



Application for University System of Georgia Institutions



Contact Information:

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1. Is your college or university participating in a local, state or national program which asks you to benchmark progress in some fashion in any or all of the Pillars?

Yes () No Program(s) and level(s) achieved: Second Nature Carbon Commitment (formerly American College & University Presidents' Climate Commitment (ACUPCC) (2009-2016), The Princeton Review's Guide to 353 Green Colleges (2011-2017)

2. Has your college or university received any awards for facilities, health or environment?

Yes () No Award(s) and year(s)

Award of Excellence - Pedestrian (creating a pedestrian friendly campus) from Georgia Board of Regents (2009), Merit Award for Pedestrian Friendly Campus from Georgia Chapter ASLA (American Society of Landscape Architects) (2007), Georgia High Performance Healthy Schools (2014, 2015 and 2016), The Princeton Review's Guide to 353 Green Colleges (2011-2017), Georgia Energy Challenge – 15% Energy Reduction (2014), Green Building Georgia Rating System: 2 Peaches Certified - Biological Sciences Building (2015), Green Building Georgia Rating System: 2 Peaches Certified - Brannen Hall (2015), Green Building Georgia Rating System: 2 Peaches Certified - Sanford Hall (2015), Green Building Georgia Rating System: 1 Peach Certified - Health Services Building (2016), Build Georgia – Adaptive Reuse 1st Place Brannen Hall (2013), Build Georgia – Adaptive Reuse 1st Place Cone Hall (2008), Innovation Award – Adaptive Reuse Sanford Hall (2014), Innovation Award – Adaptive Reuse Williams Center (2011), 2016 American College of Sports Medicine (ACSM) Award for research abstract titled Assessment of Gaze Stability Within 24-48 Hours of Post-Concussion during Annual Meeting in Boston, Massachusetts. In 2017 Georgia Southern earns honorable mention for Second Nature's 2017 Climate Leadership Awards. This is the second highest honor an institution can receive in the country from the award body.

Summary Narrative:

From the very beginning Georgia Southern has been conscious of our impact on the environment. Every year our President hosts our annual Tree Planting Ceremony on Sweetheart Circle, a tradition dating back to the 1970s when former University President Dale Lick began planting a tree in December instead of mailing Christmas cards to the campus community to kick off the holiday season.

Georgia Southern is the state's largest and most comprehensive center of higher education south of Atlanta. As of fall 2017, Georgia Southern has an enrollment of 19,085 students, and operates 5,658,871 square feet of facilities space on 900 acres.

In December of 2007, Georgia Southern's President Bruce Grube signed the American College and University Presidents' Climate Commitment (ACUPCC). In 2011, President Brooks Keel re-signed the ACUPCC agreement demonstrating a firm belief in the power higher education has in shaping a sustainable society. By becoming a signatory of the ACUPCC, the University has re-committed its efforts to: "Meeting the goals and objectives of the ACUPCC, while continuing our focus on becoming a regional leader in sustainability and renewable energy." – President Brooks Keel.

Since then we have made the principles of sustainability fundamental to every aspect of higher education here at Georgia Southern. As a campus we are committed to both preparing students to develop the solutions for a healthy and sustainable society as well as making sustainability a core value in our operations and planning.

Georgia Southern formed a Sustainability Committee to develop a Climate Action Plan (CAP) from a group of diverse representatives, including administrators, faculty, staff and students. Key committee members responsible for the CAP included the Provost, Vice Presidents, Deans, Directors, Architects, Designers, Environmental Engineer, the Sustainability Coordinator and the Energy Manager. Moving forward, all campus capital improvement, maintenance, and operational initiatives will be considered against the commitments of the Georgia Southern CAP.

We were named one of the top green universities for the 6th time in a row by the Princeton Review. We were also given awards of excellence for our work in creating a pedestrian friendly campus to reduce our carbon footprint.

We have been one of the state's top participants in the Georgia Power Company Commercial Energy Efficiency Rebate Program. Through this program we have offset approximately 8 million KWH of energy.

We have set-up an energy management system that allows us to monitor real-time energy usage. We are also able to control and alter that energy usage from our main Facilities office. Our students have set-up a wind turbine that can power personal devices in our Math and Physics building. Another student-led program tracks solar energy and provides valued data on thermal radiation in Statesboro. This information provides the background data that is needed to optimize our solar energy projects. Our buildings have energy recovery systems that saves energy and conditions the return air into the building.

Georgia Southern University has self-imposed a requirement of its own above the state minimum green building requirements. Our efforts to build high performance buildings have earned us eight green building certifications. From 2014 to 2016 we were recognized by the US Green Building Council Georgia as a Georgia High Performance Healthy School. This award acknowledges our commitment to creating healthy and efficient learning environments for our students.

Georgia Southern was one of the first universities in Georgia to irrigate with reuse water and is known statewide for its water conservation measures. We have also quantified our on-site carbon offsets with the United States Department of Agriculture (USDA) software program i-Tree.

We are ranked #1 nationally for the number of passengers on our buses per mile (1200+) and have over 15,000 passengers per day. This reduces the number of single passenger vehicles on campus and our overall carbon footprint. We have installed free community electric vehicle charging stations that connects the electric vehicle charge locations between Atlanta and Savannah.

Georgia Southern has raised the community sustainability consciousness. As a state university, it is Georgia Southern's goal to continue to support federal, state, and local efforts toward climate neutrality.

Our engineering professors have received more than \$524,000 dollars from the National Science Foundation. The grant will enable them to bring cutting-edge renewable energy research into the high school and technical school classrooms in the high-need rural areas of Georgia.

Our wellness program is dedicated to enhancing staff, faculty and student wellness. Georgia Southern provides a full range of health care services including medical, counseling, education and wellness. We have received recognition by the Accreditation Association for Ambulatory Health Care, Inc. (AAAHC) as a Patient Centered Medical Home (PCMH). This is the highest achievement for primary care. It is a mark of excellence honoring the fact that Georgia Southern University Health Services adopts best practices and complies with nationally recognized standards of care.

Campus Recreational and Intermural (CRI) provides programs that students, faculty and staff can participate in, that will boost healthy balanced lifestyles. They offer several programs including alternative transportation options, along with special awareness weeks such as Wellness Week and Think Before You Drink Week. The University Wellness program is committed to helping students achieve balance in each dimension of wellness.

Georgia Southern's sustainability efforts to-date have included a focus on awareness and educational curriculum enhancements. We continue to create and build programs that will inform the campus about environmental sustainability and climate impact awareness, as well as inform, educate and inspire the students, faculty and staff.

Georgia Southern students are deeply engaged in the local community and have a strong sense of civic responsibility. Their courses often require service learning experiences through which students serve their community while learning course content.

The Student Government Association (SGA) proposed the “Sustainability Fee,” of \$10 that was passed by a 75% majority of the student body. This “Green Fee” supports the Center for Sustainability (CfS), and other sustainability initiatives on campus. The Center for Sustainability hosts a Sustainability Seminar Series, including speakers such as Dr. Steven Chu (past US Secretary of Energy and Nobel laureate), Robert Kenner (Food Inc.), Majora Carter (environmental justice), and an annual GreenFest for the local community.

