



# Creating a Sustainable Western Experience

President's  
Advisory Committee  
on Environment  
and Sustainability  
2014 Report



Western



# About PACES

**T**he President's Advisory Committee on Environment and Sustainability (PACES) has been tasked with developing and recommending strategic plans to put into practice the principles of sustainability. These principles include engagement, ecology, efficacy, accountability, innovation and community engagement outlined in the University's Policy on Environment and Sustainability. We are in the second year since the release of our 10-Year Vision and Five-Year Action Plan, and the University has a vast array of accomplishments to share.

## **In following the principles outlined in the policy, our goals are:**

1. Incorporating sustainability into our academic programming, to contribute to an educated citizenry and develop future leaders.
2. Engaging in research across the disciplines into issues of environmental sustainability.
3. Reducing our use of inputs.
4. Reducing outputs through recycling and reuse.
5. Focusing on life cycle management of resources and waste products.
6. Utilizing ecological landscaping methods and preserving green space.
7. Building and renovating facilities in accordance with energy efficiency and sustainability principles.

**We welcome your  
feedback and ideas  
on this report.  
[sustainability@uwo.ca](mailto:sustainability@uwo.ca)**



## 2014 PACES Report to Western

For most, university is a time that shapes what students will do, who they will become and the goals they will set in life. It is a place for students, staff and faculty to work, live, learn, develop and grow. It is important that sustainability is included within this journey, no matter its duration.

This report highlights not only the work of PACES and the members of its subgroups thus far, but the work of individuals and groups across campus who are implementing sustainable change. Achievements are broken down into the following four categories:

1. **Sustainability in Operations**
2. **Sustainability in Community**
3. **Sustainability in Research**
4. **Sustainability in Teaching and Learning**

It is with great pride and excitement that the members of PACES share this report with the Western community, which illustrates some of the many initiatives the University has undertaken.

**Gitta Kulczycki**  
*Vice-President (Resources & Operations)*  
*Co-Chair of PACES*

## PACES (2013–14)

### PACES CO-CHAIRS:

**Janice Deakin**  
*Provost & Vice-President*  
*(Academic)*

**Gitta Kulczycki**  
*Vice-President*  
*(Resources & Operations)*

**Jeff Grieve**, *Director*  
*Information Technology Services*

**Susan Grindrod**  
*Associate Vice-President*  
*Housing & Ancillary Services*

**Dr. Andrew Hrymak**  
*Dean & Professor*  
*Faculty of Engineering*

### PACES MEMBERS:

**Beverley Ayeni**  
*Energy & Environment Manager*

**Dr. Tima Bansal**, *Professor*  
*Ivey Business School;*  
*Canada Research Chair,*  
*Business & Sustainability*

**Helen Connell**  
*Associate Vice-President*  
*Communications & Public Affairs*

**Dr. Irena Creed**, *Professor*  
*Biology & Earth Sciences;*  
*Canada Research Chair,*  
*Watershed Science*

**Stefanie DeAdder**  
*Sustainability Coordinator*

**Elizabeth Krische**  
*Director, Procurement Services*

**Samanta Krishnapillai**  
*Vice-President (Internal)*  
*University Students' Council*

**Lynn Logan**  
*Associate Vice-President*  
*Finance and Facilities*

**Dr. Dan Shrubsole**  
*Professor & Chair*  
*Department of Geography;*  
*Co-Director, Centre for*  
*Environment and Sustainability*

