

University of Wisconsin-Oshkosh

Research Initiatives

The University of Wisconsin Oshkosh (UW Oshkosh), located on the Fox River in east central Wisconsin is the third largest public university in the state. Approximately 12,400 undergraduate and 1,130 graduate students benefit from the nationally recognized expertise of our faculty and a wide variety of courses and degrees offered, including 60 undergraduate majors, 17 master's degree programs and one doctoral degree.

- The UW Oshkosh College of Business (COB) is one of only a few business programs accredited at both undergraduate and graduate level via the Association to Advance Collegiate Schools of Business (AACSB). Fewer than 5 percent of the world's 13,000 business programs have earned AACSB Accreditation.
- The College of Nursing (CON) has innovative programs such as the 12-month Accelerated Online BSN program and the graduate level Clinical Nurse Leader program in addition to the recently added Doctorate of Nursing Practice.
- The College of Education and Human Services (COEHS) offers baccalaureate and graduate degrees through 14 departments and divisions and professional development opportunities such as the EXCEL Center Add-on Licensure, the Fox Valley Writing Project and the ESTRELLA ESL Grant.
- The largest and most varied college at UW Oshkosh, the College of Letters and Science offers 37 undergraduate majors as well as numerous minors, emphases, pre-professional programs and graduate programs spanning the sciences, fine arts, humanities and social sciences. Recently, the college became a collaborative partner with 13 higher education institutions in the New North region in the development and delivery of three, new baccalaureate engineering technology majors – a nationally unique and workforce-responsive academic collaboration.
- UW Oshkosh offers over 50 study abroad programs to 20 countries and has won several UW System Board of Regents Teaching Excellence and Diversity awards over the last decade.

UW Oshkosh is also proud to be **among the greenest universities in the country and is a national leader in sustainability**, having been recognized in 2012 as one of 21 colleges and universities from around the nation to earn a place on The Princeton Review's 2013 Green Honor Roll. Additionally, the Sierra Club and Sierra Magazine's 2012 "Coolest Schools" rankings, based on the "greenness" of participating universities, placed UW Oshkosh 14th in the nation, the highest ranking ever for UW Oshkosh and the highest such ranking in the state. A comprehensive Sustainability Plan was adopted in 2008 with goals for energy efficiency and alternative energy. In 2009, following carbon-footprint studies by Johnson Controls and University staff, the University established one of the nation's most aggressive Climate Action Plans to achieve carbon neutrality by 2025.

UW Oshkosh, the nation's first Fair Trade University, has been recognized for its role in embracing sustainable practices, such as building "green," examining its carbon footprints and promoting social justice. An integrated Campus Sustainability Plan, established in 2006, guides the University's effort to be a leader in responsible environmental stewardship, education, outreach and research. In 2010, UW Oshkosh was one of the first schools in the nation to receive a Tree Campus USA designation from the Arbor Day Foundation and has received the recognition in each successive year.

Beyond the campus and classroom achievement, our athletes and intercollegiate teams compete in 21 sports and have earned nearly 50 NCAA Division III Team Championships.

EXISTING PARTNERSHIPS WITH FEDERAL AGENCIES

HHS-Head Start: The institution's program, now in its 46th year, is only one of a handful in the country embedded within a university campus. The program is incredibly valuable in the training and preparation of COEHS teacher-education students. More than 580 children and their families participate each year in this highly successful early childhood and family development program. UW Oshkosh Head Start works together with children, families, staff and communities to facilitate learning and support growth, empowering all partners in shaping their future. It provides an enriching and supportive atmosphere for all who are involved in the program.

EPA-Great Lakes Restorative Initiative beach monitoring program: Last August, the U.S. Environmental Protection Agency announced seven Great Lakes Restoration Initiative (GLRI) grants – including two for the University of Wisconsin Oshkosh – totaling more than \$2.6 million, to improve water quality at Great Lakes beaches in Michigan and Wisconsin.

