INSTITUTE OF ENVIRONMENTAL SUSTAINABILITY

Founding director: Nancy Tuchman, PhD
GUIDING PRINCIPLES

ALL-ENCOMPASSING
Loyola applies best sustainability practices to everything it does, from classes to facilities to programs.

LEADERSHIP AND DISCIPLINE
Loyola is a national leader in sustainability in higher education. The institute’s unique approach gives students an opportunity to learn about environmental concepts in social justice, public health, business development, policy, and dozens of other areas through classroom learning, hands-on research, service, and other participatory efforts.

FORWARD-THINKING/CAREER-FOCUSED
The institute will build a collaborative model of education by working with companies and organizations to build a curriculum that prepares students for careers in sustainability.
A FOUNDATION OF INNOVATION

The launch of the institute is the culmination of Loyola’s 10-year emphasis on sustainability, a product of our Jesuit, Catholic focus on social justice and responsibility, environmental stewardship, and theology of creation.

Loyola’s efforts in sustainability have already resulted in radical improvements to our energy efficiency, reducing our energy consumption by 32 percent overall, 38 percent per square foot, and 34 percent per student between 2008 and 2012.

OUTCOME-DRIVEN EDUCATION

Student careers are of paramount importance. Loyola’s Institute of Environmental Sustainability will prepare students for careers in policy, land management, conservation and restoration, environmental science, business, sustainable food systems, and public health care, making them responsible stewards of our environment and its resources. The institute will also work with companies and organizations to provide the best student internship experiences and outcomes possible.

The institute will offer three bachelor degree programs with four areas of concentration and two five-year dual-degree bachelor’s/master’s programs. In development are two additional five-year dual-degree programs and two master’s programs, including one online master’s degree option. With input from potential employers, these degree programs have been tailored to prepare students for public- and private-sector jobs in the field of sustainability.

COMPREHENSIVE ON EVERY CAMPUS

Loyola embraces a full, interdisciplinary view of sustainability, which means that the Institute of Environmental Sustainability encompasses all aspects of life at the University from academic degrees to research, from facilities to residential life, and from service to partnerships.

In addition to academic degrees, the institute will sponsor an array of campus programs in sustainability, including recycling and waste reduction, a student farm, urban agriculture and aquaponics, clean energy, ecological restoration, a farmers market, and a biodiesel program. Institute programs in sustainable agriculture and eco-restoration will also use Loyola’s Retreat and Ecology Campus near Woodstock, Illinois, as a field research station.

LANDMARK FACILITIES

The institute will be headquartered in a new facility that includes classrooms, collaborative research labs, a large biodiesel production lab, offices, an atrium, Engrained Café, Ecodome (greenhouse), two aquaponics systems, and a 410-bed residence hall. The facility boasts cutting-edge sustainability features including the largest geothermal heating and cooling installation in Chicago, rainwater harvesting, and high-efficiency heat-recovery technology. The institute joins several other facilities on campus as examples of state-of-the-art efficiency (Klarchek Information Commons, Baumhart Hall, Cuneo Hall, Damen Student Center).

LEADERSHIP THROUGH PARTNERSHIP

The institute will partner with Loyola’s schools of business, communication, law, public health, social work, education, and its Health Sciences Division to form transdisciplinary partnerships to find solutions to environmental challenges. These collaborations will form the backbone of the institute’s research into responsible natural resource management. Taking a leadership role in this critical field, the institute will also continue to collaborate with regional, national, and global sustainability organizations.

ONE OF A KIND

The institute will be the only one of its kind in the Midwest and the only one in the nation to house faculty, degree programs, a residence hall, and sustainability programming under one roof.
# ACADEMIC PROGRAMMING

## UNDERGRADUATE MAJORS
Bachelor of Science in Environmental Science offered with concentrations in:
- Sustainable Food Systems (fall 2013)
- Conservation and Restoration (fall 2013)
- Environmental Toxicology (fall 2013)
- Assessment and Modeling (fall 2013)

Bachelor of Arts degree offered in:
- Environmental Policy (estimated spring 2014)
- Environmental Studies (ongoing)

Minors offered in environmental action and leadership and environmental science

Customized curricula that maximizes student learning with fewer required courses

## FOUR 5-YEAR DUAL-DEGREE PROGRAMS
- BS/Master’s in Public Health (in development)
- BA/Master’s in Public Policy (in development)
- BS/Master’s in Business Administration (MBA)
- BA/Master’s in Business Administration (MBA)

## FOUR MASTER’S DEGREE PROGRAMS, TWO OF WHICH ARE ONLINE
- MS in Environmental Science (in development)
- Online Master’s in Urban Environmental Sustainability (in development/may become certificate)
- Online Master’s in Environmental Science (in development)
CAMPUS PROGRAMS

* The programs are available for students to participate in starting fall 2013.

