

2014-2015

SUSTAINABILITY AT DUQUESNE



DUQUESNE
UNIVERSITY



A RESPONSIBILITY TO OUR FUTURE

☪☪
*At Duquesne,
sustainability
means improving
the quality of life
for all of us, both
now and in the
future.*



At Duquesne University, the concept of sustainability is best expressed through the Catholic commitment to “the integrity of creation,” a profound respect for and fundamental attitude of reverence toward the natural world and its interdependent realms of plant, animal and human life.

For decades, the University has advanced this commitment by developing and implementing ethical and long-term sustainability initiatives. At Duquesne, sustainability means improving the quality of life for all of us, both now and in the future.

Achieving the goals of sustainability—whether through green operations, construction projects, research, academic coursework or community engagement initiatives—is one of the principal ways that Duquesne University has been able to transform respect for the integrity of creation into action, and honor our Catholic founding in the Spiritan tradition.

OUR FOUNDING PHILOSOPHY

Today, with approximately 10,000 students and a reputation as one of the nation's preeminent Catholic universities, Duquesne is the fortunate heir of our founders' philosophy. As the only Spiritan institution of higher education in the United States, Duquesne is deeply committed to preserving and promoting Spiritans' values:

- Educational excellence
- Moral and spiritual values
- An ecumenical atmosphere open to diversity
- Service to the Church, the community, the nation and the world
- Attentiveness to global concerns

Honoring Our Spiritan Tradition

Our Spiritan heritage imparts a worldview that challenges us to embrace a deeper understanding of the world's working and accept our role as stewards who must care for creation. And as a Catholic university, in light of the recent encyclical of Pope Francis, *Laudato Si (Praised Be)*, we appreciate that it is not only a moral issue, but also a responsibility to confront climate change and other environmental problems and to do what we can to eliminate their causes and mitigate their effects.

Integrity of Creation Conference

The timeliness and persuasive power of *Laudato Si* as well as the Spiritan, Catholic mission combined to make Duquesne University the ideal environment for a conference focused on the environmental problems that confront us. Duquesne University President Charles J. Dougherty has established an endowment for an annual Integrity of Creation Conference, a free public event that invites scholars, policy makers and concerned citizens to raise awareness, present research, and foster interdisciplinary discourse on a selected topic. The inaugural Presidential Conference on the Integrity of Creation, held Sept. 30–Oct.1, 2015, focused on climate change as well as its attendant issues, including rising sea levels and flooding, water and food shortages, and induced migrations and security issues.



The Spiritan motto, *Cor unum et anima una,*

**“One heart
and one spirit,”**

expresses an ideal of fundamental unity, that we are members of one human family.

CAMPUS OPERATIONS

In the daily and long-term management of its grounds and buildings, Duquesne University maintains high standards of sustainability and energy conservation, and strives to continue improving. A pioneer of on-campus energy production, our Department of Facilities Management takes a leading role in the University's efforts to maintain, enhance and expand the campus using green methods and technologies.

Clean Power for Campus

Duquesne's environmentally friendly and highly efficient Energy Center makes it possible to produce and consume clean power on campus. Most importantly, the facility's capacity is increasing, and its operational efficiency improving.



The Facilities Management Department has operated its **natural-gas-fired electrical generator** since 1997.



Duquesne's was the **1st campus co-gen facility in the state** that was **authorized to create alternative energy credits** and the **first in the state to earn the EPA's Energy Star Combined Heat and Power Award**.



The **Department of Facilities Management also monitors energy usage closely** in order to **reduce costs and carbon dioxide (CO2) emissions**.

Annually, Duquesne's "co-gen" (combined heat and power) plant produces more than

75% and nearly **100%**

of the electrical power that Duquesne needs

of the heating and cooling energy for the campus.

Green Construction

Design and construction at Duquesne are guided by our commitment that all new construction and renovations to existing buildings follow green methods.



The newest building on campus, the **Genesius Theater**, a 10,500-square-foot performance space that opened its doors in the fall of 2015, has energy efficient lighting, low flow water devices and a highly efficient heating and cooling system.