UW Oshkosh was awarded \$1 million (two grants of \$500,000 each) to redesign eight Wisconsin beaches to reduce bacteria levels, resulting in fewer swimming bans and beach closures. The beaches include: Samuel Myers Park, Racine; Red Arrow Park Beach, Marinette; Crescent Beach, Algoma; Red Arrow Park Beach, Manitowoc; Thompson West End Park, Washburn; Grant Park, South Milwaukee; and Simmons Island and Eichelman Parks, Kenosha.

The federal grant is the fifth in three years for UW Oshkosh, bringing the total grant money awarded to the University through the GLRI to more than \$3.2 million.

CAPITAL INVESTMENT OPPORTUNITIES

Algoma Algal Biotechnology LLC: Cyanobacteria are single-celled algae capable of synthesizing a wide range of economically valuable biomolecules for the food and fuel industries, using only sunlight, carbon dioxide and water. Isoprene is one such biomolecule that has immediate high demand for the synthesis of rubber, jet fuel and lubricants. The global isoprene market is ~\$1.7 billion pounds per year and expected to increase.

Developed under the guidance of Dr. Toivo Kallas (UW Oshkosh) and Dr. Eric Singsass (UW Stevens Point), the proposed work will allow Algoma Algal to demonstrate a prototype system for terpenoid production consisting of fast-growing cyanobacteria with improved production yields. In addition, a prototype photobioreactor to develop high-yielding, integrated systems for terpenoid production and capture will be developed. This work will ultimately lead to the development of a multi-unit biorefinery that integrates fast-growing, high-yielding cyanobacteria to produce fuels and value added products which can be rolled out in existing biomass processing industries such as the pulp and paper and ethanol industries.

Shamrock Energy Corporation: Shamrock Energy Corporation was founded in 2010 with the goal of becoming an industry leader in the energy storage field. Their emphasis has been centered on improving the performance of ultracapacitors through advances in materials and a proprietary new architecture. The goal is to deliver an ultracapacitor with energy densities similar to what is typically found in rechargeable batteries.

Shamrock Energy was founded by UW Oshkosh Chemistry professor Dr. Charles Gibson. Early stage funding was led by Shamrock Partners investment group and backed by the WiSys, an affiliate of the Wisconsin Alumni Research Foundation – WARF. The initial investment round will allow the company to complete development work on their proprietary materials as well as fund initial commercialization efforts.

CoreText Plus Inc.: UW Oshkosh economics Professor M. Ryan Haley and colleagues developed this company distributing a free digital statistics textbook to the institution's students. As highlighted by the WiSys Technology Foundation Inc., "the company's base online statistics textbook can be tailored by each professor in his/her department to create their own version of the text. Students in Haley's department have already saved between \$100,000 and \$150,000 over three semesters using these online books, which are peer-reviewed like any published textbook." The efforts were funded from a grant under the U.S. Department of Education.

RENEWABLE ENERGY & SUSTAINABILITY INITIATIVES

Biodigester I: On campus at UW Oshkosh, this dry fermentation anaerobic digester, first of its kind in the western hemisphere and overseen and operated by a student and faculty research team, provides 10 percent of campus power needs. The biodigester facility takes waste into large chambers and extracts methane gas to create energy. The chambers are designed to handle 8,000 tons per year of organic material such as campus food waste, yard waste and crop residuals. From there, the material remains in one of the four fermentation chamber for 28 days, fermenting and producing the gas to be transformed into electricity and heat. The project is the result of dynamic collaboration between COLS faculty and students, Madison-based BIOFerm Energy Systems (a subsidiary of German efficiency and sustainability company, Viessmann Group) and the UW Oshkosh Foundation.

Biodigester II: This planned wet biodigester, on the site of the 9,000-cow Rosendale Dairy in Pickett, uses livestock manure -- the private dairy operation's abundant, on-site ingredient necessary to produce methane gas and, ultimately, electricity. The process again involves anaerobic digestion, the bacterial decomposition of organic matter that occurs in the absence of oxygen. In the odor-controlled environment of the biodigester, gas produced is safely combusted and turned into electricity. The revenues that will come from the energy's return to the grid will advance UW Oshkosh's operations and educational mission. The facility will also feature an attached public education center. Rosendale Dairy owners Milksource, BIOFerm, the UW Oshkosh Foundation and COLS students and faculty are involved in the unique partnership fueling the project.

