



Postsecondary Nominee Presentation Form

ELIGIBILITY CERTIFICATIONS

College or University Certifications

The signature of college or university President (or equivalent) on the next page certifies that each of the statements below concerning the institution’s eligibility and compliance with the following requirements is true and correct to the best of their knowledge.

- 1. The college or university has been evaluated and selected from among institutions within the Nominating Authority’s jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university is providing the U.S. Department of Education Office of Civil Rights (OCR) access to information necessary to investigate a civil rights complaint or to conduct a compliance review.
3. OCR has not issued a violation letter of findings to the college or university concluding that the nominated college or university has violated one or more of the civil rights statutes. A violation letter of findings will not be considered outstanding if OCR has accepted a corrective action plan to remedy the violation.
4. The U.S. Department of Justice does not have a pending suit alleging that the college or university has violated one or more of the civil rights statutes or the Constitution’s equal protection clause.
5. There are no findings by Federal Student Aid of violations in respect to the administration of Title IV student aid funds.
6. The college or university is in good standing with its regional or national accreditor.
7. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

U.S. Department of Education Green Ribbon Schools Postsecondary 2015-2018

[X] Public 4-Year [ ] Public 2-Year [ ] Private Non-Profit

Name of President/Chancellor: Dr. John M. Beehler
(Specify: Ms., Miss, Mrs., Dr., Mr., etc.) (As it should appear in the official records)

Official College or University Name: Jacksonville State University
(As it should appear on an award)

College or University Street
Mailing Address: 700 Pelham Road North, Jacksonville, AL 36265
(If address is P.O. Box, also include street address.)

County: Calhoun IPEDS Number\*: 101480
Telephone: 256-782-5966 Fax: 256-782-5983
Web site/URL: www.jsu.edu E-mail: blackbur@jsu.edu

I have reviewed the information in this application and certify that to the best of my knowledge all information is accurate.

John M Beehler

Date: March 23, 2018

(President’s/Chancellor’s Signature)

Nominating Authority’s Certifications



The signature by the Nominating Authority on this page certifies that each of the statements below concerning the college or university's eligibility and compliance with the following requirements is true and correct to the best of the Authority's knowledge.

1. The college or university has been evaluated and selected from among institutions within the Nominating Authority's jurisdiction, based on high achievement in the three ED-GRS Pillars: 1) reduced environmental impact and costs; 2) improved health and wellness; and 3) effective environmental and sustainability education.
2. The college or university meets all applicable federal, state, local and tribal health, environmental and safety requirements in law, regulations and policy and is willing to undergo EPA on-site verification.

Name of Nominating Agency: Alabama Department of Education

Name of Nominating Authority: Mrs. Mary Dansak

(Specify: Ms., Miss, Mrs., Dr., Mr., Other)

I have reviewed the information in this application and certify to the best of my knowledge that the school meets the provisions above.

A handwritten signature in cursive script that reads "Mary Dansak".

Date: March 23, 2018

(Nominating Authority's Signature)

## **SUBMISSION**

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The nomination package, including the signed certifications, narrative summary, documentation of evaluation in the three Pillars, and photos should be submitted online according to the instructions in the Nominee Submission Procedure.

OMB Control Number: 1860-0509

Expiration Date: March 31, 2018

### **Public Burden Statement**

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. The valid OMB control number for this information collection is 1860-0509. Public reporting burden for this collection of information is estimated to average 37 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit P.L. 107-110, Sec. 501, Innovative Programs and Parental Choice Provisions. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20202-4536 or email [ICDocketMgr@ed.gov](mailto:ICDocketMgr@ed.gov) and reference the OMB Control Number 1860-0509. Note: Please do not return the completed ED-Green Ribbon Schools application to this address.

# **Alabama State Department of Education Nomination for Jacksonville State University to 2017-2018 ED-GRS Green Ribbon Schools**

## **Jacksonville State University Green Ribbon Highlights**

Jacksonville State University's first official commitment to environmental and sustainability education began in 1995 with the creation of the Environmental Policy and Information Center (EPIC). Biologist Pete Conroy, EPIC Director, has since led efforts to create a National Wildlife Refuge, two National Parks and a National Wilderness. The Little River Canyon Center, open in 2009, was one of the state's first LEED-certified public buildings. The Center maintains Silver status and features elements that reach across all three pillars. Visitors learn about geothermal heating and cooling, sustainable technical practices, recycled materials and a rooftop water silo that collects 2,500 gallons of rainwater to irrigate areas around the property.

Niagara® Energy Management systems in JSU buildings monitor and control temperature and identify operational issues. Occupancy sensors are now in restrooms and hallways in newer facilities and recently updated dormitories. HVAC upgrades improve indoor air quality and respiratory health through better ventilation, and contaminant/moisture control. Two dormitories received Mitsubishi HVAC units recently, and others will follow soon. Replacement of HVAC units will save \$45,000 annually per building, a potential reduction of \$2,000,000 annually.

Solar energy powers five emergency call boxes located in key areas on the main campus. Students may also use these stations to request a police escort to their dormitories after dark.

The change from fluorescent lights to LED will save \$116,000 annually with the replacement of 2,500 bulbs in the twelve-story Houston Cole Library.