CAMPUS OPERATIONS



**In 2015,
the University
was awarded a
\$2 million grant**

through **Pennsylvania's Alternative and Clean Energy program** to upgrade the Energy Center. The largest state grant ever received by Duquesne, the funding will make it possible to produce more energy while increasing overall efficiency of the facility, as well as employing the latest technology of emissions control significantly reducing nitric oxide emissions.

Green Consumption and Maintenance

- Duquesne uses **LED fixtures**, which can **reduce energy consumption by as much as 90 percent**, for exterior lighting.
- The University is replacing conventional light switches in classrooms and offices with **occupancy switches to turn lights off** when movement is not detected.
- More than **80 percent of the cleaning products** Duquesne buys and uses on a regular basis are **environmentally friendly**.
- More than **75 percent of the paint, glue and aerosol sprays** for maintenance, construction and cleaning products are purchased based on their **low VOC (volatile organic chemical) content**.
- Climate optimal and native plant choices, along with Integrated Pest Management procedures for lawns and shrubs, **reduce the use of pesticides and herbicides** as well as the need for water.
- Made-from scratch and **locally sourced foods selected for sustainable production** methods are the centerpiece of the dining facility experience at Duquesne.
- Water fountains in public areas of campus are upgraded to **hydration stations that dispense chilled, filtered water**, and refill personal water bottles.
- The University consumes less paper and its building have **designated receptacles for convenient, single-stream recycling** for paper, plastic, glass and metal.



To help ensure that the campus continues improving in areas related to sustainable operations,

Duquesne has appointed a sustainability manager

to develop new campus-wide initiatives and student programs.

Des Places Hall

Des Places Hall, a 12-story student residence, has attained Gold LEED certification. In its first year of operation in 2012, energy use was estimated to be 22 percent lower than a residence hall similar in size but constructed and operated using conventional methods.

Every aspect of the building's construction, operations and amenities reveals a choice made for saving and sustainability.

- 1. A light-colored roof covering** retards heat buildup, and rooftop solar cells generate electricity.
- 2. Carpeting, flooring and ceiling tiles** are made from recycled material.
- 3. Temperature controls** are found in each room, and a **ventilation/heat recovery unit** saves energy in cold weather and cools and dehumidifies incoming air during warm periods.
- 4. Energy-saving LED fixtures** illuminate exterior entrances, sensors switch off room lights in unoccupied rooms and regenerative motors produce electricity when elevator cars descend.
- 5. Floor-to-ceiling windows** with photosensitive shades maximize natural light and window tints vary by location, with the darkest tint on the building's west side and the lightest on the north.
- 6. Landscaping** in the area surrounding Des Place Hall features low-maintenance, drought-tolerant plant species.
- 7. Water-saving toilets** in each room or suite conserve water, and **high efficiency dryers** and high capacity washers that use half the water per load as a normal washer are on each floor. (*not shown*)

75% of the brick, stone and concrete produced during the demolition of the existing building was used for engineered fill for the foundation of the new building and promenade



LEARNING AND RESEARCH



Our undergraduate programs, regardless of discipline, are designed to produce ethical members of the global community. This includes encouraging students to fully engage with the part each of us plays in creating and mitigating social and environmental problems. In addition, a broad range of graduate programs in the sciences, business and law fields addresses issues related to sustainability and the environment.

School of Law

To prepare law students in the economic and ethical bases of environmental issues, including those related to Marcellus Shale production, Duquesne's School of Law created an Energy and Environmental Law Concentration. The concentration features an array of courses in energy, environment, gas and oil industry, and land use. The school also joined with the Bayer School of Natural and Environmental Sciences to begin a joint J.D./M.S. in Environmental Science and Management.

Additional sustainability and development work is conducted via the School's Urban Development Clinic, through which students provide legal services to nonprofit community organizations, municipal corporations, and government agencies.

