

Contact: Patrice Sayre

CAMPUS SUSTAINABILITY ANNUAL REPORT

Action Requested: Receive the annual report on the Campus Sustainability Plan.

Executive Summary: Iowa's public universities are committed to a sustainable future through academics and research, operations, and economic development. Respect for the impact on the environment is part of decision-making at all levels. Regent institutions apply campus sustainability broadly – in the general operations of each institution, in the curriculum and experiences of students and employees, in effectively partnering with industry and government, and in technology transfer.

Each Regent university achieved a Gold rating in the Association for the Advancement of Sustainability in Higher Education (AASHE) Sustainability Tracking, Assessment and Rating System (STARS) program. STARS encourages a comprehensive approach and vision to making college and university campuses living, learning laboratories for sustainable resource-efficient institutions.

In this year's report, the Campus Sustainability Coordinators at the universities have highlighted selected accomplishments in the area of sustainability:

Elizabeth Christiansen – SUI, Director, Office of Sustainability - <http://sustainability.uiowa.edu/>

Merry Rankin – ISU, Director, Office of Sustainability - <http://www.livegreen.iastate.edu/>

Eric O'Brien – UNI, University Sustainability Coordinator – <http://www.uni.edu/sustainability>

EDUCATION AND RESEARCH

A primary function of colleges and universities is to educate students. By training and educating future leaders, scholars, workers, and professionals, higher education institutions are uniquely positioned to prepare students to understand and address sustainability challenges. This STARS category recognizes institutions that have formal education programs and courses, as well as sustainability learning experiences outside the formal curriculum.

Iowa State University

ISU Bikeshare Project

The ISU Bikeshare Project began in 2013 as a senior capstone project for one Industrial Design Student, with a focus on developing a [bike share system for the Iowa State University Campus](#) that would in turn improve and increase sustainable transportation options, relieve congestion on the CyRide bus system, and increase the availability of health-oriented transportation with less carbon pollution and less fuel consumption.

Interest and opportunity led to the formation of a cross-disciplinary Industrial Design Studio for the project in the spring of 2014. Currently finishing its third semester, [this collaborative project, spearheaded by the Department of Industrial Design and the College of Design](#), engages over 90 students and 11 academic departments, including Industrial Design, Architecture, Interior Design, Community and Regional Planning, Landscape Architecture, Electrical Engineering, Mechanical Engineering, and Economics - and is the only student/faculty project of its size, subject, and scope in the country.



Students' engagement in this collaborative and integrative connection to sustainability is two-fold. Academically, students are immersed firsthand in the complexity of systems design from the ground up to create a value-added, user-embraced, and resilient deliverable transportation service. Student teams, each committed to a unique and specified component of a bikesharing system, are challenged with formulating rigorous research questions, using multiple research methods and generating report of findings and recommendations that serve not only as an exemplary model for other college and university campuses, but also a transferable, scalable, and informed process for communities.

Student teams during 2014-2015 have focused on designing and fabricating a model “shared” bike and docking system as well as a “failsafe” locking system to connect these prototypes; developing software and hardware for bicycle tracking, checkout (including Smartphone applications) as well as general system reports and controls; placement and infrastructure of docking stations; user interface information education tools and product; and system branding and marketing. The result is an actual usable physical system that has been noticed by the private and public sectors outside of the campus and the region.



As well as offering a unique academic connection to sustainability for students, this collective project allows for and requires the integration of disciplines toward achieving a sustainable system serving and connecting community needs and infrastructure. With this initiative placed within the context of improving and enhancing a currently established and embedded system rather than simply designing a stand-alone program, students are challenged in navigating the complexities of the interwoven nature of transportation beyond simply designing a new bicycle and a place to check them out.

University of Northern Iowa

Maintaining and growing the spirit of learning and outreach

Both faculty and students benefit from learning and curricular experiences that expand their horizons and enable them to contribute at higher levels with lasting impacts. Two excellent opportunities were provided at UNI



in the last year.

