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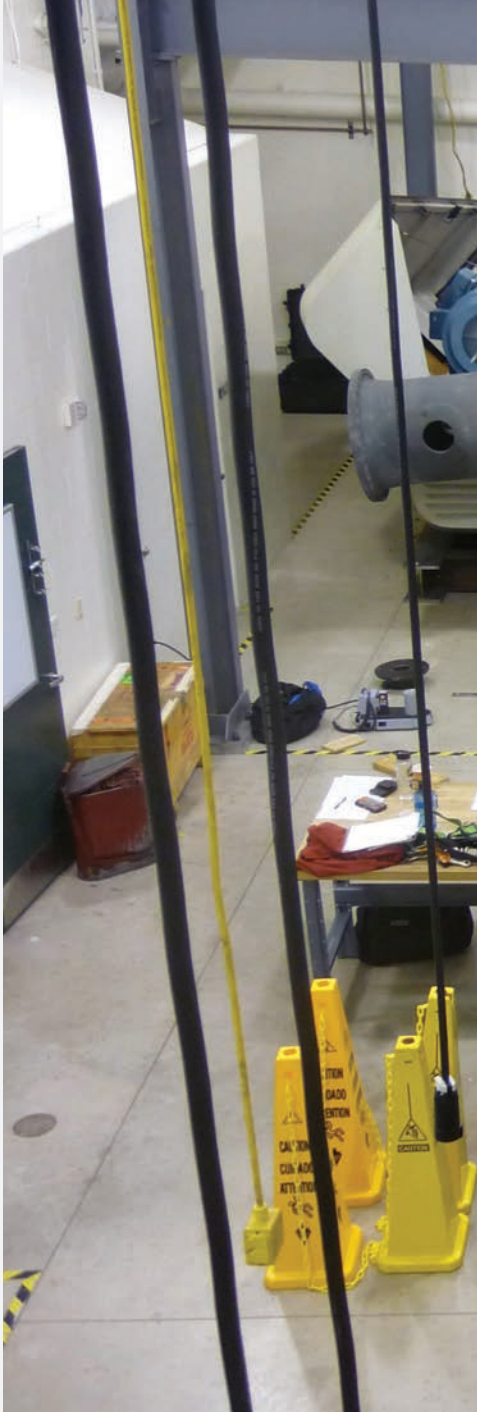
Profile: Kalamazoo Valley Community College

Founded in Kalamazoo, Michigan, more than 40 years ago, Kalamazoo Valley Community College has made a name for itself in the wind energy industry with its Wind Turbine Technician Academy and the skilled workforce it produces.

By Anna Claire Howard



Established in 1966, Kalamazoo Valley Community College (KVCC) is a comprehensive, fully accredited public two-year college with approximately 13,000 students currently enrolled. It offers certificate programs in more than 20 areas of study and associate degrees in 25 others. In addition to associate degrees and certificate programs in business, health care, human and public service, technical occupations, and industry-specific fields, the college also provides a quality experience for students preparing to transfer to four-year institutions following graduation.

Creating an educated workforce skilled to meet the demands of a changing economy is the focus at the Groves Center on KVCC's Groves Campus, one of the college's four campuses that was originally opened in 2001 as one of 18 Michigan technical education centers (M-TEC) facilities across the state of Michigan. The Groves Center was financed by a $5 million grant from the Michigan Economic Development Corporation in addition to $6 million in matching funds provided by area companies and foundations. It offers a variety of training programs for those looking to embark on a new career path, including fast-track training academies that are designed with input from local employers. One of its most outstanding career programs is the Wind Turbine Technician Academy, which was initially launched in 2009 and has quickly earned a reputation as one of the premier training sources for wind industry professionals. Other career academies offered at the Groves Center include Mechatronic Technician Academy and the CNC Operator Academy, as well as customized workforce development training for area employers.

The Wind Turbine Technician Academy at KVCC is a comprehensive 24-week training program designed to teach students the skills necessary to work as wind turbine technicians. Upon successful completion of the program, students typically enjoy a high placement rate within the wind energy industry. The program meets from 8:00 a.m. to 4:30 p.m. Monday through Friday. During scheduled service trips, students can expect to work 10-12 hours per day to complete the scheduled tasks. Due to the rigorous nature of the program, it is recommended that students not work while they are enrolled in the academy.

"We are committed to enriching the lives of our students and communities through quality educational programs and services," said Benjamin Ash, program coordinator for career academics at KVCC. "For those in the Wind Turbine Technician Academy, we create an environment where students learn by

KVCC

doing. Many times, students' questions are met with questions from the instructor to help them develop their own thought process to solve a particular problem. As a wind turbine technician, the student will face new challenges every day. More than likely, there won't be a 'cookie-cutter' solution to all of the issues they'll encounter in the field, so our instructors try to guide the students to their own solution."