The “Green Fee” also supports student programs such as our afterschool garden program in local schools, campus community gardens, food waste composting, RecycleMainia, residence hall recycling incentive program and no impact week activities. A grant program has been implemented that provides funding to campus sustainability initiatives. To reward students, faculty and staff that enhance the universities’ environmental program, a Green Eagle Award was created. This award is presented at our Annual Sustainability Showcase along with displays from grant awardees.

PILLAR I: REDUCED ENVIRONMENTAL IMPACT AND COSTS

Georgia Southern has developed a Climate Action Plan (CAP) that aids the University in reducing its greenhouse gas (GHG) emissions on an ongoing basis. We have made sustainability a primary focal point in design, construction, maintenance, operations and procurement practices. We have organized our operational plans and sustainability initiatives to align with the University’s Campus Master Plan. This streamlines sustainability actions into normal operations.

Energy Conservation Programs

We believe energy conservation is achieved through team work. The university has created a full time energy manager position that leads our energy conservation programs and is a resource for the entire campus.

Approximately 85% of the university buildings are individually metered (Figure 1¹). These meters track energy use in real time by sending data to our Itron Meter Reading System. This allows for greater analysis in the use of energy and provides us with the data used to maximize conservation by automating controls or promoting behavioral changes.

Georgia Southern has actively worked with utility suppliers to implement the beneficial purchase of utilities from environmentally-friendly energy sources. In addition, the utility suppliers have assisted the University with accurately measuring



FIGURE 1: GEORGIA SOUTHERN'S BUILDING ENERGY RANKING

¹ FIGURE 1 COURTESY OF GEORGIA SOUTHERN UNIVERSITY BUILDING ENERGY RANKING SYSTEM AND STEPHEN WATKINS



FIGURE 2: CAMPUS ENERGY USAGE IN BTU/SQFT

and metering resources to ensure that the University meets its objectives and reduces greenhouse gases (GHG) emissions

The University has had significant increases in building space and student enrollment since our established sustainability baseline in 2009. We advanced by over 1,400,000 square foot and 2,900 full time equivalent (FTE) students. Though this campus has grown in square footage we have reduced our overall energy usage per square foot (Figure 2²). The university has received the 2014 Governor’s State Award for Energy Reduction per building square foot on campus.

We have completed approximately 30 projects totaling in excess of \$2.2 million dollars. One such project is our replacing/retrofitting indoor and outdoor lighting systems to total light-emitting diode (LED) fixtures with

upgraded smart lighting controls and inter-connecting lighting controls to Heating, Ventilating, and Air Conditioning (HVAC) system controls. We replaced 75+ outdoor fixtures in parking lots to LED fixtures; we retrofitted some 200+ walkway post top light fixtures to LED. Our LED projects also included a \$475,000 dollar relighting project in the Hanner Fieldhouse with LED lights. The Fieldhouse serves as the home of Eagle basketball and volleyball.

Since 2015 we have built new facilities with LED lighting and high efficiency Heating, Ventilating, and Air Conditioning (HVAC) equipment, premium motors, variable-frequency drives (VFDs) and electronic smart HVAC networked controls. Going forward all lighting will be LED fixtures with smart sensor lighting controls; all buildings will have smart electronic direct digital control (DDC) network HVAC controls and purchase energy star equipment.

Georgia Southern University is a top participant in the Georgia Power Company Commercial Energy Efficiency Rebate Program. These projects are submitted in detail to Georgia Power and each project is analyzed for its impact on energy conservation. We were approved for 117 applications over five years; offsetting approximately 8 million KWH of energy usage; and receiving over \$250,000 dollars in rebates.

Johnson Controls "Metasys" is a DDC that connects the HVAC and lighting systems enabling them to communicate on a single platform to deliver information to allow a smarter more sustainable system management. We have deployed a campus energy management load shedding program, during the peak summer and fall months. This load shedding program, through Metasys, offsets approximately 750 to 1,100 KW peak demand during our peak energy demand. This produces energy use avoidance as well as cost avoidance of roughly \$220,000 dollars annually. We replaced four outdated chiller units and two boiler units with more energy efficient units. Four solar patio tables are located in front of the IT building. Users can plug in to recharge devices and use energy directly from the sun. A small wind turbine collects wind energy from the chiller in the Math/Physics Building and converts it to electricity to power an outlet inside the building.

To further control the use of energy, occupancy sensors and daylight harvesting controls were installed in approximately 40% of campus buildings. A majority of the lights in our buildings are on timers. Whenever the timers have not sensed a person in the room after a certain amount of time, the light will turn off. These sensors are 19% more energy efficient than minimum energy code requirements. All of our equipment is regulated by heat sensors so they do not run constantly and unnecessarily. Approximately 80% of motor and pumps have VFDs attached to drop energy usage when necessary to save energy. Solar conversion kits were installed on a fleet of electric utility carts on campus and are used to reduce the non-renewable energy needed to recharge the vehicles. One of these carts was further modified to allow the solar panel to automatically track the light. A solar powered street lamp with high capacity lithium ion battery was designed and installed near the engineering building. Solar powered lights were installed along the walking

² FIGURE 2 COURTESY OF STEPHEN WATKINS

trail at the Recreational Activity Center (RAC). A mobile solar panel was purchased for use at events and for emergency use (i.e. hurricane cleanup, etc.).

Georgia Southern has 14 buildings with white roofs. The white roof surfaces used are made of 97% reflective foam, which also significantly increases the insulation value of the building. An energy star roof reflects more of the sun's rays, decreasing the amount of heat transferred into the building. Fifty-seven solar panels heat all the water in the Biological Sciences building and provide 1% of the electricity for building operations. CRI and Facilities installed solar powered lighting fixtures on a walking pathway in June 2017. Furthermore, Facility Services is currently installing a solar powered golf cart parking lot.

The campus tree cover and onsite carbon-offset was established by the university and collected in the National Forest Service i-Tree program in 2014. i-Tree is a state-of-the-art, peer-reviewed software suite from the USDA Forest Service that provides urban and rural forestry analysis and benefits assessment tools. The i-Tree Tools help communities to strengthen their forest management and advocacy efforts by quantifying the structure of trees and forests, and the environmental benefits that trees provide. Our students, Center for Sustainability (CfS), Division of Facilities Services, and the campus community celebrated the fifth annual Arbor Day tree planting at the Shooting Sports Education Center on Feb. 15, 2017.

Green Building Standards

The Division of Facilities Services Planning, Design and Construction (FPDC) Department assiduously work to include sustainable practices and equipment when designing and renovating Georgia Southern buildings.

The Georgia Southern University Design Standards manual is a document that gives guidelines and minimum standards for design, construction and maintenance of all built environments on campus. It is used for all demolition, new construction and renovation whether designed and built by University staff or outside consultants. All construction divisions are covered within these standards and focus on energy and water efficiency, recycled content and construction debris. It is this standard that dictates that the university will continue to work with contractors and purchase products such as white roofs, low flow plumbing fixtures, solar water heating and LED fixtures.

FPDC has developed an integrated design process by which the user group, design group and facilities operations are brought into the process throughout the design and system start-up of construction projects. This helps to integrate user expectations for building comfort and performance with the campus standards for energy conservation, water efficiency, sustainable finishes, fixtures and furnishings and operational efficiency for the building lifecycle. This process allows all stakeholders to understand why specific choices were made during the design process and get "buy-in" from all.

