

LAFAYETTE

SUSTAINABILITY



Annual Report

Fall 2017-Summer 2018 | Office of Sustainability

Introduction

At Lafayette College, we are committed to preparing today's students to be tomorrow's leaders and global citizens. Distinguished by our unique integration of liberal arts, engineering, and natural and social sciences, the College provides students with an interdisciplinary academic foundation in which critical thinking, quantitative reasoning, and creativity are applied to solve complex problems. The College's intentional link between classroom and experiential education provides a campus environment that functions as a living laboratory—one in which students develop skills, foster relationships, and explore solutions that will enable them to tackle challenges on campus and beyond.

The Office of Sustainability works to further the academic mission of the College by generating and implementing environmentally responsible initiatives with a 360-degree approach, so that students, faculty, staff, and community members are actively engaged in the Office's efforts. It is with responsible planning, sustainable operations, community service activities, and integrated curriculum that the Office of Sustainability reaches into all corners of campus to reduce the College's footprint and demonstrate the College's commitment to environmental action and a sustainable future. The College understands its role in addressing global environmental challenges, and through the work of the Office of Sustainability, it strives to achieve best practices in operations, research, and teaching.

In this, the Office of Sustainability's first annual report, we aim to demonstrate our impact, highlight metrics for future benchmarking, and share success stories that occurred between fall 2017 and summer 2018. We highlight sustainability efforts in key focus areas: biodiversity and campus ecology, food and farm, energy and greenhouse gas emissions, waste reduction and recycling, curricular integration, and community engagement.

Office of Sustainability Leadership



Marie Fechik-Kirk
Director of Sustainability



Nick DeSalvo
Campus Energy Manager



Lisa Miskelly
Assistant Director of Food and Farm



Kendall Roberson
Sustainability Fellow

Building on the Past to Shape the Future

Lafayette College has a long tradition of environmental action. Here are just a few of the key initiatives that help to demonstrate our ongoing commitment to sustainability.

2008

President Dan Weiss signs the President's Climate Commitment in 2008 stating that climate change is real, and that the College should take action to achieve carbon neutrality, or net-zero greenhouse gas emissions.

2000



Faculty design the Green Move Out program to recycle and reuse unneeded clothing, books, and home goods at end of the academic year.

1989

Students call for an official recognition of Earth Week. Students create the advocacy group Lafayette Environmental Awareness and Protection (L.E.A.P).

1990

Faculty create the environmental science minor.

2009

LaFarm, Lafayette's campus farm, is established.



2011

Faculty and students collaborate to establish on-campus composting.



2012

Faculty establish degree programs in environmental studies and environmental science.



2017

President Byerly further amplifies her support for sustainability efforts by signing the "We're Still in Pledge," joining 3,000 leaders nationwide in supporting climate action to meet goals set in the Paris Agreement.

2016

President Alison Byerly establishes an Office of Sustainability, creating a dedicated staff to develop a campus sustainability strategy, spearhead projects, and enhance opportunities for outreach and education.



2014

Professor David Brandes' Civil Engineering Course on hydrology designs, configures, and tests a solar-powered irrigation system at LaFarm. The Society of Environmental Engineers and Scientists (SEES) teams with LaFarm's manager to establish the first campus pollinator garden.



Curricular Integration

Lafayette takes an interdisciplinary approach to understanding, modeling, and seeking environmental sustainability. Our faculty bring together coursework from different disciplines across campus, providing students a way to integrate the methods and research of environmental studies from the humanities, engineering, natural sciences, and social sciences. Our curriculum works toward a more sustainable future by setting course projects and capstone experiences into community settings, which gives students an understanding of the unique ecological context of our campus, town, and region. In the 2017-18 academic year, there were 144 courses offered focusing on sustainability with 29 academic departments (or the equivalent) offering at least one sustainability course and/or course that includes sustainability. Examples include: Environmental Policy, Gender, Race, and Environmental Issues, Envisioning a Sustainable World. The impact of this is significant: It means that more than 2,000 students are engaging in more than 120,000 hours of coursework and thoughtful and intense deliberation about sustainability. It means sustainability is taking an increasingly prominent place in the Lafayette curriculum. Embedding environmental sustainability into the fabric of our teaching, research, and overall educational experience will enable our students to take the lead in building a more sustainable world.