Additionally, the college has educational service contracts with two Michigan-based utility companies giving its Wind Turbine Technician Academy sole responsibility for five utility-grade turbines in the state of Michigan. Students can expect to spend at least two weeks working in the field on these turbines.

KVCC's wind training program differs from many others like it in the U.S. in that it is competency-based

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rather than credit-based, meaning that students must demonstrate with 100-percent proficiency that they can complete the tasks necessary to be a wind turbine technician. These competencies are proven by hands-on demonstrations completed in the presence of one of the instructors.

"Not only do students have to complete the hands-on demonstration, they also have to be able to describe what they are doing and why they are doing it," Ash said. "They must also be able to answer any questions from the instructor. Many of the competencies build on one another, and if an instructor feels that a student is no longer competent in a particular task, they may strip the student of that competency until they are able to demonstrate it correctly."

Learning the skills necessary to be successful as a wind turbine technician requires hours of hands-on practice. So, as a general rule, KVCC aims to keep the class time to a minimum, spending approximately 85 percent of their time in the laboratory or in the field.

However, in order for this type of training to be successful, class sizes must remain small. According to Ash, KVCC only accepts a maximum of 12 students into the academy each session, allowing it to maintain an ideal student-to-instructor ratio.

"We currently have two full-time instructors and one part-time instructor, all of whom have been through our program and have worked in the wind industry and worked their way into leadership roles within their respective companies before deciding to come back and teach for KVCC," Ash said.

Beyond the traditional classroom setting, students in the Wind Turbine Technician Academy have the opportunity to work in the college's electronics lab and its training lab, which contains two 300-kW turbine nacelles. In addition to the lab work completed on campus, students can also spend time on utility-grade turbines by completing regularly scheduled maintenance and service requests.

According to Ash, graduates of KVCC's Wind Turbine Technician Academy typically take positions as wind turbine technicians either on a wind farm or as a traveling technician for virtually every major OEM and service and maintenance provider in the U.S. wind industry. The majority of the academy's graduates have moved to the Washington and Oregon areas and to North and South Dakota, while a handful of others have taken positions in Oklahoma, Nebraska, and Illinois.

KVCC's Wind Turbine Technician Academy costs a total of $14,000, which includes all safety gear, tools, books, and laptop computers to use while they are enrolled in the academy. The academy also covers the lodging costs of the students while on the off-campus service trips. Students enrolled in the

program may be eligible for Federal Financial Aid, Veteran Education Benefits, Kalamazoo Promise, Michigan Works, and private grants or scholarships.

According to Ash, there are several key factors that set KVCC's graduates apart from the pool of wind technicians entering the workforce, the first of which being that the college expects its students to treat the academy like a job from the start of the application process through graduation.

"We require students to apply with an application similar to a job application, provide contact references, and conduct an interview," Ash said. "Once the student is accepted into the program, they are accountable for tardiness and missing class. If a student does not call and does not show up for class, they may be asked to leave the program. Attendance is recorded throughout the course and will be reported to potential employers if requested. The class schedule also falls in line with a full-time work schedule."

Additionally, students enrolled in the academy must complete ENSA GWO BST training series, which includes working at heights, First Aid, fire prevention, and manual handling. All work-at-heights training is completed on the college's 100-foot climbing tower.

KVCC's wind program has earned both the American Wind Energy Association (AWEA) seal of approval and certification by the Bildungszentrum für Erneuerbare Energien (BZEE) Renewable Energy Education Center. Upon successful completion of a series of written and practical tests, as well as completion of the field service, students receive certification as a service technician for wind turbine engineering through the BZEE.

"Employers appreciate the fact that the students from KVCC's Wind Turbine Technician Academy complete the ENSA GWO training," Ash said. "They also like the fact that students are gaining experience on real components and actual field experience all within the 24-week training period.

KVCC runs two academies per year; one typically starts during the first week in January, and the other typically starts the first week in July. Applications are accepted year-round. Anyone who is interested in learning more about KVCC's Wind Turbine Technician Academy should contact Ash directly at bash@kvcc.edu or (269) 353-1560.

For more information, go to www.kvcc.edu/wind.

RETOOLING AMERICA'S WORKFORCE FOR THE WIND ENERGY INDUSTRY

By Shawn Lamb

According to the United States Bureau of Labor Statistics, the wind turbine technician profession — and opportunities for employment therein — is expected to increase by 108 percent over the next 10 years. This projection is much higher than the other occupations classified under the category of installation, maintenance, and repair, which is expected to grow by only 6 percent throughout the same time frame. This statistic indicates that U.S. wind energy generation is a growing industry with approximately 8.6 GW of newly installed capacity over the past year, as well as the tens of thousands of previously installed turbines that will need to be operated and maintained well into the next couple decades. However, the question remains — where will these workers come from?