At the
2014 National Energy and Sustainability Moot Court Competition,
a team of Duquesne School of Law students took top honors, focusing on issues related to the Clean Air Act.

Law students have
for-credit options for externships,
including with the Pennsylvania Department of the Interior and the U.S. Department of the Interior.

“...the city of Pittsburgh credits law students from Duquesne University’s Urban Development Clinic—students who took on the work of poring over ordinances and land titles—with playing a key role in the city’s move toward a greener skyline.”

– Pittsburgh Post-Gazette, October 14, 2013

LEARNING AND RESEARCH

Bayer School of Natural and Environmental Sciences

The Bayer School has a tradition of supporting sustainability initiatives on campus, throughout Pittsburgh and in global communities.

Some of these partnerships and Duquesne's involvement include:

ORGANIZATION	HOW DUQUESNE HELPS
 3Rivers Quest	With the help of \$442,428 in grant funding, engage in sampling water quality in the lower Allegheny River and train local community groups and watershed organizations to collect water samples there as well. Disseminate the results of the ongoing study to community groups, government agencies and individuals in an understandable format.
 Allegheny Land Trust	Monitor water quality at Wingfield Pines, a golf course created on an abandoned 1940s-era strip mine where an eight-acre network of ponds and wetlands serves as a natural water purification system for toxic mine drainage.
 Animal Rescue League	Trap feral cats to be spayed and neutered and to have vaccines and medications administered; BSNES students also opened their own clinic where low-cost spaying and neutering is offered twice each month.
 Pittsburgh Project's Urban Farming	Develop an urban farm and adjacent nature park, as well as an integrated rain garden to limit runoff and increase water retention in the soil.

A pioneer in greenhouse gas inventories in higher education, Duquesne's **Center for Environmental Research and Education (CERE)** in 2008 led the University to become the first institution of higher education in the region to conduct a campus-wide greenhouse gas emissions inventory. CERE then went on to conduct a follow-up inventory—the first of its kind—two years later, which has now been followed by two more biennial inventories.

Since 1992, the Bayer School's multi-disciplinary **Center for Environmental Research and Education (CERE)** has brought experts together from across the University in a collaboration that makes it possible to offer multidisciplinary baccalaureate and master's degree programs in environmental science. Additionally, CERE provides the technical infrastructure and support required for faculty and students to engage in environmental research.

Researching the Impact of Marcellus Shale Fracking

Dr. John F. Stolz, director of CERE, has given nearly 70 presentations across five states related to Marcellus fracking. He also was awarded more than \$50,000 through grants to stage a free, public two-day symposium on shale gas extraction in 2013.

Stolz also has a multi-year grant to study well-water quality in southwestern Pennsylvania. Through the grant, undergraduate and graduate students learn how to collect samples and analyze them for various constituents as well as provide information to homeowners about their water.

One of Stolz's CERE students, Brittney Jackson, recently garnered national attention by earning a prestigious \$50,000 fellowship from the U.S. Environmental Protection Agency for new environmental research initiatives. Her research focuses on the potential for arsenic-metabolizing microorganisms to help clean up wastewater produced by hydraulic fracturing in gas and oil extraction. Jackson is one of only 34 students nationwide to win the award in 2015.



ENVIRONMENTAL SCIENCE DEGREES AT DUQUESNE

Undergrad Program:

Accelerated five-year, dual-degree program that allows students to obtain a **B.S. in Biology, Chemistry or Environmental Science**, and a **Master's in Environmental Science and Management**

Grad Programs:

Environmental Science and Management

Certificate Programs:

Environmental Science and Environmental Management

LEARNING AND RESEARCH

Palumbo-Donahue School of Business

Anticipating the increasing demand for business professionals who are capable of implementing sustainable practices while maintaining enterprise competitiveness, the Palumbo-Donahue School of Business created its Master in Business Administration (MBA) Sustainability Program.

Offered in an accelerated one-year format, the program educates students to become agents of change. In addition to learning in rigorous on-campus classes, these students—a diverse and highly talented group from across the nation and around the world—gain experience with sustainability problems and practices through field trips, study-abroad coursework and consulting projects.