"Environmental issues are very intersectional. Encouraging students who may not realize or value their connection to the environment is a great way to increase awareness and involvement."

-Caroline Shaffer '19, ECOrep

Building Relationships

Lafayette hosted the Lehigh Valley Association of Independent Colleges' (LVAIC) biannual campus sustainability conference in February 2018. The event drew more than 170 participants, including more than 20 Lafayette students, faculty, and staff who gave presentations highlighting the College's collaborative sustainability-related work both inside and outside the classroom. Participants from Cedar Crest College, DeSales University, Lafayette College, Lehigh University, Moravian College, and Muhlenberg College attended to share insight and strategies from their own sustainability programs. The event also included an interactive workshop and a poster session.



Exploring and Discovering

ECOrep Lara Henderson '19 had the opportunity to immerse herself in environmental studies and living while studying abroad in Copenhagen. The environmental sciences major spent spring 2018 in the city often touted as the greenest city in the world. Henderson certainly learned inside the classroom, by taking interdisciplinary courses in sustainable development, conservation biology, campaign communications, sustainable urban planning, and sustainable business strategy. But the time she spent outside the classroom was just as impactful. "It was fascinating to see the extensive nature of their recycling, how little food they wasted, and the cycling culture there," says Henderson, who was inspired to rent her own bike for the semester. "Sustainability was such a strong part of their mentality. The sustainable mindset inherent in almost all Danes was fascinating and eye-opening. It reminded me that while our country has a long way to go, with the right attitude I feel confident that real progress can be made toward a greener American society."



STUDENTS
in action

Planning for the Future

Benjamin Cohen, associate professor of engineering studies, and Kira Lawrence, professor and head of geology, created "Envisioning the Future of LaFarm," an environmental studies and sciences capstone course 10 seniors completed in fall 2017. Cohen and Lawrence designed the curriculum to give students an understanding of future challenges of food production and how in order for communities to thrive, there needs to be a shift away from an over-reliance on industrial farming (which relies on fossil fuels, damages biodiversity, and centralizes food supplies) to resilient farming (which prepares agriculture to withstand climate change threats that could hurt food supplies). Students were tasked with creating a plan that would make their peers more engaged with LaFarm throughout their collegiate career, which could then translate to making them engaged environmental citizens for life.

STUDENTS
in action

Conducting Research

In December 2017, more than 100 students across three courses presented their research at the 14th annual Multidisciplinary Environmental Poster Session. Students from Environmental Engineering and Science, Environmental Economics, and Introduction to the Environment worked over the course of a semester together on a research project, which they then needed to present and defend to community professionals engaged in environmental work. In the process, students learned that solving problems is rarely an individual endeavor. Creating solutions usually requires collaboration and insight from various fields of study.



Engagement

The Office of Sustainability works to engage with students, providing them with experiential learning opportunities, so they can develop skills, build relationships, and gather experience to prepare them to be the next generation of environmental leaders. The Office of Sustainability also partners with the Environmental Studies & Science program to develop and co-sponsor education outreach programs for Campus Sustainability Month, Earth Week, and LaFarm. The College values its role as a member of the Easton and Lehigh Valley communities and provides opportunities for students to share their passion and knowledge with our surrounding communities. These outreach efforts benefit our neighbors, demonstrate the College's commitment to sustainability, and provide students a powerful, firsthand opportunity to see the impact of their efforts.

HOW WE ENGAGE WITH STUDENTS

- Monthly Sustainability Committee Meetings. Open to students, faculty, and staff. Average attendance: **18**
- ECOreps presenting research findings at Sustainability Committee Meetings: **2**
- Social media: **average of 23 likes per Instagram post**
- Collaborations with 10 campus organizations, clubs, and groups: **LiveWell Lafayette, Lafayette Association of Visual Artist, Lafayette Activities Forum, Landis Center for Community Engagement, WRJH, Lafayette College Arts Society, Kaleidoscope, Athletics, Lafayette Outdoors Society, and MOSAIC**
- Events to raise awareness and engagement: **14 events held during Earth Week in April; five events held during Campus Sustainability Month in October**
- Volunteer opportunities to improve the community, including Riparian buffer planting along Bushkill Creek: **20 students planted 95 trees**

STUDENT-LED ORGANIZATIONS

Several student-led organizations are dedicated to promoting and supporting sustainability initiatives on campus.