As I have discussed in previous articles, there is a coming shortfall of wind workers in this industry, as well as a requirement for these workers to be properly trained and qualified in order to perform maintenance work on the wind turbines. Additionally, there is potential for workers from industries that are similar to the wind energy industry to transition into being wind technicians. There are two U.S. industries that have seen a recent downturn and may have trained workers who are currently seeking other employment options. The first is the mining industry. With the low prices of mining commodities, many mining companies are downsizing their workforce to stay in business. Mining involves many skills that can be transferable to the wind industry, including instrumentation, data analytics, heavy machinery maintenance, and troubleshooting hydraulics and electronic systems.

The other pool of potential workers could come from the oil and gas industry. The price manipulation of oil overseas coupled with the boom in fracking technology in the U.S. has created a glut on oil and gas worldwide. As a consequence, many experienced professionals in that industry find themselves without work. Before joining Ecotech Institute as the director of career development, Natasha Maier spent a decade in the oil and gas industry as a human resources consultant. Now, she finds jobs and placement for graduates of the school's Wind Turbine Technology program.

"Having previously worked in the oil and gas industry, I have seen a lot of the technical and safety skills transfer into the wind industry," Maier said. "With some additional training, these oil and gas technicians can become proficient wind technicians."

I met with one such technician while I was training wind techs at the Panther Creek Wind Farm in Big Spring, Texas. I asked John Sherrod, an employee of E.ON Climate and Renewables North America, how he felt the skills from his career in oil and gas carried over to wind.

"The skills I learned while troubleshooting the pumping units, PLCs [programmable logic controllers], and SCADA systems in oil and gas were very close to what I do while troubleshooting wind turbines," Sherrod said.

Sherrod spent 14 years in the oil and gas industry, first as a pumper, and then as a well technician who worked with controllers and PLCs.

"I made the transition from oil and gas to wind energy because I saw the layoffs coming, and I wanted to further my career in control systems and PLCs," Sherrod said.

As an educator in this industry, Sherrod was one of the students I trained through the Danish Wind Power Academy Americas when he started working at E.ON. When asked how difficult it was to transition from the theory and schematics found in a classroom to troubleshooting in the field, Sherrod said, "When I first started with E.ON, I didn't know anything about wind. The class helped me understand how the turbine works, and once I started working on the turbines with more experienced technicians, I could understand the terminology and what they were saying."

The retooling and repurposing of technicians from industries outside of wind energy can take many forms. Some may only need to be shown the schematics, while others may require a long-term training plan to fully understand how wind power plants operate. From my 20-plus years of teaching and training adult students, I can honestly say that there is no specific one path that's best for transitioning these technicians. However, finding workers with the right attitude and some heavy-industry experience is a great start for addressing the labor shortage and having qualified technicians working on the towers.

HOW THE U.S. WIND INDUSTRY CAN BENEFIT FROM THE ADVANCEMENT OF EDUCATIONAL AND TRAINING OPPORTUNITIES

By Gordon Moran

There is a broad range of professions that make up the workforce needed to drive the wind energy industry forward, including jobs in the manufacturing of wind turbines, engineering, and a range of support roles relating to daily operations, including marketing and community liaison work. A wide variety of training is required for all of these different roles, from initial background qualifications that may include a specific college degree or certification to conversion courses for someone coming into the sector from another discipline, as well as ongoing training for staff throughout their careers.

The wind industries in the United States and Europe both require a highly skilled workforce for their continuing development and expansion. Some European countries have wind turbine manufacturing industries that they have built up and developed over several decades, and many are installing large numbers of turbines and providing training programs and degrees at educational institutions that equip the workforce with the skills necessary to meet the current and future needs of the industry. A similar trend has developed in the U.S. where there are several manufacturing bases and states with a large number of turbines being installed. Educational support has also developed quickly in wind-rich states like Texas, where there is a growing need for a trained workforce to meet the needs of the industry.

According to the American Wind Energy Association (AWEA), more than 80,000 Americans are employed in the wind industry and related fields. While the development of the wind energy industry is on the rise in the U.S., the skills gap risks putting that growth in jeopardy if there is a shortage of skilled

> The wind industries in the United States and Europe both require a highly skilled workforce for their continuing development and expansion.

workers who are readily available to meet the industry's needs. This, combined with an aging workforce, means that an enhanced education pipeline will be crucial to ensure that there are well-trained, qualified workers to sustain the industry.