Georgia Southern University has utilized sustainable green building strategies for over a decade. In 2007, we opened the RAC which was our first LEED Certified building. Since then three other buildings have received LEED Certification, two silver and one gold. In 2008, the state of Georgia enacted the Energy Efficiency and Sustainable Construction Act, requiring all state agencies to design and construct State Buildings according to the Georgia Peach Green Building Rating System. Georgia Southern University has self-imposed a requirement of its own above the state minimum requirements. Thus all of the buildings designed and constructed since 2008 that are 10,000 square foot or larger have to achieve a minimum of two Peaches. Georgia Southern University has achieved this high standard by paying special attention to energy efficiency in HVAC and electrical systems and using the most energy efficient equipment and controls. One of the areas that the University has embarked on is the use of solar energy. Solar panels are being considered for all capital projects. The goal is to accumulate solar panels in each building to the point when they can counter the energy needs during the peak load shedding periods.

A solar tracker has been installed at our football stadium in collaboration with the Mechanical Engineering Department. This has been installed as part of research on the magnitude, direction and duration of thermal radiation from the sun in Statesboro. This will provide valuable information for future solar projects.

The Electrical Engineering Department installed 20 solar panels on golf carts during the summer of 2014. This provided an alternative source of fuel for the vehicles.

Alternative energy systems such as a wind turbine in the Math/Physics Building is also utilized. Students designed and installed the wind turbine to harvest wind energy from the chillers operating continuously in a campus building. The energy is converted to electricity and used to power operations in the building.

Water Conservation

Georgia Southern has a campus standard to install waterless urinals and low flow fixtures including automatic low flow toilets and faucets in all of our renovations and new construction. The building consumes 40% less water than it would with standard fixtures. By using dual-rinse dishwashers we have reduced water consumption in Lakeside Dining by 15%.

We are also able to monitor our use of water from our water tower through the Itron metering system. We have two wells on campus that are monitored electronically and all of our water that we pump is treated by Water Utility Management, a third party firm that was hired by the university to handle our water system.

We have installed bioswales/stormwater parks at more than three campus locations. This improves water quality of the runoff from parking lots and impervious surfaces. Pervious pavers are strategically installed in locations with hard surfaces and are able to accommodate water filtration.

Waste Reduction and Recycling



FIGURE 3: DRESS IN THE PRESS COMPETITORS

Diverting trash into the recycling stream has been a part of the culture of the university for over 20 years. Though there are limited opportunities in the rural southeast of Georgia to recycle, Georgia Southern has been able to achieve a diversion rate of over 22%. In 2016 we topped RecycleMainia bottles and cans recycling competition for Georgia. Each year we promote “No Trash Day” during “No Impact Week”. Student Media and the Center for Sustainability have teamed up to present Dress in the Press Competition (Figure 3³). Student designers showcase their creativity by constructing a dress out of recycled materials, predominately newspaper and magazines from Student Media.

The recycling program has been enhanced due to training of staff and investment in new hauling and collection equipment. In one year our Landscaping department kept 1.4 million pounds of wood waste out of the landfill and it was reused on campus.

In fiscal year 2017 our students in partnership with University Housing donated 51 boxes of clothes, 28 boxes of food, 23 boxes of household goods. In 2017 alone we have donated more than 81 bikes to our community promoting a healthy lifestyle and sustainable travel. Donations were distributed directly to local charities within our surrounding community free of charge. This included Blount Boys Home, Pineland Mental health and Fostering Bulloch.

Water bottle filling stations have also been placed around campus. For all meal plan holders, Eagle Dining provides a reusable cup that can be filled in place of a disposable cup at all campus dining locations. This encourages the use of reusable bottles and cups and reduces plastic bottle waste production.

Dining facilities operate pulpers that reduce the volume of food waste by nearly 90%. In addition, a portion of this pulp was used in a student-led research composting program.

Our dining facilities recycle used cooking oil and fryer grease. Waste oil is converted into biodiesel and a variety of other products by a 3rd party vendor. Georgia Southern has eliminated food trays in our dining halls. The simple act of eliminating food trays reduces food waste by 25 – 30% per person and conserves energy and water by eliminating 1/3 – 1/2 gallon of hot water needed to wash each tray.

³ FIGURE 3 COURTESY OF LISSA LEEGE FOR GEORGIA SOUTHERN CENTER FOR SUSTAINABILITY

We do not use disposable take-out containers or individual packets of food in our Dining Halls. Our Eagle Dining team recently switched their uniform shirts and name badges to a recycled product. This comes from a company called Renew Merchandise.

According to the Campus Standards, all minor and major capital projects are required to recycle or salvage metals, concrete, clay masonry, asphalt, non-lead containing porcelain, glass and wood as well as all cardboard packaging. The amount of waste reduction required varies by type of debris from 50-80% by weight. In 2011, Georgia Southern University rehabilitated the Athletic Tennis Courts and in 2016, reconfigured Parking Lot 21. The University was able to achieve 100% reclamation or reuse of materials for both of these projects. All projects, no matter the size or whether done by University staff or by contractor, will be required to follow the same recycling standards.

A treatment, storage, and disposal facility (TSDF) is contracted to transport and properly dispose of the hazardous waste generated on campus. The company first recovers metals and solvents and perform fuel blending as needed for energy recovery. After the reclamation and recovery process, the remaining waste may be treated by chemical reduction, oxidation, or precipitation prior to incineration, destruction or disposal.

The university uses a plastic carboy container made from high density polyethylene for hazardous waste collection. The TSDF shreds and recycles the empty carboys through a company which specializes in producing remanufactured and reconditioned industrial drums.

We are also promoting aerosol recycling by establishing satellite locations for use of an EPA verified aerosol can puncturing system. The system depressurizes the spent aerosol cans allowing residual product to be collected in a drum for hazardous waste disposal. The empty aerosol containers are recycled as scrap metal.

The Shooting Sports Education Center (SSEC) recycles brass, metal and aluminum shell casings. They recycled 1,373 lbs. of shell casings last year with CMC Commercial Metals out of Augusta, GA and Newell Recycling in Statesboro, GA.

The Parking and Transportation Office partners with the art department to reuse bus advertisements for art projects. The CfS maintains a solo cup recycling agreement with Terracycle. The CfS partnered with a local small business to provide used campus vinyl banners for the production of upcycled items. Moreover, CfS has funded a student and faculty joint project to reduce waste in organic chemistry labs by designing a green chemistry curriculum and conducting microscale experiments. The development and testing took place in 2016-17 and resulted in a 75-84% reduction in chemical waste with no change in student satisfaction, and the lab changes are being proposed for implementation in two 3000 level chemistry courses in fall 2018.



FIGURE 4: STUDENTS PARTICIPATE IN BLUE MILE CLEAN-UP

In 2017 more than 100 students volunteered to participate in a community Clean-up event in downtown Statesboro (Figure 4⁴). Planned by Georgia Southern student Jefferson Doehling in partnership with Habitat for Humanity.