- **Lafayette Food and Farm Co-operative:** Members of LaFFCo volunteer on LaFarm and work to foster discussions about sustainability through the lens of food. In addition to weekly volunteering on LaFarm in fall and spring, LaFFCo also tries to bring LaFarm to campus, sponsoring lectures and film screenings about college farming and sustainable food, promoting the LaSeed Library, and hosting workshops preparing food using ingredients from LaFarm.
- **LEAP:** Lafayette Environmental Awareness and Protection (LEAP) works to solve campus sustainability challenges through student-driven initiatives each semester. LEAP acts through rallies, community partnerships, campus projects, and events to achieve campus goals. Past initiatives include Acopian Bird Savers, TerraCycle, and Political Action.
- **SEES:** Society of Environmental Engineers and Scientists (SEES) focuses on advancing knowledge within the environmental field through research projects that range from composting techniques to methods of improving water quality. They also spread knowledge to K-12 students in the community through activities with local schools and a STEM camp on campus during the summer.
- **FRN:** Food Recovery Network (FRN) partners with Dining Services to safely recover unused and unneeded food from dining halls and catered events, and donate it to local food pantries and food banks. The club also raises awareness about food waste.
- **Take Back the Tap:** This is Lafayette's branch of the nationwide organization Food and Water Watch. The group's goal is to raise awareness of the negative effects of plastic water bottles and to reduce bottled water consumption on campus. The group hosts outreach and educational events, informs students about the impact of plastic bottle usage, and researches and analyzes trends in campus water bottle use.



"I'd like to see more collaboration on environmental initiatives with organizations that may not necessarily be environmental."

-Jennifer Giovanniello '20, ECOrep

STUDENTS in action



ECOreps are student employees who help the Office of Sustainability with education and outreach. Our 12 ECOreps helped plan many events specifically during Campus Sustainability Month in October and Earth Week in April. During Earth Week, ECOreps assisted with planning a variety of events, including Yoga on the Quad, Bushkill planting, and LaFarm to Table dinner. ECOreps have also coordinated Outreach events like Project Runway: Halloween Edition, where a group of 2-5 students use their creativity and critical thinking to design a Halloween Costume out of recycleable materials in one hour. ECOreps are critical ambassadors for the Green Move In and Green Move Out programs. They encourage their peers to participate, explain the process, and actively problem solve. Each ECOrep also is involved in a variety of student groups on campus to help bring sustainability to all areas of campus life.

Food and Farm

LaFarm, the College's 2.65-acre farm 3 miles north of the main campus, integrates curriculum and practice in sustainable food and agriculture for the campus community and beyond. Our work is multidisciplinary: We engage with engineering, liberal arts, Dining Services, and community partners to provide a place for experiential learning and service. Over the 2018 farming season, LaFarm welcomed 15 student farmers, one student community garden manager, and four EXCEL student interns, who worked a combined 800 farming hours. In addition, approximately 290 student volunteers (about 11 percent of Lafayette's student population) put in 1,180 volunteer labor hours at the farm over the course of the season. In addition to partnering with LaFarm, in 2017-18, Bon Appétit purchased 14 percent of its food product from local farmers within 150 miles, with the goal of that number growing to 17-20 percent by 2018-19.

