reputation, one WTTA graduate has been hired and two more are under consideration for employment at the current time.

**RM:** Yes. Ryan has taken more of an approach to reach out and promote WTTA graduates through social networking. He has provided WTTA program specifics as he receives follow-up online inquiries and interest from field personnel he meets.

**Q: ARE THERE A COUPLE LESSONS LEARNED / EXPERIENCES FROM THE WTTA THAT HAVE BEEN ESPECIALLY IMPORTANT / BENEFICIAL IN YOUR FIELD?**

**PT:** Safety training. Besides the high degree of preparation it provides for working in the field, WTTA safety training has also impacted the way Pat handles other areas of his life... like the precautions he takes working around his house.

**RM:** Field experience and service trips. The WTTA program prepares students for the day-to-day situations that they will encounter. As a result, this practical knowledge removes a lot of apprehension

(unknowns) and better positions WTTA graduates when employment starts.

**Q: WHAT EXCITES YOU ABOUT YOUR JOB?**

**PT:** Responsibility and accountability. There is no boss looking over your shoulder. Success is up to you and depends on how well you leverage the training received. The preparation he went through in the WTTA provides him the capability to deal well with the daily pressures and decisions.

**RM:** Task variety and problem solving. The job remains multi-dimensional and fresh.

**Q: IS THERE SOMETHING SPECIAL OR UNIQUE ABOUT YOUR SKILLS AND/OR WTTA TRAINING THAT ACCELERATED THE PATH TO YOUR OPPORTUNITY?**

**PT:** Working on actual turbine components.

**RM:** “Hands-on,” live field work. The classroom theories can only take you so far.

**Q: HAVE YOU HEARD ANY ANECDOTAL OR EMPLOYER COMMENTS ABOUT KVCC'S WTTA?**

**PT:** Yes. In addition to his personal path progression, Pat has been asked to provide WTTA references due to the quality of its graduates. The company is not averse to letting go colleagues because of their inability to handle the responsibilities. WTTA graduates are viewed as the benchmark to which others are compared.

**RM:** Yes. Family relations of co-workers have requested information about Ryan's training experience because of the skills and knowledge he exhibits.

Those interested in participating in the Wind Turbine Technician Academy at Kalamazoo Valley Community College should send inquiries to [careeracademies@kvcc.edu](mailto:careeracademies@kvcc.edu), or call 269-353-1286. More information about the program, as well as the application and admissions process can be found online at [www.kvcc.edu/training](http://www.kvcc.edu/training).