



Meeting Summary
October 8, 2018

Council Members Present:

Carlo Colella, Vice President for Administration and Finance (Chair)
Linda Clement, Vice President for Student Affairs
Maureen Kotlas, Executive Director, Department of Environmental Safety, Sustainability & Risk
Scott Lupin, Assoc. Dir., Environmental Safety, Sustainability & Risk, and Director, Office of Sustainability
David Cooper, Assistant Director of Operations, Division of IT
Mary-Ann Ibeziako, Director, Department of Engineering and Energy
Jana VanderGoot, Assistant Professor, Architecture
Amelia Avis, Undergraduate Student, Government and Politics and Policy
Timothy Reedy, PhD Student, International Education Policy

Guests:

Bob Reuning, Director, Facilities Management
David Allen, Executive Director, Department of Transportation Services

Meeting start time: 10:00am

Meeting Highlights

Welcome and Review of April 13, 2018 Meeting Minutes

Carlo Colella welcomed the Council members and called the meeting to order. Meeting summary from April 13, 2018 was approved.

Carbon Neutral Air Travel Update

Sally DeLeon from the Office of Sustainability provided an update about offsets purchased by the university to neutralize air travel. Carlo Colella thanked all the partners who contributed to this accomplishment.

Campus Water and Stormwater Management Update

Scott Lupin followed up on Stephen Reid's April 2018 presentation by updating the Council that the Water Steering Committee continues to meet about campus stormwater management priorities.

SustainableUMD Magazine & Celebration Event

Andrew Muir from the Office of Sustainability shared that the fourth edition of the SustainableUMD Magazine is almost complete and will be released at the SustainableUMD Celebration event on Tuesday, October 23 at The Stamp. This year's feature story is about the UMD Solar Decathlon team, campus solar canopies, and research at the Clark School of Engineering.

Maryland Sustainability Summit

Scott Lupin shared the news that the Smart and Sustainable Campuses Conference will no longer take place after 12 years. On Tuesday, December 4, the University System of Maryland and Office of Sustainability will host a Maryland Sustainability Summit at University of Maryland. All are invited to attend and updates will be shared with the Council.

Sustainability Progress Report

Sally DeLeon highlighted Sustainability Progress Report accomplishments. A Progress Summary update was also shared with the Council. The presentation can be viewed as Appendix A.

Sustainability Fund Report

Mark Stewart from the Office of Sustainability shared the Sustainability Fund Report from FY 2017-2018. The report can be viewed as Appendix B.

Sustainability Transportation Update

David Allen, Executive Director, Department of Transportation Services updated the Council about ongoing sustainable transportation initiatives. The presentation can be viewed as Appendix C.

Adjourn 12:00pm

ProgressSummary

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University Sustainability Council Meeting October, 8th 2018



ClimateAction



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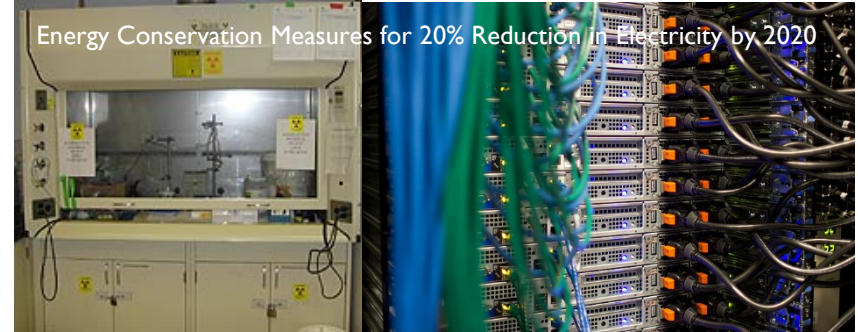


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Carbon Neutral New Construction