What We Grow

From April through mid-October, student farmers harvested a total of 5,540 pounds of produce and more than 150 bouquets of flowers. We fed our community through:



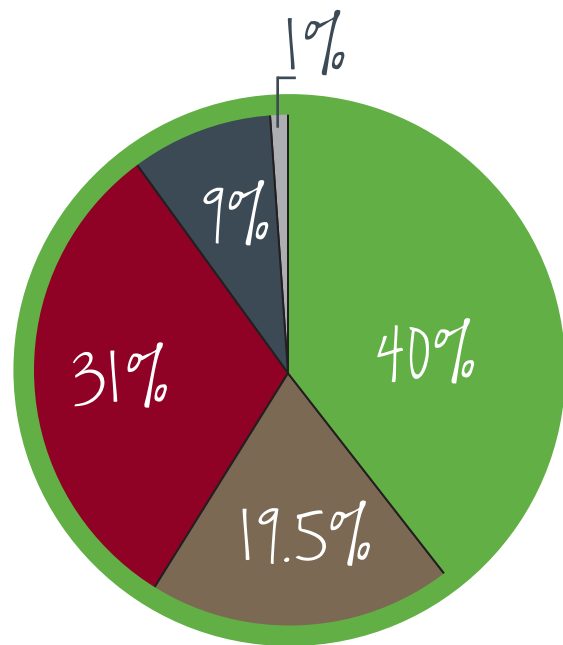
40 deliveries to Lafayette Dining Services



11 Vegetables in Community (VIC) stands in Easton



13 On-Campus markets for students, staff, faculty, alumni and neighbors



Where our food goes

- Donated to 700 community members via Vegetables in Community, Second Harvest Food Pantry, and Easton Area Neighborhood Center Food Pantry. This is a 40% increase in donations from 2017.
- Sold fresh directly to our dining halls
- Processed into tomato sauce and salsa
- Sold through our on-campus market or enjoyed by our student farmers
- Sold off campus



Field Hockey Players Volunteer at LaFarm



LaFarm On-Campus Market



Eat Local Challenge with Bon Appétit

INVESTMENT AND EXPANSION

More than \$35,000 in capital improvements were invested in LaFarm in fall 2017 for infrastructure projects, including construction of a 10-foot, 20-year deer-and-critter control fence, which encloses three acres of prime Washington Silt Loam farmland.

EDUCATION AND NETWORKING

In February 2018, the LaFarm manager, students, and alumni joined together to present at the Yale Food Symposium, titled "Row By Row: Growing a Resilient, Local Food Loop By Building a Sustainable and Scalable College Farm."

LaFarm hosted a number of outreach events and visitors in 2018, including: Lafapalooza Volunteer Day; Earth Week's LaFarm to Table Dinner; Lafayette Food and Farm Co-Op's retreat; Lafayette Childcare and Pre-School; LaFarm Work and Welcome for first-year students; Eat Local Challenge with Bon Appétit; visits from seven courses that incorporated LaFarm into their curriculum; and a meeting of the President's Cabinet. All told, more than 290 students toured and learned at the farm in 2018.

LaFFCo also worked to raise awareness of sustainability efforts, sponsoring four Earth Week 2018 events. One outreach event was held on the steps of Skillman Library, and raised awareness about LaSeed Library, a community-based seed library where anyone can "check-out" garden seeds year-round from Skillman Library's circulation desk. Students, faculty, staff, and community members had the opportunity to take a seed packet, plant a seed to take home, or plant a seed for LaFarm at LaFFCo's outreach event. Many attendees were surprised to learn about the collaboration between LaFarm, LaFFCo and Skillman Library, and were excited to take home some free seeds, which are surplus from LaFarm. "As President of LaFFCo, I'm happy to see that surplus seeds are being shared with the community in this creative way instead of going to waste," says Jennifer Giovanniello '20, President of LaFFCo.