Biodigester III: This small-scale biodigester, now operational at the family-owned Allen Farms northwest of Oshkosh, is commonly referred to as the "Titan 55." It involves a small-scale, wet biodigester with a 55 kW engine. It is innovative, scaled energy technology once again championed by Viessmann and BIOFerm, the UW Oshkosh Foundation and COLS students and faculty.

The Environmental Research and Innovation Center (ERIC): The ERIC lab at the University of Wisconsin Oshkosh is the only such facility in the UW System. The facility and its team of research staff partner with industrial and municipal clients to evaluate energy potential from a variety of feedstock material. These materials can be waste products, industrial byproducts commodities, etc. While the facility is able to conduct traditional laboratory testing, it contains the most comprehensive collection of biogas test systems in all scale of application. The facility is able to test material from the most basic tests to actual incorporation into operating biodigesters, as described above. Taken as a whole, the ERIC's capabilities do not exist anywhere else in the Americas.

Oshkosh Premier Waterfront Hotel and Convention Center – UW Oshkosh: The University of Wisconsin Oshkosh Foundation and local hoteliers Richard Batley of RB Hospitality in Neenah and John Pfefferle of Pfefferle Companies, Inc. in Appleton are transforming an existing 179-room waterfront property into a full-service, state-of-the-art business hotel, anchoring the city's downtown and serving as an economic catalyst for the entire community. Opening is set for spring 2013. While dramatically enhancing the use of the downtown convention center, the renovated hotel will also support guests participating in UW Oshkosh's current and future campus-based academic conferences and events, including those in the future Alumni Welcome and Conference Center. A portion of the hotel's revenues will also be channeled into student scholarships, and partners have furthered discussed long-range development of a collaborative, academic hospitality management program being headquartered in the property.

CENTERS AND INSTITUTES

Business Success Center: At the BSC in the College of Business, faculty, staff and students from the University of Wisconsin Oshkosh and community-based experts combine their knowledge and professionalism to offer customized training, applied research, business consulting and student internship programs to business in the area. Dozens of business have benefitted, if not sustained themselves and fortified and expanded jobs through historically challenging economic times, from the expertise and support over the last decade.

Center for Career Development and Employability Training: The UW Oshkosh CCDET provides innovative solutions to successfully make your ideas happen with positive, productive results. CCDET's strengths for over three decades include training, quality assurance, case management, and project management services as well as a customized blend of services to meet your specific project needs. CCDET staff is strategically focused and employs the industry's top talent and offers a wealth of expertise. Our staff members are creative, highly trained and experienced professionals with the knowledge and ability to develop new approaches, modify existing strategies, and provide services to meet the unique needs of agencies and organizations, both large and small. CCDET's staff is located throughout Wisconsin; at UW Oshkosh, in home-based offices and at contracted locations. They provide services to government agencies, as well as nonprofits and private businesses throughout the nation.

Small Business Development Center: The SBDC, affiliated and supported by the Small Business Administration (SBA) is staffed by experienced business professionals from the College of Business who provide free management counseling services for companies with up to 500 employees. They also have experience in helping both start-up and existing businesses secure needed financing. As an extension of the work of the SBDC, our new Center for Entrepreneurship and Innovation (CEI) provides a wide range of services for entrepreneurs and entrepreneurial companies, such as preliminary market assessments for new products and services, and assistance in securing grant and equity financing.

Wisconsin Family Business Forum: The WFBM in the UW Oshkosh College of Business is a partnership; a community that shares values, experiences and commitment to family business. We come together, as partners: business owners, family members, non-family employees, business professionals and academics - to explore the challenges and rewards of family enterprise and to grow in our knowledge, skills and experience.