**Kevin Vuong**  
*Society of Graduate Students*

**Carolyn Young**, *Director*  
*Continuing Studies*

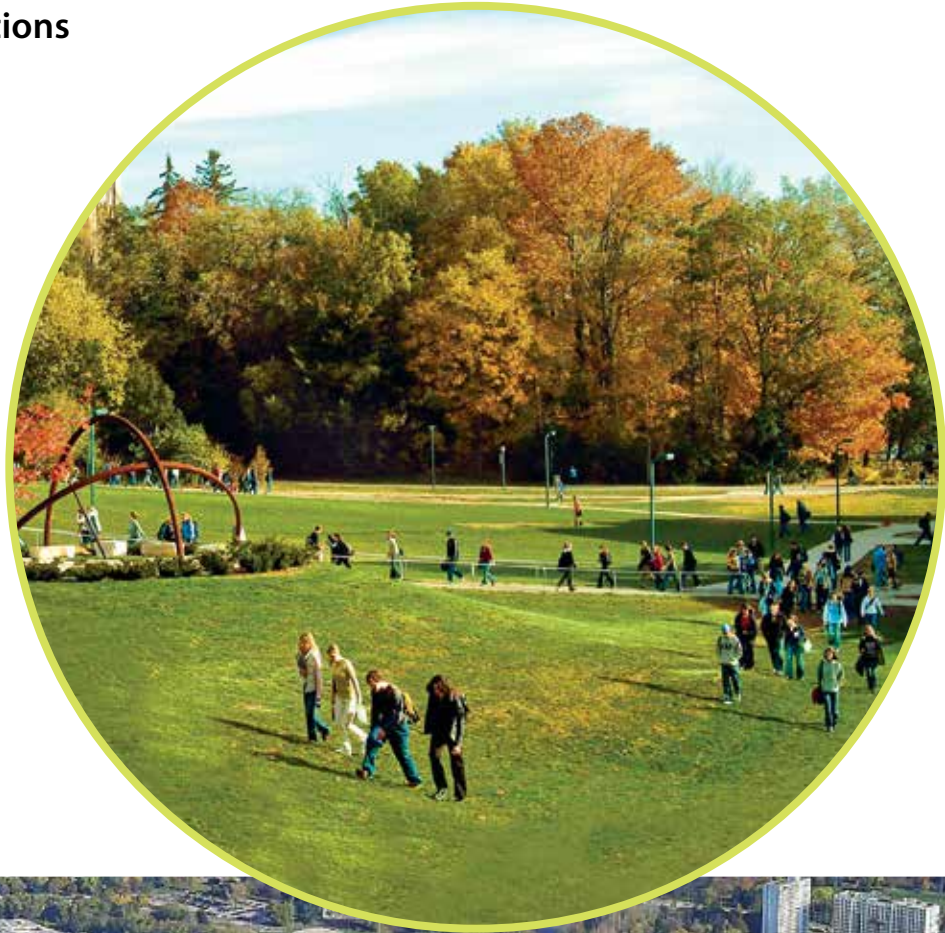
# (1) SUSTAINABILITY IN OPERATIONS

## Sustainability Accomplishments in Operations

Considering the size of Western's reach, it is important that sustainability is included within the functioning of campus, wherever possible.

This means including sustainability in building design and infrastructure, waste management, purchasing as well as energy and water management, to name a few.

Western continues to be a leader in post-secondary education in terms of how it operates, and will continue to minimize its ecological footprint while enhancing ecosystem services on campus.



**Western is like a small city, with a daily population of more than 40,000. The university land area is 1,200 acres. There are 91 major campus buildings.**



AFS Aerial Photography Inc.

STARS ranking for Western. STARS is a transparent, self-reporting framework for colleges and universities to gauge relative progress toward sustainability.\*

# GOLD

20 Tons of material donated to Goodwill during student move out in 2013 (primarily clothes, food and furniture).

7 General purpose computer labs converted to the Virtual Desktop Initiative.

24% Energy saved by Virtual Desktop Initiative being deployed in labs across campus.

0 Paper plates purchased by residence dining during the first-term of 2013–14 academic year.

**McIntosh Gallery:** One of Western’s most historic buildings attained a LEED Silver certification (in 2011) on major renovations, dramatically reducing its carbon footprint. Other green initiatives include using local Forest Stewardship Council (FSC) – certified walnut to frame works of art, switching to electronic communications and presenting information in the gallery on energy efficient LED monitors.





**35**  
Western's vendors signed up for Mustang Market, a digital-only online portal for ordering supplies.

**1,500**  
Metric tonnes of salt used on campus grounds during winter 2010-11.

**900**  
Metric tonnes of salt used on campus grounds during winter 2013-14. Reduction attributed to grounds staff trained on Smart About Salt program.

**440**  
Tonnes of organic waste collected and composted in 2013 from food services and landscape material.

Launched organics collection within residence dining halls so students may compost their own organic waste collected in the eatery and within their rooms.

Campus diversion rate from landfill in 2013. **50%**



# RECYCLE

In summer 2014, the City of London started processing the university's recyclables, allowing for recycling of all plastics and coffee cups.

XChange4Change  
**XC4C**

**31,000**

Fewer tons of CO<sub>2</sub> Western is emitting into the atmosphere.