The school was among the first 100 endorsers of the United Nations-backed **Principles of Responsible Management Education (PRME)**, an initiative to infuse the issues of environmental stewardship, human rights and fair trade practices into business education.

MBA Sustainability students have engaged in well over 100 consulting projects with multinational corporations, non-profits, regional mid-size and small businesses and NGOs since the program's inception in 2007. Not simply academic exercises, these consulting projects develop workable and sustainable solutions to organizational challenges.



The school is ranked among the top 10 MBA programs in the world for sustainability by Corporate Knights and Net Impact.

The most recent class of students worked closely with the following organizations, among others, on sustainability-related consulting projects:

- **WGL Energy Services**—to evaluate opportunities for leveraging sustainability and renewable energy while expanding into new markets
- **US Steel**—to assess competitive sustainability initiatives and steel industry disclosure practices for creating a strategy to pursue best-in-class status
- **UPMC**—to identify and evaluate emerging sustainability reporting methods and develop a blueprint for becoming a sustainability leader among integrated healthcare providers
- **City of Pittsburgh**—to analyze the costs and environmental impact of operating the City's fleet of vehicles and develop a long-term green transportation strategy
- **PNC Bank**—to revitalize a company-wide program aimed at involving employees in the corporation's commitment to environmental principles
- **Pennsylvania Environmental Council**—to develop a strategy for valuing and leveraging energy-saving features in commercial and residential real estate listings and pricing



Students in the **MBA Sustainability program** also combine consulting projects with international study. Recent cohorts have examined the economic slowdown in China, eco-tourism in the Amazon rainforest, food supply challenges in India, sustainable cities in Scandinavia, water purification issues in Costa Rica, and environmental challenges for Alcoa's newest facilities in Iceland and Brazil.

LEARNING AND RESEARCH

Community-Engaged Teaching and Research

In every discipline, a Duquesne education based in community-engaged teaching and research encourages collaborative and meaningful partnerships between the University students and community constituents. Such initiatives enable students to join together with the communities that they serve, united in finding solutions. A few examples follow.

Duquesne's Center for Community-Engaged Teaching and Research, in collaboration with the Division of Mission and Identity, is home to the student-led interdisciplinary research and action group called *Pure Thirst*. The focus is on addressing the global water crisis by helping communities here and in Africa gain access to clean water. The student-founded, student-led group is guided by an advisory board that includes regional Rotarians, the Center for African Studies, faculty and a member of the Spiritan Congregation.

More than
3,000
people in Honduras and Tanzania given
access to clean water thanks to student
efforts in *Pure Thirst* initiatives.

Closer to home in Pittsburgh, a revitalized park means a richer community. Led by faculty, Duquesne psychology students have partnered with the nonprofit Mount Washington Community Development Corporation and residents to transform the nearly-neglected 260-acre Emerald View Park into a viable, multi-purpose green area. This community engagement initiative emphasizes the importance of sustainability and the use of urban parks as integrated natural spaces in any neighborhood.

An Honors College seminar titled *Imagining a Sustainable World* prepares students to become informed and engaged decision-makers on sustainability, bringing a multidisciplinary approach to this decision-making process. Faculty from different disciplines spanning the natural and social sciences, business and the health professions, together with students, examine environmental, social, health, economic, political and ethical issues from a multidisciplinary perspective. Students go beyond reading, hearing and watching to participating in discussions, presenting, simulating real-world experience and synthesis.

Held annually, Fair Trade Week on campus promotes understanding of fair trade principles that include decent working conditions, local sustainability and fair terms of trade for workers in the developing world.



Sustainability Organizations Making a Difference on Campus

Uniting academic resources and expertise across campus, the University Academic Sustainability Committee is instrumental in developing multi-disciplinary sustainability courses and course components as well as research and service-learning opportunities.

Along with helping members of the faculty to incorporate sustainability concepts into their courses, the committee works to guide campus departments to establish sustainable operations.