One way these needs could be addressed is by looking at how European countries have developed educational opportunities to support the wind sector and applying similar principles to the U.S. wind market. The United Kingdom can provide relevant insights that may prove helpful to the American wind industry.

The U.K. is currently facing a decrease in the number of available, qualified engineers and technicians that are required to sustain and advance the industry. The government addressed this shortage with an increased investment in apprenticeships and a flexible range of training options available for new applicants who are entering the industry. Companies are also investing heavily in on-the-job training for their existing staff to build on and increase their skillsets. For example, wind turbine technicians are one of the primary groups in the wind industry and are responsible for ensuring turbine equipment operates efficiently. Organizations such as the European Energy Centre (EEC) offer a variety of curricula for those looking to pursue careers as wind technicians. The EEC is an accredited center and offers qualification courses, such as the Wind Power course, where individuals learn how to install, maintain, and repair wind turbines. Additionally, courses like Modern Apprenticeships in Wind Turbine Operation and Maintenance as well as Wind Turbine Installation and Commissioning are also available in the U.K. This range of courses combined with relevant hands-on experience yields a workforce that is equipped with a broad range of qualifications and can ensure a large enough workforce is available.

More highly technical, specialized roles are also required for a range of engineering fields across the industry, including aerospace, civil, electrical, electronics, environmental, industrial, materials, and mechanical. An undergraduate engineering degree is typically a prerequisite for this type of employment, along with relevant work experience. These qualifications are available at a range of universities across the U.K., and students often participate in an internship or cooperative program as part of their undergraduate studies.

This flexible and broad range of avenues for applicants to become suitably trained is helping ensure that sufficient numbers of qualified personnel are available to work in the global wind energy industry. It has also resulted in a virtuous circle of initial educational investment by the public sector, which has led to companies investing in the educational development of their workforce. Siemens, for example, built a wind power training center in Newcastle Upon Tyne — a university city on the River Tyne in northeast England — and a global center for offshore grid connections in Manchester. The company is also sponsoring research in renewables at various U.K. universities and is currently constructing a manufacturing plant in Hull to support the offshore wind industry.

Some countries in Europe have established wind turbine manufacturing industries that require skilled technicians and a great deal of careful planning to develop the supply chains, infrastructure, and training facilities necessary to sustain the industry. While the U.K. does not have a history of technological advancements that are required to develop an indigenous manufacturing base, collaborations with private companies may result in the development of such a system. An established policy regime, commitments from government, and known projections for construction have led to the development of a training infrastructure and the facilities that can ensure the long-term viability of the industry. For example, the U.K. offers training facilities that were developed by private companies in addition to apprenticeship schemes, university degrees, and extensive in-employment training to provide the workforce that the industry requires.

Further investment in more comprehensive training facilities in the U.S. will lead to positive mutual reinforcement with initial public sector-led educational investments, which will lead to further internal investment by companies in the development of their wind workforce.

To learn more about renewable energy and energy efficiency through training courses, visit www.EUenergycentre.org

WIND SCHOOL GRADUATES HAVE A COMPETITIVE EDGE IN THE APPLICANT POOL

By Walter Christmas

As a wind energy instructor at Ecotech Institute, I'm envious of my students. They are at an exciting place in their careers, and the wind energy industry is exploding with opportunity worldwide right before their eyes. The technology uptower is changing so rapidly that employers are coming straight to schools like Ecotech Institute in Aurora, Colorado, to hire as many of our students as they can.

After two years of hard work and personal sacrifice, more than 90 percent of Ecotech Institute graduates will go into high-paying jobs in the wind energy industry. Most of them will start off in challenging and exciting positions as wind turbine technicians — the first step in building a career in an industry that has seen phenomenal growth and a diverse range of career paths that continue to grow and evolve.

As an instructor, my charge is to take them from the slightly naive yet motivated renewable energy enthusiasts that they are coming into the program and turn them into highly professional technicians with a deep scientific understanding of turbine systems and the wide range of applicable skills that employers need.

Since July 2010, we have learned what kind of knowledge and skills our industry needs, and we enjoy evolving as a response to the wealth of input provided by site managers, safety managers, graduates working in the turbines, and other industry partners who take a personal level of responsibility in molding our program to reach new heights.

So what is it, specifically, that separates wind school graduates from job applicants who are trying to move into wind energy from other technical fields? In a word — trust.

A wind energy student must be able to trust his or her instructors to guide them to the point of not only being attractive to employers, but also being successful throughout their career. For example, as an instructor, I aim to train my students to smoothly see and follow a path to their second promotion. If I have only helped them get their foot in the door, then I have failed them.