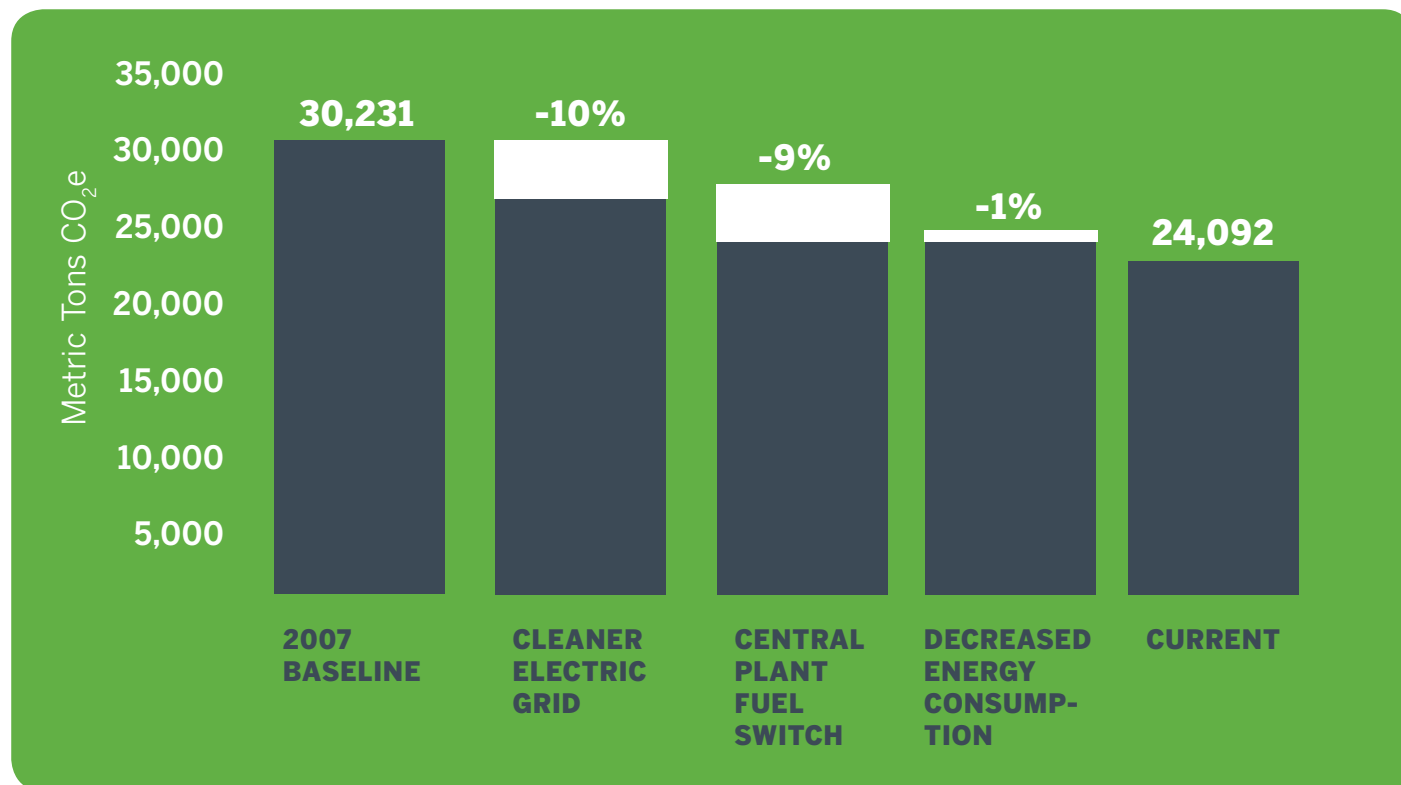
Energy and Greenhouse Gas Emissions

Lafayette College began the path to carbon neutrality in 2008 with signing of the American College and University Presidents' Climate Commitment. When President Dan Weiss signed the Climate Commitment in 2008, Lafayette was one of the first Patriot League institutions and the only institution in the Lehigh Valley to do so. In 2011, the College created a Climate Action Plan with a strategy for reducing GHG emissions and with interim goals for reaching closer toward climate neutrality. Since then, the College has reduced emissions by more than 20 percent, while increasing enrollment and campus square footage. In June 2017, President Alison Byerly signed onto the "We Are Still In" declaration in which business, municipalities, and colleges pledge to support climate action to meet the Paris Agreement. And in fall 2017, the College began the process to develop a Climate Action Plan 2.0, with the goal of reaching carbon neutrality by 2035.