Student organizations such as the Duquesne Ecology Club and Net Impact help students increase their environmental knowledge while providing opportunities to educate the campus and the public and pitch in when labor, skill or ideas are needed.

BEYOND CAMPUS

At Duquesne, learning occurs both in the classroom and beyond campus. Our Spiritan Catholic ideal of service in pursuit of peace, justice and the integrity of creation drives us to create innovative and meaningful opportunities for students, faculty and staff to work for the greater good in the Pittsburgh region and beyond.

Mission and Identity

Through a range of opportunities organized by the Division of Mission and Identity, students can assist people in their struggle to liberate themselves from economic, environmental, social and other forces that oppress them.

For example, in the Hill District, a historically underserved neighborhood adjacent to the Duquesne campus, the Division of Mission and Identity has partnered with civic organizations, providing opportunities for students and residents to work together to solve pressing community problems. .

Among these recent collaborations is the work at Martin Luther King Jr. Park in the Hill District. Students from Evergreen and students from the TERRA learning community have worked alongside community members building garden beds and clearing invasive plants, as they helped to transform a run-down baseball field into a community garden.

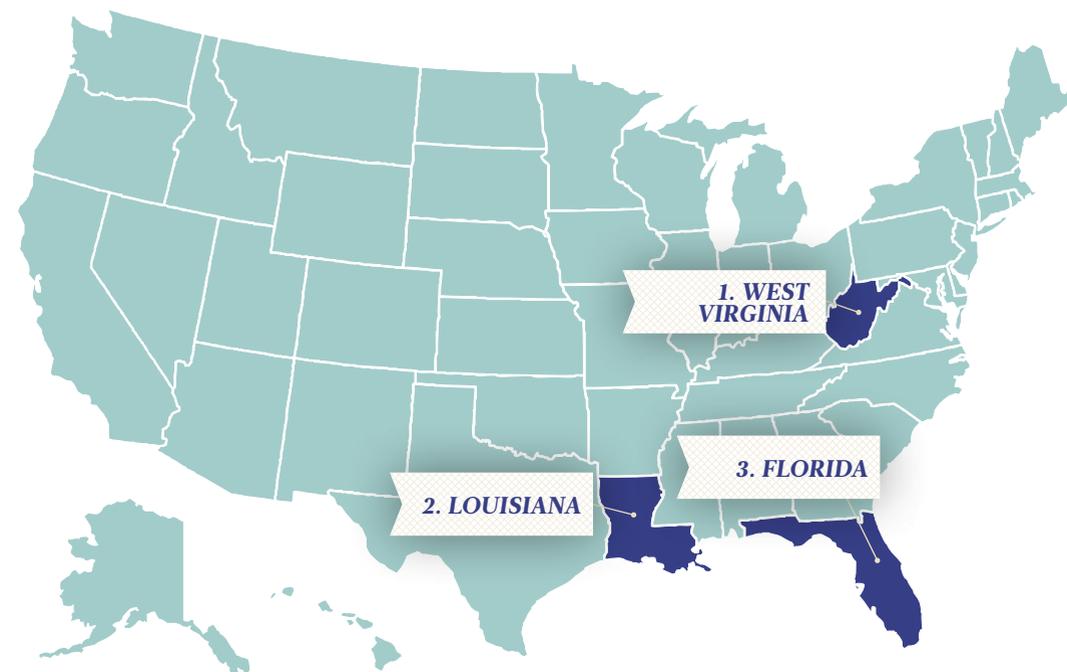


Evergreen plays a pivotal role in Spring Clean-Up, an annual event, directed by Spiritan Campus Ministry, that in 2016 marked its 27th year. The event unites neighborhood residents and civic organizations with hundreds of volunteers from the Duquesne community in an effort to collect litter and haul away trash from the streets and empty lots of the Hill District and South Side.

Cross Cultural Mission Experiences

Spiritans Campus Ministry's Cross Cultural Mission Experience (CCME) offers students extended trips during the academic year, allowing them to immerse themselves in communities and work alongside local people toward a civic goal.