Residence Hall Incentive Programs

Our Center for Sustainability has partnered with Residence Life to run a recycling hall incentive program. Students obtain a recycling card from their hall's main office. When a student recycles, their card is stamped and when the card is full they are eligible to win a prize from CfS. In addition, a significant Operation Move-In effort collects >2 tons of cardboard waste as students move into the residence halls each August

Ecologically Beneficial Use of Grounds

The Georgia Southern campus creates a sense of place with landscapes that incorporate plant species originally from the region. The native plants in the landscape require 70% less irrigation than typical plants.

⁴ FIGURE 4 COURTESY OF GEORGIA SOUTHERN MARKETING AND COMMUNICATIONS MY NEWS

Once established, native plants require little water, fertilizer, herbicides, or pesticides, thus benefiting the environment and reducing maintenance costs. The plants selected for campus are drought tolerant, but beautiful. Native landscapes keep watersheds clean, provide food and shelter for wildlife, and help pollinators thrive.

Reuse water provides irrigation for landscaping on campus. All visible irrigation components are identified by the color purple to indicate that it is not drinking water. This saves up to 200,000 gallons of drinking water in a single day in the hot summer. We shut down our system to save water when we experience heavy rains or when temperatures allow for reduced irrigation. Georgia Southern is one of the first universities in Georgia to irrigate with reuse water. We have an outside green roofed pavilion utilized as a classroom and are currently constructing a major building with a green roof to manage storm water. Mow heights are set so that the turf grass is less likely to stress during high heat, which reduces the need for irrigation and reduces run-off.

Many asphalt and concrete surfaces on campus are being replaced with permeable surfaces to reduce storm water runoff.

Car Sharing Program

Georgia Southern contracts with a car-sharing service to provide 24/7 access to fuel-efficient vehicles. The use of shared cars reduces strain on parking and reduces the carbon footprint produced by a large number of vehicles.

Alternative Transportation

Part of Georgia Southern's master plan is to create a pedestrian and bicycle friendly campus. The campus greenway is a cross campus natural corridor consisting of preserved woodlands and wetlands. Part of the greenway is a multipurpose trail system for bicycles and walking. The trail system connects the City of Statesboro's multipurpose trail system to the university. In 2017 there was an additional 2000 linear feet of multipurpose trail system installed.

In addition, most campus streets have dedicated bikes lanes or are designated as shared space with "sharrow" street markings. We have a total bike parking capacity of over 2,330 bikes. We are diligently increasing the number of racks available on an ongoing basis. There are 6 self-serve bike repair stations located throughout campus to help with basic bike repairs like flat tires, so as to encourage the use of bicycles. Bike repair stations will be installed at every residence hall. There are also showers/locker rooms in our buildings to encourage people to bike or walk to the university.

Southern Adventures is the university community's resource for adventure programming with CRI. Southern Adventures hosts a bike rental program on campus that is fully subscribed each semester called Campus Cycle. Campus Cycle is designed to support and promote self-propelled transport on campus and within the city of Statesboro. The Campus Cycle program reuses abandoned or donated bikes from campus for its bicycle membership program.

The CfS hosts a "Bike to Campus Day" during No Impact Week each year, and demonstrates the most efficient mode of transportation on campus with a competition between a bicyclist, skateboarder, bus rider, and car driver. Transportation Day of No Impact Week promotes sustainable transportation options and offers a community bike ride.

We have a fleet of low emission transit buses. Our bus service is free for all and is ranked #1 nationally for passengers per mile (1200+) and have over 15,000 passengers per day. This reduces the number of single occupancy vehicles and the campus footprint. Georgia Southern has a no idle policy for University Vehicles. Our transit fleet are in constant motion not allowing idling. We have limited parking around buildings to encourage the use of the bus.

We installed a free community electric vehicle charger, officially linking Atlanta to Savannah in the electric vehicle market. Carpool parking permits are located in highly sought out parking lots encouraging students to carpool.



FIGURE 5: NO IMPACT WEEK PROMOTIONAL FLIER

No Impact Week

Georgia Southern hosts the longest running No Impact Week program in the country - a week of sustainability focus which encourages a cumulative reduction in environmental impact over the week (Figure 5⁵). One day of focus during the awareness week is "Energy Day," and students' faculty and staff are encouraged to reduce their energy consumption. Student volunteers have been involved with lightbulb exchanges: providing compact florescent bulbs in place of incandescent bulbs across campus.

PILLAR II: IMPROVE THE HEATH AND WELLNESS OF STUDENTS, FACULTY AND STAFF

Our Wellness Program is a combination of existing, new and collaborative programming that addresses the seven dimensions of wellness: emotional, environmental, intellectual, occupational, physical, social and spiritual.

Life Safety

Georgia Southern is committed to the safety and well-being of our faculty, staff, students and visitors. This begins in the initial design phase and continues throughout the life of the building. Georgia Southern strives to exceed the minimum fire and life safety code requirements. The university has a revolving schedule that ensures all fire alarm and sprinkler systems are tested annually by a licensed professional as well as all hood suppression systems as required by the National Fire Protection Association 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. Our goal is to provide the safest environment which will allow our students to obtain a great education for a successful life as well as afford our visitors the opportunity to be safe while enjoying our beautiful campus and its activities. Over 200 fire safety signs made from recycled material have been placed around Georgia Southern to identify fire extinguisher and stand pipe connections.

Lab Safety

At Georgia Southern University, research and teaching are fundamental activities within our university's laboratories. In an effort to create a safe working and learning environment in which these activities can be performed, the Environmental Health and Safety (EHS) Department developed a Laboratory Safety Program. The Laboratory Safety Program provides principal investigators, instructors, and students with the guidelines to set up their laboratory and maintain safe working and learning conditions.

The Office of Research Services and Sponsored Programs works with various oversight committees and boards to promote the ethical conduct of research. EHS assists FPDC by reviewing building plans and equipment specification sheets during the design and construction phase of academic laboratories. This is an effort to ensure engineering controls are put in place to prevent any potential hazards that might occur due to activities planned for the laboratories at the construction phase. By applying the basic safety instructions and through the laboratory inspection, we are able to support the university communities by educating them on nationally accepted prudent laboratory practices as well as applicable general industry standards which are designed to minimize hazards in the laboratories and shops. To promote safety, each laboratory principal investigator or laboratory coordinator is required to perform monthly self-audits of their

⁵ FIGURE 5 COURTESY OF GEORGIA SOUTHERN CENTER FOR SUSTAINABILITY

laboratory spaces. In addition, EHS performs annual inspections of the research, teaching and laboratory spaces to ensure activities in the laboratory are conducted in a safe manner.

Integrated Pest Management

A written Integrated Pest Management (IPM) plan and program is in place to provide for the responsible use and tracking of pesticides. Our Landscaping Department maintains logs of our pesticides use. In our pesticide purchasing practices we use less caustic chemicals.

Faculty, staff and students are prohibited from entering an area that is being treated with chemicals. Safety signs are posted in the area to make everyone aware of the activity. No one is allowed in this area until the re-entry period has passed.

We integrate the use of mulch to form a natural physical barrier to reduce weeds in the landscape, which reduces the use of chemicals. In addition, our set mow heights not only encourage healthy turf grass but reduce the presence of weeds.