A wind energy instructor must be able to trust that his or her students will go out and make a positive impact on our industry. The instructor must also trust them to take safety seriously, to continuously learn more about turbine reliability, and to respect the need for our employers' profitability.

At Ecotech Institute, we trust that our relationships with industry experts will net fruitful advice to us as technology advances. We cultivate these relationships to make sure they see the benefit in helping us stay on the cutting edge of wind turbine training.

Wind industry partners trust wind energy instructors to effectively train and mold their future employees to

Ecotech Institute

be the technicians that are needed on their wind farms. As students approach graduation, they transition into being an asset offered to the job market. At Ecotech Institute, we often get positive feedback in this regard as our students have multiple job offers from which to choose.

We as instructors trust industry partners to take on the responsibility of continuously training the students that they hire. We provide our industry partners with technicians who have succeeded in learning the physics, mechanics, electrical, hydraulics, schematics, and control logic of a wind turbine. Graduates are also proficient with Microsoft Office applications and can learn proprietary SCADA software quickly and efficiently as they have used SCADA simulators in the classroom. After the graduates have completed their training program and they have been hired, it is the employer's responsibility to train them on the site's specific turbine platforms. Most importantly, employers are trusted to provide the equipment and continued training needed to keep graduates safe.

There have been quite a few training programs popping up around the nation that train entry-level technicians to get their foot in the door with their first job. However, preparing students for successful careers in the wind energy industry with a wide range of options is not about stocking an impressive inventory of large components. It is crucial to have a faculty that is diverse in their wind energy experience so they can offer students the chance to a wide spectrum of career opportunities.

When prospective students are researching colleges for wind energy careers, they should inquire on the background of the instructors. While the majority of these educators' experiences are from uptower maintenance and troubleshooting, experience outside of the typical turbine technician realm is crucial. Otherwise, graduates risk suffering from tunnel vision and a general lack of how our industry works outside of those two key areas.

Wind technicians with tunnel vision often experience early burn out. Without a larger understanding of our industry, climbing turbines can seem like just a job rather than the right step in a promising career. If college program directors wish to serve the long-term needs of their students and the industry, they must hire faculty who bring this level of diversity and provide opportunities for instructors to gain additional industry training that they can then pass on to their students.

Again, I am envious of my students. The opportunities laid out before our future wind energy technicians are unlike any the industry has seen before. We trust that this growth will continue simply because market pressures support this belief. As long as wind energy remains cheaper than the fluctuating costs of coal and natural gas, as long as there is a possibility of a carbon tax looming on America's energy future, and as long as data continue to support the ever-strengthening understanding of the link between carbon dioxide and global climate change, the landscape will continue to remain wide open for wind energy to gain more of the diversified energy portfolio of our nation and world. This is not a trust based on assumptions. This is a trust based on fact and careful analysis. It is this trust that keeps wind energy technology instructors motivated to train ambitious people who are committed to a better world and can build rewarding careers in our industry.

THE IMPORTANCE OF ENCOURAGING WOMEN TO PURSUE CAREERS IN WIND ENERGY AT AN EARLY AGE

By Kristen Graf

The United States Department of Energy's Wind Vision Report suggests that we as a nation can achieve 20-percent wind-generated energy by 2030 and 35 percent by 2050. This estimated economic growth has the potential to create 600,000 additional jobs by 2050, which will require a trained and qualified workforce. Children who are currently in elementary school will be in their 40s by 2050, bringing those projected numbers to reality as they become members of the U.S. workforce. Now is the time to look toward the pipeline of potential wind workers that will be necessary to meet that coming need.

THE K-12 PIPELINE

Generation STEM, a 2012 report from the research arm of the Girl Scouts of the United States of America, suggests that there are a variety of factors that can encourage young women to pursue an education and a future career in science, technology, engineering, and math (STEM). Some of these factors include meeting role models who are involved in renewable energy and a STEM career, going to science and technology museums, and doing hands-on science activities at home at a young age.

Programs such as KidWind offer teacher trainings, curricula, and student design challenges to kids at a young age. Also, Wind for Schools is a program that helps schools get their own wind turbines on-site, creating pathways that bring wind energy to the classroom.

THE HIGHER EDUCATION AND TRAINING PIPELINE

I recently had the opportunity to speak on the Women in Sustainability panel at the annual Society of Women Engineers conference. The room was packed — standing room only — and students made up the majority of those in attendance. After the panel concluded, the lines to ask questions stretched across the room, and I heard the same story over and over again. These students were studying engineering and wanted to work in renewables and sustainability, but they weren't sure where or how to get connected to career opportunities. Regardless of the field of choice in college or vocational training programs, it is critical to begin making the connections to potential career paths, and part of that responsibility falls on the industry.