CAMPUS ENERGY USE

- Total student enrollment (FTE): **2,505**
- Gross square feet of building space: **2,148,251**
- Total purchased electricity consumption: **28,507,909 kWh**

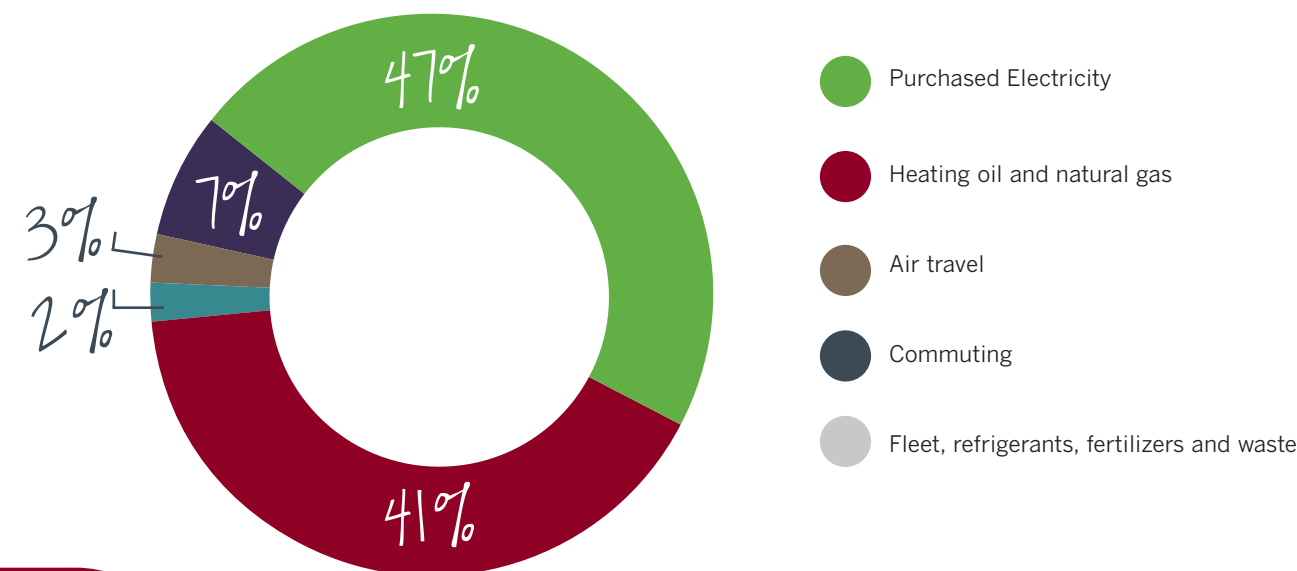
LAFAYETTE COLLEGE: TOTAL GHG EMISSIONS REDUCTION FROM BASE YEAR (2007) TO 2017



KEY TAKEAWAYS

Lafayette's GHG emission for 2017 were 24,092 MT CO₂e, a 20 percent reduction from 2007, the base year of the Climate Action Plan. Lafayette's original goal was to reach a 15 percent reduction in emissions by 2027. The College realized its emissions reduction goal 10 years early. Over this same period, as emissions were reduced, the gross square footage of building space being heated and cooled increased by more than 200,000 square feet, which represents the 10 percent increase.

Lafayette 2017 Greenhouse Gas Emissions



STUDENTS in action



In spring 2017, the Office of Sustainability created an online survey to collect feedback about the potential of revisiting and updating the College's Climate Action Plan. Student members of LEAP saw an opportunity. They created a petition, which outlined overall goals of the plan and asked members of the Lafayette community to give a qualitative sign of support for these goals. ECOreps and SEES (Society of Environmental Engineers and Scientists) joined LEAP's efforts and tabled for two weeks straight, which led to the collection of more than 1,300 signatures.



Bright minds go to Skillman Library to study, investigate, and collaborate. Now there are nearly 2,000 new LED bulbs lighting that learning. In 2017, Plant Operations removed 1,960 54-watt fluorescent lights in Skillman and replaced them with new 24-watt light-emitting diode (LED) bulbs. The calculated annual energy savings is approximately 390,000 kWh, roughly equivalent to the annual electricity usage of 31 homes. In addition to using less than half of the energy of the fluorescent lights, LEDs also generate less heat and last longer. The LED retrofit at Skillman is part of the Office of Sustainability's ongoing work with Plant Operations to incorporate more energy-efficient LED technology around campus.