The installation of campus hydration stations three years ago has saved 83,300 bottles. The Canyon Center water silo collects rooftop rainwater used to irrigate the property. Filters are in place for lines supplying water to campus food service, ice machines, and hydration stations.

The Earth Club inspired recycling efforts in 2016 through a \$38,425 Alabama Department of Environmental Management grant. The project reduced 653 tons of trash usually produced by JSU to 98 tons. This recycling effort reduced landfill tipping fees by \$2,500 and protected 1,316 trees in 2016 and 1,500 in 2017. The JSU food service has saved 5,800 gallons of water since 2010 by going trayless. In 2016, 800 gallons of fryer oil was recycled into biodiesel. External vendors provide removal and recycling of waste and properly dispose of all hazardous waste and chemicals.

The Gamecock Express, JSU's diesel transit system since 2009, provides alternative transportation. Less need for vehicles on campus has reduced greenhouse gas emissions. Student parking decal

purchases decreased by 33% (2,458 annually) and bicycle decals by 77%. Passenger count for the fall was 47,290. The Gamecock Express has bike racks for the students using both transportation methods.

Students enjoy gathering in the outdoor biology classroom and the Amphitheater to study. **Outdoor Adventure Programs** provide access to areas offering kayaking, fishing, biking, and hiking. **Chief Ladiga Trail**, the longest paved pedestrian trail in the USA is near campus. A 100,000 square foot **Wellness and Fitness Recreation Center** will be opening in January 2019. JSU offers a Bachelor of Science degree in Exercise Science & Wellness and a Master of Science in Education with a major in Physical Education and a concentration in Nutrition.

JSU's Student Health Center averages 25 students daily. The Counseling Center provides access to licensed mental health professionals for 500 students, faculty and staff per semester. **Peer Educators** coordinate events for Alcohol Awareness, Sexual Responsibility Week and other trending topics.

JSU biology students are researching long-term effects of the 2010 oil spill on Gulf ecosystems over the coming years. Semesters average 58 students seeking a Bachelor of Science in Biology with a concentration in Ecology and Environmental Science. For 26 years, the JSU Field Schools have provided quality outdoor environmental education programs for the public and students from Pre-K to 12<sup>th</sup> grade.

Applied Electronics Engineering degrees are bringing 78% of JSU graduates (five-year average) employment within four months. JSU's Robotics Team won a 2015 national title at the 14th Annual Association of Technology, Management, and Applied Engineering Student Robotics Competition.

JSU AMSTI distributes 2,700 science kits to teachers in 15 school systems in 7 counties and 70 schools, educating 67,500 students. JSU AMSTI distributes \$7,100,000 in equipment and materials to teachers. JSU AMSTI/ASIM partnerships provided hands-on professional learning for building a VEX/VEX IQ robot. STEM faculty trained and mentored teacher trainers, sought team mentors from industry and involved JSU STEM student interns as role models to encourage students toward STEM careers.

**The Freedom Riders National Monument**, located in Anniston, Alabama is associated with the 1961 Mother's Day attack, resulting in "the flames that helped ignite the civil rights movement." Co-chairs of the Freedom Riders Park committee are Freedom Rider Bill Harbour and JSU EPIC Director Pete Conroy.

The American Democracy Project for Civic Engagement, a national initiative that seeks to foster informed civic engagement, will host upcoming JSU activities for Martin Luther King Jr. Community Service Week, January 17-27, 2017.

# Jacksonville State University

## Green Ribbon Elements in Detail

### Pillar 1: Reduce Environmental Impact and Costs

#### Element 1A: Energy Savings

##### **Energy-General**

- Niagara® Energy Management systems in University buildings provide management of energy use. This comprehensive monitoring system allows JSU to control building temperatures as well as identify and resolve operational issues.
- Occupancy sensors are now in restrooms and hallways in newer facilities (William A. Meehan Hall) to increase energy savings. Sensors will be in all buildings as time and budgets permit.
- HVAC upgrades contribute significantly to improving indoor air quality and respiratory health through better ventilation, and contaminant/moisture control. Two dormitories received new Mitsubishi HVAC units recently. Other buildings will receive upgrades, one per year until all are completed. The most current environmentally safe refrigerants are used. The replacement of HVAC units will save \$45,000 annually per building. Completion of upgrades will mean a potential cost reduction of \$2,000,000 annually.
- Preventing sustained energy loss has resulted in savings in electricity, water, and other utilities. The replacement of old windows in the President's mansion and other campus buildings are adding to energy savings.
- Solar energy powers five emergency call boxes located in key areas on the main campus. University police respond immediately to calls for assistance. Students may also use these stations to request a police escort to their dormitories after dark.
- The change from fluorescent lights to LED yields the fastest return on investment. The JSU Houston Cole Library has 2,500 bulbs to replace. The University will see an annual cost savings of \$116,000 when the current replacement project is complete in January 2018. Two dormitories recently received new LED lighting. A replacement schedule is in place for all other buildings.