**6,000**

Cars it would take driving for four years to emit 31,000 tons of CO<sub>2</sub>.

Number of trees necessary to absorb 31,000 tons of CO<sub>2</sub>.

**27 MILLION**

In September 2013, every student in residence was given a reusable takeout container for food purchases. This program earned Hospitality Services a Silver in the Waste Management category of the 2014 Sustainability Awards, presented by the National Association of College and University Food Services. Western was the only Canadian university honoured.

Reduction in greenhouse gas emissions from 2009-13.

**12%**

## (2) SUSTAINABILITY IN COMMUNITY

### Sustainability Accomplishments in the Community

It is the goal of PACES to ensure every member of the Western community will have the opportunity for a sustainable and healthy working, living and learning environment. The profile of sustainability will continue to be elevated at Western, inviting campuswide collaboration and engagement.

Over the last several years, there has been a greater inclusion of sustainability within staff training, during O-Week and through extracurricular offerings and events. With the launch of the sustainability website and energy dashboard, it has become easier for the campus community to monitor Western's sustainability accomplishments and seek the answers to the questions they have.



**Last September, during Western Serves 2013, 82 volunteers from Western and the community joined forces with ReForest London on the Murray Marr East naturalization site. In three hours they planted 500 plants.**

**Western's weekly on-campus Farmers' Market runs from June to November. The sustainability benefits include not only supporting the local economy, but reducing the 'food miles' that would have accumulated from sending these products first to a central processing hub and then back to your local grocer.**





### ECO ACTION DAY

Organized by the London Youth Sustainability Network, a subgroup of EnviroWestern, more than 70 students attended Eco Action Day (March 28) to discuss their vision of a greener Western, try some local, vegan food, plant seedlings and make pledges.

### REZ POWERS DOWN

Rez Powers Down (March 24–April 4) resulted in a 3.27 per cent reduction in energy consumption during Winter 2014 term.

### SEE THE MESSAGE

Debuting during O-Week 2013, an annual Western video introduces incoming students to Western's achievements and expectations of sustainable practices.

ON THE WEB

[sustainability.uwo.ca](http://sustainability.uwo.ca)

### TRAINING

Residence staff and Sophs are participating in sustainability training, which highlights sustainability as a priority and talks about the university's goals and how to live more sustainably. In summer 2013, all Residence staff and Sophs participated; in summer 2014, that expanded to include off-campus and faculty-based Sophs.

### WORLD WATER WEEK

World Water Week (March 19-21) was dedicated to water awareness and conservation on campus. The event featured a documentary film night, tradeshow and panel discussion.

400

Pounds of waste picked up on Campus Clean Up Day (April 1) by 150 students, staff and faculty.

1,770+

Trees planted in 2013. More than 1,000 trees were planted off campus by Western volunteers, and another 770 on campus by staff and volunteers.



### SOCIAL MEDIA

@GreenWesternU and its 261 Twitter follows are joining forces with @WesternU and its nearly 33,000 followers to broadcast the university's sustainability efforts to the largest possible audience.



## WESTERN'S GREEN AWARDS

In 2014, Western's Green Awards winners helped not only the University, but the entire global community continue to turn over a new leaf when it came to environmental sustainability.

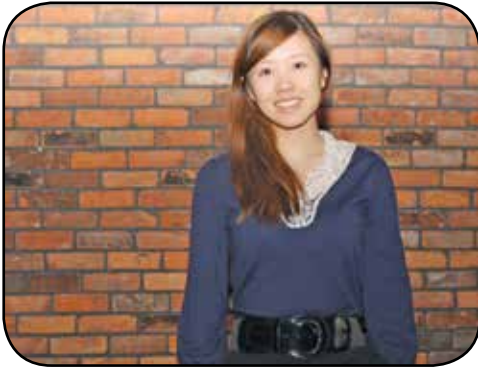
Established in 2008, the Western Green Awards celebrate individuals and/or teams who initiate or support activities with positive environmental outcomes, encourage participation and involvement, work together with others or demonstrate an environmentally friendly effort. The purpose of the awards is to help raise awareness of sustainability at Western.

# 50

Nominations for 37 different individuals and groups. This year, we received more Green Award nominations than any of the previous six years.

