

DOCUMENTED ENVIRONMENTAL BENEFIT

Georgian Court University's commitment to sustainability is results-driven. The university has captured a wide range of data to illustrate gains in protecting the environment and stewarding our natural resources. The following reflect GCU's annual progress across only a few projects:

- In 2014 GCU boasted a 75.3% recycling rate ranks 4th among the 272 institutions of higher education competing in the various divisions of the "Recyclemania" contest. In addition, GCU's weekly per capita waste generation was only 9.3 lbs per person (versus a median of almost 40 lbs for all institutions within the Recyclemania contest). Our low level of waste generation and high recycling rates reflect a commitment to reduced packaging, active efforts to reduce food waste, and a strong awareness, campus wide, of the importance of the use of reusable containers. It also reflects changes in land management practices, such as mulching leaves and grass clippings rather than landfilling such wastes. Together, all of these actions help GCU to reduce the strain we place on the earth to provide resources not effectively used or reused.
- This year, the university installed 75-80 low-flow shower heads to reduce water use in residence halls.
- A water bottle filling station in GCU's main academic building filled 41,870 bottles, reducing the community's dependence on store-bought, single-use bottled water.
- This summer, 30 top-loading, 5-gallon bottled water dispensers were replaced with direct plumbing filtration units, reducing the global warming gas generation associated with the packaging and transport of bottled water to campus.
- GCU's catering partner, Chartwells, has reduced food waste by 6 percent as a result of its trayless food service program; in addition 70 gallons of water are saved each day as a result of not having to wash trays in the main university dining room.
- 90 large trees---lost after Superstorm Sandy---were replaced with seedlings from native plants on campus.
- Ceramic window films were installed on 200 large windows in GCU's main academic building, providing insulation equivalent to double-paned windows. This resulted in a 35 percent energy reduction for these classrooms when compared to the previous five years. In 2013, GCU realized \$56,000 in energy savings from window film installation, the addition of a new energy-efficient roof, and the practice of closing stairwell and office doors during summer.
- Since starting to monitor its progress in sustainability through a Green MOU with the USEPA, signed in March 2012, Georgian Court University has reduced its carbon footprint by 13,460 MTCO₂e (equivalent to the annual greenhouse gas emissions from 2,834 vehicles) and saved an estimated \$546,500 in operating expenses, largely through its increased use of alternative energy. Georgian Court is home to 2,557 solar panels providing nearly 900 KWH of electrical power. In addition, GCU offsets 100 percent of its electric use with green energy RECs that support the development of green energy production.
- This summer, GCU's 4,000-square foot "Mercy Community Garden" donated enough fresh produce each week to local charities to feed about two families of four, while engaging numerous students, faculty and local residents in community gardening, environmental education and leadership and teambuilding experiences.

MEETING NEEDS (20 points)

A comprehensive approach

GCU's progress reflects its commitment to a range of activities within a comprehensive framework. Our efforts are consistent with the Sisters of Mercy's reverence for the earth and their advocacy of access to water as a human right. GCU's meets New Jersey's environmental needs by:

- Addressing nutrient pollution in our waterways—An experimental rain garden designed to remove nutrient pollution from stormwater runoff was completed in 2012. The project marks an innovative approach to determining how rainwater basins filled with gravel can remove nutrients from storm water—an issue that continues to vex communities throughout New Jersey. Until the rain garden was built on GCU's property, a scaled down "gravel wetland" design had not been tested. A \$5,000 New Jersey Sea Grant underwrites our work to collect nutrient data from this system, and seems to be removing about 95 percent of nitrate nutrient pollution, compared to about 30 percent for traditional style rain gardens.
- Increasing plant diversity for New Jersey wildlife and making land less susceptible to disease—GCU is shifting from a canopy with many deciduous trees susceptible to gypsy moth and bacterial leaf scorch, to one that includes more red maple, wild black cherry, and species that perform well in our region. Careful land management and use of manual labor in weeding, as well as in changed tolerances to diversity in many of the decorative turf areas, have reduced our use of herbicides and fertilizers.