##### **Specialized Buildings**

##### **Little River Canyon Center**

- The JSU Little River Canyon Center has LEED Silver status and on a daily basis educates the public as to ways to conserve energy and reduce impact. Visitation estimates are growing at a fast pace. In 2015, the National Park Service counted 250,000 visitors at Little River Canyon and in 2016, 460,000 visitors. In 2015, communities near the park enjoyed over \$14,208,600 in revenue, which supported 237 jobs in the local area and tourism to the Preserve and JSU Canyon Center. In 2016, the economic benefits to the region amounted to an estimated \$16,468,800. Estimates are that visitors spend \$20 -163 each. It is important to note that without economic sustainability, environmental sustainability is not possible.
- At the Little River Canyon Center, JSU has highlighted all of its sustainable architectural features with Green Salamander graphics that bring attention to most of the following:
  - The Heating and Cooling Geothermal System (which saves the Center \$20,000 annually) is a continuous closed loop system consisting of 36 wells, each of which is 300 feet deep, providing enough temperature exchange to offset heating and cooling resources. The system takes the fluid down to 57 degrees, which helps regulate temperatures both summer and

winter. The system connects to pumps in the building. When the fluid reaches the pumps, it is 64 degrees. Adding heat or cool helps to achieve the desired temperature.

- Humidity detectors in every room to help regulate energy use through heating ventilation and cooling system.
- Each room, storage space, office, restroom, kitchen, and hallway is equipped with lighting/occupancy motion sensors that turn lights off and on.
- Restrooms feature automatic timed water faucets, waterless urinals, high power hand dryers, and high/low flush option commodes.
- Decking around the Center is made of recycled plastic water bottles and sawdust.
- Entrance mats are made of recycled materials and remove outside particles from shoes that can affect air quality.
- Masonite used around the building is a concrete material made with recycled resources.
- Terrazzo is a material made of crushed recycled glass that is on our countertops and decorative locations like the Canyon Center Compass Logo at the buildings main entrance.
- The rock found around the building and on property site is a mixture of coal fly ash and 20% recycled concrete, and then painted to look and feel like rock.
- Insulation at the Canyon Center is a cellulose material made from recycled newspapers (bat insulation). This recycled material is on all exterior walls and lines the entire ceiling to fill all voids around the electrical boxes and provides a much greater thermal barrier. There is also no off-gassing when using this material.
- LED and fluorescent bulbs provide lighting in the building.
- Purchasing approximately 35% of all construction materials locally saved on freight cost.
- Some floors in the building are recycled plastics.
- Floor wax, paints, finishes, and cleaning products at the Canyon Center are all zero VOCs (volatile organic compounds) so there was and is no off-gassing into the atmosphere.
- Staff uses the recycling sorting room to sort and recycle all cardboard, newspapers, print, bottles, cans, etc.
- Canyon Center only purchases and uses recycled paper and ink cartridges for printing.
- Outdoor classrooms and seating areas throughout the property are old, recycled highway 35 bridge-side railing pieces.
- Solar lights are throughout the outdoors for safety or marketing reasons.
- One-of-a-kind solar charging public seating outdoors bench with solar panel equipped with four USB 3.0 charging ports for charging electronics.

### **Alabama Campus Sustainability**

- Another effort of EPIC and the staff at the Canyon Center relates to an Auburn University led effort to establish a statewide Campus Sustainability Coalition. Coordination, engagement, and awareness have been the focus, connecting with faculty, staff, and students regarding recycling programs, energy conservation and campus sustainability standards in buildings and other operational activities. The Canyon Center hosted a key meeting that discussed the experiences people have and what have they found to be successful. At the conclusion of that meeting, JSU's Canyon Center presented its first Sustainability Award to Heil Manufacturing in coordination with US Senator Richard Shelby. The University of Alabama, Samford University, the University of North Alabama, Auburn University, the University of South Alabama, the Cooperative Extension of Calhoun County, the University of Montevallo, Birmingham Southern, and others participated.

## Element 1B: Improved Water Quality, Efficiency, and Conservation

### JSU's Efforts to Conserve Water

- Water fountains on campus are now hydration stations, which are both water fountains and water bottle filling stations. Students are encouraged to use reusable bottles to help eliminate waste from discarded plastic bottles. Since the installation three years ago, the campus community has saved 72,400 bottles. The Little River Canyon Center has saved 10,900 bottles in one year.
- JSU receives water from the City of Jacksonville. The City produces an Annual Drinking Water Quality Report for the community to review. There are additional filters on all ice machines and hydration stations on campus.
- The Little River Canyon Center water silo collects rooftop rainwater (up to 2,500 gallons) which irrigates landscape areas around the building and property.
- Physical Plant staff constantly monitors all water usage on the main campus and react immediately to repair any problems (i.e., toilets running constantly, loss of water due to in-ground pipes leaking). Recent restroom updates feature high/low flush option commodes.
- JSU is a tree-friendly campus with beautifully landscaped grounds. The landscape design is resistant to runoff. Plant material chosen is drought tolerant to conserve water.