Programs like the Collegiate Wind Competition allow students to work in cross-disciplinary teams and work together on challenging problems, often with the help of experienced mentors who can help prepare them for careers in the renewable energy workforce.

Women of Wind Energy (WoWE) was founded around the Rudd Mayer Fellowship, a program that brings female students and recent graduates to the American Wind Energy Association's (AWEA) annual Windpower conference where they can gain the knowledge and contacts to successfully break into the field and thrive.

This year, in collaboration with the Wind Energy Foundation and the American Wind Energy Association, WoWE has added a new effort called the Wind at Our Backs Scholarship that also brings young women to

Women of Wind Energy

WHAT YOU CAN DO AS INDUSTRY LEADERS:

- Mentor or volunteer with a local school program or with collegiate teams where women and minority mentors serve as role models.
- Offer to have a student shadow you for a day to learn more about potential career paths.
- Donate to or sponsor fellowship and scholarship programs for women and minorities.
- Support and connect with affinity networks and groups like WoWE and the Society of Women Engineers that create community-oriented and educational opportunities to help retain and encourage women working toward careers in STEM and renewables.

the Windpower show and includes an additional $2,500 to be used toward tuition specifically for women in wind technician training programs.

THE LEADERSHIP PIPELINE

The final stage of the pipeline is one of ongoing retention, growth, and professional development. Whether transitioning from another field, changing areas within the sector, or steadily growing into new roles and capabilities, formal (i.e., graduate programs, certifications, etc.) and informal (i.e., WoWE Webinars and mentoring program) opportunities for continuing education are an important part of retaining women who have made it through from the earlier pipeline stages. While some of these efforts are for the individual member of the workforce, others can be focused on creating a culture across the wind energy industry that is standing ready and excited for all the new ideas that a diverse workforce will bring.

WIND EDUCATIONAL INSTITUTIONS IN THE U.S.

Alphabetized by State

ARIZONA

Coconino Community College
Arizona
Community College
Associate
www.coconino.edu
(800) 350-7122

Northern Arizona University
University
Arizona
Bachelor's
www.nau.edu
(928) 523-9011

CALIFORNIA

Airstreams Renewables Inc.
California
Career
Certificate
www.air-streams.com
(661) 822-3963

Santa Clara University
California
University
Master's
www.scu.edu
(408) 554-4000

College of the Desert
California
Community College
Certificate
www.collegeofthedesert.edu
(760) 346-8041

COLORADO

Colorado State University
Colorado
University
Master's; Doctorate
www.colostate.edu
(970) 491-6444

Northeastern Junior College
Colorado
Community College
Associate
www.njc.edu
(800) 626-4637

Ecotech Institute
Colorado
Career
Associate
www.ecotechinstitute.com
(877) 326-5576

Redstone College
Colorado
Career
Associate
www.redstone.edu
(877) 801-1025

Lamar Community College
Colorado
Community College
Associate
www.lamarcc.edu
(719) 336-2248

DELAWARE

University of Delaware
Delaware
Graduate
www.del.edu
(302) 831-2841

FLORIDA

Everglades University
Florida
University
Bachelor's; Master's
www.evergladesuniversity.edu
(888) 854-8308

University of Miami
Florida
University
Master's
www.miami.edu
(305) 284-2211

IDAHO

College of Southern Idaho
Idaho
Community College
Certificate; Associate
www.agriculture.csi.edu/wind
(208) 732-6403

ILLINOIS

Danville Area Community College
Illinois
Community College
Associate
www.dacc.edu
(217) 443-3222

Heartland Community College
Illinois
Community College
Associate
www.heartland.edu
(309) 268-8860

Highland Community College
Illinois
Community College
Certificate; Associate
www.highland.edu
(815) 235-6121

Illinois Valley Community College
Illinois
Community College
Certificate (Basic, Advanced)
www.ivcc.edu
(815) 224-2720

Lake Land College
Illinois
Community College
Certificate; Associate
www.lakeland.cc.il.us
(217) 234-5253

Northern Illinois University
Illinois
University
Certificate; Graduate
www.niu.edu
(815) 753-1000

Sauk Valley Community College
Illinois
Community College
Certificate
www.svcc.edu
(815) 288-5511

Eastern Illinois University
Illinois
University
Undergraduate coursework and minor
www.eiu.edu
(217) 581-5000

DeVry College
Illinois (main campus)
Bachelor's
www.devry.edu
(866) 338-7934

Elgin Community College
Illinois
Community College
Certificate
www.elgin.edu
(847) 697-1000

INDIANA

Ivy Tech Community College
Indiana
Community College
Certificate; Associate
www.ivytech.edu
(888) 489-5463