## 2014 GREEN AWARD WINNERS

Read their stories at [sustainability.uwo.ca](http://sustainability.uwo.ca)



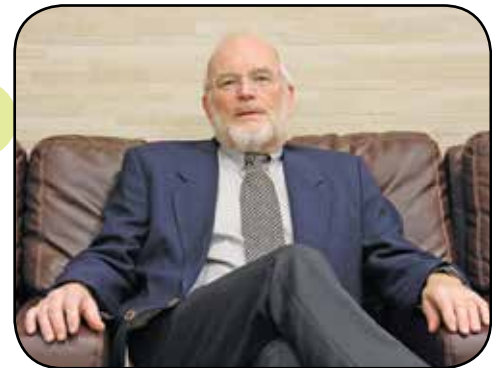
### London Youth Sustainability Network

Growing out of EnviroWestern, a service within the University Students' Council, the London Youth Sustainability Network inspires action through activity on the issue of sustainability. The group, led by **Jennifer Hao**, has spearheaded numerous environmental efforts.



### Repurpose for Change

Geography graduate students **Kevin Vuong**, **Sepehr Pashang** and **Joseph Kangmennaang** are true global ambassadors for Western. The trio developed inexpensive and safe alternatives to cooking using solar energy, beginning first in Ghana, with the aim of extending the solution to the rest of Africa and the developing world.



### Michael Tattersall, Director of Physical Plant, King's University College

The King's University College Physical Plant director, **Michael Tattersall**, has spearheaded numerous environmental efforts at the Western affiliate.



## (3) SUSTAINABILITY IN RESEARCH

### Sustainability Accomplishments in Research

Western has a responsibility to help find solutions to the challenges of environmental sustainability. We will continue to encourage and pursue research that promotes sustainability accomplishments and knowledge at the local, regional and international levels. Through collaboration and innovative partnerships, we will raise awareness of Western's research activities in the fields of sustainability.

# 100

Researchers from seven faculties engaged with the Centre for Environment and Sustainability.

**The Wind Engineering, Energy and Environment Research Dome (WindEEE) continues a half century of Western leadership in global wind engineering research. Established in 2011, this state-of-the-art facility joins an impressive research infrastructure that includes the Boundary Layer Wind Tunnel Laboratory, Insurance Research Lab for Better Homes and Advanced Facility for Avian Research.**

### HIGHLIGHTS

- The international Network for Business Sustainability connects corporations with policy makers and researchers to integrate sustainability research into business practice.
- Researchers have designed a novel class of fuel cell expected to produce electricity while consuming carbon dioxide.
- Geographer Gordon McBean was lead author for the Inter-governmental Panel on Climate Change, and was a member of the team awarded the 2007 Nobel Peace Prize.

### KEY FACILITIES AND CENTRES

1. **Biotron Experimental Climate Change Research Centre** is a large-scale, realistic, environmentally controlled study of climate change, environmental disturbances, pollution and ecosystems.
2. **Claudette MacKay-Lassonde Pavilion**, the 'green' building, advances work in the green technologies field.
3. **Ontario BioIndustrial Innovation Centre**, located at the Western Sarnia-Lambton Research Park, integrates the renewable bio-based and traditional petrochemical industries.
4. **Western Bioproducts Initiative** promotes sustainable farming and renewable energy through a biogas facility and the Institute for Chemicals and Fuels from Alternative Resources.
5. **WindEEE Dome** develops sustainable cities by exploring ways to build and retrofit buildings to produce and save energy.





Douglas Keddy

The Biotron Experimental Climate Change Research Centre. Pictured at left is an algae stream project in one of the biomes, where researchers examine the viability of converting algae into biofuels.

## BIOFUELS AND ALTERNATIVE ENERGY DISCOVERY

Focus on biofuels and other clean energy sources, and new methods for using alternative forms of energy more efficiently.

- **Agri-Therm**, a spin-off company, has developed a portable pyrolysis unit to convert agricultural by-products into value-added products.
- **Power Systems Engineering Group** works to restructure the electric industry and accelerate the growth of clean energy sources.
- **Particle Technology Research Centre** advances biodiesel production and semiconductor photocatalysis for producing clean fuel and manufacturing of carbon nanotubes for solar energy.
- **Chemical Reactor Engineering Centre** develops innovative green reactor technologies, including catalytic desulphurization of gasoline, novel fuel cells and treating toxic contaminants in air, water and soil through advanced oxidation.