**BIODIESEL**

Waste cooking oil is converted to biodiesel fuel through a student-run program; the fuel is used in campus shuttle buses, and Loyola is the only university in the country licensed to produce, sell, and distribute biodiesel.

Biosoap uses a waste product from biodiesel production. It is created in the Clean Energy Lab.

The biodiesel production lab produces enough profit to support its entire operation, plus five student internships each year ($25,000 in 2012).

**URBAN AGRICULTURE**

Students manage multiple urban agriculture projects at the Lake Shore Campus and donate produce via a local nonprofit organization.

**ORGANIC STUDENT FARM**

Students manage a three-acre farm, a large hoop house, a large greenhouse, and multiple aquaponics facilities with over 60 varieties of vegetables and fruits, egg-laying chickens, turkeys, and honey bees.

Students follow a business plan for sales with four outlets: the Loyola University Retreat and Ecology Campus kitchen, the Loyola Farmers Market, the Woodstock Farmers Market, and their own shareholders.

The Loyola University Retreat and Ecology Campus student farm produces enough profit to pay for all of its operating expenses.

**COMPOSTING AND RECYCLING**

Loyola recycles 60,000 lbs. of materials each month, up from 17,000 lbs. in 2009.

Ninety percent of construction debris on campus is recycled.

Loyola’s tray-free dining program in the cafeterias has resulted in a 25 percent decrease in plate waste.

**WATER CONSERVATION**

Forty-seven water bottle refilling stations and a ban on bottled water on campus have resulted in 400,000 plastic water bottles being saved.

Loyola has saved 58 million gallons of water between 2009 and 2010 thanks to water-conservation efforts.

**FARMERS MARKET**

Loyola hosts an independent weekly farmers market, the result of a student-driven initiative; in 2012, the market served 3,600 visitors.

**MEASUREMENT/METRICS**

Students are involved in the measurement and monitoring of several sustainability areas in order to improve annual campus performance.

**RESEARCH OPPORTUNITIES**

Students conduct research with faculty in laboratory, field, and/or urban settings.

Experience and skill development help students to be more marketable in their careers.

**TRANSPORTATION**

Loyola continues its efforts to become a no-car campus: Loyola shuttle bus, i-Go, pre-tax transit benefits, walk-to-work housing program, electric car charging stations, and the ChainLinks bicycle program.

**CLIMATE CHANGE**

Loyola has reduced its greenhouse gas emissions by 15 percent from 2008; per student this is 13 percent and per area over 20 percent.
THE FACILITY

217,000 ft²
THE INSTITUTE OF ENVIRONMENTAL SUSTAINABILITY
BUILDING SPACE

SUSTAINABILITY FEATURES

Largest geothermal complex in Chicago, 91 geothermal wells, 500 feet deep, providing over 700 tons of cooling energy

Winter heating supplemented with student-produced biodiesel from waste cooking oil

Rainwater will be collected in a cistern and reused for Ecodome irrigation and flushing toilets in restrooms

Natural ventilation systems reduce the need for fans to move air

State-of-the-art laboratory spaces for anthropology, environmental science, ecotoxicology, and a clean energy lab that will allow the biodiesel program to increase fuel production up to 100,000 gallons per year; continuing with the institute’s philosophy of increased efficiency and collaboration, these labs will be shared between researchers and departments

4 in 1
FOUR “FACILITIES” IN ONE: BLESSED VIRGIN MARY HALL, INSTITUTE OF ENVIRONMENTAL SUSTAINABILITY, SAN FRANCISCO HALL, AND PUBLIC SPACES (LOUNGE, CAFÉ, AND MULTI-PURPOSE ROOMS)

INSTITUTE OF ENVIRONMENTAL SUSTAINABILITY

Atrium
Three-story vertical farming element demonstration

Window overlooking the clean energy biodiesel lab

Ecotoxicology and Risk Assessment Lab, Biodiversity Lab, and two multi-investigator research labs