Waste Reduction and Recycling

The Office of Sustainability works with students and departments to reduce the campus waste stream. Our collaborative efforts aim to decrease the amount of trash the College produces while increasing the percentage of waste that is recycled. To support our campus commitment to recycling, in spring 2017, ALMA architecture, the College's Communications Division, Facilities and Grounds, Facilities Planning and Construction, and the Office of Sustainability developed a recycling standard to create a cohesive recycling infrastructure and to improve recycling rates on campus. In spring 2017 and fall 2017, the Office of Sustainability conducted a waste audit in Farinon Student Center and Skillman Library Café to compare recycling rates and contamination. The spring audit results showed 67 percent of recycling was clean and free to be recycled. In fall 2017, those results improved: 81 percent of recycling was clean and could be readily recycled.

TONS OF SINGLE-STREAM RECYCLING

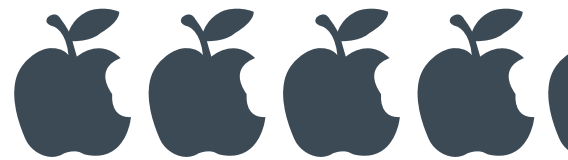
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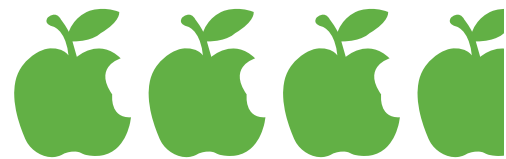
FISCAL YEAR 2016-2017

FISCAL YEAR 2017-2018

POUNDS OF WASTE PER PERSON



2016-2017 = 410



2017-2018 = 388

TONS OF TOTAL TRASH PRODUCED



Kyle Low '20 took personal responsibility to design a pilot program through LEAP to recycle additional bath products. He recruited three students to monitor and empty collection bins in residence halls, and encourage friends, classmates, and neighbors to participate.

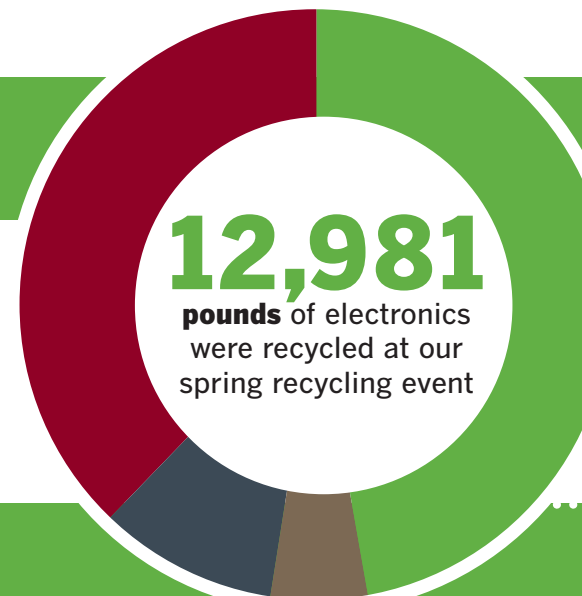
STUDENTS in action

The Office of Sustainability organizes Green Move In and Green Move Out recycling programs when students are arriving on campus in August and leaving in May. In 2017 students recycled 4.5 tons of cardboard through the Green Move In program. Additionally, the Office of Sustainability added two new recycling streams to the Green Move In program in 2017: plastic bags (58 pounds collected) and hard, white Styrofoam (32 pounds collected). In the spring of 2018, Green Move Out added recycling to the process so students can repurpose unused or gently used goods and recycle old, damaged, unusable items. In three weeks, students recycled more than 6,000 pounds of futon frames and old wooden furniture. This is in addition to the more than 10,000 pounds of clothing, books, and home goods collected annually for Green Move Out. In 2018, 19 local nonprofits, including the Boys and Girls Club and Safe Harbor Homeless Shelter, benefitted from the donations.

ECOreps hosted their inaugural Recyclemania event during a women's basketball game in February 2018. ECOreps collected recycling during the quarter breaks, provided an educational halftime break focused on recycling, and measured and weighed recycling and trash at the end of the game. This first ECOrep-led event was a success, resulting in a 72 percent diversion rate.