Faculty from all the Colleges participated in a sustainable workshop to help enhance sustainable aspects of their curriculum. Also, in a juried competition, three faculty members were awarded funds from UNI’s Recycling and Reuse Technology Transfer Center (RRTTC) for in-depth curricular projects in the area of whole foods nutrition (Dr. Diane Depken, HPE/HPELS); green business operations (Dr. Eric Lee, Accounting/CBA); and energy/STEM education (Dr. Timothy Kid, Physics/CHAS). These projects affect the community directly and show students tangible examples of

how their learning is implemented in the community.

For students in all disciplines, UNI's Certificate in Sustainability offers an opportunity to gain a 15-hour academic endorsement and will see its first two graduates this May. During recent Earth Week activities, a host of films, talks, campus clean-ups and educational activities were jointly sponsored by UNI's various Centers, offices, and programs that are involved in sustainability. These efforts were also supported by the mentoring efforts of UNI's sustainability faculty and will continue the strong spirit of learning and growth.

University of Iowa

Climate Narrative Project

SUI launched a *unique media arts project* to expand discussion regarding the growing impact of global climate disruption. Using social and popular media and communications, the Climate Narrative Project reaches across academic disciplines to chronicle regenerative approaches to energy, food, agriculture, water and waste management, community planning and transportation, to answer the question "*What accounts for the gap between science and action on climate change, and what can we do more effectively to communicate informed stories and galvanize action?*"



Selected Student-Fellows work with Writer-in-Residence, Jeff Biggers, on semester-long investigative projects, using visual arts, film, radio, theatre, dance, spoken word and creative writing mediums. During the Spring 2015 semester, Climate Narrative Project Fellows explored regenerative agriculture, urban farming and food policy, with a special focus on schools. The Yale Climate Connections features the Climate Narrative Project on its nationally syndicated public radio program.

Sustainable Fuel Index

With grant funding through the Leopold Center for Sustainable Agriculture, the University is investigating the methods for identifying and developing a sustainable bio-renewable fuel supply. The Energy Sustainability Index (ESI) is a decision-making tool to help evaluate locally available biomass sources using the framework of the sustainability triple bottom line. Users consider energy choices through the lens of ecological health, social equality, and economic viability to compare renewable energy alternatives.

The SUI created an inter-institutional project team to systematically evaluate the sustainability of biomass energy to be co-fired with coal in the main power plant. The project team, consisting of investigators from the University of Iowa, Iowa State, and the University of Northern Iowa, is developing a broad ESI framework so that other fuel sources (wind, solar, fossil fuels) may also be compared in the future. SUI will use the ESI to aid in its transition to a more sustainable energy mix. The framework and processes developed during this project will be available for other institutions and businesses to use.

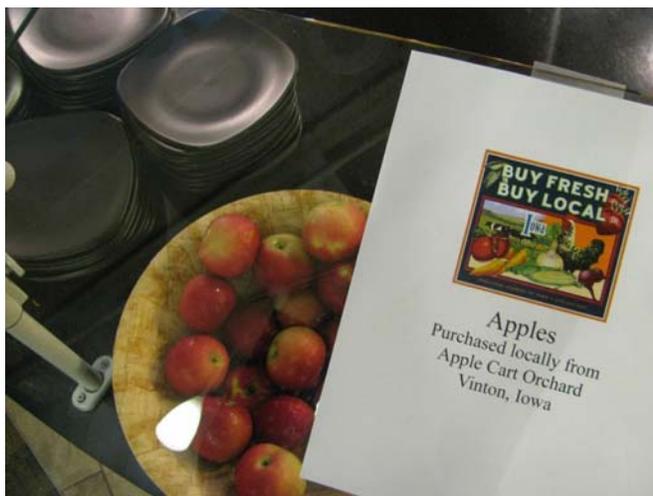
CAMPUS OPERATIONS

This STARS category encompasses everything that goes into the daily operation of a campus. It includes quantitative data reporting in the areas of Building Operations, Climate, Dining Services, Energy, Grounds, Purchasing, Transportation, Waste, and Water Usage. This overarching category notes that institutions can design, build, and maintain a campus in ways that provide a safe and healthy environment for the campus community. It recognizes the outstanding efforts to maintain a more sustainable campus environment.