Tobacco Free Policy

Georgia Southern University has a tobacco free policy. We educate the campus community members through email and campus programs like the Great American Smoke-Out in November. New students are educated on this policy through new student orientation. Signage is posted all over campus and a website was created to provide information about the policy. The website includes a reporting form where campus community members can alert our tobacco free policy committee of any violations of the policy. Cessation resources are offered for any student, faculty, or staff member who desires to stop using tobacco products.

Asthma Treatment and Management Support

In addition to our tobacco-free campus initiative, the health services department also has an asthma treatment and management plan for a student with asthma issues.

Designing for better indoor air quality

The paints, sealants, and adhesives used in the construction of the Biological Sciences building were carefully chosen to reduce the amount of air contaminants that are odorous, irritating and/or harmful. Walk-off mats were installed near the building's entrances to catch dirt and dust. These pollutants are captured to improve the quality of the indoor air.

The university building HVAC systems, as well as local exhaust ventilations systems (LEVs), are designed to meet the ASHRAE Standard 62.1-2010 and other applicable standards. The ventilation system in terms of equipment, location and ventilation rates for specific building uses are designed in accordance with the applicable standards. We have chemical fume hoods in all laboratories, LEVs in art studios and welding stations. The carpentry shop, ceramic and sculpture studios are installed with dust collection systems which are designed to collect and contain any wood or clay dust at the point of generation for proper disposal. We also install charcoal filters in a number of our laboratories and animal field houses to cut down on the amount of possible contaminants that are being exhausted from the building. These devices are inspected periodically.

Here at Georgia Southern we have a staff of 16 HVAC Mechanics that oversee our preventive maintenance program. Our TMA work order system has been set-up to create preventative maintenance checks so that preventative maintenance is completed on a regular basis. This ensures our equipment is operating as efficiently as possible and contaminants are minimized. Annual maintenance checks (consist of face velocity test, smoke pattern, and structural integrity tests) are performed on the chemical fume hoods, biosafety cabinets, and LEVs to ensure the equipment is functioning as designed and users (faculty, students, and staff) are protected.

Most of our buildings are equipped with an energy recovery ventilation wheel that saves energy and conditions the return air inside the building. In all of our new facilities and renovations where applicable, we are installing new high-efficiency condensing boilers. These boilers are maintained by our operations

department on a daily basis and inspected bi-annually by the state. We control the humidity in all of our buildings with either hot water reheat or strip heat in the air handlers. All of our systems are controlled and monitored by our Metasys Building Automation Control System. Our operations staff closely monitors the conditions of the coils on all of our air handlers as well as air cooled chillers to ensure they are operating at their optimum while providing the best air quality possible.

Building Coordinator Program

Through the university's building coordinator program, communication between building occupants and the university's facilities services divisions is enhanced to ensure any building related safety or indoor air quality issues are addressed. The building coordinators schedule and coordinate activities such as custodial and maintenance issues related to their respective buildings. Environmental Health and Safety (EHS) works in conjunction with the facilities services department to respond to requests from a building occupant who suspects possible indoor environmental quality issues such as moisture, humidity, water leakage or irritating odors affecting their work or study. One priority of the Division of Facilities Services (DFS) is to provide a healthy and productive learning and working environment to students, faculty, and staff. With this, DFS ensures that proper design, construction, commissioning, and ongoing maintenance of building systems are a necessary part of daily work activities and a high priority for project managers or facilities supervisors. Also, Georgia Southern planning, design & construction department keeps building occupants aware of various construction projects that may be in or around a particular building that may be a source of contaminant or pollution to the indoor environmental quality.

Chemical Management

As part of our waste management program, laboratory waste generated from teaching and research experiments is disposed of in accordance with all regulatory requirements. EHS works with the academic community on chemical management through inventory control and disposal. The EHS department updates our Safety Data Sheet (SDS) database which is an online SDS management system called "MSDSOnline". This database is available to faculty, students, and staff who want to access SDS of chemicals used in the learning and working environment. Hazardous Waste Management is a key component of the EHS activities. It is coordinated in a way to ensure safety at the waste accumulation or point of generation. EHS provides the various satellite accumulation areas with DOT approved high-density polyethylene containers that are resistant to a wide range of chemicals.

Green Cleaning

We know that well trained custodial staff are key to any custodial program, so we have designed a very robust training program. Every newly hired staff member goes through an extensive 40 hour training curriculum. The training is simple, visual, and hands-on and is conducted in small groups whenever possible. Our goal is to ensure that supervisors are well-versed in the green cleaning program and constant reinforcement of green cleaning purpose, procedures, cleaning products and tools are taught in refresher trainings. Training highlights health benefits, environmental safety, and similarities to traditional cleaning procedures. We use a combination of our own internally developed training program along with those developed by vendor partners, product manufacturers, and others. Our goal is for all cleaning staff to have at least a working knowledge of GS-42 (Green Seal Environmental Leadership Standards for Commercial Cleaning Services) so that we can work together towards a brighter, cleaner, and more environmentally conscious campus.

We are committed to purchasing green cleaning products and equipment in an effort to contribute to a safer and more positive campus environment. Cleaning is first attempted without chemicals whenever appropriate with the use of a microfiber cloth and water before cleaning chemicals are used. Our three chemicals for daily and routine cleaning are Green Seal certified or "Environmentally Preferred" and they are dispensed via a controlled dilution dispensing system.

Local Food

Georgia Southern Farmer's Market supports the local economy while providing students with fresh produce, baked goods, honey, soaps and crafts regularly during the growing season. Locally purchased food significantly cuts down on fuel consumption, greenhouse gases, air pollution and the use of plastics in packaging. Additionally, the food is fresher, tastes better, and is more nutritious. Georgia Southern's Farmers Market is a collaboration between the University Wellness Program and Statesboro's Main Street Farmers Market.



FIGURE 6: STUDENTS AT THE CAMPUS COMMUNITY GARDEN

CfS also hosts a Campus Community Garden and offers students the opportunity to grow their own food (Figure 6⁶). Students engage in biweekly workshops to learn about growing food organically. Each semester concludes with a harvest celebration where students cook a dish to share the food that they grew. Some herbs grown in the garden have been used in catering.

Georgia Southern has hosted a Farm to Table Workshop for other universities in the state through the Georgia Campus Sustainability Network and regularly provides student service learning opportunities with local growers. Receptions for

sustainability speakers are catered by nutrition course students with local sustainable food and recipes that students research and prepare. Service Learning students in nutrition classes make food samples for the local farmers market as well as the campus market to teach visitors how to prepare the sustainable food that is available that week.

Whenever possible, Georgia Southern purchases produce from local farms for our Dining Halls. We currently buy our honey from a local honey farm called B&G Honey Farms, we also source our coffee and espresso from a local roaster. The roaster is called Three Tree Coffee, which provides only organic, fair trade and environmentally friendly grown coffee beans. We also source some cheeses from a local goat milk farmer, Bootleg Farms and buy dressings and sauces from a local company called Braswells. When Dining Services has a special event, we purchase products locally, using meats from Hunter Cattle, vegetables from a variety of vegetable farmers, milk from Southern Swiss Dairy and many other food products. Furthermore, Dining Services maintains its own garden. It provides food for our catering departments and for making trays of vegetables to be sold to the public.

