SEEKING sustainability

- AFTER THE ROAR: Recycling at University Athletics Events
- LOOKING TO THE FUTURE: The Founder of the U's Organic Gardens
- TIVO-ING HEAT AND COLD: A PROF’S INNOVATIONS IN ENERGY
- SOLAR IVY: A GREEN TWIST ON THE WALLS OF ACADEME
Martha always wanted to be a mother. It was her dream. It was her hope. But at age 39, her chances of having a baby were running out.

That's when reproductive medicine specialists at University of Utah Health Care gave her one last shot. They performed the most advanced infertility techniques and provided the most compassionate care until finally, Martha was pregnant.

Ten years have passed, and Martha continues to hope and dream. But now her dreams are for Rosemary, the daughter she always wanted.
A student-led effort has helped make the U campus a leader in being green.

By Ross Chambless

Environmental sustainability has become part of the way the University of Utah thinks. Awareness of sustainability issues influences the way buildings are built and remodeled at the U; the transportation that students, staff, and faculty members are encouraged to use; how the landscaping is irrigated; how the buildings are heated and cooled; even the food that’s grown on campus and served by the University’s dining service. Two years ago, the University completed an Environmental and Energy Stewardship Initiative, or “Climate Action Plan,” for steering the University toward zero carbon emissions by 2050. The pages ahead explore how these transformations came to be and are continuing to take shape. We hope these articles provide you with new information and insights into the green changes taking place at the U.

—The Editors

Visit continuum.utah.edu for additional photos of the U’s sustainability efforts, Fred Montague’s artwork, and much more.
Your Comments

PRAISE FOR TURKISH PROFESSOR

I enjoyed reading the article on the Turkish professor here at U studying and researching birds [“Tracking Winged Sentinels,” Spring 2012].

Dick Kenney BS’56
Comment submitted via continuum.utah.edu

EVOLUTION DOESN’T CUT IT

It is amazing the numerous problems with the theories of evolution that their scientific opponents gloss over and at the same time refuse to give creationism the time of day because of its supernatural nature [“Evolution of a Scientist,” Spring 2012]. Let me mention just a few.

There is life itself. Evolutionists postulate that billions of years ago conditions were perfect when a sunspot or some other natural phenomena accrued providing the chemicals or energy that started life with a single cell in the sea. Yet deprive a newborn (whatever) of a life-required substance (air) for just a few minutes and no chemical or energy will restore life to a perfectly conditioned creature.

Then there is the fact that a single-cell amoeba has a DNA strand that is more complex than a fleet of 747s. There is no scientific explanation for this complexity. To believe that a lightning strike or some other natural phenomena created it is absurd.

What about the problem of reproduction? There is no scientific explanation for the development of reproduction or the requirement for a male and a female in the reproductive process. How does survival of the fittest explain this?

Then there are the problems with the variety of life (why are there mosquitoes, etc.?), the beauty all around us, the intricacy of so much of life (the eyeball), etc.

In an oversimplification, the total scientific evidence consists of some visible evolution within a species and a few fossils that appear to show a migration from one species to another. To accept paltry evidence and totally dismiss intelligent design is not scientific.

Dick Kenney BS’56
Comment submitted via continuum.utah.edu

PROUD OF GRANDPA AND THE BLITZ KIDS

I’m Vadal Peterson’s granddaughter, and I grew up hearing how proud he was of the team and the circumstances and events leading up to the win [“The Blitz Kids,” Spring 2012]. Thank you for your acknowledgement of this great achievement.

Pam Pannier BS’83
Comment submitted via continuum.utah.edu

I, too, am a granddaughter of Vadal Peterson. Isn’t it amazing how different college sports were back then—the coaches did not receive huge salaries, [and] the players were shorter! All the grandchildren are proud of our grandfather!

Linda Ruiz
Comment submitted via continuum.utah.edu

BECOMING A FOOTBALL FACTORY?

It saddened me greatly to learn, after reading in the Fall and Winter issues of Continuum, that my alma mater, Utah—of which I was once proud—has decided to become a football factory, following Penn State, Ohio State, Michigan, Nebraska, Alabama, and other schools of similar ilk. Thus the definition of “university” in a Harold Lloyd comedy from 1925 as “a football stadium with a couple of classrooms attached.”

Jacqueline Edwards BFA’55
New York, NY

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Utah Governor Gary R. Herbert and the state Legislature demonstrated clear support for higher education and the University of Utah during the 2012 legislative session that ended March 8.

Higher education received the first increase in state funding since 2008, and thanks to the efforts of University of Utah Interim President Lorris Betz and new President David Pershing, the U specifically received much-needed funding to replace its failing infrastructure.