Energy Conservation Measures for 20% Reduction in Electricity by 2020



Behavior Change



100% Renewable
Purchased Power by 2020



Verified Carbon Offsets



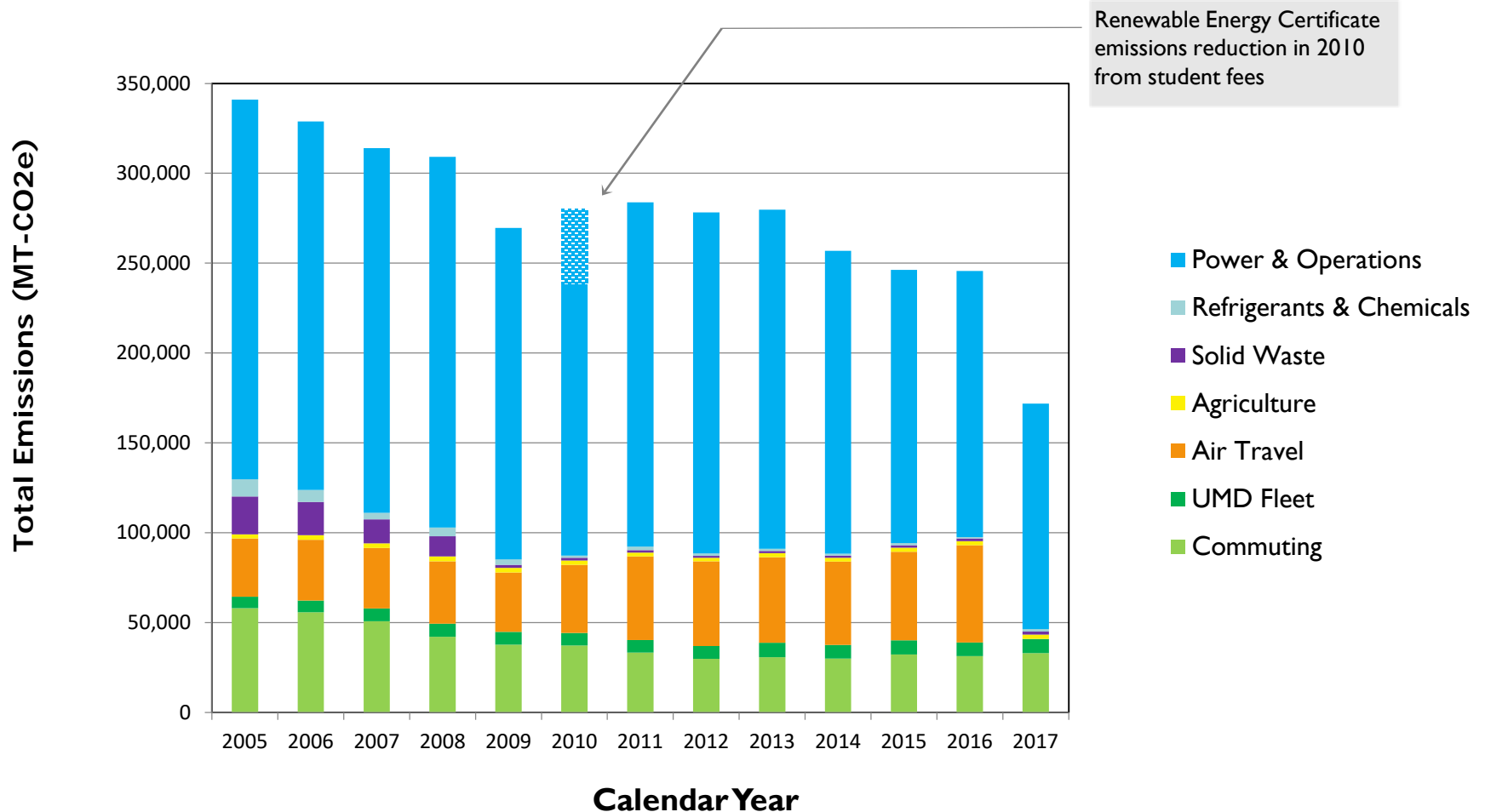
CarbonFootprint



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CarbonFootprint

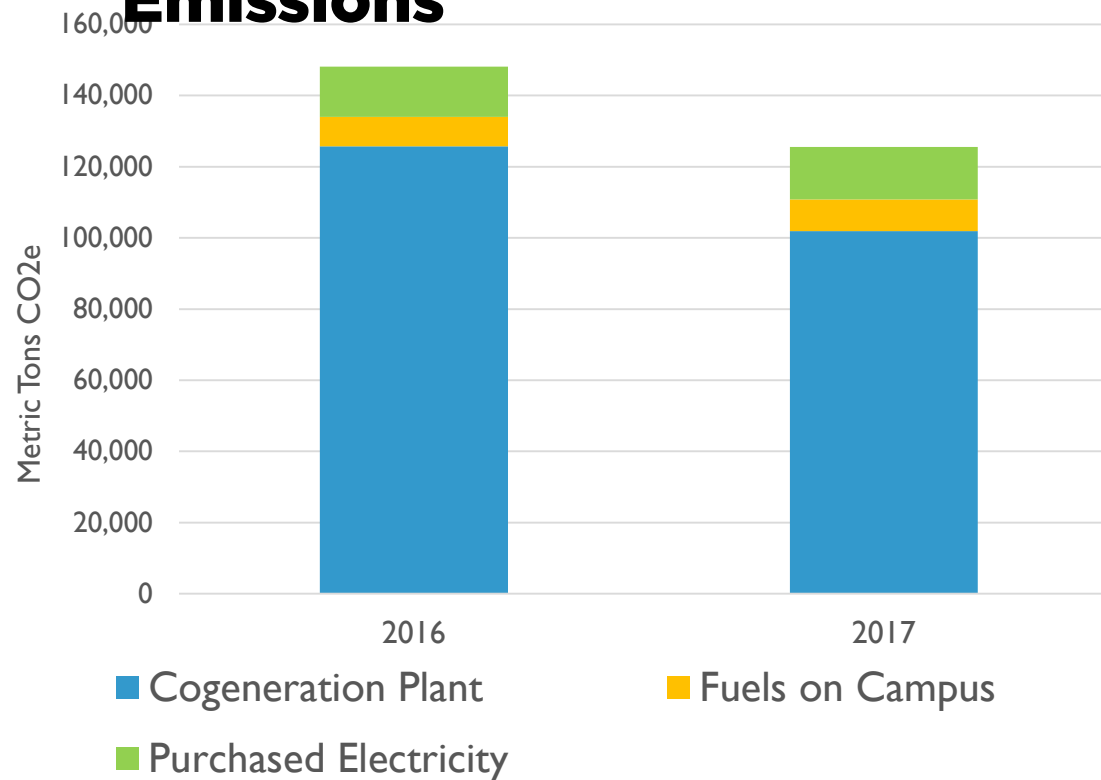


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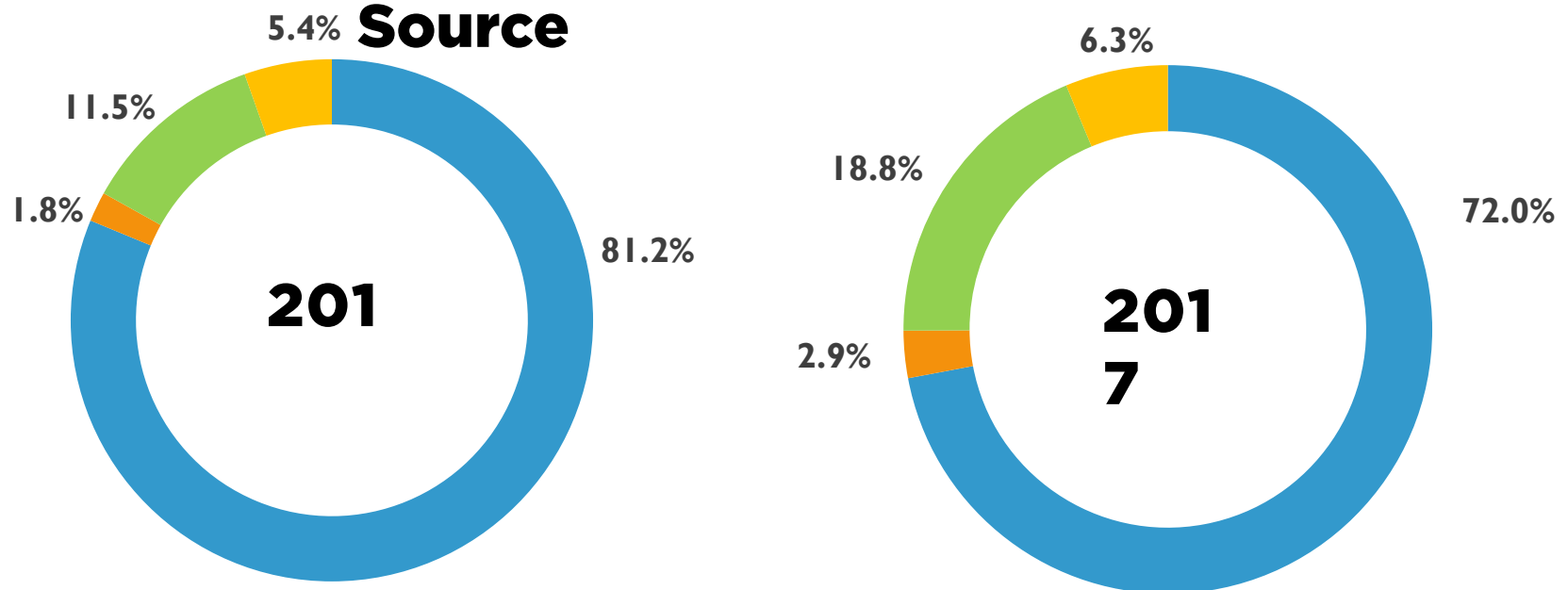
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Thermal & Electric Load Emissions





Energy Generation by Source



- UMD's Combined Heat and Power Plant (CHP)
- Regional Electric Grid
- Off-campus Wind and Solar
- Other equipment on campus

