

BY MICHELLE
TEDFORD

A L I V I N G

How the University of Dayton went from green to gold

LABORATORY

The University is so green, it's golden.

This spring, UD earned a gold rating in the Association for the Advancement of Sustainability in Higher Education sustainability tracking, assessment and rating system known as STARS. This is the University's first gold rating since it started reporting to AASHE STARS in 2011, when it received a bronze rating.

What to an outsider might seem as individual initiatives — a green roof planted here, efficient lighting installed there — form a web of innovations, from academics and research to operations and administration. These innovations are not only golden but illuminate a focus of the University's strategic vision: to marry sustainability and human rights in the spirit of the pope's encyclical on caring for our common home and UD's mission as a Catholic, Marianist university.

"In my inauguration address last year, I said we must be prepared to make investments in faculty,

staff, graduate students and facilities in sustainability," said President Eric F. Spina. "We have already invested in and achieved notable progress in renewable energy and energy efficiency, specialized energy labs and new interdisciplinary academic programs.

"But to reach our aspiration to be the University for the Common Good, we must build upon our cross-University strengths in those areas and develop additional opportunities for our students to be leaders in improving standards of living and creating a more sustainable environment."

Steve Kendig, executive director of energy utilization and environmental sustainability, pointed to 2014 when the University's spotlight on sustainability started to shine brighter. That's when the George and Amanda Hanley Foundation donated \$12.5 million toward campus sustainability initiatives. The gift helped create the Hanley Sustainability Institute, which has been a catalyst toward

approaching campus sustainability in a systematic way with broad reach, Kendig said. It also set a goal to reach STARS gold within five years.

It has achieved that goal in just under four.

The credit goes to the entire University, Kendig said. Not only is sustainable innovation found across campus, but all units contributed to the 2018 reporting process. The University assembled a team of three staff members and a cadre of students to manage the data collection. This allowed the University for the first time to submit data in every STARS category.

In 2017, UD earned a STARS silver rating. Fourteen months later, UD gained 23 points to achieve the gold. Among the areas of greatest improvement for 2018 are:

- Student engagement, including a peer student educators program.

- Dining services, which received a near perfect score on sustainable dining and contributed to overall campus waste reduction.

- Research, which received a perfect score of 18; University faculty and staff researchers from 29 departments participate in sustainable research.

- Curriculum, which cataloged 141 courses on sustainability and an additional 376 that include sustainable principles and discussions.

- Diversity and affordability, which includes data from enrollment management about its efforts to improve access to higher education to create a more equitable world.

- Energy, with UD's Green Revolving Fund addressing building energy consumption in a systematic way.