Afterschool Garden Program

The CfS also partners with several campus departments, the County Parks and Recreation Department, the Board of Education, and a local farmer to run a 10-week Afterschool Garden program for the five elementary schools in Statesboro, Georgia each semester (Figure 7⁷). Georgia Southern students teach the children about sustainable food from seed to table and conclude with a harvest celebration where the children cook and eat what they have grown. Students are involved in every aspect of the program: they develop and teach the lessons, tend and maintain the gardens through the year, volunteer to supervise the children during weekly trips, etc. This program has received wide media coverage in the state.



FIGURE 7: GEORGIA SOUTHERN AND ELEMENTARY STUDENTS AT THE AFTERSCHOOL GARDEN PROGRAM

Health Education

The Health Education & Promotion office provides a number of services to accommodate the needs of Georgia Southern University students including outreach programs and events, peer education and counseling as well as various health related topics specific to the Accreditation Association for Ambulatory Health Care (AAAHC) standards. These standards include; substance abuse prevention and education,

⁶ FIGURE 6 COURTESY OF GEORGIA SOUTHERN FLICKR

⁷ FIGURE 7 COURTESY OF GEORGIA SOUTHERN CENTER FOR SUSTAINABILITY

including programs related to alcohol, tobacco and other drugs; disease-specific screening and educational programs; promotion of healthy eating; promotion of physical activity; sexuality education and skill building for healthy relationships; sexual, physical and emotional violence prevention; as well as promotion of and education about stress management and relaxation. To meet this requirement, programs and events are scheduled throughout the academic calendar to enhance capacity building and advocacy in an effort to foster lifelong health and wellness practices among university students, faculty and staff.

Student Health Insurance Plans

For those students that need health insurance coverage, Georgia Southern University offers to students the University System of Georgia (USG) Student Health Insurance Plan (SHIP) underwritten by United Health Care. This plan comprehensively provides covered benefits that meet the federal Patient Protection and Affordable Care Act mandates at the 80/20 coverage Gold Level. Students can enroll in the USG SHIP for the entire academic year or on a semester basis.

Health Services

Georgia Southern University Health Services is a Patient Centered Home and accredited by the AAAHC. The services provided by the center include; Primary Care, Men & Women's Health Clinic, Minor Surgery/IV Therapy Services, Laboratory Services, Respiratory Therapy, Radiology, Pharmacy, Allergen Immunotherapy & Immunizations, Patient Support Services, Mental Health, Travel Medicine Consults, Health Education & Promotion, Physical Therapy and Eagle Eye Care.

Counseling, Psychological and Social Services

Georgia Southern University Counseling center is a place where students can go to receive services and participate in programs that are designed to help them handle day-to-day challenges and encourage their personal growth and development. In addition, the staff believes that inherent to the concept of a university counseling center is the goal of training and developing future generations of mental health practitioners. In this way, the Counseling Center not only supports, but is also actively engaged in the educational process.

The counseling center believes that students are the principal agents of their own growth and offer a variety of services to them and to the university community to facilitate that development. The counseling services include: individual counseling, couples counseling, group counseling and workshops, case management and outreach, medical withdrawal (for individual students who has a medical or mental health condition which impairs their ability to perform academically in a given semester), and emotional wisdom (for individuals dealing with stress, anxiety, or depression and would benefit from learning or reviewing emotional wisdom such as relaxation, mindfulness, cognitive tools to battle anxiety or depression, emotion regulation, and/or social anxiety).

In addition to the Counseling Center, there are additional health & wellness services on campus including: University Wellness Program, Health Education & Promotion, Alcohol & Other Drugs, and Center for Addiction Recovery. The professionals responsible for these services coordinate programs and events related to the improvement of health behavior designed to create a successful student. Our campus partners with the Statesboro Regional Sexual Assault Center, a non-profit, to offer free resources and aid to victims of sexual assault. Willingway Hospital, a local Georgia Addiction Treatment Center, offers financial resources to the Center for Addiction Recovery on campus. The Center for Addiction Recovery offers integrated support services for recovering students as they complete their academic career with Georgia Southern University. Examples of current programs are All Recovery Night held monthly and Campus Alcoholics Anonymous held weekly. Alcohol & Other Drugs is a consistent recipient of the Georgia Governor's Highway Safety Grant as a support mechanism to offer drinking and driving, and distracted driving prevention programs. The University Wellness Program partners with the Counseling Center to offer several mental health outreach opportunities. This enables us to offer mental health workshops, mental health fairs utilizing peer educators and multiple depression screening opportunities to the campus outside of the physical walls of the Counseling Center.

Walk a mile in her Shoes

Walk a Mile in Her Shoes® is an international program that aims to raise awareness and encourage communication about gender relations and sexual violence. Men throughout the campus and local community walk in red high-heeled shoes to draw attention to the issue (Figure 8⁸). All proceeds are donated to the Statesboro Regional Sexual Assault Center (SRSAC) where free assistance is offered to victims. In 2016 over 300 participated and we donated \$3,200 to SRSAC! This event is co-sponsored by the Sexual Assault Response Team (SART), University Wellness Program, Health Services, the Multicultural Student Center, Fraternity & Sorority Life, and Sexual Assault Student Educators.



FIGURE 8: STUDENTS PARTICIPATING IN "WALK A MILE IN HER SHOES" EVENT

Battle of the Halls

To address some of the issues with Domestic Violence, Health Services hosts a "Tug of War" and "Arm Wrestling" event at Battle of the Halls. Health Services provide education on healthy relationships, conflict resolution, and healthy communication.

Get Fit for the Health of It Festival

Eagle Dining Services wrapped up National Nutrition Month with the Get Fit for the Health of It Festival right in front of Dining Commons on March 24, 2017. This festival featured information on healthy eating habits, short exercise class demos, food samplings of workout recovery recipes and more. The first 100 attendees received a free T-shirt and there were giveaways during the event.

Staff Council

Our Staff Council has three committees which are dedicated to staff morale and wellness. The Staff Morale Committee conducts staff surveys, organize town hall meetings and submits recommendations to upper administration to increase awareness of staff concerns, needs, and attitudes and implements plans to improve and provide opportunities to enhancement staff work environments and quality of life on campus. The Employee Wellness Committee looks for opportunities to enhance staff well-being. The committee looks for ways to advocate for staff to have a positive work-life environment in order to ensure a healthy workforce. The Wellness Committee takes part in the National Get Fit Don't Sit Day. At Georgia Southern University, we value our staff health and want to empower them with the resources they need to get moving today and every day. Our Scholarship Committee supports staff employees and their dependent children by allocating financial support raised by the Fundraising Committee for use toward higher education. This alleviates the burden that financial needs can have on a staff member's emotional health.

Human Resources Benefits & Wellness Fair

In 2017 The Department of Human Resources hosted its tenth annual Benefits and Wellness Fair. This is a drop-in event for Faculty and Staff. Over fifty vendors, such as Blue Cross Blue Shield, CVS Caremark, Delta Dental, Minnesota Life, EyeMed, Optum, TIAA-CREF, VALIC, Fidelity, TRS, and more, were at the fair, along with several campus departments and many of our Eagle Perks vendors. There was also various free health screenings available including health risk assessments (HRA), blood pressure checks, chiropractic spinal screenings, skin cancer screenings, foot pressure mapping, and gait analysis. In addition, at the fair Georgia Southern University Health Services sponsored a flu vaccination clinic.