### Developing University Grounds for Ecologically Beneficial Uses

- The **JSU Chemistry and Biology Outdoor Classroom** is a study and observation space for students. The classroom, named in 2012 in memory of beloved biology professor Frank Romano, is still a popular place for students to gather.
- The **Amphitheater** adjacent to the Ernest Stone Performing Arts Center provides a favorite place for classes to meet outdoors.
- **Little River Canyon** outdoor classrooms and seating areas throughout the property are old, recycled highway 35 bridge-side railing pieces.
- **JSU Field Schools** provide diverse, in-depth programs (including environmental education programs, outdoor recreation programs, field trips, outreach, summer camps, general public programs, and festivals) annually that are designed to nurture an appreciation of Alabama's natural and cultural significance, celebrate diversity, and foster stewardship of the natural world. JSU Field Schools promote natural history and history education through the Little River Canyon Center, DeSoto State Park, the Talladega Mountains Natural Forest and other outdoor classroom locations. The JSU Canyon Center alone has hosted 3,455 groups in 2016. Overall Visitation to the Little River Canyon Center in 2016 was 462,700.
- **The Frog Pond Wildlife Preserve and Observation Area** is located on a two-acre seasonal wetland in the hills of Northeast Alabama, just a short drive from the cities of Jacksonville and Anniston in White Plains. It was developed by the staff of JSU EPIC in 1990 and since has attracted countless individuals, schools, scouts, bird watchers and others seeking outdoor activity. Designed as a place to learn, it demonstrates wetlands as living laboratories filled with biodiversity. It is important as a place for exercise but lends itself to people teaching that wetlands provide habitat for about one-third of all federally listed endangered plant and animal species. They also provide nesting spots for more than half of the nation's migratory birds. Even more importantly, they are essential to the quality of human life. Wetlands can reduce flooding, control erosion, recharge our aquifers and improve water quality. Wetlands are valuable, but they are vanishing. The Frog Pond is a little wetland, and that is important, as few places in Northeast Alabama provide a more beautiful setting than the Frog Pond.

## Element 1C: Reduced Waste Production

- In 2016, the JSU Earth Club inspired the beginning of JSU’s recycling program for paper and plastic in six buildings across campus. Corrugated recycling bins were also available. These locales are a mix of administrative, residence, and academic buildings. This effort was possible through a \$38,425 grant from the Alabama Department of Environmental Management. The project increased recycling opportunities to the 8,659 students at JSU and reduced an estimated 653 tons of trash produced by the University at least 15%. This reduction resulted in a \$2,500 reduction in landfill tipping fees and the diversion of 98 tons of trash annually. The long-term goals of the project are to create a campus-wide recycling program and continue to build upon the 4-H Environmental Education program provided by the Alabama Cooperative Extension System. The recycling efforts saved 1,316 trees in 2016 and 1,500 in 2017.
- The JSU cafeteria dining service provider, Sodexo, has been a committed partner in conservation and sustainability:
  - JSU is a trayless campus. Customers without trays typically waste less food and beverages. It is also a healthier approach to eating, as we all know that at times our eyes are bigger than our stomach. Trayless dining also reduces the amount of water and detergents needed to wash trays. JSU has been trayless since 2010 and has saved an estimated 5,800 gallons of water as a result.
  - Xpress Nap Dispensers save energy and waste. The napkins are made of 100% recycled paper and the dispenser will encourage customers to take (and waste) fewer napkins.
  - Individual packets of condiments are useful in some instances, but they result in extra waste. Students are encouraged to use the bulk dispensers to reduce waste.
  - The fryer oil is recycled into biodiesel that powers a variety of vehicles from delivery fleets to farm equipment. Last year JSU recycled 800 gallons of fryer oil into biofuel.
  - Plates and silverware are used in dining locations. This reduces waste associated with using disposable containers.
  - The cafeteria office uses paper with recycled content and prints on both sides whenever possible.
  - The chemicals Sodexo user (92%) are “Green Seal” certified concentrated or sustainable
  - No idling – all vendor vehicles are turned off while they are parked at our loading dock.
  - Sodexo works closely with local produce distributors to maximize the fruits and vegetables purchased from local farms. Purchases also come from local dairies, and participate in farm to school initiatives. Tracking local purchases helps Sodexo to meet their Better Tomorrow Plan commitment of 20% local purchase by 2020.
- **Additional waste reduction activities:**
  - The JSU Little River Canyon Center only purchases and uses recycled paper and ink cartridges for printing.
  - The “When You Move Out, Don’t Throw It Out” program began in 2017 in partnership with the Salvation Army. Bins are located near each dorm on campus and students are encouraged to share any discarded items and place them in the bins.
  - Paper use has been reduced and a minimum of \$30,000 cost saved annually by having admissions brochures, undergraduate course catalogs, graduate bulletins and employee directories accessible online.



## Hazardous Waste

- External vendors provide removal and recycling of other waste (i.e., computers/electronics, metal, glass, batteries and light bulbs). MCF Environmental Services, Inc. properly disposes of all hazardous chemicals from various departments (chemistry, biology, art, photography, etc.). Universal Environmental Services removes and recycles all waste from the Physical Plant.