## ENVIRONMENTAL REMEDIATION

Focus on sustainable processes for controlling, reducing and preventing pollution; biosensors for environmental monitoring; and solar-powered degradation of air and water pollutants.

- **Geotechnical Research Centre** mitigates fallout from environmental hazards, managing wastes, developing drinking water treatment technologies and ensuring the safety of such structures as nuclear power plants.
- **Research for Subsurface Transport and Remediation (RESTORE)** develops groundbreaking technologies that contain and reduce subsurface contamination.
- **Southern Ontario Water Consortium** is a full-scale demonstration and validation facility for new, close-to-market wastewater treatment technologies, in partnership with the City of London.



**Claudette MacKay-Lassonde Pavilion incorporates dozens of demonstration and functional sustainability design features. The Pavilion was the first LEED (Leadership in Energy and Environmental Design) certified building on Western's campus. The Pavilion's 'green' features include: Low Volatile Organic Compound paints, occupancy sensors and energy-efficient lighting fixtures, heat recovery on exhaust air, natural lighting and open design, and geo-thermal ground-source heating.**

### FACULTY LEADERS ACHIEVING EXCELLENCE IN SUSTAINABILITY RESEARCH



**Irena Creed** Departments of Biology and Earth Sciences  
Canada Research Chair, Watershed Sciences

Creed tracks the movement and fate of nutrients within and through watersheds, which are released to the atmosphere and aquatic systems.



**Jason Gilliland** Department of Geography  
Director of the Urban Development Program

Gilliland focuses on how various aspects of urban and regional planning have an impact on critical issues such as local food systems, active transportation and children's health.



**Horia Hangan** Department of Civil & Environmental Engineering  
Founding Director of the WindEEE Research Institute

Hangan uses novel approaches to wind energy for the urban environment, wind engineering and natural disaster mitigation, and environmental sustainability and green energy.



**Tima Bansal** Ivey Business School  
Canada Research Chair, Business & Sustainability

Bansal explores business sustainability and strategy and aims to understand how to better embed businesses into the wider context in which they operate.

## (4) SUSTAINABILITY IN TEACHING & LEARNING

### Sustainability Accomplishments in Teaching and Learning

Our goal is every student entering Western will have the opportunity to be exposed to the theory and practice of sustainability. The PACES committee will continue to ensure students seeking expertise and knowledge in sustainability will have access to curriculum—at both undergraduate and graduate levels—and that opportunities will be available to the entire Western community and beyond to acquire education in sustainability topics of interest and relevance.

29

Departments, programs, centres analyzed (out of 68) that incorporate sustainability themes into courses.

8

Faculties that include sustainability courses (out of 11).

281

Undergraduate courses that incorporate sustainability themes (out of 4,235).

For a list of sustainability classes offered by Western.

[sustainability.uwo.ca](http://sustainability.uwo.ca)





# Our GOALS

## MAJOR INITIATIVES

### Sustainability In Our Future

Although Western has made significant headway on the action items targeted within Western's Sustainability Strategy, we are only in year two of a five-year Action Plan for Sustainability, and still have many projects and ideas we are committed to implementing.

Accomplishing the actions laid out in Western's Sustainability Strategy will require the commitment of all members of the Western community.

**Become**  
a Fair Trade  
certified campus.

**Reach**  
'zero waste'  
status by  
2022.

**Reduce**  
campuswide energy  
usage intensity, overall  
energy usage, greenhouse  
gas emissions and water  
usage intensity.

**Increase**  
inclusion of sustainability  
within procurement  
practices across  
campus.

**Develop**  
and launch Western's  
Sustainability  
Awards  
Competition.

**Expand**  
Western's Green Office  
Program (targeting  
enrolment of  
10% of all staff).

86%

Students who say "Western's sustainability efforts/initiatives are above average when compared to other postsecondary institutions." Western surveyed a group of more than 400 students who had previously attended another university or college and now attend Western.

50%

Students who consider themselves to live and act sustainably.

## Student Survey

Results stem from a sustainability survey of 3,299 Western students.

90%

Students who use a sustainable form of transportation to get to and from campus.

70%

Students who believe they are personally responsible for ensuring Western is a place where individuals can live, learn and/or work sustainably.

Sustainability themes deemed most important to Western students.

Waste reduction

Water conservation

Renewable energy

Transportation