University of Northern Iowa

With long established roots in local food, UNI continues to practice what it preaches

From the inception of its Local Food Program in 1997 and creation of the nationally recognized “Buy Fresh, Buy Local” program in 2002, UNI is known as a leader in positively impacting the local food economy. The University commitment has been prominent through efforts in the classroom, outreach to the community, and purchasing practices within UNI Dining.



During calendar year 2014, UNI Dining obtained an amazing 47% of their purchases from local sources. This includes purchases from a 250 mile radius, in accordance with the Association for Advancement of Sustainability in Higher Education reporting guidelines, and is up more than 10% from previous years. No one item caused the major increase this year; rather it was a number of small changes such as switching to locally-sourced chickens which increased local purchases by over \$75,000 from the previous year.



Panther Plot. The garden has grown over its first two years, producing thousands of pounds of produce that have been served in dining centers, local restaurants, and donated to the Northeast Iowa Food Bank.

Many converging efforts create an engaged campus related to food. From the recent Reaching for Higher Ground yearlong theme of “Food Matters,” which engaged the entire UNI community, to a visit at last fall’s UNI Harvest Festival from Food Network Chef Amy Thielen, the entire UNI community has been involved.

One of the main drivers of this effort is students. In 2013, a group of second year Presidential Scholars broke ground on a student-run garden called the Panther Plot. Over the last year, the student engagement in the Panther Plot garden has continued to grow. This expansion of efforts has resulted in a five-year landscape architectural plan designed to increase the productivity and sustainability of the garden, while making it a more welcoming

place for the entire university community to spend time. This effort, completely initiated and run by students has morphed from an idea to a fully operationalized business plan in less than a year. Completion of phase one and two of this project are set for fall of 2015. These efforts are a prime example of how the hard work of students created a project far beyond their original vision.

University of Iowa

Energy Smart Classroom Scheduling for the Summer Session

In Summer 2014, SUI launched an initiative to test whether compacting classroom scheduling and consolidating the use of occupied space on campus would reduce energy consumption. Three buildings were in the pilot project:

- English-Philosophy Building - 95,052 gross square feet
- Maclean Hall - 73,521 gross square feet
- Pomerantz Center - 73,150 gross square feet

General assignment classroom activities were suspended after 6 p.m. on weekdays and all day on Saturdays and Sundays in the selected buildings. Air handling systems were cycled down during unoccupied times in those buildings.

Results - Electrical consumption during the 10-week summer session was reduced by an average of 19 percent in the three buildings (EPB=13%, Maclean=17%, Pomerantz=27%). The use of chilled water to cool the buildings was reduced in all three buildings. Due to the success of this project, the energy smart scheduling plan will be expanded for the Summer 2015 academic session to add three additional buildings for a total of six buildings.

This project is part of a larger initiative to reduce energy consumption at the SUI. Other energy reduction measures include:

- Energy Control Center – energy information and system operations center
- Energy efficient building design standards
- Energy Hawks Team identifies opportunities for energy efficiency to reduce costs
- Aggressive retro-commissioning program to optimize building systems at all times
- Fault Detection and Diagnostics Pilot – instantaneously identifies system “faults” to maintain building optimization
- Building Energy Audits
- Maximize utility rebates and incentives
- Steam Trap Maintenance program
- Steam piping insulation
- MidAmerican Energy Curtailment Program Enrollment
- Eco Hawks Sustainability Leadership Program is a sustainability leadership program to educate students, faculty and staff to practice energy reduction, waste reduction and healthy practices.

Miscanthus Harvesting and Testing

The University’s investigations into the use of perennial grasses and woody biomass as fuel for the Main Power Plant are moving forward. Two test plots of miscanthus grass were harvested in March 2015. The perennial grass was forage-chopped and hauled to the fuel yard to be mixed with coal. Test burns of the fuel mix will be conducted in May, 2015. The use of miscanthus as an alternative fuel to coal will assist SUI in meeting its goal of achieving 40% renewable energy use on campus by 2020. The University of Iowa is currently enlisting local landowners to grow the perennial fuel



crop for the power plant. Approximately 360 acres will be planted in 2015, with the goal of 2,500 acres by 2018.