## Element 1D: Use of Alternative Transportation

- The Gamecock Express, JSU's diesel transit system since 2009, provides an alternative transportation source for many students. This change has led to a reduction in the need for operating vehicles on campus, thereby reducing greenhouse gas emissions. The number of student parking decals issued has decreased by 33% (2,458 annually) and bicycle decals issued annually have decreased by 77%. More students are walking and riding the Gamecock Express to class.
- The Gamecock Express also provides night and off-campus travel to sites most frequently visited in Jacksonville (i.e., Walmart, restaurants) and travels as far as Oxford for shopping. The total passenger count for the fall semester is 47,290. This service is at no cost to students. The Gamecock Express is fitted with bike racks for the students that might want to use a combination of transportation methods.
- There are 50 bike racks located throughout the campus.
- Several departments utilize **electric golf carts** during normal daily activities. **Electric vehicles** also transport parents and guests on preview days, graduation and from various locations on campus to sporting events.

## Pillar II: Improve the Health and Wellness of Students and Staff

### Element 2A: Integrated School Environmental Health Program

- JSU maintains a pest management program. The Physical Plant staff provides pest control services to all campus buildings except the dormitories. Services provided in the dormitories are by an outside vendor.
- Vendors are required to ensure that all chemicals meet safety code requirements. JSU follows the Alabama Department of Environmental Management recommendations for safe use and storage of all chemicals. When fogging or spraying chemicals, we ensure the chemicals used are safe for occupied spaces. All chemicals are stored in a locked, properly ventilated room in the Physical Plant and Material Safety Data Sheets are available in proximity to the chemicals.

### Element 2B: Health and Wellness

- The JSU **Student Health Center** is located on the JSU campus. The Health Center staff are doctors and nurses from the local Regional Medical Center (RMC). Primary and urgent care are available to staff and students by appointment. The Student Health Center serves an average of 25 students per day.
- The University **Counseling Center** provides students, staff, and faculty unlimited access to licensed mental health professionals. Their role is to support the University's mission to educate and develop the whole person. The Counseling Center provides consultation to approximately 500 students, faculty, and staff during a semester. In addition to counseling services, staff members provide presentations on a wide variety of relevant topics to JSU departments, local

groups, and conferences. Counseling Center staff support various student groups actively seeking to change the conversation on campus about mental health issues.

- Jacksonville State University Counseling Center **Peer Educators** are students that have taken the initiative to offer leadership to their peers on certain issues. Their number one goal is to create a more positive, healthy campus environment. For example, they coordinate and publicize events for National Alcohol Awareness Week, Sexual Responsibility Week, and Safe Spring Break programs.
- Jacksonville State University offers a Master of Science in Education with a major in Physical Education and a concentration in Nutrition. Admission to this program requires completion of a fourth-year (Bachelors) degree in Exercise Science, Nutrition, or a closely related field. The Nutrition program prepares graduates for interaction with both healthy active populations and populations affected by chronic diseases (e.g., CVD, Diabetes) and the impact of nutritional interventions in these populations.
- In 2014, the “Wellness Wednesday” concept came to JSU and continues today. In conjunction with the new Get Healthy JSU campaign, students from JSU’s Nutrition and Exercise Science programs invite the campus to Wellness Wednesdays. At the program, participants enjoy a healthy lunch and learn tips for living a healthier lifestyle. Meals are prepared by Nutrition students and presented by Exercise Science and Wellness students.
- Jacksonville State University currently operates various facilities for the health and well-being of the staff, students and the community. Stephenson Hall offers a cardio room, Cybex weight room, racquetball courts, gymnasium, and a steam room. The Coliseum has an indoor pool, intermural fields, and tennis courts.
- A groundbreaking ceremony held on September 23, 2017, marked a major milestone in JSU’s vision to create a dynamic campus experience for JSU students. The facility will feature over 100,000 square feet of student-centric fitness and social spaces for future Gamecocks. Construction begins February 2018 with completion in January 2019.
- In addition to a wide variety of traditional sports, an increased focus on outdoor activity has been a particular emphasis of the Environmental Policy and Information Center and the University Recreation Outdoor Adventure Program. The following options (and more!) are available to all faculty, staff and the community.
- The University Recreation **Outdoor Adventure Program** provides resources that allow students to access our local outdoor areas more effectively. The area around JSU has an impressive selection of outdoor recreational opportunities, from kayaking and fishing to mountain biking and hiking. Jacksonville State’s surrounding area provides outdoor activities that would please any outdoor enthusiast. The region also contains beautiful state parks and numerous rock-climbing opportunities.
- The 24th annual Cheaha Challenge Gran Fondo Century and ULTRA bike ride took place on Sunday, May 15, 2017. The start and finish of the event were at Pete Mathews Coliseum at Jacksonville State University, the third year for Jacksonville to host the Gran Fondo. Proceeds from both rides go to benefit the Chief Ladiga Trail, Coldwater Mountain Trails and local high school mountain bike teams.
- **The Chief Ladiga Trail** is the longest paved pedestrian trail in the USA. Measuring over 95 miles in length, and rests on the bed of the former Seaboard/CSX. The Chief Ladiga Trail hosts countless bicycles, walkers, runners, wheelchairs and others all seeking a healthy, outdoor and safe environment that benefits their health and wellness. Estimates show an average of 50 people per hour in most places on the Trail. Several access points are located near campus. The safest

access point is located in Paul Carpenter Village. Students can park in the village and safely enter the trail. JSU may be the only university in the USA that bisects a nationally recognized rail-trail.