Meeting challenges and overcoming risks

With just under 2,500 students, GCU remains a small institution. It is heavily tuition-dependent, and funding for non-academic priorities is very limited. A comprehensive sustainability strategy requires an incredible amount of original approaches, including partnerships with larger institutions, as well as creativity in marshaling staff, faculty, alumni and student-athletes:

- A biology professor who is also a botanist managed the planting of native plants and seedlings to replace historic trees and flora lost because of Superstorm Sandy. When we don't have seed stock, native plants are acquired from local nurseries. The varieties selected are tolerant to heat and drought, which further reduces the need for irrigation and fertilizers.
- Campus facilities staffers use a vertiquake soil decompactor to reduce compaction on athletic fields and lawns, allowing irrigation water to reach plant roots and reducing watering needs.
- The university's sprawling campus is quite beautiful, but being true to sustainability means that GCU has to rethink the notion of manicured lawns and the chemicals and practices used to achieve that look. Today, 6.24 acres of low-mow areas are maintained in GCU's expansive Oak Grove and along the fenced areas around GCU's detention basin bordering Lake Carasaljo. This approach to more natural landscaping presented a communications challenge that GCU addressed with signage designating certain areas a "Natural Zone" and a Powerpoint presentation posted to the school's intranet. Finding ways to improve sustainability and effectiveness of use of older spaces (circa 1896) remains challenging, with regard to improved insulation and more effective heating and cooling. Campus energy consumption is reduced because thermostats under GCU facilities control are set at 78F in summer and at 68F in winter.
- The GCU Mercy Garden is, by design, labor intensive and challenging to staff. Community volunteers joined the GCU Men's Basketball team, Women's Lacrosse team, and students in the federally funded TRiO program to provide more than 750 hours of assistance this year. Their hard work paid off at harvest time as 10-15 lbs. of tomatoes, along with about half a dozen cucumbers, zucchini, a couple of pounds of beans, and assorted hot peppers, herbs and greens were delivered to Providence House or to the Visitation Relief Center in Brick.

LEADERSHIP/INNOVATION (15 points)

GCU's sustainability program is broad in scope and scalable for any organization, large or small. And while the institution is relatively small, the commitment is big. In 2007, GCU's President, Rosemary E. Jeffries, RSM, Ph.D., signed the American College and University Presidents' Climate Commitment (ACUPCC), making GCU one of the country's first higher education institutions to formally commit to carbon neutrality. Since then, Georgian Court has been a leader in sustainability on multiple fronts.