CarbonFootprint

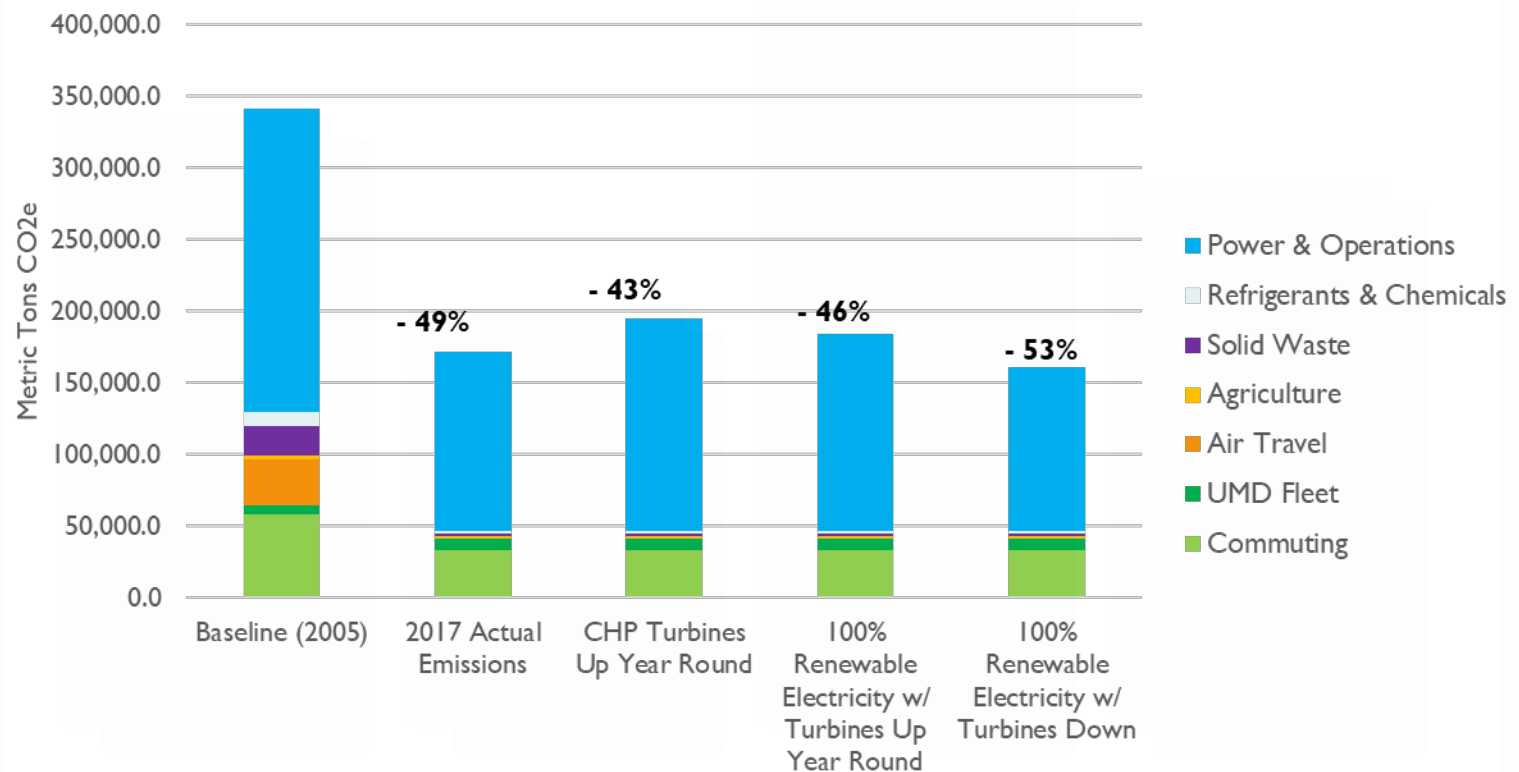


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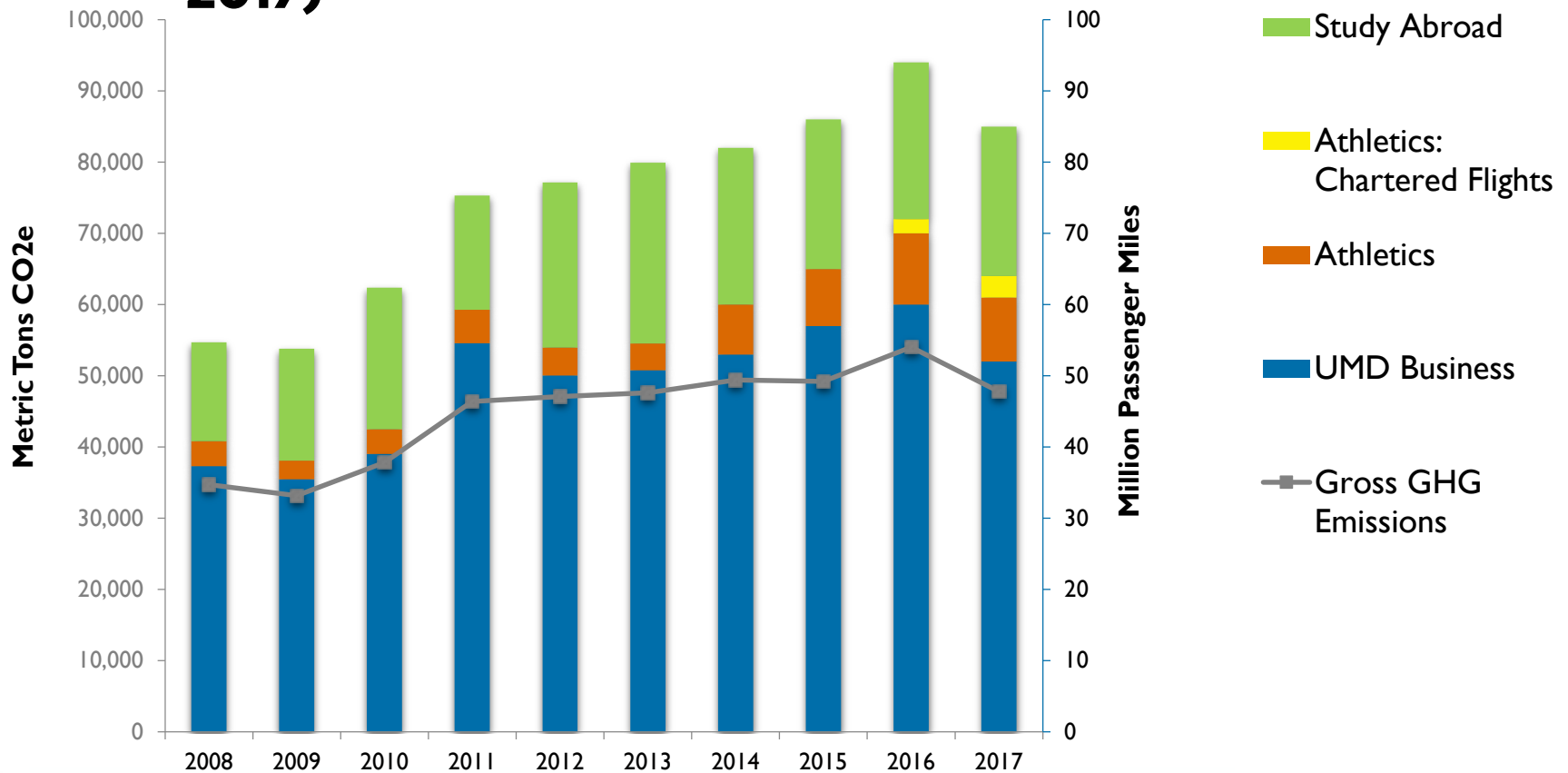
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CHP Impact: Carbon Footprint Scenarios





Gross Emissions from Air Travel (100% Offset in 2017)



SustainabilityCulture



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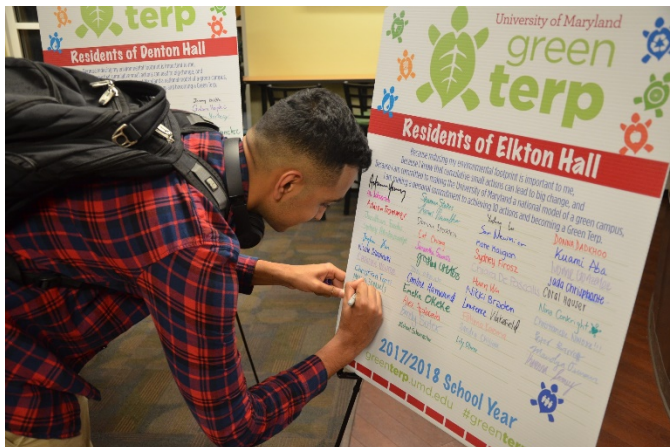


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Students participating in the Green Terp and Green Chapter programs pledge to take sustainable actions to foster a student culture of sustainability on and off campus.

1,561 students participated in the Green Terp pilot program last year.

78% of chapters that participated in the Green Chapter pilot program last year completed requirements and certified as Green Chapters.