"The collection of donations is eye opening. There is so much food, books, clothing, and other useful items we can offer to those in need. And we can divert things, such as shampoo, from waste streams."

-Katalin Fabian, professor of government & law



Pounds of Recycled Electronics

- 6,157 LBS.** TVs and monitors
- 4,868 LBS.** Printers and stereos
- 1,287 LBS.** Computers and laptops
- 669 LBS.** LCD TVs



STUDENTS in action

Reducing Food Waste

Lafayette's Food Recovery Network is a new addition to campus. The club works to recover food from Dining Services twice a week to donate to local organizations. Salad bar leftovers unfit for human consumption are taken to animals in the College's biology department. The club also partners with the Office of Sustainability, Dining Services, and students active in other campus groups to reduce food waste at Family Weekend, Reunion, and through the Weigh the Waste event each semester. Weigh the Waste is a program in which food waste is measured after meals to increase awareness of plate waste and to show students how they can make an immediate impact.

TOTAL POUNDS OF FOOD RECOVERED AND DONATED TO DATE

Spring 2017.....	179 pounds
Fall 2017.....	330.30 pounds
Spring 2018.....	680 pounds
Summer/June 2018.....	590 pounds
Total Pounds.....	2,107

Biodiversity and Campus Ecology

The Office of Sustainability supports conservation efforts and initiatives that promote ecological and educational values of enhancing biodiversity on campus.

Student members of LEAP want to prevent bird strikes on campus. With faculty guidance from Mike Butler, associate professor of biology, and Dave Brandes, professor of civil and environmental engineering and co-chair of environmental science and environmental studies programs, students are taking an active role in advocating for measures to prevent bird mortality. Birds often die after flying into windows, either instantly from the impact or after becoming injured. In 2016, with help from Jeff Acopian '75, Butler and Brandes successfully secured a protective measure on Hugel Science Center: Strings of parachute cord (called "Bird Savers") spaced 4 inches apart—too narrow for birds to fly through—now hang from the second floor of the building and have reduced bird mortality by about 90 percent. As a result of those efforts, architects of Rockwell Integrated Sciences Center have announced that wall areas around the lobby and public spaces of the new building will feature "fritted" windows—small ceramic dots added to the glass to help deter birds from striking. Students in LEAP want to further these efforts and are developing a survey to gauge the College community's understanding and concern for this issue. Their goal is to determine if additional buildings could be outfitted with Bird Savers or other protective measures.

Residents of East and West Fisher Halls have a sustainability project right outside their doors. The campus pilot stormwater bioretention area was designed by students in engineering in an effort to slow and filter stormwater so that fewer pollutants reach Bushkill Creek. This site was planted by students, faculty, and staff, is maintained by ECOreps and SEES, and is supported by grants from DCNR Lehigh Valley Greenways Initiative and the Lehigh Gap Nature Center. The bioretention area vegetation was scientifically and strategically selected for its ability to withstand saturated conditions but also to be able to thrive when water dries up. The garden is comprised of native perennial plants that encourage biodiversity and attract pollinators, which is critical to supporting a declining population of bees, monarch butterflies, and other pollinators and steward our natural resources and campus ecology.

TOP: Bird Savers on the windows of Hugel Science Center prevent bird mortality.

MIDDLE: ECOreps maintain the bioretention area outside East and West Fisher Halls.

BOTTOM: Students in Biology 224 created pollinator garden signage to educate people about the benefits of pollinators.

Next Steps

Global climate change is one of the most pressing problems of our time. As citizens of the world, Lafayette graduates will need to confront climate-related risks to health, biodiversity, food security, water supply, human security, and economic growth. Since its inception, the Office of Sustainability has striven to provide opportunities for students to tackle issues around biodiversity, food, energy, and waste recycling and reuse, and to provide students with real-world work experience as they learn to manage projects, lead teams, and create communications that educate, engage, and inspire. As the College moves ahead with Climate Action Plan 2.0 to reach net-zero greenhouse gas emissions by 2035 and a revamped on-site composting program, the Office of Sustainability is eager to find new ways to further enhance campus operations, curricular connections, and community engagement.

Lafayette's Green Move-In program recycles waste at the start of the fall semester.

STUDENTS
in action





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