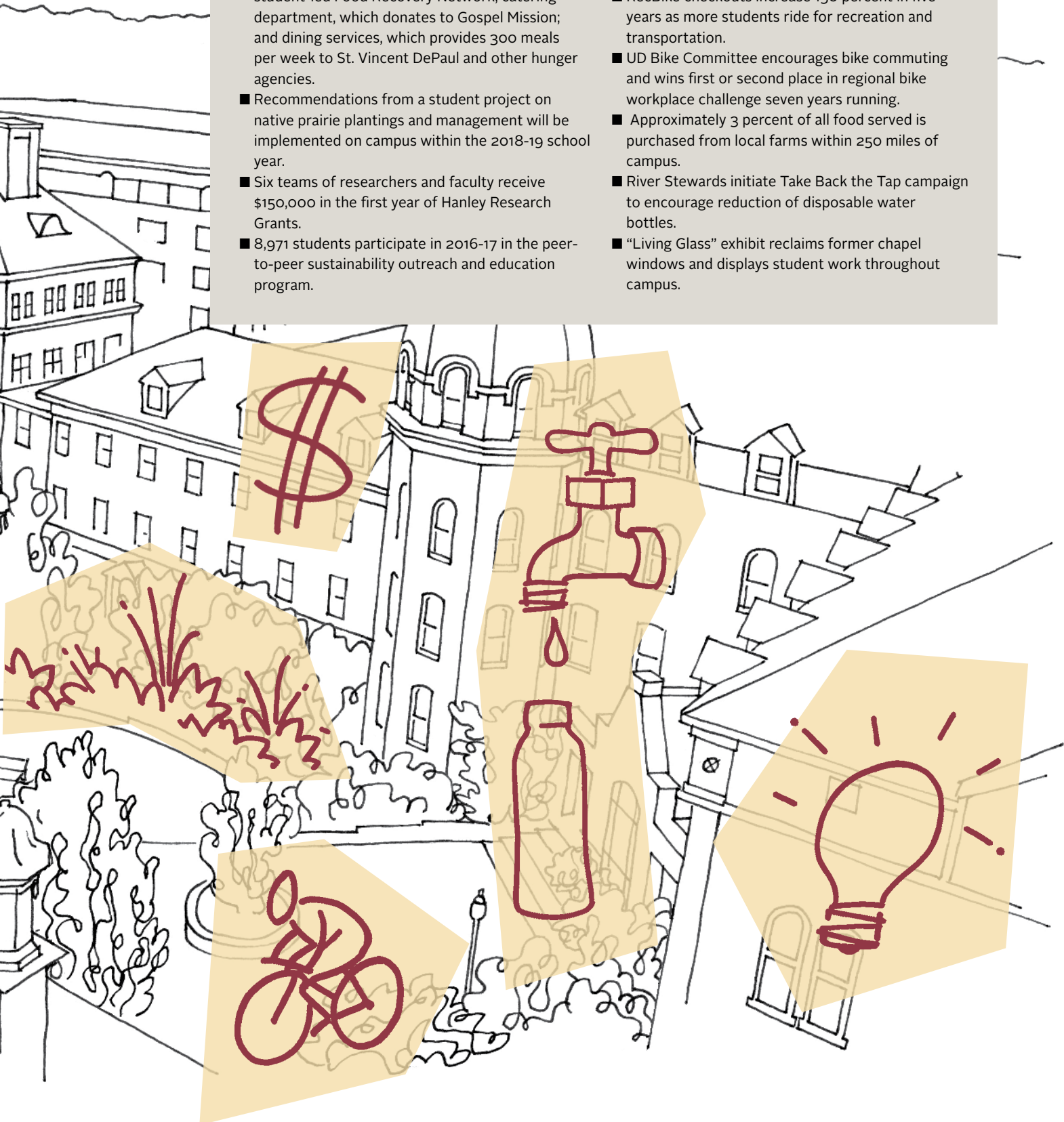
- Waste, with more attention to measuring reduction and diversion, especially during construction projects.



Seeing STARS

How campus contributes to STARS gold

- The Green Kiosk in Kennedy Union gives real-time and historical campus sustainability data; also available online at bit.ly/UDM_greenkiosk.
- On-campus composting trials utilize dining and landscape waste material.
- Multiple food recovery programs, including student-led Food Recovery Network; catering department, which donates to Gospel Mission; and dining services, which provides 300 meals per week to St. Vincent DePaul and other hunger agencies.
- Recommendations from a student project on native prairie plantings and management will be implemented on campus within the 2018-19 school year.
- Six teams of researchers and faculty receive \$150,000 in the first year of Hanley Research Grants.
- 8,971 students participate in 2016-17 in the peer-to-peer sustainability outreach and education program.
- Green rooftop patio is installed at Kennedy Union in 2017, with sensor monitoring proposed by students in GEO 404.
- Campus energy team audits four large academic buildings with potential savings of 3.32 GWh of electricity and 9,044 mmBTU of natural gas per year.
- RecBike checkouts increase 150 percent in five years as more students ride for recreation and transportation.
- UD Bike Committee encourages bike commuting and wins first or second place in regional bike workplace challenge seven years running.
- Approximately 3 percent of all food served is purchased from local farms within 250 miles of campus.
- River Stewards initiate Take Back the Tap campaign to encourage reduction of disposable water bottles.
- "Living Glass" exhibit reclaims former chapel windows and displays student work throughout campus.