Ecodome
A 3,100-square-foot greenhouse for teaching, research, and plant production

Aquaponics system showcase

Glass-floor hallway encasing the geothermal system manifold

Sustainable food systems and urban agriculture research projects and production; two teaching laboratories connected by a bridge to the Ecodome

Ecodome glass roof encasing the sophomore wing of San Francisco Hall; students can open their windows directly into the Ecodome year-round

Engrained Café: coffee and sandwich counter that will feature seasonal, local, and organic produce, some of which will be grown by students in the Ecodome

Two multipurpose rooms and a student lounge

SAN FRANCISCO HALL

A 130,000-square-foot dormitory attached to the institute academic facility that features 410 beds

Sub-metered for utilities, so 14 individual residence “neighborhoods” can measure electricity use to conduct friendly energy conservation competitions

Remote thermostats that students can operate via smartphone

Houses a model green dorm room showcasing green technology and behavioral options for living sustainably at Loyola

BLESSED VIRGIN MARY HALL

Houses academic elements of the institute as well as departments of mathematics, anthropology, and Marcella Niehoff School of Nursing

Conference rooms and a student lounge on the second floor

Design team: Solomon Cordwell Buenz Architects, ELARA Engineering, Transsolar, Halvorson and Partners
LOYOLA UNIVERSITY RETREAT AND ECOLOGY CAMPUS

Loyola University Retreat and Ecology Campus is located on a rural parcel near Woodstock, Illinois, 50 miles from the Lake Shore Campus. It functions as the field research station for the Institute of Environmental Sustainability.

- **212** beds to house students enrolled in summer field ecology courses
- **98** acres of wilderness
- **25** acres of woodland restoration project
- **20** acres of wetland restoration project
- **7** full-time, paid student internships spanning from mid-May to mid-August each summer
- **3** acres of organic student farm that includes over 60 different varieties of vegetables, chickens, and bees, along with a hoop house, greenhouse, food processing shelter, farm stand, farmers market, and community supported agriculture program
- **2** general classrooms
- **1** equipment stockroom, herbarium and specimen collections room, and computer laboratory

**Amenities**
- A student lounge, a student laundry facility, a five-acre pond, tennis courts, basketball courts, climbing wall, zip line, high and lowropes challenge courses, and a gourmet dining hall
LOYOLA UNIVERSITY CHICAGO

PROOF POINTS

Loyola has been recognized by the State of Illinois Governor’s Office with a Gold Award (highest rating) for the Illinois Campus Sustainability Compact.

**Loyola received an A-** on the 2011 College Sustainability Report Card from the Sustainable Endowment Initiative.

Loyola is listed in the **top 10 national universities** for students without cars on campus.

Loyola **reduced energy usage** by 21 percent per capita between 2008 and 2011, resulting in $6.2 million saved on utilities.

Loyola will have the most **LEED-certified buildings** of any college in Chicago (seven); Father Garanzini (Loyola’s president) pledges that all new academic buildings will meet LEED Silver status qualifications or above.

Loyola is the only university in the country **licensed** to sell biodiesel fuel.

The Institute of Environmental Sustainability has **the largest geothermal installation** in Chicago and the only hybrid design that uses biodiesel-fueled generators for the makeup heat.

In 2012, Loyola students **banned** the sale of **bottled water** on campus.

**Over 27 academic departments** across eight schools offer 92 classes featuring sustainability or environmental curricula.

Loyola features more buildings with **green roofs** than any university in the Midwest.

**Nancy Tuchman, PhD**, IES founding director, was named a top five green Chicagoan by *Chicago* magazine in 2013 and one of 24 green women powerhouses by *The Wren* in 2013; she is a past president of the Society for Freshwater Science, winner of the Loyola faculty scholar award (2002), and winner of Loyola’s Sujack Master Teacher Award (1996).

In 2012, the **LUREC farm** served 17 families (totaling 39 people) and produced the following produce: 120 lbs. of winter wheat, 12 gallons of raw honey, 18 heirloom seed varieties saved for replanting, 616 lbs. of kale, 142 lbs. of potatoes, 258 lbs. of tomatoes, 331 lbs. of summer squash, 250 lbs. of yellow onions, and 463 lbs. of cucumbers. In 2013, the student farm nearly doubled in size and revenue.