Iowa State University

Jeff and Deb Hansen Agriculture Learning Center

Iowa State University celebrated its ninth LEED certified building in 2014-2015 with LEED Gold being awarded to the [Jeff and Deb Hansen Agriculture Learning Center](#), a state of the art designed and constructed facility and innovative multi-use resource that uniquely connects and engages town and gown. The Center embraces all facets of sustainability and sustainable development – economic sustainability, social sustainability, and environmental sustainability.



In terms of environmental sustainability, the Hansen Center is the first LEED certified building to use a geothermal system, lowering energy costs so substantially that the system performs 33% better than state code requirements. Water conservation systems and equipment allow the Center to use 43% less water than a similarly functioning traditionally-designed facility, exceeds Iowa Code requirements by 33%, and saves nearly 69,000 gallons of water a year. Almost 41% percent of building materials were sourced within a 500-mile radius, making it the second highest locally-sourced building on the Iowa State University campus.

As to economic sustainability, the Hansen Agriculture Student Learning Center offers a two-fold benefit. First, all the efficiencies in operational design equates to ongoing reduced cost of annual operation – key for a building located remotely from the central campus core and the benefits that come from the central power plant. Although some initial costs may be higher than a traditionally designed facility, the return on expenses is extremely short. For example, the Center's geothermal



system has a three year payback and results in ongoing operational savings for the University. Economic sustainability is also evidenced in support to local business and communities through sourcing and using locally extracted and manufactured materials and contracted services.

Social sustainability is attributed to the unique and extensive functionality of the facility and its accessibility to students, faculty and staff as well as groups, organizations, initiatives and events throughout Iowa and the region.

The Hansen Center is especially unique to Iowa State University and the Midwest through its ability to offer year-round opportunities and access for animal-human interaction with its teaching laboratories, outreach activities and functions for future and current students. A multitude of student organizations use the facility to conduct meetings, host events, and network. The Center supports a variety of events outside Iowa State University, including

business meetings, formal dinners, and private celebrations – in its first year hosting an international beef cattle welfare symposium, a statewide gathering of high school FFA students, a centennial celebration for an ISU agricultural fraternity, and the annual Iowa Games competitions.



PLANNING, ADMINISTRATION, AND ENGAGEMENT

This STARS category encompasses a wide variety of planning, engagement, and outreach areas. It includes quantitative and qualitative data reporting in the areas of Coordination and Planning, Diversity and Affordability, Human Resources, Investment, and Public Engagement. This overarching category notes that institutions of higher learning can make significant contributions to sustainability throughout society by sharing their experiences and expertise with others. Sharing best practices and lessons learned can help other institutions, communities, and individuals realize efficiencies that they otherwise may not have considered.

University of Iowa

Energy Efficiency for Iowa

The University's outreach activities included a stop at the 2014 Iowa State Fair. Professor K.W. Thern (*aka* SUI Associate Director of Energy Conservation, Doug Litwiller) educated and entertained visitors at the SUI booth. Fair-goers were also able to participate in a show-and-tell session on energy efficient light bulbs, and learn how the University is working to reduce energy consumption.



Bio-Renewables Field Day

Many local agricultural producers attended the University of Iowa's Bio-Renewables Field Day (September, 2014) to visit a miscanthus test plot and learn about the SUI's investigations into the use of perennial grasses and woody biomass as fuel for the Main Power Plant. The event was sponsored by Iowa Learning Farms (ILF), the University of Iowa Office of Sustainability and FM Utilities & Energy Management.



Jacqueline Comito, ILF Program Manager, explained the role of Iowa Living Farms in organizing the event and Dr. Emily Heaton, Iowa State University, discussed the agronomic research that is being conducted on *Miscanthus x giganteus*, in partnership with SUI. Dan Black, local land owner, shared his experiences with field preparation and planting the new-to-Iowa crop, and Ben Anderson, SUI Main Power Plant Manager, explained why the University is considering this alternative fuel and the

processing steps necessary to use the material in the power plant.

Iowa State University

Eco-Healthy Child Care

Early childhood professionals can make small changes that have a significant and sustainable impact on the health of young children.

[Eco-Healthy Child Care®](#) is a national program, recognized by agencies such as the National Environmental Health Association and the United States Environmental Protection Agency that ensures child care settings are as happy, healthy, safe and green as possible by reducing children's exposure to toxics.