Purdue University
Indiana
University
Bachelor's
www.purdue.edu
(765) 494-4600

Indiana University
Indiana
University
Bachelor's
www.engr.iupui.edu
(317) 274-2533

University of Notre Dame
Indiana
University
Graduate; Minor
www.nd.edu
(574) 631-5000

IOWA

Des Moines Area Community College
Iowa
Community College
Associate
www.windenergy.dmacc.edu
(877) 863-6222

Iowa Lakes Community College
Iowa
Community College
Diploma; Associate
www.iowalakes.edu
(800) 521-5054

Kirkwood Community College
Iowa
Community College
Associate
www.kirkwood.edu
(319) 887-3658

Northeast Iowa Community College
Iowa
Community College
Diploma; Associate
www.nicc.edu
(800) 728-2256

Vatterott College
Iowa
Community College
Certificate
www.vatterott.edu
(888) 202-2636

Western Iowa Tech Community College
Iowa
Community College
Associate
www.witcc.edu
(800) 352-4649

Iowa State University
Iowa
University
Doctorate; Undergraduate minor; Research
www.engineering.iastate.edu
(515) 294-5933

Iowa Western Community College
Iowa
Community College
Associate; Certificate
www.iwcc.edu
(800) 432-5852

KANSAS

Cloud County Community College
Kansas
Community College
Certificate; Associate
www.cloud.edu
(800) 729-5101

MAINE

Northern Maine
Community College
Maine
Community College
Certificate; Associate
www.nmcc.edu
(207) 768-2700

MASSACHUSETTS

University of Massachusetts-Amherst/Wind Energy Center
Massachusetts
University
MS; Research
www.umass.edu/windenergy
(413) 545-4359

Western New England University
Massachussettes
University
Undergraduate (Concentration)
www.wne.edu
(800) 325-1122

MICHIGAN

Delta College
Michigan
Community College
Associate
www.delta.edu
(989) 686-9000

Kalamazoo Valley Community College
Michigan
Community College
Certificate
www.grovescenter.kvcc.edu
(269) 353-1253

Saginaw Valley State University
Michigan
University
Undergraduate minor
www.svsu.edu
(989) 964-4000

Grand Rapids Community College
Michigan
Community College
Certificate
www.cmsold.grcc.edu
(616) 234-4722

Lansing Community College
Michigan
Community College
Associate
www.lcc.edu
(800) 644-4522

MINNESOTA

Minnesota West Community and Technical College
Minnesota
Community College
Associate
www.mnwest.edu
(800) 658-2330

Riverland Community College
Minnesota
Community College
Diploma
www.riverland.edu
(800) 247-5039

MISSOURI

Crowder College
Missouri
Community College
Certificate; Associate
www.crowder.edu
(417) 451-3223

Pinnacle Career Institute
Missouri
Career
Short course; Certificate; Associate (Online)
www.pcitraining.edu
(877) 241-3097

MONTANA

Montana State University
Montana
University
Certificate; Doctoral; Master's
www.montana.edu
(406) 994-0211

Montana Tech
Montana
University
Certificate; Associate
www.mtech.edu
(800) 445-8324

NEBRASKA

Northeast Community College
Nebraska
Community College
Diploma; Associate
www.northeast.edu
(800) 348-9033

Western Nebraska
Community College
Nebraska
Community College
Certificate
www.wncc.net
(308) 254-5450

Southeast Community College
Nebraska
Community College
Associate (AAS)
www.southeast.edu
(402) 761-2131

NEW MEXICO

Clovis Community College
New Mexico
Community College
Certificate; Associate
www.clovis.edu
(575) 769-4904

Mesalands Community College
New Mexico
Community College
Certificate; Associate
www.mesalands.edu
(575) 461-4413

NEW YORK

Clinton Community College
New York
Community College
Associate
www.clinton.edu
(518) 562-4200

Hudon Valley Community College
New York
Community College
Certificate
www.hvcc.edu
(877) 325-4822

Hudson Valley Community College
New York
Community College
Certificate
www.hvcc.edu
(518) 629-4822

Excelsior College
New York
University
Bachelor's
www.excelsior.edu
(888) 647-2388

NORTH CAROLINA

Appalachian State University
North Carolina
University
MS; Undergraduate minor
www.wind.appstate.edu
(828) 262-7333

Central Piedmont Community College
North Carolina
Community College
Associate; Certificate; Diploma
www.cpcc.edu
(704) 330-2722

NORTH DAKOTA

Bismarck State College
North Dakota
Community College
Certificate; Associate
www.energy.bismarckstate.edu
(800) 852-5685

Lake Region State College
North Dakota
Community College
Certificate; Associate
www.lrsc.edu
(701) 662-1519