SustainabilityCurriculum

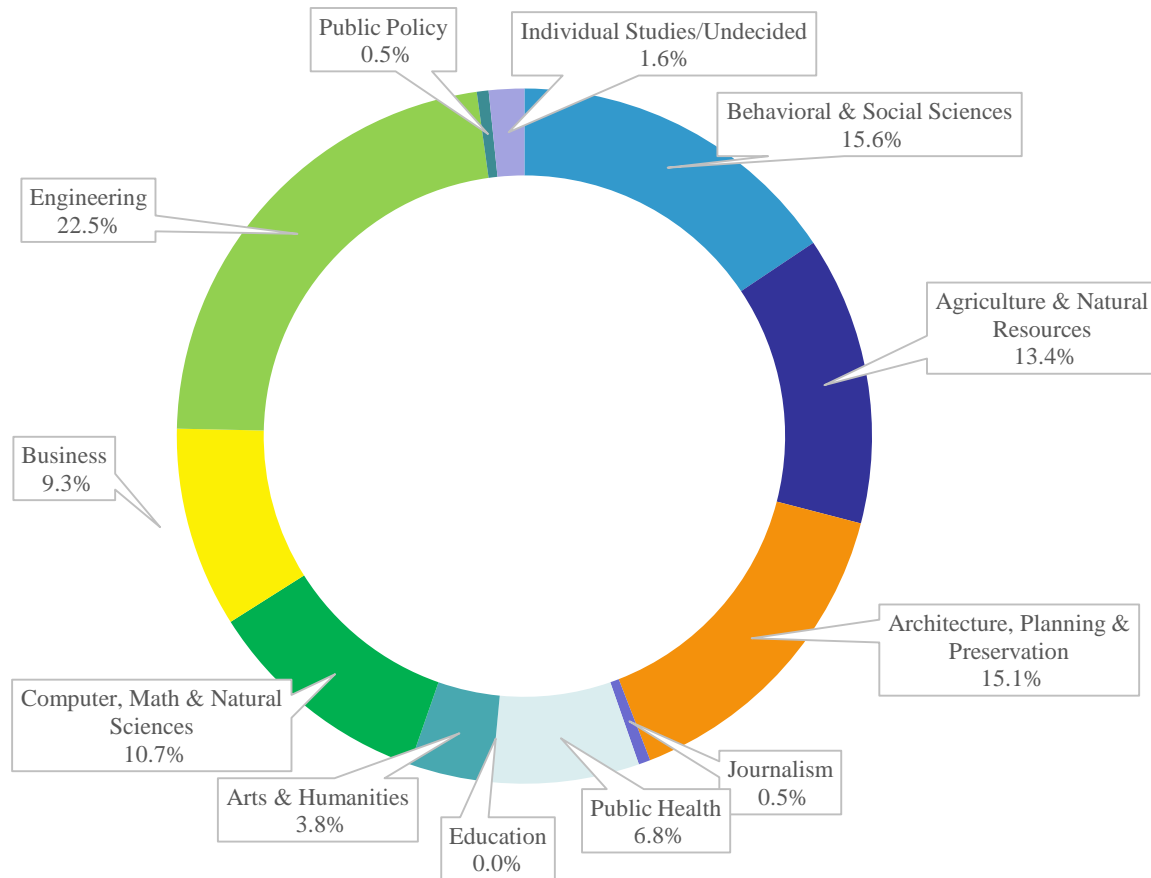


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Sustainability Studies Minors by College





2017 Carbon Offset Portfolio bundled with Maryland Trees

Carbon Management class in School of Agriculture & Natural Resources worked with the Chesapeake Bay Foundation (CBF) to quantify carbon sequestration at tree planting sites

- Alternative Breaks trip to CBF greenhouse to plant sycamore seedlings for use at tree planting sites
- Over 140 UMD students were involved in tree planting and maintenance with CBF in 2017



GreenProcurement

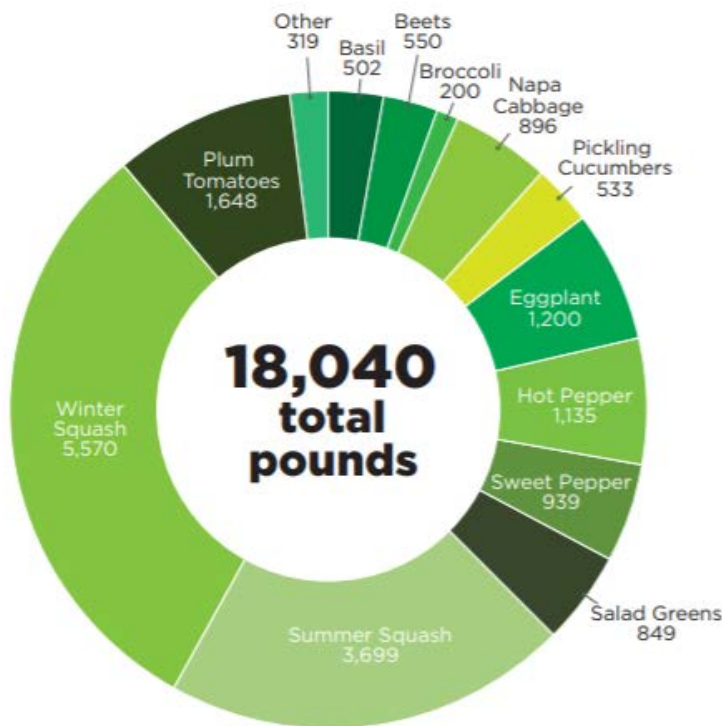


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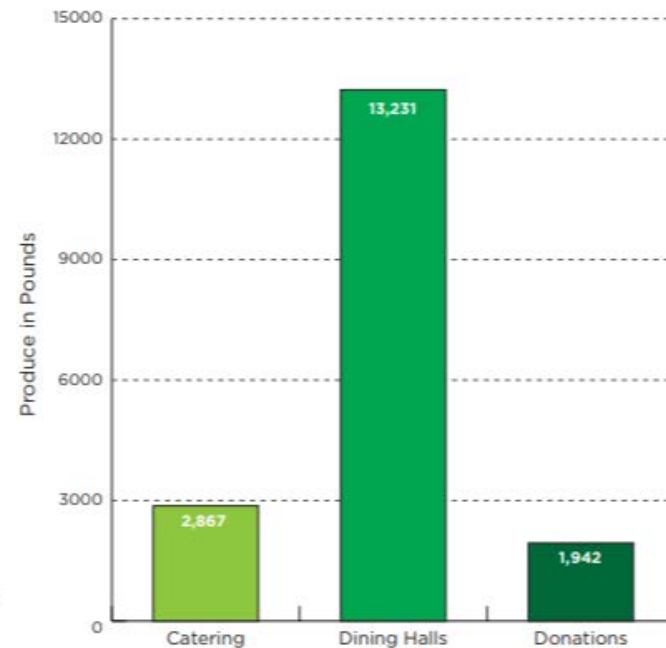


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Terp Farm Crop Yield



Produce Deliveries



CommunityInvolvement

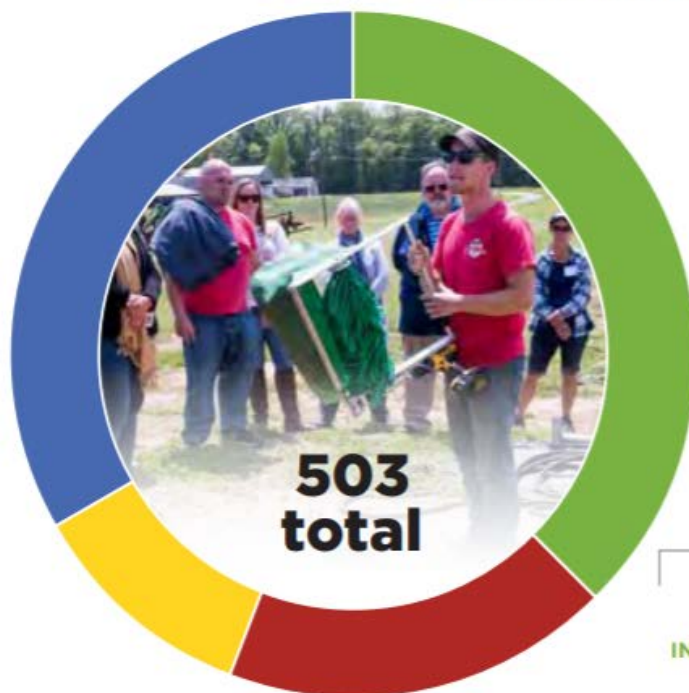


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Visitors and Volunteers



Academic Courses [190]

Volunteer Groups [91]

Research Tours [55]

Farm Tours [167]