Said Kendig, “This rapid improvement — and reaching our goal a year ahead of schedule — is only possible because more units bought into the University’s sustainability goals and committed to evaluating, reporting and aligning performance and priorities to advance sustainability on our campus and our community.”

Senior Andrea Mott said her position, both as a STARS data contributor and member of the team that evaluates campus energy use, has given her a keen view of UD’s commitment to sustainability.

“I’m a student of a university that takes the initiative to get the gold standard,” she said. “I have a lot of pride in that.”

Leah Ceperley ’17, who organized the STARS reporting process in 2017 and 2018, said the report captures campus initiatives; engages a large part of campus; gives an honest measurement of how UD is doing; and gives the University, through access to the reports from other STARS schools, an idea of best practices and how UD can implement them on campus.

“It also helps to keep our feet to the fire,” said Ceperley, who noted that, just as UD has improved, other universities are also reviewing UD’s best practices and learning from them.

Schools can submit their self-reports at any time of the year. As of press time, UD is the highest rated STARS school in Ohio, has the second-highest score among Catholic schools nationally, and is in the top 2 percent of all rated schools.

Katie Schoenenberger ’99, Hanley Sustainability Institute director of student engagement, said participating in STARS is about “reaching out to other schools, having those conversations, and building community — as we intend to do at UD — around what will take us to the next level.”

In 2021, UD will learn if it’s

Seeing STARS

How the classroom contributes to STARS gold

- 6,372 students in the last three years have graduated having taken at least one class that adopts sustainability learning outcomes.
- Academic units adopt learning outcomes focusing on ethical decision-making, Catholic social teaching and sustainability.
- Two undergraduate degree programs focus on sustainability: International Studies and Human Rights Studies.
- Three sustainability minors are available to undergraduates: Sustainability, Energy and Environment; Sustainable Manufacturing; and Human Rights Studies.
- One graduate program focuses on sustainability: Renewable and Clean Energy.
- New interdisciplinary graduate certificate in sustainability includes electives from nine programs.
- Carbon footprint tool designed by honors student is to be implemented in the dining halls.
- Student class project envisioning a zero-waste UD Arena to be implemented by 2019-20 basketball season.
- Students organize a National Issues Forum on Climate Choices to build dialogue, trust and capacity for action on climate solutions.
- Experiential learning opportunities include ETHOS immersions, the Malawi Research Practicum on Rights and Development and participation in the River Stewards.



reached the highest level — platinum. That's when a University team will again submit data to AASHE. In the meantime, UD is working on its 20-year plan on sustainability, which Kendig expects to be completed next spring.

Adding to the momentum is new leadership with experience in implementing sustainable practices. Rick Krysiak joined UD in fall 2017 as vice president of facilities and is a certified LEED green associate with experience implementing a campus-wide energy conservation program at Oklahoma State University. Ben McCall, who helped the University of Illinois at Urbana-Champaign become one of the most sustainable campuses in the nation, will this August become the first executive director of the Hanley Sustainability Institute.

On the horizon is another goal set in 2014 — to become the top Catholic university in sustainable education. STARS is one measure of such success, so UD is looking to the Catholic school with the highest STARS score, Santa Clara University, to learn from its innovations.

Achieving gold has only left Kendig hungry for more. As he sat around a conference table with members of the STARS team, he talked about the impending installation of UD's first large-scale renewable energy initiative, solar panels to be installed at three campus locations. Not only will students and faculty be involved in the installation, but the monitoring and optimization of the panels will be incorporated into classroom and research projects.

Schools that do sustainability well, Kendig said, do it seamlessly throughout campus. He said he can see UD headed in that direction.