- **Coldwater Mountain Bike Trails** recreational area for is now 4,183 acres. In partnership with the Northeast Alabama Bicycle Association (NEABA) and the International Mountain Bike Association (IMBA), Coldwater Mountain has been developed as one of the premiere locations for mountain biking.
- **Little River Canyon Center** since its start in 2009 has offered hundreds of guided hikes, six Canyon Half Marathons, yoga classes and workshops including a new focus on medicinal plants. Daryl Patten has been a regularly featured guest at the Canyon Center where he leads hikes to identify medicinal plants, sustainable practices for harvesting as well as information about alternative tinctures, ointments, and remedies.
- In 2015, in honor of National Employee Health and Fitness Month, the JSU Exercise Science and Wellness students invited the campus community to "Pound the Pavement" at the Stephenson Gym parking lot on Wednesday, May 27 from 11 a.m. - 1 p.m. ESW students will also be providing free health screenings. Tests and measures will include blood pressure, weight, body composition, lung volume, and various cardio and strength tests. Pound is a fun, dynamic cardio drumming workout that is perfect for any age, size, and fitness level.

### Pillar III: Provide Effective Environmental and sustainability Education, Incorporating STEM, Civic Skills, and Green Career Pathways

#### Element 3A: Interdisciplinary Learning about Key Relationships between Dynamic Environmental, Energy, and Human Systems

- The JSU planetarium provides a fascinating experience through which K-12 classroom students, youth organizations, and university students can learn about astronomy. It houses a modern Digistar 3SP projector.
- **Gulf Oil Spill Research Summary** - In light of the massive, 780,000 cubic meters of crude oil that spilled into the Gulf of Mexico during 2010, biology students and professors have been exploring the long-term consequences of that spill on the Gulf ecosystem and what the spill will mean for us and the environment over the coming years and decades. To answer that question we must understand how the biochemistry of the Gulf is breaking down and changing the oil and the way the oil is modifying the environment. To maintain focus on the Gulf spill, we concentrate on the MC252 oil, developing new techniques to identify the oil, even after substantial weathering. We are mainly looking on possible paths of degradation of the immobile oil remnants that remain after weathering. Currently, we are pursuing four important milestones:
  - Replication of environmental degradation of medium-size hydrocarbons and naphthalenes and phenanthrenes, including photo-oxidation and biodegradation.
  - Long-term degradation of chrysenes and pyrenes, including identification and characterization of the decomposition products.
  - Identification of pathways and characterization of products of environmental degradation of asphaltenes and resins, including high-pressure studies of oil degradation.
  - Development and customization of combined thermogravimetric, GCMS, NMR, and fluorescence methods of identification of oil derived compounds from environmental studies.

- The JSU Biology department is the home of the **Center for Tick-Borne Disease Ecology**. The Center provides an avenue for research and education in multidisciplinary areas of tick behavior, ecology, host range effects, microbiology and molecular technique development. The Center facilitates collaboration and partnerships within Jacksonville State University and across the Southeastern region.

### **K-12 Educational Field Trips**

- For 26 years, the Jacksonville State University Field Schools have been providing quality outdoor environmental education programs and field trips to Grades K-12<sup>th</sup> and the public. The program offers a variety of opportunities for the public to do more, know more, and see more.
- Each year, local schools bring school groups ages K-12<sup>th</sup> to JSU's Little River Canyon Center. From March 2016 to December 2016, 2,398 students visited. The purpose of these field trips is to engage students in activities that give them a better appreciation of the environment in their own backyard. By engaging students in this way, the program develops a desire in the students to both protect and preserve the natural resources in our local area. The students also develop an understanding of how the local natural resources play a role in maintaining a higher quality of life for the entire community.
- A pilot program began in 2016 in partnership with the Fort Payne School System. This program within two years of its inception will see all 3200 students from Pre-K to 12<sup>th</sup> grade at Fort Payne attending a field trip every year to the Little River Canyon Center. The goal is that by allowing yearly, continuous exposure of the students to the natural wonders of the Little River Canyon Preserve and its sustainability efforts we will build future naturalists, scientists, and children with a general love for the outdoor world.
- Another initiative began in 2016 within the Field Schools to make the National Preserve more accessible to all people. The area around the JSU Field Schools has a strong Hispanic component. A group of 65 English as a Second Language local high school students attended a pilot bilingual field trip. Most of these students had been in the United States for under a year and few spoke English. As a result, many of the students have returned to the Little River Canyon National Preserve with their families. To continue this program, the Field Schools have begun monthly Latino Roundtable meetings to access how we can better serve this community and reach them with our messages of sustainability and conservation.