PLSC405 Agroecology
INAG123 Introduction to Sustainable Agriculture
INAG213 Crop Production Practices
INAG224 Plant Production & Greenhouse Management
PLSC433 Fruit & Vegetable Technology
PLSC452 Environmental Horticulture

SustainabilityResearch



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The Menu of Change University Research Collaborative



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SustainableTransportation



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- UMD's first Vanpool for faculty and staff was launched last spring
- BikeShare membership increased significantly in 2017
- Vigilante Coffee opened a location in College Park
- In 2018 UMD and its development partners have opened 2 office/R&D buildings in the Discovery District with another 3 expected to open by the end of the year



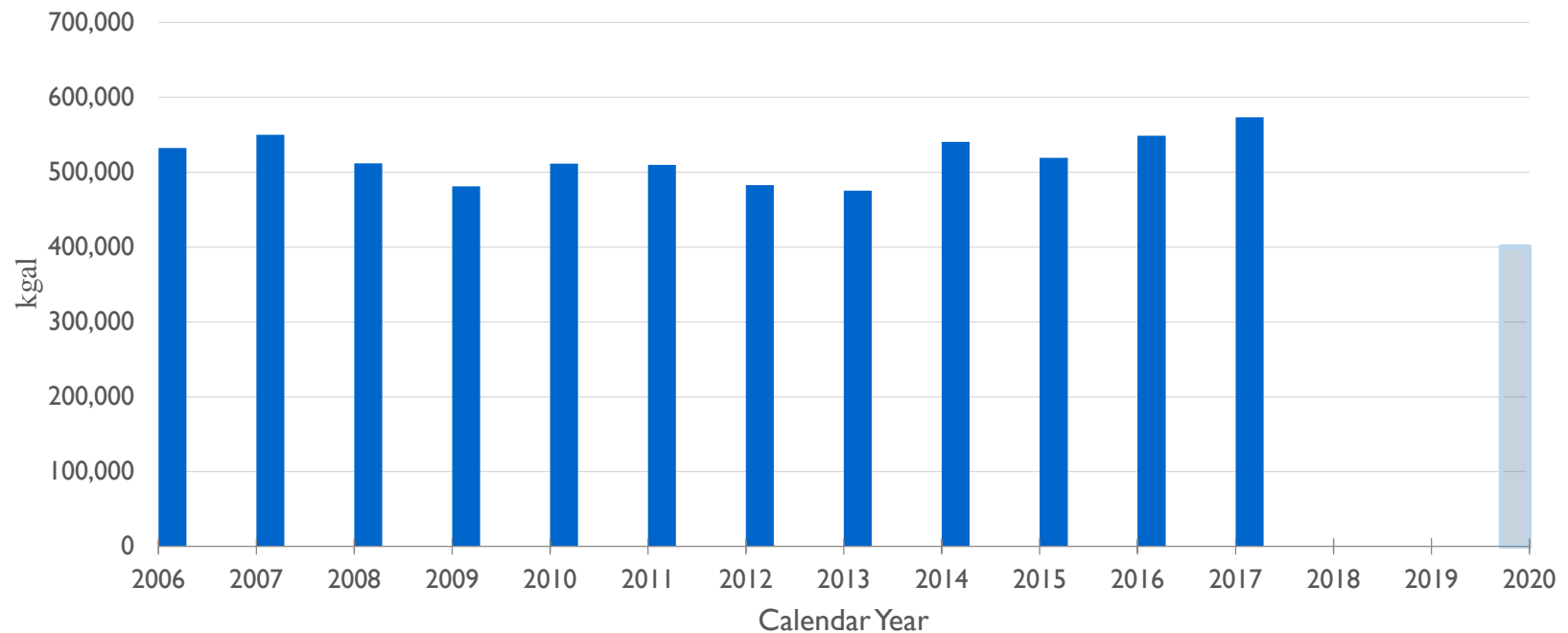
WaterConsumption



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SustainableBehaviors

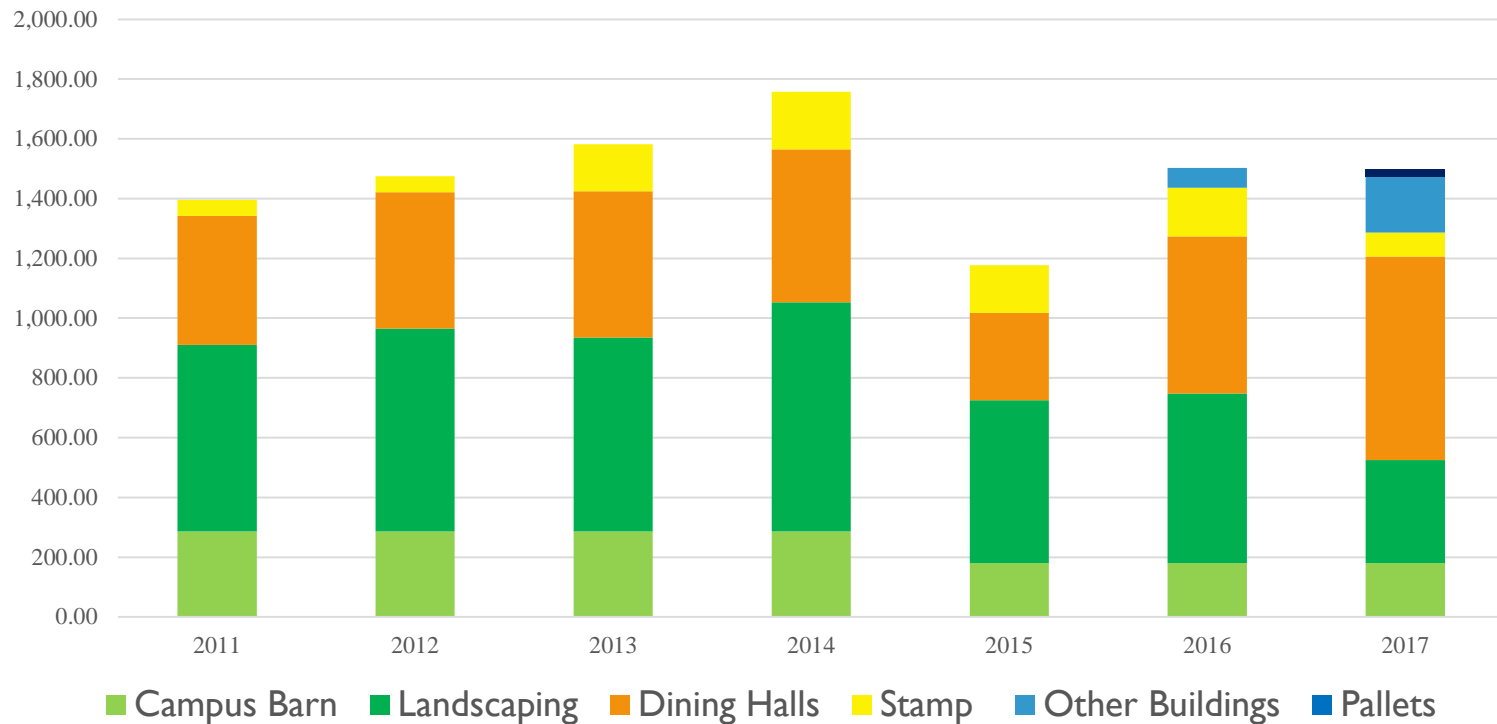


sustainableumd



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Tons of Compost Collected excluding sod and soil





Questions and Ideas for Future Work





Annual Report



Sustainability Fund Background

- ▶ In 2007, 91% of undergraduate students voted in favor of increasing mandatory student fees to support sustainability initiatives
- ▶ Fee collection began in fall 2009 at \$4/fulltime undergraduate/year
- ▶ Sustainability Fund was established in 2010 to support projects that reduce the environmental impact of campus operations and/or enhance sustainability education and research activities
- ▶ By 2014, the Student Sustainability Fee reached \$12/fulltime undergraduate/year and it's stayed at that level ever since
- ▶ Mini-Grant program started in 2014 to provide smaller grants in less than 30 days, managed by Student Sustainability Comm. of SGA
- ▶ Current Student Sustainability Fee Revenue: \$330,000