- The university demonstrates leadership through its ongoing memorandum of understanding with the U.S. Environmental Protection Agency. This partnership allows GCU to fully track its total MTCO_{2e} reduction and the associated cost savings. In addition, the Georgian Court has been repeatedly recognized through the New Jersey Department of Environmental Protection's stewardship initiative. GCU has standing in 11 categories of stewardship, placing the university in the top 10 percent of more than 200 participating organizations.
- GCU's 6,000-square-foot Wellness Center opened in 2010 and achieved LEED Gold status. It has a green roof over the atrium, a reflective roof over the rest of the building, and was constructed using recycled materials. It incorporates multiple energy and water saving features.
- In the past three years, five energy inefficient vehicles in the university's fleet have been decommissioned and replaced with electric carts, cutting consumption by approximately 2,100 gallons of gasoline (\$6,350.00 fuel cost) annually.
- GCU is hosting a \$250,000 experimental stormwater basin research project in partnership with Rutgers University and NJDEP. We have just broken ground on this project and expect to start collecting data in early 2015. The project involves testing 4 designs for stormwater basins to see which reduces nutrient pollution most effectively and cost-efficiently. Results will inform stormwater management strategies throughout New Jersey and beyond.
- Since 2008, GCU has participated in "Recyclemania," an intercollegiate contest between 272 U.S. colleges and universities that keeps track of campus recycling. In 2013, Georgian Court's 75.3 percent recycling rate ranked fourth nationwide.
- GCU is home to a Pepsi Dream Machine, a incentive-based recycling machine, that is available for anyone from the community to deposit cans and bottles. Once material is donated, users receive credits toward deals and discounts from local businesses, and Pepsi uses some of its recycling profits to support retraining programs for returning veterans.
- LED lights are in exit signs across campus, and the technology is being piloted in GCU's historic Casino and campus parking lots—key areas with very high powered lighting needs. The shift from mercury vapor lighting to LED lighting has an expected electrical savings of 90 percent.
- A small grant (\$5000) from the Independent College Fund of New Jersey to install 200 ceramic window films in GCU's main academic building provided insulation for heating and cooling as if they'd been converted from our single pane windows to double pane. Year-over-year power use data (recorded in 2013) showed a 35 percent energy reduction in the building. This change reflects the impact of the window films, improved insulation in a new roof installation, and changed practices in terms of closing doors in stairwells.
- The GCU Mercy Garden—detailed in this application under education and outreach—positions GCU as a leader in sustainable agricultural practices, and has motivated participants to grow food for themselves while learning about organic horticulture, ecology, and soil science.
- Another space on campus, Georgian Court's Wellness Garden, provides locally grown herbs with food or medicinal value to anyone who wishes to sustainably harvest. It also creates a gathering place to provide an aesthetic and aromatic calming experience to help relieve stress and a place in which people can relax and reflect on the theme of wellness.

COVERAGE AND REPLICABILITY

GCU's sustainability efforts have clear environmental impacts, as documented via our biannual EPA Environmental Assessments and annual American College and University President's Climate Commitment report. The work we are doing to promote healthy soil, and to pioneer methods to improve stormwater treatment means that the campus is actively reducing both pollution and stormwater runoff from its property, while also providing important information about the effectiveness of these strategies for the wider community. Moreover, many of the actions that we have taken have been financially neutral or even advantageous, as well as being environmentally sound. The institution's values and behaviors relating to environmental stewardship and the broader issues of sustainability are communicated broadly, both within the university and beyond, through internal newsletters and through presentations made to the wider community by the sustainability director (e.g. Annual Meeting of the NJ Environmental Federation, Barnegat Bay State of the Bay Conference, Atlantic Audubon Society Meeting). Thousands of students and visitors to our campus read the weekly sustainability bulletin due to its strategic distribution method (posted to the backs of bathroom doors!). Over 240 people follow the Mercy Garden's facebook page and many more have learned about it and other sustainability activities on campus through press releases and features in the university's alumni magazine and on our website. The university's president is also an active advocate for environmental sustainability within both our local community and during her frequent trips to DC and elsewhere on behalf of the university.

GCU's sustainability program does not have a budget line within the university. All of the changes that are documented here have been achieved through the work of several leading individuals on campus who advocate for these initiatives and educate the community to build buy in from the campus administration and the stakeholders in the community. In many cases the changes have been achieved with little cost to the university (e.g. the PPAs for the solar panels on campus) or even with a net financial return (e.g. the energy savings achieved through the ceramic window films and modifications to heating and cooling set points). In other cases, GCU has made the desired changes through mindful decision-making during the normal replacement cycle (e.g. upgrading older fuel guzzling vehicles with electric carts or hybrid vehicles, replacing older furnaces and water heaters with newer more efficient models as they wear out and replacing burnt out incandescent with fluorescent or LED bulbs). Thus, changes like those made at GCU could easily be replicated by other institutions and businesses both in NJ and beyond, even in these challenging financial times.