⁸ FIGURE 8 COURTESY OF GEORGIA SOUTHERN FLICKR

Campus Recreation and Intramurals (CRI)

CRI, at Georgia Southern University, is dedicated to providing growth opportunities and educational experiences, which will enrich the life-long learning process. Through our nine program areas and facilities, which are recreational, educational and sporting in nature, we promote and develop healthy life-style choices.



FIGURE 9: RECREATIONAL ACTIVITY CENTER

CRI's facilities include a 215,000 square foot RAC (Figure 9⁹), 18 hole championship golf course, and state of the art shooting sports education center with 16 archery lanes and 16 firearm lanes. Throughout an academic year CRI program areas will serve over 18,000 of the over 20,000 students, faculty, and staff at Georgia Southern.

Understanding the importance of quality outdoor time, nearly every program area within CRI offers an opportunity for students, faculty and staff to spend time outdoors. Intramural Sports serves over 4,000+ students with most of their sport offerings being outdoors. Aquatics' outdoor pool offers leisure and sporting opportunities. The majority of Club Sports' 25+ teams

practice and play outdoors. Fitness offers weekly Madness in the Meadow fitness programs. Southern Adventures offers over 20 outdoor weekend trips per year, 20+ clinics on how to recreate outdoors, a challenge course, and a rental center to provide outdoor equipment to those planning their own trip. In addition to CRI's own programming, they plays host to over 43 outdoor Health and Kinesiology courses.

Southern Adventures in addition to offering alternative transportation provides guided backpacking, sea kayaking, canoeing and cycling trips that range from weekend trips around the southeast to week-long trips across the country.

Wellness Week, hosted every year in the spring, is designed to help students improve their personal well-being. Students are able to explore their own definition of wellness and learn how to create lifelong health habits. In 2016 highlights of the week included guest speaker Kevin Breeel (Mental health Speaker), the LiveWell Fair, intermural registration, belaying clinic, Wellness and GPA Workshop, CPR/AED Class, First Aid Class, a Bike Maintenance Clinic, and includes workshops such as the Graduate Student Self-Care Workshop. Grad school can be exciting and very stressful! This workshop, presented by student-therapists from the Georgia Southern Psychology Clinic and members of the University Wellness Program, help graduate students identify resources for self-care and develop a self-care plan. The LiveWell Fair is an opportunity for students to interact with both on-campus and off-campus vendors that focus specifically on health and wellness.

Other awareness weeks hosted by CRI include Think Before You Drink. This is a week dedicated to helping students learn how to be successful in college and still have a good time. They learn tricks to help party smart. This week is led by the Office of Alcohol and Other Drugs in partnership with the University Wellness Program. Sexual Assault & Safe Spring Break Awareness Week is dedicated to raising awareness about sexual assault and how to have a safe spring break. Throughout the week the university honors victims of violence as well as teach students how to make spring break a success.

Stomp Out Stigma (SOS) week is dedicated to decreasing stigma towards mental illness on campus. The goal of SOS week is to create and encourage conversation among college students around mental health and provide the mental health resources available to them on and off campus.

A Health Hut is set up at various locations on campus throughout the semester to act as a satellite wellness office for students. There will be a different topic of wellness to promote each day the Health Hut is out.

⁹ FIGURE 9 COURTESY OF GEORGIA SOUTHERN FLICKR

Worry-Free Wednesdays are a chance for students to participate in activities that are known to reduce stress and anxiety. This is held the last Wednesday of every month in the Russell Union Commons. The Russell Union is the mecca of student life on campus.

PILLAR III: EFFECTIVE ENVIRONMENTAL AND SUSTAINABILITY EDUCATION

Georgia Southern has continued to lead in sustainability efforts by engaging the campus and the surrounding Bulloch County community in sustainability initiatives and practices. Georgia Southern has created the CfS to institutionalize sustainability efforts on campus. The CfS website and the Division of Facilities Services Sustainability website host a portfolio of sustainability accomplishments, curriculum and sustainability-related outreach campaigns in many areas of campus sustainability. These efforts create an environmentally-friendly campus while engaging students, staff, faculty, and the local community.

Georgia Southern students have demonstrated their support of the University's efforts in sustainability. The Student Government Association (SGA) proposed a "Sustainability Fee," a \$10 student fee that supports the CfS, and other sustainability initiatives on the Georgia Southern campus. The fee was passed by a 75% majority of the voting student body in October 2012, and approved by the Board of Regents in April 2013. Georgia Southern currently has the highest "Green Fee" in the University System of Georgia. The fee supports a sustainability speaker program, sustainability field trips, a film series, and much more. In 2017, Georgia Southern Alumnus Seth Orme, co-founder of the "Packing it Out" initiative discussed littering on America's nature trails, and packing out thousands of pounds of trash, that he collected while hiking through the Appalachian and Pacific Crest Trails. In addition, a grant program has been implemented and has deployed projects to improve campus sustainability. A panel of mainly students makes decisions regarding how the funds are spent.

Ultimately, Georgia Southern recognizes that education and awareness of sustainability will contribute equally with the energy conservation and management initiatives to reduce the GHG emissions of Georgia.

Interdisciplinary learning

Georgia Southern continues to create and build programs that will inform the campus about environmental sustainability and climate impact awareness, as well as inspire the students, faculty, and staff. Sustainability criteria and objectives have been added to new specific curricula and integrated into existing curricula and advanced research initiatives. Sustainability is included prominently in new student orientation as a component of campus tours. Furthermore, 1000+ students each year participate in environmental service learning in their environmental biology courses. They conduct 3 hours of environmental service to the local community and write a reflection about their experiences. Students assist the local community in invasive species removal, organic farming, farmer's market work, storm water education and more. Since 2015, 3,000 students have conducted nearly 9,000 hours of environmental service for the community for this course alone. CfS also provides field trips to a sustainability career fair in Atlanta each year for students at Georgia Southern.

All Georgia Southern students are required to take a 1000 level non-majors Environmental Science (lecture and lab) prior to graduation and sustainability is taught within this course. This course emphasizes interdisciplinary learning to solve sustainability problems. For students who want more, Georgia Southern offers an Interdisciplinary Concentration in Environmental Sustainability for undergraduates of any major. The concentration is increasing in both enrollment and course offerings every year. Students in any major can complete the eighteen credit concentration through the CfS and are required to complete a capstone Sustainability Practicum that integrates their learning into a culminating real-world sustainability project. Moreover, Georgia Southern faculty and staff are networking with local industry and governmental agencies, such as the USEPA/Coastal Regional Commission, Gulfstream, and Savannah Oceans Exchange, to identify potential sustainability internship opportunities for students.

The Georgia Southern CfS provides a bi-annual Sustainability Curriculum Workshop for faculty who wish to incorporate sustainability into their courses. Eight new sustainability courses were added to the curriculum in 2012-2013. Now forty courses offered by Georgia Southern University have a sustainability focus that encompass nineteen different departments within the University. One-hundred members of Georgia Southern University faculty are involved in sustainability research across 16 departments, many involving students. For example, the Renewable Energy Lab in the College of Engineering and Information Technology engages students in cutting edge research on renewable fuels.