"We have some room to grow," he said. "And we only have to get 11 more percentage points to reach platinum." **UD**

Seeing STARS

How the student neighborhood contributes to STARS gold

- Residents of more than 400 student houses receive monthly Energy GPA "report cards"; top savers receive Energy Champion T-shirts.
- Rooftop solar arrays are on a student house on Evanston Avenue and five houses on Stonemill Road.
- Highly residential campus allows 88 percent of student body to get to class by alternative means (walking, biking, taking the campus shuttle).
- Students donate for reuse 30 tons of furniture, clothing, kitchen supplies and more during move-out each spring.
- Our Place in the Watershed project, in collaboration with the Miami Conservancy District, maps water runoff and its effect on the health of the Great Miami River.
- Save a Watt, Spare a Lot assessment measures student knowledge of sustainable practices.
- Students receive PATH points toward housing preferences for the following year for participation in sustainable video education program.
- A new solar array will be installed on Adèle Center when it opens in the neighborhood in August.
- Sustainability Club organizes GreenSweep to beautify student neighborhood.



Beyond STARS

What it will take to become a carbon neutral campus

The University's quest for STARS gold may seem simple compared to another goal it has set for itself: to be carbon neutral by 2050.

One hurdle is embedded in UD's 168-year history. Old buildings have historic value but come at a large carbon price. Renovations that improve efficiency still lock in a significant energy requirement.

Matthew Worsham '15 applied the economic concept of carbon lock-in to his evaluation of campus energy requirements for his master's research in renewable and clean energy, a degree he earned in 2017.

"You say you want to go carbon neutral — that's a very ambitious goal," said Worsham, now the University's sustainability and energy coordinator. "It's something a lot of universities want to do, but we're having trouble figuring out the best way to go."

Worsham is looking to a combination of options:

- Using energy more efficiently. This includes upgrades to technology, efficient renovations and new construction choices that reduce carbon-based fuel dependence.

- Using cleaner power. This could be from on-campus renewable generation, such as solar, or in purchasing renewable energy credits, such as from Ohio wind farms.

- Purchasing carbon offsets. This could come from identifying reforestation or soil management programs to support.

Worsham said a university must also consider carbon lock-in from other sources: the commuting practices of its employees and students; travel practices from business trips to study abroad; and solid waste disposal and wastewater treatment, to name a few.

In addition to its carbon neutral pledge as a signatory to The Second Nature's Carbon Commitment, UD is also part of "We're Still In," which sup-

ports climate action to meet the Paris Agreement; the Global Catholic Climate Movement; and the U.N. Global Compact, the world's largest corporate sustainability initiative.

Perfect teaching moments spring from such goals. For example, Worsham said while our student neighborhood is an inefficient way to house students, neighborhoods everywhere face similar energy challenges.

"We have the opportunity to use this neighborhood as a model for how we can convert buildings all over the country to carbon neutral homes," he said.

As UD pursues STARS platinum, its actions also will further reduce carbon emissions and expand the impact of its practices by educating others. Worsham identified potential areas of improvement, including employee training, continuing education, transportation, waste-shipping practices, future efficiency projects and on-campus renewable energy generation.

The motivation for being carbon neutral goes back to the University's roots as a Catholic, Marianist university.

'If not for care of our common home, then what? What better mission-driven obligation do we have than this?'

"If not for care of our common home, then what?" said Leah Ceperley '17, staff member in facilities management and the Hanley Sustainability Institute, referring to Pope Francis' encyclical on human rights and the environment. "What better mission-driven obligation do we have than this?"

With 10 Catholic universities now earning STARS ratings of bronze, silver or gold — and seven of them having signed a statement in support of Pope Francis' leadership on climate change and social justice — Ceperley said there's a great opportunity for collaboration, leadership and success in meeting sustainable goals.

As Pope Francis writes, "The climate is a common good, belonging to all and meant for all." **UD**