CCME trips have taken Duquesne students to the inner city neighborhoods of Chicago, Baltimore and Washington D.C. And for decades, students, Spiritans and other members of the Duquesne community have been focusing on community and sustainability work in West Virginia, Louisiana and Florida.



1. Since 1988, the **Appalachian CCME** has taken students to an area of West Virginia which suffers from high unemployment, food insecurity and substandard housing. There they study the ecological effects of coal mining and logging while working on home repair and other projects.
2. A **New Orleans CCME** gives students a chance to learn about continuing efforts to rebuild the city and repair the ecology and economy of the Gulf after the twin disasters of Hurricane Katrina and the BP oil spill while working with Habitat for Humanity to build homes.
3. For the past 27 years, Duquesne students have made yearly trips to Immokalee, Fla. to learn about the plight of migrant agricultural workers and help to accomplish the goals of the **Coalition of Immokalee Workers (CIW)**, which is struggling for better wages and working conditions. The students also have become involved with the CIW's Campaign for Fair Food, which targets consumers and major food companies in an effort to bring market forces to bear on low wages and poor working conditions.

BEYOND CAMPUS

Sustainability Partnerships in Pittsburgh

Locally, Duquesne seeks and develops relationships with organizations that share the University's commitment to sustainability.

In one partnership, Duquesne, along with Trout Unlimited, Wheeling Jesuit University and West Virginia University are united in Three Rivers Quest (3RQ), a multi-year, grant-funded project to establish baseline water quality data from 54 sites in the upper Ohio River basin. Since 2013, students and faculty have collected water samples from Pittsburgh's Three Rivers, and the resulting data is helping researchers ascertain the health of this critical and expansive river ecosystem.

Other current and recent sustainability-related partnerships undertaken at Duquesne include:

- **The Power of 32**, a visioning project to develop a regional energy plan led by Duquesne University
www.powerof32.org
- Over the last eight years, the Center for Environmental Research and Education undergraduate and graduate students have served on a regular basis as interns at the **Green Building Alliance**. In this role, they have helped to develop the Pittsburgh Climate Initiative adopted by City Council in 2008, and the *Pittsburgh 2030 Cities Challenge* program in 2015 to reduce energy use, greenhouse gas emissions, water use and waste generation in Pittsburgh's Downtown business district.
- CERE was a founding member of the inter-university consortium that established the **Rachel Carson Legacy Conference** that brought national and international scientists to Pittsburgh for six major gatherings from 2007 to 2014 to present research on climate change, global biodiversity, green chemistry, toxic chemical threats to children, and environmental impact of Marcellus Shale gas extraction.
- Sponsorship of a three-year **Tropical Forest Congo exhibit at Phipps Conservatory** that increases awareness of the biodiversity of Africa as well as Duquesne's support of African-related initiatives
www.phipps.conservatory.org

Assistance and Awards to Businesses

The University's Center for Green Industries and Sustainable Business Growth offers no-cost confidential consulting services, both to small businesses operating in the developing "green" sector of the economy as well as to traditional businesses seeking to increase sustainability without sacrificing profit. In 2015, the Center hosted an event designed to help business owners understand Pennsylvania energy policy and launched a Green Business Series to help small enterprises make their operations and products more sustainable.

Green to Gold Award

The Green to Gold Award is presented annually by the **Palumbo-Donahue School of Business**, to major corporations as a way of recognizing creative solutions to sustainability-related challenges.

Sustainable Small Business Award

Annually, the **Center for Green Industries and Sustainable Business Growth** recognizes a local company that is committed to sustainable business practices with a Sustainable Small Business Award.

Looking Forward

At Duquesne, we work each day to find new ways to reduce our consumption of natural resources and to promote sustainable living. Whether through events that bring the message of sustainability to the public, green construction, energy-saving operations or other initiatives, Duquesne is helping to preserve our planet for the generations to come.

For the latest news about sustainability at Duquesne, visit duq.edu/sustainability.