OHIO

Lorain County Community College
Ohio
Community College
Certificate; Associate
www.loraincc.edu
(800) 995-5222

Ohio State University
Ohio
University
Associate
www.osu.edu
(614) 292-6446

Stark State College
Ohio
Career
Certificate
www.starkstate.edu
(330) 494-6170

University of Dayton
Ohio
University
Master's
www.udayton.edu
(937) 229-1000

OKLAHOMA

Canadian Valley Technology Center
Oklahoma
Career
Certificate
www.cvtech.edu
(405) 262-2629

High Plains Technology Center
Oklahoma
Career
Certificate
www.hptc.edu
(580) 571-6167

Oklahoma State University – Oklahoma City
Oklahoma
University
Certificate; Associate
www.osuokc.edu/wind
(800) 560-4099

University of Oklahoma
Oklahoma
University
Associate; Certificate
www.osuokc.edu
(405) 947-4421

OREGON

Columbia Gorge
Community College
Oregon
Community College
Certificate; Associate
www.cgcc.cc.or.us
(541) 506-6011

Clackamas Community College
Oregon
Community College
Associate; Certificate
www.clackamas.edu
(503) 594-6000

PENNSYLVANIA

Penn State
Pennsylvania
University
MPS (Online)
www.wind.psu.edu
(814) 865-2569

SOUTH CAROLINA

Clemson University
South Carolina
University
Certificate
www.clemson.edu
(864) 656-3311

SOUTH DAKOTA

Mitchell Technical Institute
South Dakota
Community College
Associate
www.mitchelltech.edu
(800) 684-1969

TEXAS

Amarillo College
Texas
Community College
Certificate (Basic, Advanced); Associate
www.actx.edu/wind
(806) 371-5000

Clarendon College
Texas
Community College
Certificate (Level I, Level II); Associate
www.clarendoncollege.edu
(800) 687-9737

South Plains College
Texas
Community College
Associate
www.southplainscollege.edu
(806) 894-9611

Texas A&M University
Texas
University
Certificate; Master's
www.tamu.edu
(979) 458-1644

Texas Christian University
Texas
University
Bachelor's; Master's
www.tcu.edu
(817) 257-7000

Texas State Technical College (Harlingen)
Texas
Community College
Certificate (I, II); Associate
www.tstc.edu/harlingenwindtech
(800) 852-8784

Texas State Technical College (West Texas)
Texas
Community College
Certificate (I, II); Associate
www.tstc.edu/westtexaswet
(325) 235-7300

Texas Tech University/National Wind Institute
Texas
University
Certificate; Bachelor's; Doctorate
www.depts.ttu.edu/nwi
(806) 742-3476

West Texas A&M University
Texas
University
Certificate; Bachelor's
www.wtamu.edu
(806) 651-0000

MIAT College of Technology
Texas
Career
Certificate
www.miat.edu
(888) 547-7047

Houston Community College
Texas
Community College
Certificate
www.hccs.edu
(713) 718-2000

Howard College
Texas
Community College
Certificate
www.howardcollege.edu
(432) 264-5061

VIRGINIA

Dabney S. Lancaster Community College
Virginia
Community College
Certificate
www.dslcc.edu
(540) 863-2800

University of Virginia
Virginia
University
Graduate
www.virginia.edu
(434) 924-0311

Virginia Polytechnic Institute and State University
Virginia
Undergraduate
www.vt.edu
(540) 231-6000

WASHINGTON

Walla Walla Community College
Washington
Community College
Associate
www.wwcc.edu
(509) 522-2500

WASHINGTON, D.C.

The Catholic University of America
Washington, D.C.
University
Bachelor's
www.cua.edu
(202) 319-5000

WEST VIRGINIA

Eastern West Virginia Community and Technical College
West Virginia
Community College
Certificate; Associate
www.easternwv.edu
(877) 982-2322

WISCONSIN

Lakeshore Technical College
Wisconsin
Community College
Associate
www.gotoltc.edu
(888) 468-6582

Madison Area Technical College
Wisconsin
Community College
Certificate
www.madisoncollege.edu
(800) 322-6282

Northeast Wisconsin Technical College
Wisconsin
Community College
Associate
www.nwtc.edu
(800) 422-6982

Herzing University
Wisconsin
University
Certificate
www.herzing.edu
(800) 596-0724

WYOMING

Casper College
Wyoming
Community College
Certificate; Associate
www.caspercollege.edu
(800) 422-2963

Laramie County Community College
Wyoming
Community College
Associate
www.lccc.wy.edu
(800) 522-2993

If you would like an educational institution added to this list, email the school's name and information to editor@windsystemsmag.com.