Having buy-in from the facilities and purchasing divisions as well as students and staff has been key to much of the success GCU has enjoyed. This has largely been achieved through a mix of institutional will (top-down leadership from S. Rosemary Jeffries and her administrative team) and education and training to build buy in from all those in implementing the changes we have made. We learned some of these lessons the hard way, especially those pertaining to the importance of educating those implementing the changes as to WHY those changes were beneficial to the university either immediately or on the long term. Resistance to change among both students and staff was high and resentment sometimes arose when we asked for changes through top-down directives without remembering to educate those who had spent a lifetime doing things another way about the reasons for, and benefits of, the changes we were requesting. However, we learned that simple communications (e.g. environmental signage, weekly newsletters and features on both our website and intranet) could increase both awareness of the issues we are tackling and the need for and importance of the actions we were asking people to take. Again, such a combination of institutional leadership and grass roots education would be easily implementable at any institution with the desire to achieve changes similar to those documented here.

EDUCATION AND OUTREACH

Each year GCU hosts a series of presentations and workshops for its own community and the general public focusing on issues of particular concern to the Sisters of Mercy. The 2011 event, which focused on sustainability, featured a discussion of regional water planning, especially as it pertains to the proposed growth of Lakewood in the next decade. The 2013 event, which focused on building resiliency, provided opportunities to discuss environmental, social and personal resiliency in the context of the recovery of our community from Superstorm Sandy. Also, GCU's Social, Environmental and Economic (SEE)-Justice Living-Learning Community encourages students to appreciate all aspects of sustainability. Sponsored movie nights, field trips, guest speakers and political service events are among their many activities.

Throughout campus, students are encouraged to become active in environmental issues. For example several groups of students have traveled to Washington, DC and NYC to join protests again the Keystone pipeline and to raise awareness of the crisis presented by Climate Change. Similarly several students each year attend UN meetings on sustainability, and the students associated with the Global Transformation Initiative recently carried out a fundraiser to support "Trees for Tanzania". Similarly, the Campus Activity Board sponsored a fashion show in 2014 featuring fashions made from recycled materials (bottles, cans, newspaper etc.)

The Mercy Community Garden at Georgian Court University is a new and growing educational component of our campus landscape. The garden consists of four major components; a 4000 square foot vegetable production area, a native plant area, an outdoor classroom, and turf walkways. Our family demonstration gardens support a great diversity of vegetable plants, while our larger spaces produce high-volume crops for donation, and allow for us to determine which varieties work best in our area. We have hosted about a half dozen volunteer events for basketball and lacrosse teams and for Trio (Student Support Services), wherein garden work reinforced environmental lessons as well as teambuilding and leadership skills. This summer we also hosted biweekly programs for special needs students from the Lehmann School and the Schroth Academy, providing service opportunities for GCU pre-PT, education, biology and art students. Some student researchers have worked in the garden to monitor insect pests and methods to reduce their population, and tested different strains of plant to assess yield, growing conditions and organic land management. Art students designed the label for the Mercy Me salsa and regularly use the garden as inspiration for their work; business and communications students help market the salsa, and garden educate volunteers and visitors on the importance of abundant, clean water and healthy soils.

A small team of students has just finished research and development for campus signage designed to educate the community about the various sustainability initiatives. Each sign uses QR codes to direct the reader to a student generated website with additional information about each initiative. Other communication includes an annual campus year welcome letter to inform new students of GCU's sustainability program. We also ask that any appliances they bring for their rooms be Energy Star-certified. The student handbook also includes a section on sustainability and its importance at GCU. In 2013, thermometers were placed into each room in the residence halls so that students are provided with visual reinforcement of the temperature in their rooms. We then reminded them of desired targets (no less than 67F in summer no more than 72F in winter). One of our most popular outreach activities is GCU's weekly sustainability themed flyer known as "The Water Closet Reader," which is researched and written by students in consultation with the sustainability director, and posted inside bathroom doors throughout campus. The archive is at http://gcuonline.georgian.edu/wootton/water_closet_reader.htm