Sustainability Fund Activities Since Year 1 (FY11-FY18)

- ▶ Revenue: \$2,190,519
- ▶ Number of proposals received: 266
- ▶ Total funding requested: \$7,863,671
- ▶ Number of grants awarded: 120
- ▶ Total funding awarded: \$2,179,778
- ▶ Average award: \$17,860
- ▶ Project activity: 25 in progress, 3 failed to launch, 92 completed

Sustainability Fund Activities in FY18

▶ Funds available:	\$424,042
▶ Number of proposals received:	23
▶ Total funding requested:	\$909,282
▶ Number of grants awarded:	11
▶ Total funding awarded:	\$316,586
▶ Average award:	\$28,781
▶ Carry-forward to FY19:	\$107,456

Mini-Grant Activities in FY18



▶ FY18 Starting Balance:	\$20,000
▶ Number of Grants Awarded:	15
▶ Total Funds Awarded:	\$16,382
▶ Carry Forward to FY19:	\$3,618

This Year (FY19)...

► Sustainability Fund

- \$421,000 available (\$330k in FY19 + \$107k from FY18 - \$16k for mini-grants)
- Grant request: \$2,000 to \$400,000
- Priority deadline for proposals: Oct 15
- Final deadline for proposals: Jan 15

► Mini-Grants

- \$20,000 available
- Grant request: Less than \$2,000
- Accepts proposals anytime September-April



University Sustainability Fund Annual Report: FY2018

Fiscal year 2018 (July 2017–June 2018) was the eighth year of the University Sustainability Fund, which is administered by the Office of Sustainability with oversight and funding authority by the University Sustainability Council. All revenue comes from undergraduate students in the form of a Student Sustainability Fee, which was \$12 per fulltime student per year in FY18 and has been fixed at that rate since FY14. A student-majority Sustainability Fund Review Committee reviews proposals and recommends grant awards to the Sustainability Council. University of Maryland students, faculty, and staff can submit proposals by October 15 (priority deadline) or January 15 (final deadline).

The Student Government Association's Sustainability Committee administered the Sustainability Mini-Grant program for its fourth year in FY18. The Mini-Grant program is funded by the Sustainability Fund and offers smaller grants (up to \$2,000 per grant) on a shorter timeline than the Sustainability Fund can offer. A summary of Mini-Grant activities is included at the end of this report.

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Sustainability Fund Grant Recipients in FY18

Green Terp and Green Chapter

RECIPIENT: Department of Resident Life, Department of Fraternity and Sorority Life, Office of Sustainability

AMOUNT: \$121,728

These programs, collectively called the Green Housing programs, were developed with the intent of engaging residential students in dynamic and interactive programs that promote personal and collective sustainability action. The programs support and reward students that embed sustainability into their daily actions and activities. The Office of Sustainability, Department of Resident Life, and Department of Fraternity and Sorority Life received funding for a Sustainability Associate and four student LEAF Team leaders for a 2-year campus-wide expansion of the Green Terp and Green Chapter programs. This would expand the reach of these programs from around 5,000 students living in select residence halls and chapter houses to all 38,000 students living on and off campus.

Student Leadership in Campus Community Expanded

RECIPIENT: College of Information Studies (iSchool) and National Center for Smart Growth Research and Education (Center for Smart Growth)

AMOUNT: \$50,000

Student Leadership in Campus Community Expanded (SLCCE) builds on Year One of the Campus Community Connection pilot, and more specifically on the Student Leadership in Greater College Park Sustainability and Resiliency. SLCCE will fund graduate assistants and undergraduate hourly to implement parts of at least 60 projects that were developed last year in the municipalities of College Park, Hyattsville, Riverdale Park, University Park, Berwyn Heights and unincorporated Prince George's communities near the University of Maryland such as Adelphi, Beltsville, Langley Park, and East Riverdale. SLCCE student leaders will also develop research questions related to the 60 projects for the 12 major schools or colleges of the University of Maryland.

Next Generation Technologies for Sensing, Actuation, and Control of ReACT

RECIPIENT: A. James Clark School of Engineering and the School of Architecture, Planning, and Preservation

AMOUNT: \$47,500

For the fifth time in the history of the competition, the University of Maryland participated in the 2017 US DoE Solar Decathlon. Named reACT, for resilient Adaptive Climate Technology, Team Maryland's design was driven by the goal of producing a modular house that can adapt to its uncertain and dynamically changing environment. The house ranked first among U.S. teams. This grant is part of a rebuilding effort to install reACT next to the other solar decathlon house to create a Sustainability Park for research and education. The reconstruction of reACT offers an opportunity to act on the lessons

learned during the Solar Decathlon 2017 competition, to upgrade the sensors, actuators, and instrumentation of this house to more fully enable the adaptability and resiliency of reACT as well as future generations of homes based on our design.

Aquaponics Research Center

RECIPIENT: Environmental Science and Technology Department / Green Roots Club

AMOUNT: \$36,800

Aquaponics is a form of food production that integrates aquaculture (fish production) and hydroponics (soilless crop production). The fish are fed and excrete waste, which is broken down by bacteria into plant nutrients. Plants remove nitrates and other nutrients from the reservoir to be utilized for growth and development while simultaneously improving water quality. The goal of this project is to pioneer aquaponics research at the University of Maryland to ensure UMD continues to be a flagship of sustainable agriculture and design. The project will include a 1,200 square foot heated greenhouse, fish tanks and several hydroponic systems.

Environmental Justice Symposium

RECIPIENT: Community Engagement, Environmental Justice and Health (CEEJH) and 17 for Peace and Justice

AMOUNT: \$17,000

The CEEJH program and 17 for Peace and Justice hosted a symposium on May 4th-5th with a full day of activities on May 5th. This symposium connects UMD students, community activists, environmental advocacy groups, academics, health practitioners, policymakers, and other stakeholders in order to identify and address environmental justice and health issues in and around College Park, Prince George's County, the state of Maryland, and Washington, DC.

Stamp Vertical Garden

RECIPIENT: Adele H. Stamp Union – Center for Campus Life, TerpVert Student Team

AMOUNT: \$15,000

The Adele H. Stamp Student Union at the University of Maryland features an enclosed patio (Room 0467) that the university staff would like to utilize to provide students, faculty/staff, and visitors with a welcoming and productive environment as well as providing a space for awareness towards sustainable issues. This provides an opportunity for an innovative sustainability solution by incorporating a biowall on the main 10' x 90' wall of the enclosed patio. The goals for the installation of this biowall would not only be to enhance the aesthetics and air quality of the Stamp Student Union, but also to act as a self-contained and crop producing vertical farm to be used by the catering department in the building.

Understanding and Navigating Environmental Justice

RECIPIENT: Community Engagement, Environmental Justice and Health (CEEJH)

AMOUNT: \$14,000

This project is being run under the Community Engagement, Environmental Justice and Health (CEEJH) program in the School of Public Health with the goal to improve campus knowledge about environmental justice issues. This grant will go towards funding a speaker series, incorporating environmental justice into classes, and establishing a Summer Scholars Program for students doing environmental justice work over the summer.

Gemstone Team Sunny D/Purify

RECIPIENT: Gemstone Program

AMOUNT: \$6,372

This Gemstone research team is working with the University of Maryland Solar Decathlon team to develop a sustainable water filtration system that can be implemented in any new residential house being constructed. The goal for the system is to achieve net-positive water usage through a complex filtration system that incorporates greywater recycling and rainwater harvesting. This system distinguishes itself from other filtration systems by using strictly non-chemical filtration methods, thus increasing its environmental friendliness.