### **Public Education Programs**

- Each year, the Field Schools offer numerous programs to the general public that promote sustainability, education, conservation, and local heritage. From March 2016 to December 2016, 1,024 individuals attended these programs. These programs are through partnerships with groups such as the National Park Service, DeSoto State Park, Anniston Outdoors, and others. By exposing the public to their local environment, we are building better stewardship.
- Different hikes are available each month for the public. These hikes explore all of the wonders of Northeast Alabama while promoting fitness and good health. Instructors lead the hikes and cover the basics of ecology, ornithology, and many other topics. While enjoying their environment, people gain an appreciation for the need to protect it.
- One of the Field Schools most popular classes focuses on wetland ecology and preservation. Frog Pond Wildlife Preserve and Observation Area is located on a two-acre seasonal wetland in the hills of Northeast Alabama, just a short drive from the cities of Jacksonville and Anniston in White Plains.
- Wetlands are living laboratories of biodiversity. In fact, wetlands provide habitat for about one-third of all federally listed endangered plant and animal species. They also provide nesting spots

for more than half of the nation's migratory birds. More importantly, they are essential to the quality of human life. Wetlands can reduce flooding, control erosion, recharge our aquifers and improve water quality. Wetlands are valuable, but they are vanishing. The Frog Pond has an observation platform that allows individuals to walk out within the wetland, listen to frogs calling, and even with the help of Dr. George “Frog” Cline, meet some of the frogs in person. This one small wetland had nine different species of frogs and toads present during one late night session in 2016. As part of this class, participants are welcomed as FrogWatch participants. This citizen scientist program allows the person to help in monitoring our amphibian population locally. This data in turn helps scientists interpret how these populations are doing throughout the state.

- A screening of “The Venom Interviews” was held at the Canyon Center as a “response to the media’s fictionalized depictions of venomous reptiles and the people who work with them.” This documentary focuses on the work and science of venomous herpetology and why sustaining our venomous snake population is important to our system as a whole.

### **K-12 Teacher Workshops**

- The Field School offers educational workshops throughout the year for teachers and homeschool parents. In 2016, the JSU Field Schools in partnership with NASA (Marshall Space and Flight Center) offered a teacher workshop on Meteorite and Lunar Sampling. This workshop allowed the teachers to gain educational resources and knowledge of the space program. As a result, teachers may now borrow sample disks of real meteorite and lunar materials from NASA to use in teaching their classes. Another teacher workshop scheduled for 2017 is Alabama Waterwatch Water Monitoring. This program will train teachers to monitor local water bodies and send that data to another statewide Citizen Scientist program to monitor local water quality. As part of this training, we are getting the teachers as well as students involved in the effects of our actions on our local water.

### **Summer Programs**

- The JSU Field School offers several summer programs related to sustainability and conservation education. Each year, we offer Creative Kids Days throughout the summer. Each of these days has a different theme. One program focuses on the river and its ecosystem. In this class, students use different parameters for monitoring water quality through the organisms they find in the water. The students can visit the river, collect organisms, and then evaluate water quality. Other important events each summer are the JSU summer camps. The focus of these four-day camps is the environment and sustainability. The students see a LEED-certified building and discuss all the aspects of the construction. Each camp day had a theme (Earth, Wind, Fire, and Water) and different aspects of these elements were the focus during the hands-on outdoor activities.

### **Educational Concerts and Festivals**

- Several concerts and festivals are a part of the outreach program of JSU’s Field Schools. More than 3,000 individuals attended these events in 2016. One example is the annual Earth Day celebration. This event regularly draws 400-500 members of the community and the focus is the local educational community and sustainability. A variety of interpreted Canyon hikes are available as part of this event. Other events offered include sustainable gift giving, sustainable/recycled arts and crafts, Leave No Trace, and live animal programs. Organizations such as the National Park Service, Alabama Herpetological Society, DeSoto State Park, and the State Leave No Trace group also attend and engage with the public on issues regarding sustainability and conservation.

## Interpreted Hikes

- The JSU Field Schools offer several monthly hikes to promote education and fitness. Also offered are educational hikes such as the Medicinal Plant Hikes with a local plant/medicine expert. This hike teaches people the medicinal uses of local plants while hiking and promoting overall good health. This class is very popular and usually has a waiting list.

Element 3B: Use of the Environment and Sustainability to Develop STEM Content Knowledge and Thinking Skills

**The Jacksonville State University In-Service Education Center has documented position results with Alabama Math, Science and Technology Initiative (AMSTI). Following are some highlights:**