The institution is expanding research efforts toward the achievement of reduced greenhouse gas emissions



FIGURE 10: INSTALLATION OF SOLAR PANELS ON ELECTRIC UTILITY CARTS

research by offering a grant program to support sustainability improvements on campus and in the community; and many students, faculty, and staff have applied for these funds. Funded research projects include alternative energy solutions (wind turbines capturing wind from chillers, solar tracking technology), nanotechnology for carbon capture from emissions, and solar powered street lighting to name a few. Research funded by the Student Sustainability Fee often builds collaborations between academic departments and facilities to apply cutting edge sustainability research to campus operations. In one example, a team of students and faculty have converted a fleet of plug-in electric utility carts into a solar-powered fleet and are modifying the design to improve efficiency (Figure 10¹⁰).

The University has created a Sustainability Study Abroad Program, with courses in four countries (Ecuador, Botswana, Malawi, and Italy), many of which are cross listed among disciplines. In addition, the interdisciplinary First Year Experience courses have added the Sustainability Seminar Series to the options of campus events from which students may choose to attend for course credit.

Students in the required 1000 level Environmental Science course as well as those in other interior design and First Year Experience courses tour the sustainable Georgia Peach-Certified and LEED Certified buildings on campus to learn about sustainable buildings.

Georgia Southern has institutionalized sustainability by including sustainability learning outcomes in institutional General Education Requirements through Environmental Biology which is a General Education (Core) Requirement.

Georgia Southern CfS offers an eight week online continuing education professional development course in sustainability for the general public entitled, The Sustainability Advisor Certificate Program.

The institution coordinates an ongoing peer-to-peer sustainability outreach and education program for degree-seeking students. Approximately two graduate assistants and four undergraduate interns work in CfS all engage in significant campus outreach to their peers. Additionally, our sustainability practicum students present their work in a public forum, typically including students. In addition, a Green Ambassador student group leads sustainability tours and gives presentations to their peers. The Environmental Health and Safety Department in the Division of Facilities Services offers interns, federal work study students, and student assistants the opportunity to learn about sustainability and environmental programs on the job.

Campus Garden

Sustainability tours educate students and visitors about the value of native species. Two vibrant outreach centers focus on sustainability: The campus supports an 11 acre Botanic Garden that, as stated in its mission: Promotes knowledge and appreciation of the native plants and animals of the southeastern coastal plain. The Garden is visited by thousands of school children each year and provides teacher training

¹⁰ FIGURE 10 COURTESY OF GEORGIA SOUTHERN CENTER FOR SUSTAINABILITY

programs for dozens of teachers through the grant funded Adventures in Science, Teaching, Exploration and Resourceful Stewardship (ASTERS) program. The Georgia Southern Wildlife Center teaches principles of conservation to tens of thousands of children each year through school visits to the Wildlife Center on campus and to outreach events off campus. They also offer summer naturalist camps for children.

Graduate students Michala Howard and La'Darius Madison, in the School of Health and Kinesiology's Dietetic Internship (DI), had the opportunity to take part in a statewide initiative to change the entire culture of school nutrition in 2016. Howard and Madison worked alongside Wayne County School Nutrition Director, Rindy Trapnell, and School Nutrition Coordinator, Samantha Thornton, to implement a flavor station, "Shake It Up," at Martha Puckett Middle School in Jesup, Georgia, where students can add salt-free seasoning and herbs to their food without increasing their sodium intake. Howard and Madison implemented a taste test using cauliflower popcorn as a way to promote the flavor station. Students were taking an interest in making healthier choices.

Travelling Exhibit

The Georgia Southern Museum and Center for Sustainability developed a traveling sustainability exhibit that we share with elementary and middle schools in the region for special events and Math and Science Family Nights. At these outreach events, Georgia Southern students work with the community to improve sustainability knowledge.

GreenFest

The Center for Sustainability hosts a large sustainability festival, GreenFest, each October to educate and engage the community in sustainability. In 2017, the event, which takes place on the courthouse lawn, featured more than 40 green vendors and exhibitors as well as many of the downtown shops, and attracted more than 1750 participants. The event enlists assistance of more than 100 student volunteers who assist with sustainability activities and workshops throughout the festival. Many of the students create exhibits and workshops for the general public that apply sustainability principles to solve sustainability problems. In 2017, the Alumni Association conducted a litter cleanup as a part of the Alumni Day of Service during GreenFest. CfS partners with the Business Innovations Group (BIG) and the Institute for Interdisciplinary Science Technology Engineering Math (STEM) Education to host a regional pallet challenge each year that is judged during GreenFest (Figure 11¹¹). Participants are challenged to use STEM principles to repurpose used pallets into something new. The first two years of the Pallet Challenge drew participants from more than 50 miles away and entries from community members, schools, and universities.



FIGURE 11: SOUTHERN FLYERS - PALLET CHALLENGE CONTESTANT

Service Learning

CfS has partnered with the Georgia Southern Museum to host a sustainability art activity (ArtStop) for ArtFest each year. This community event brings in >5,000 people and allows student volunteers to interact with the public to teach sustainability principles through art.

Students in the Southern Leaders program develop a legacy project to leave an impact on the campus community long after they are gone. Many of these projects have involved some aspect of sustainability.

Sustainability Career Pathways

The university has an Interdisciplinary Concentration in Environmental Sustainability, which allows students to fully comprehend the role of sustainability across multiple disciplines. Numerous students in this program have received internships with sustainability-focused design firms, completed honor's theses and research

¹¹ FIGURE 11 COURTESY OF GEORGIA SOUTHERN CENTER FOR SUSTAINABILITY

projects, and presented at community events. Some graduates have also taken jobs working in design and architectural firms with sustainable building initiatives.

The Office of Leadership and Community Engagement

The office of Leadership and Community Engagement integrate learning, service and leadership to empower students to become active global citizens. The office partners with the Center for Sustainability to provide students with service learning opportunities in sustainability to combine academics and service.

Big Pitch Competition

Georgia Southern University's Business Innovation Group (BIG) in conjunction with Ocean Exchange hosts an annual event called the BIG Pitch Award that seeks innovative, proactive, and globally scalable sustainable solutions with working prototypes and applications that can cross industries, economies and cultures, in a competitive process in which two \$100,000 and one \$10,000 awards are granted to early stage companies.

In 2016 Touch Light Innovations was named the winner of the second annual BIG Pitch Competition. Touch Light Innovations, is a start-up company whose director include Georgia Southern students. Their flagship product, Power Pad, is a low-profile device that sits beneath any moderate-to-heavy foot traffic location. Each step a passerby takes on the Power Pad generates up to 10 watt-mins of power.

In 2017, Pipeguard Robotics was named the winner of the third annual Big Pitch Competition. Pipeguard Robotics is a team from MIT. The Pipeguard Robotics solution inspects water pipes from the inside using innovations in sensor membranes and the soft body drone to find leaks long before they become catastrophic, with the objective to reduce the 20 percent of clean water production daily lost to leaks.

Conclusion

We have made the principles of sustainability fundamental to every aspect of higher education here at Georgia Southern. As a campus, we are committed to both preparing students to develop solutions for a healthy and sustainable society as well as making sustainability a core value in our operations and planning at Georgia Southern.