Gemstone Team CAPTURE

RECIPIENT: Gemstone Program

AMOUNT: \$4,070

As carbon dioxide acts as a greenhouse gas, accelerating global warming, technologies that capture CO₂ from the atmosphere offer the remarkable potential to mitigate some of the worst effects of climate change, potentially alleviating decades of damage. However, most industrial scale carbon capture processes far exceed the \$100 per kilogram of carbon extracted threshold required for economical deployment, so Team CAPTURE seeks to introduce the property of carbon capture to commercial-grade products, recognizing that consumers are often willing to pay 10-15% more for goods that offer societal benefit.

Gemstone Team OMEGA

RECIPIENT: Gemstone Program

AMOUNT: \$2,500

While omega-3 fatty acids are an important nutrient, they are not synthesized by the human body and must be obtained through a well-rounded diet. Climate change and ocean acidification threaten the forage species (i.e. sardine and anchovies) that are vital to the production of U.S. fish oil and may lead to decreased production of omega-3 in the future. One suggested solution to this concern is genetic

engineering, which is the approach Team Omega will be taking. The goal of Team Omega is to create a novel source of omega-3 fatty acids using genetic engineering techniques.

Gemstone Team Oysters

RECIPIENT: Gemstone Program

AMOUNT: \$1,616

Team Oysters is a University of Maryland Gemstone Honors program affiliated student research team. This project focuses on research of oyster restoration in the Chesapeake Bay for the declining population of the eastern oyster. The goals of this research project are to create ecologically beneficial, cost-efficient, and more successful methods for future oyster restoration efforts.

Sustainability Mini Grant Recipients in FY18

Funds available:	\$20,000
Grants awarded:	15
Funds awarded:	\$16,381.98
Carry-forward to FY19:	\$3,618.02

McKeldin Windroponics Project

Organization/Individual: Matthew Lagomarsino, Dave Tilley

Grant: \$2,000

The elegant hydroponic vertical garden, Windroponics, from Team Maryland's 2017 entry to the Solar Decathlon competition was in campus in storage. A memorandum of understanding between its designer, Professor Hooman Koliji, and McKeldin Library has been signed in order to install two like systems on the second floor of McKeldin in the Terrapin Learning Common (TLC). The two iterations of the windroponics will be placed in front of two adjacent south facing windows in the TLC; one for experiments done by the researcher and one for display. Both will be part of an 'interactive living laboratory' which will be enjoyed by all visitors to the Library, student and general public alike.

Gemstone Team VOLTAGE

Organization/Individual: Trinish Chatterjee, Dr. Pamela Abshire, Gemstone Program

Grant: \$2,000

This Gemstone Team is focused on the benefits of the new technology "e-paper." Electronic paper is a technology that has been gaining popularity in the last decade. It involves devices that mimic the readability and clarity of a piece of printed paper using various types of "e-ink". These technologies, such as Kindles, not only provide a paper-like reading experience unparalleled to that of LCD devices, but also are much more energy efficient than traditional screens. Their project contributes to research on better screen technology, which might eventually lead to such technological advancements such as electronic wallpaper in hallways of academic buildings, replacing the hundreds of high-wattage projectors used around campus, and reducing energy usage for electronic signage by an order of magnitude, among others.

TurbuGen: Electrical power generation in turbulent urban flow fields

Organization/Individual: Dr. Derrick Yeo, FIRE Program

Grant: \$1999.03

TurbuGen is a part of the AUSS program, or “the Autonomous Unmanned Systems Stream.” The AUSS is a robotics research lab that is part of the First-year Innovation and Research Experience (FIRE) program. Through this grant, TurbuGen formed the core of a 2-semester research experience for up to 9 undergraduate researchers who will apply tools in aeronautical, electrical, and control-systems engineering to improving the sustainability of daily operations on the UMD campus and other urban areas. Specifically, TurbuGen explores the potential for using specially designed and intelligent small-scale vertical-axis wind-turbines to exploit small regions of accelerated flow within the urban flow field of the University of Maryland campus.

Pizza Compost Bins

Organization/Individual: Jonathan Glaser

Grant: \$1,750

One of the most immediately successful projects funded this year, Jonathan designed and created pizza box composting bins which have been installed by the City of College Park near prominent pizza establishments. The receptacles cut down on clutter in the waste stream and improve the aesthetics of major parts of Route 1 and College Park.

FlushX

Organization/Individual: Charles Dylan Grody, John Jabara

Grant: \$1,697.02

This grant funded independent research by a student who hopes to cut down on wasted water by improving the way automatic toilets flush. This invention is essentially a new method of flushing toilets initiated by the unlocking of a stall door. The invention is an augmented version of the traditional stall door slider that includes a contact sensor and signal emitter capable of detecting when a stall lock is unlocked. Once the action of the stall door unlocking is detected, the signal emitter then sends a message to the toilet, causing it to flush. The grant is going to be used for a prototype of the product.

Intelligent Mobile Irrigation System

Organization/Individual: William Singelstad, Dr. Derrick Yeo, FIRE Program

Grant: \$1,489

This is another team of undergraduate researchers working through the First-year Innovation and Research Experience Program. The goal of this team’s research is to alleviate water scarcity through innovation and new technology. Specifically, the IMIS is a mobile tool that farmers can use to autonomously disperse the appropriate amount of water to each crop remotely, therefore reducing the amount of wasted water and runoff. Specifically, this grant was used to create a proof of concept prototype that the team then introduced to potential stakeholders.

The Sustainability Award for ENME472 (Capstone Design)

Organization/Individual: Vincent Nguyen, UMD Mechanical Engineering

Grant: \$880

ENME 472, or “Integrated Product and Process Development” is a high-level mechanical engineering course offered by UMD that culminates in a prototyped product displayed for the public to see at a “career fair” style event at the end of the semester. The professor of this course, Dr. Vincent Nguyen, used mini grant funds to create an ongoing sustainability award, which would be presented to the team who created a product or service that would help to create a more sustainable future. The grant funded a plaque, 8 semesters worth of engraving costs, and 8 \$100 cash prizes for the winning team to split each semester. In addition, representatives from the SGA Student Sustainability Committee and the University’s Office of Sustainability were invited to choose the initial recipients of this new award.

GreenFest 2018

Organization/Individual: Lisa Alexander, UMD

Grant: \$795

GreenFest is an annual sustainability festival that is open to all University of Maryland students. Sustainability-oriented student and community organizations host information booths about their mission and initiatives, and University departments have an opportunity to show off their sustainable programs and projects as well. The grant was used to buy branded reusable tote bags that were used as promotional items and as prizes for students who completed a scavenger hunt during the event.

Beekeeping on Campus

Organization/Individual: Franklin Olmstead, Dr. Dennis vanEngelsdorp, Student Beekeeping Club

Grant: \$764.68

The Student Beekeeping Club is the student arm of one of the most respected bee labs in the entire world – truly a hidden gem on campus. This student organization works with both hands-on techniques and classroom lectures to educate students, faculty, and the public alike about the importance of caring for bees. This grant was used to purchase a shed for the organization, a crucial step in the maintenance of hives. This also ensures that the organization and lab will be able to continue their great work and outreach on campus and beyond.

Sustainable Ocean Alliance

Organization/Individual: Lillian Wessel, Annette Spivy, ENSP

Grant: \$709.95

The SOA is a student-led organization focused on promoting ocean health and wellness to students on campus through events and demonstrations. They state: "Our chapter's mission is to bring awareness to plastic pollution and its detrimental effects on our oceans. Our chapter will create a more educated atmosphere on campus surrounding these pressing issues, building an environment of an educated generation who will pledge to do their part. " This first year on campus, their goal is to make Terps "suck less" by promoting the use of paper and metals straws as well as other alternatives to plastic. The grant will be used to by the rights to documentaries they plan to screen as well as metal straws that they hope to give away to the community.