- Professional development sessions offered in 2016 provided on-site instruction support programs that build capacity for sustainability at the school level.
  - JSU AMSTI/ASIM partnership provided hands-on professional learning for building a VEX/VEX IQ robot. Members of the JSU STEM faculty trained and mentored the teacher trainers, sought team mentors from industry, and involved JSU STEM student interns in serving as role models to encourage students in grades 3-12 toward STEM careers.
  - The estimated number of STEM professionals participating during the first year of implementation is at least 10 JSU STEM faculty/staff and industry partners who may interact with approximately 200 K-12 math and science teachers.
- In 2017, JSU AMSTI provided ten days of professional learning on VEX/VEX IQ robot building and coding and sensors for 51 teachers through math and science partnerships (JSU AMSTI and Applied Engineering and ASIM.) One partnership school competed at VEX world competition with a girls-only team.
- In summer 2017, 61 Teachers in the JSU AMSTI region received a week of professional learning in engineering. The teachers were challenged throughout the week-long training to use recyclable materials to solve current environmental problems.
- Approximately 500 teachers received STEM professional learning through JSU AMSTI in summer of 2017.
- JSU AMSTI trained 100 pre-service teachers in 2017. As these new teachers are hired into the public schools, they arrive on their first day fully trained on the use of AMSTI kits.
- AMSTI places in the hands of teachers and students over \$78,000,000 worth of equipment and materials each year, with \$7,100,000 coming from JSU AMSTI. At the high school level, it includes high-tech equipment like spectrophotometers, gel electrophoresis apparatus, DNA replicators, SPARK Science Learning Systems, graphing calculators, etc. AMSTI Specialists provide professional learning and support throughout the year. The \$28,000,000 annual budget demonstrates AMSTI's cost-effective approach.
- After receiving professional learning through JSU AMSTI, teachers go back to their classrooms with training materials from the courses and are prepared to offer the hands-on curriculum in their classrooms. Environmental topics include Wild organisms, Soils and Shore, Weather and Climate, Water and Land Forms, Dynamics of EcoSystems (simulating oil spills), Bio-diversity and Interdependence (Alabama Forestry Association), and Electricity, Waves and Information Transfer. Alabama Science in Motion trains teachers on additional labs.
- JSU AMSTI keeps 900 science kits in inventory. Those kits rotate to classrooms, are refurbished and sent back out, resulting in 2,700 kits distributed to teachers in 15 school systems in seven counties and 70 schools. At a minimum, 67,500 students receive instruction in hands-on science using these kits. These numbers will continue to grow each year as more teachers are trained.

- Results specific to JSU AMSTI: 51.1% of teachers use AMSTI math or science resources (kits, lesson plans, activities, task, and/or other resources provided by AMSTI Specialists) with their students; 35.6% use AMSTI resources 2-3 times weekly and 8.9% use the resources once per week. Over 95% say the AMSTI support had an impact on how they teach the math and science standards. Over 95% agreed that removing AMSTI materials would negatively affect their instruction in math and/or science.
- Effects of Oxford City School’s partnership with AMSTI-JSU:
  - 26% average improvement in math scores (Aspire Data)
  - 24% average improvement in science scores (Aspire Data)

### Element 3C: Civic Skills and Green Career Pathways

- The Office of Continuing Education and Outreach offers a non-credit Water Treatment Professional certificate program for individuals interested in the water and wastewater treatment field. The program includes sixty self-study hours, 440 hands-on internship hours in a water treatment facility, and sixty classroom hours preparing for the Alabama Department of Environmental Management (ADEM) Grade IV Water Treatment Operator exam. After passing the ADEM exam, the individual is immediately employable as an Intern Operator. An additional 1900 hours is required for ADEM to certify the employee as a Grade IV Operator (the highest-ranking Operator in the plant).
- JSU offers a Bachelor of Science in Biology with a concentration in Ecology and Environmental Science for graduates pursuing careers in those disciplines. There are on average 58 students seeking a Bachelor of Science in Biology with a concentration in Ecology and Environmental Science.
- The JSU Robotics Team of engineering and computer science majors brought home a national title at the 14th Annual Association of Technology, Management, and Applied Engineering Student Robotics Competition in St. Louis, MO in 2015. It was JSU’s second win since the team formed just four years prior. The 17-member team had to design a robot capable of competing in four Olympic events, including football, without manual adjustments. Weighing in at less than 120 pounds and sporting a JSU logo and glowing red undercarriage, “Optimus Rooster” lifted barbells, kicked field goals, completed a 20-yard dash, and collected golf balls on a marathon course. The JSU team captured first place as well as the Best Fabrication and People’s Choice Awards. JSU offers degrees in both Applied Manufacturing Engineering and Applied Electronics Engineering. We find that 78% of JSU Applied Electronics Engineering graduates (on average over the last five years) will find employment within four months.
- **Freedom Riders National Monument** consists of two locations in Anniston, Alabama associated with the 1961 Mother’s Day attack, from the bus station to the grocery store, resulting in “the flames that helped ignite the civil rights movement.” The Freedom Riders National Monument is for students, scholars, tourists, families, international visitors and unintended travelers. Through the development of this park, a small city's inspirational story becomes a part of the entire nation's civil rights history.
- **American Democracy Project for Civic Engagement** JSU participates in the American Democracy Project for Civic Engagement, a national initiative that seeks to foster informed civic engagement in the United States. Following are two recent activities:

- September 19, 2016 – JSU celebrated Constitution Day with a film screening of the History Channel documentary, “Founding Fathers” on the 11<sup>th</sup> floor of the Houston Cole Library. The event was free and sponsored by the American Democracy Project.
- The American Democracy Project at JSU will be hosting the Martin Luther King Jr. Community Service Week January 17-27, 2017, as a way to honor Dr. King and his mission of unity, equality, and service to one another. Several community service events occurring during the week are:
  - Jan. 17-27 – Book Drive for United Way
  - Jan. 21 – Food Distribution at Piedmont Benevolence Center
  - Jan. 24 — Yard work/Cleaning at Anniston HOPE Women’s Services
  - Jan. 25 — Games and Visit Legacy Village Retirement Community