After attending a facilitator training in 2013, a team of program specialists from Iowa State University's Extension and Outreach Human Sciences Program, developed the [Eco-Healthy Child Care® online series \(EHCC\)](#), to offer a unique and relevant "greener" alternatives component in their early childhood program. Recognizing that few environmental issues are addressed by professional development, accreditation standards or licensing/registration regulations for early childhood programs, the team assisted child care providers in identifying small changes that have a big impact on the children in their care, as well as the environment.

Through an online educational format, ISU Extension and Outreach specialists facilitate discussions, share information, and provide activities related to completing an EHCC checklist and earning professional development credit through the Department of Human Services. In offering the course online, providers and trainers saved time and travel costs and eliminated the environmental impacts associated with on-site training. Collectively, the series offers three sessions:

- Eco-Healthy Child Care® - Indoor: A closer look at the indoor environment related to toxins including furniture & carpets, household chemicals, air quality, radon, and asbestos.
- Eco-Healthy Child Care® - Outdoor: A closer look at the outdoor environment related to toxins including pesticides, treated structures made of wood, recycling and garbage.
- Eco-Healthy Child Care® - Materials: A closer look at the program materials and supplies related to toxins including plastics, art, lead, and mercury.



Eco-Healthy
Child Care®



An ONLINE training series supporting early childhood professionals in creating a healthier environment for children.

- Session 1 **Indoor Environment**
- Session 2 **Outdoor Environment**
- Session 3 **Materials**



Register for the series on the [Iowa Child Care Training Registry](#)

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Extension and Outreach
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In addition, the team offers an [online “clearinghouse” website](#) to provide ongoing access to all EHCC resources and discussion materials after training sessions have been formally completed.

With the overarching goal of supporting Iowa early childhood professionals with information that facilities operating “greener” programs, two interactive training opportunities were offered in 2014-2015, the initiative’s first year. In its inaugural year, 43 child care providers across Iowa were trained with over 90% of participants electing to complete all three online sessions.

The Eco-Healthy Child Care® online series has great potential to positively affect child care in Iowa, which currently ranks third in the nation for the percentage of young children with all parents in the household employed, and has 70 percent of its children under six years of age needing early care and education while their parents work. This resource is an effective tool in engaging individuals, families, and households in sustainable living and empowering communities toward a healthy and sustainable future.

University of Northern Iowa

Germinating collaborations and ideas to improve the world around us

Communities in Iowa have much to learn, apply, and engage with solutions and best practices from other parts of the country and the world in achieving sustainable and equitable development. We also have many things to share with other communities around us. Environmental sustainability, equity and resilience were front and center of engaging students, faculty and our Centers in conversations and actions launched at UNI this year.



Recently, the Consul General of Canada, Jamshed Merchant, addressed the symposium, **“Canada and the US: Partners and Allies in Arctic Research”**, hosted by the UNI Museum, Department of Geography and the Arctic-FROST Center. Additionally, a March conference on sustainability, **“Environmental Equity and Resilience”**, sponsored by a Provost’s Initiative brought in an active demonstration of walkability of neighborhoods by the “bikeaholic” Robert Ping (Livable Walkable Communities Institute) in Waterloo’s east

side. The UNI College of Business Administration sponsored a daylong seminar on the **Ethics of Energy Production**. This seminar examines the role of ethics in the business sector through new transmission routes for energy that are proposed to pass through Iowa.

Attendees at these recent events were engaged by presentations, demonstrations, conversations and ideas that addressed the following questions and explored their impact on communities in and beyond Iowa:

- What lessons can we learn and apply from remote Arctic communities that are very similar to some rural Iowa communities?
- How walkable and bikeable are our neighborhoods?
- Do all neighborhoods provide equal access to healthy choices for living?
- How is the food we eat, the energy we rely on, and the policy that influence our actions sustainable?



At the same time, a new collaboration between UNI's RRTTC and Provost's office has engaged student interns directly, not only in some of the conference planning, but also in providing technical assistance to communities and resiliency programming in schools. These Provost's Initiative on Environmental Equity and Resilience (PIEER) interns are excellent ambassadors of UNI's advances in sustainability, both on campus and in the community.