Arts Scholars After School Sustainability

Organization/Individual: Tienne Mohs, Harold Burgess, Arts Scholars

Grant: \$660

A team of College Park Scholars in the Arts Scholars program used this grant to fund their capstone project. The project is an environment focused after-school program at Catherine T. Reed Elementary School. For three months, once a week, the team went into the school and taught a lesson about a specific part of the environment and sustainability. An eco- conscious arts-and- crafts activity followed the lesson. In March, the team helped the students grow their own seedlings under growlights and prepare their school garden for planting during the warmer season.

AEES Algal Terp Scrubber

Organization/Individual: Samantha Francis, AEES

Grant: \$507.30

The University of Maryland American Ecological Engineering Society (AEES) is competing in the EPA Rainworks Competition. The club's design for a structure that reduces sediment and nutrient load in a low-cost, low-maintenance, highly-productive manner has garnered a lot of support from professors and faculty members at the University of Maryland. The technology that AEES used for this is called an Algal Turf Scrubber (ATS), and the idea is to combine a low-energy method of reducing the nutrient and sediment load into the Bay while providing a means for commuters and students to relax and learn. This project is located by the Terrapin Trail Garage, on the hill leading down to the retention pond, and will continue to be maintained there for at least 5 years.

Recruitment Application

Organization/Individual: Sydney Lufsey, Panhellenic Recruitment

Grant: \$500

Normally for Panhellenic Recruitment, women who go through the process rank chapters on pieces of paper. Over 1000 women go through recruitment and there are 4 rounds of ranking on paper. This equates to about 4000 pieces of paper. This year, the Recruitment Team set out to find a better alternative, and decided that developing an app for ranking chapters would be the most efficient way to proceed. This grant saw through the creation and development of said app.

Team CARDIO

Organization/Individual: Cristina Tous, Dr. Newcomb, Gemstone Program

Grant: \$330

This grant funded research for a rechargeable battery that could be used in the medical field. Three million people worldwide live with pacemakers, which have a battery life of around 5-7 years. At the moment replacing this battery requires an invasive surgery. This team's prototype could provide a rechargeable battery for pacemakers, reducing the number of surgeries required and the overall quality of life of the patient. Specifically, this grant was used for proof of concept and other testing costs.

Climate Change Theatre Action 2017

Organization/Individual: Scott Reese (Theatre), Artists & Climate Change

Grant: \$300

This grant funded a performance that was open to all students through a collaboration between the UMD School of Theatre and Artists & Climate Change, an independent organization. A blog and international network, Artists & Climate Change (A&CC) explores the intersection of art, science, policy, and climate change. Through the publication of essays, interviews, and editorials, the online platform creates community and promotes the inclusion of the arts in the global climate change conversation. Specifically, the grant funded compensatory food and drink for students who would be taking time out of their days to participate in the project. The project culminated in an evening-long performance at the Clarice that was open to the public.

Department of Transportation Services Transportation Demand Management Program

J. David Allen
Executive Director
Transportation Services

Tools in our Tool Box

- Public Transit
- Biking and Bikeshare
- Ridesharing
- Carsharing
- Parking Cash Out
- Alternative Work Schedule
- Telecommuting
- Technology



Tools in our Tool Box

Public Transit

- ✓ 2002 shuttle ridership 980,000
- ✓ 2017 shuttle ridership 3,400,000
- ✓ Created partnerships with WAMATA and PG County The Bus
- ✓ Financial partnerships with 6 area developers
- ✓ Partnerships with City of College Park, Greenbelt and Hyattsville
- ✓ Expanded the Shuttle UM services to include UMAB and UMB
- ✓ Experiencing run-a-way growth at two area Park and Rides
- ✓ Recently deployed GPS enabled passenger counters and stop enunciators
- ✓ Heat map route planning
- ✓ Revenue sharing with parking fees
- ✓ Aggressive equipment replacement plan (ultra clean diesel)

Tools in our Tool Box

Biking and Bikeshare

- ✓ Mbike program (24 stations-191 bikes-3344 members-93,000 trips-250% increase over last year)
- ✓ Share the road pledge
- ✓ The League of American Bicyclists Gold Rating Bike friendly campus
- ✓ Initiated Bike safety month
- ✓ Support national bike to work day
- ✓ Installed bike counters campus wide
- ✓ Implemented sharows and soon super sharows
- ✓ One of very few universities what a AD for TDM
- ✓ Significant increase in bike racks both sheltered and not
- ✓ Approximately 80% increase in bike registration from previous year



Tools in our Tool Box

Ride Share/Car Share



- ✓ Recently increased Zipcar locations on campus to 8
- ✓ Negotiated free membership for all Freshmen Residents
- ✓ Received international award for a promotional strategy promoting carshare
- ✓ Initiated first UMD Vanpool Program with DOTS subsidy
- ✓ Discounted parking for carpoolers
- ✓ Preferred individually signed carpool parking
- ✓ Guaranteed ride home for all carpool, vanpool and car sharers
- ✓ Bundle packs (temporary permits) for carpool participants

Tools in our Tool Box

Parking Buy Back

UMD is the first institution nationally to buy back previously purchased parking permits as an incentive to forfeit current parking permit for one year.

Tools in our Tool Box

Alternative Work Schedule/Telecommuting

DOTS initiated the first *Telework Challenge*

PRIZE DRAWINGS

Each Monday one employee will win one of the following items:

- A Fitbit Alta HR
- A Instax Smartphone Printer
- A full membership for one year to UMD Recreation & Wellness
- 1 day of UMD SUV service to and from work

At the end of the challenge period, participants that have teleworked at least 6 times will receive a Smart Commute T-Shirt and one employee will be drawn at random as the grand prize winner of a Microsoft Surface Pro!

Tools in our Tool Box

Technology

- ✓ 2700 Registered users
- ✓ 7000 trips searches
- ✓ 39,000+ sustainable trips logged
- ✓ 111.3 tons CO₂ reduced compared to driving



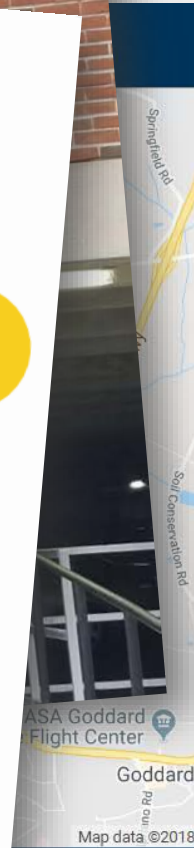
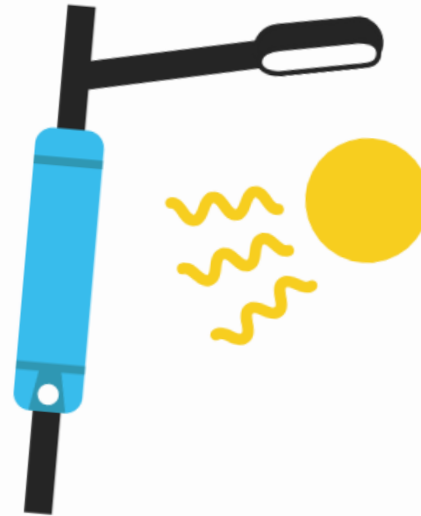
Tools in our Tool Box

Technology

PLUG-AND-PLAY

Purpose-built for streets

Our sensor mounts to light poles at 15-25 feet, runs on grid or solar power, and connects over GSM (cell phone) network. It was designed from inception to seamlessly meet the needs of planning departments everywhere.



round it

use



Challenges



The background of the slide is a dense, overlapping pattern of US dollar bills, primarily \$100 bills, rendered in a monochromatic orange-red color. The bills are scattered across the entire frame, with some clearly showing the portrait of Benjamin Franklin and the serial number HK 402844900. A solid black horizontal bar is positioned across the middle of the image, and a solid orange rectangle is located in the bottom right corner.

Current Funding Models

Funding Model



=



Only Students Pay for Transit

Students



Employees

The Purple Line

*Purple
Line*

is coming to

UMD



Unintended Consequences





Full and Comprehensive Funding Review



What is the final step?
We must listen but be able to say No



Questions and Comments