Alumni, students, and faculty and staff members who had signed up to be political advocates for the University played a key role in helping communicate the U’s needs to the legislators and governor, and the U Alumni Association helped organize their efforts.

“Several legislators have let me know how much they appreciated the thoughtful and helpful communications they received from our advocates during the session,” President Pershing wrote in a letter to the advocates after the session’s end. “Your outreach helped secure many of our top priorities and enhanced our relationship with the Legislature.”

The U had many victories during the session. Among the successes:

- A top priority for higher education was the need to fund specific initiatives at each institution while providing increased funding for significant student growth throughout the system. The Legislature appropriated $8 million, which will be evenly split between initiatives and growth.
- The U received $22 million to begin replacing its failing infrastructure. This appropriation, combined with a portion of the $30 million that was allocated for system-wide capital improvement projects, will allow the U to complete all of its year one infrastructure requirements.
- The University will continue to work with the Legislature for the funding that will be required in subsequent years.
- Over the past five years, the USTAR initiative has attracted world-class researchers to the state and has brought in more than $175 million in direct and indirect research funds. This initiative has been critical to the mission of the University of Utah, and this year, $6 million was appropriated to restore cuts to the program over the past several years.
- Effective this year, funding has been allocated to give a 1 percent compensation increase for higher-education employees.

Several buildings were authorized by the Legislature for the U, including:

- Authorization to construct the Student Life Center after raising $10 million. Thanks to statutory amendments now in place, the University can proceed with this much-anticipated building.
- Bonding authorization plus operations and maintenance funding to construct the new S.J. Quinney College of Law Building. This was the only building in the state to receive operation and maintenance approval this year.
- Authorization to use $37.4 million in previously donated funds to construct a new dental school building.
- Bonding authorization to expand the Orthopaedic Center.
- Bonding authorization to expand the athletics center.
- Bonding authorization to construct two parking structures, one near the HPER building and another for Health Sciences.
The University awarded five honorary doctoral degrees during the annual commencement ceremonies held on May 4.

A. Lorris Betz was given an honorary doctorate of science. Betz joined the University in 1999 as senior vice president for health sciences, dean of the School of Medicine, and chief executive officer of the University of Utah Health System. He has served twice as interim president of the University, most recently from May 2011 to March 2012. H. David Burton BS’67, who served as presiding bishop of The Church of Jesus Christ of Latter-day Saints from 1996 until this past March, received an honorary doctorate in business. Burton worked more than four decades in Utah as a dedicated civic leader, financial steward, and community builder.

Wataru “Wat” Misaka BS’48 received an honorary doctorate of humane letters. Misaka was the first professional basketball player of Asian descent and the first non-white person to play in the National Basketball Association. He went on to become a successful engineer and, until recently, consulted for a circuit-board business in Salt Lake City.

Jerilyn McIntyre, Central Washington University’s first woman president, received an honorary doctorate of education. She served the University of Utah on the faculty as professor of communication and in the administration as vice president for academic affairs and twice as interim president. She serves the University still through the advisory boards of the Marriott Library and the Tanner Center for Nonviolent Human Rights Advocacy.

Philanthropist Beverley Taylor Sorenson BS’45 received an honorary doctorate of fine arts. In 1995, Sorenson founded Art Works for Kids, a teaching model that integrates arts into core subjects to improve learning for elementary school students. Sorenson’s philanthropic efforts have led to the construction of several buildings on the U’s campus, including the Beverley Taylor Sorenson Arts and Education Complex.

Keith Sterling Named U Communications Director

Keith Sterling is the new communications director for the University of Utah. Reporting directly to the chief marketing and communications officer, Bill Warren, who joined the U last year, Sterling will work to develop a strategic media relations plan to help elevate the profile of the U while also serving as the University’s primary media spokesperson.

Sterling came to the U from the city of Burbank, Calif., where he held the position of public information officer. Prior to his time in Burbank, he served as public relations director for the city of Broken Arrow, Okla.; Scottsdale School District in Arizona; and a boutique advertising and public relations agency, also in Arizona.

College of Education Slated to Move to Sorenson Arts Complex

Plans for the Beverley Taylor Sorenson Arts and Education Complex have been expanded so that it will include a new home for the entire College of Education. The complex is currently in final design and scheduled to be completed in November 2013.

To accommodate faculty and staff in the College of Education, the $32 million complex will be increased from its original size of 82,000 square feet to 110,000 square feet. Additionally, the construction site for the complex has been relocated to the east side of Milton Bennion Hall. The new building site provides the College of Education, the College of Fine Arts, and the Virginia Tanner Dance Program considerably more space.

In Memoriam

Matthew “Bronco” Bradley MEd’06, 41, community activist, University of Utah associate professor, and co-director of the Honors College’s Social Justice Scholars program

Thetis M. Group, M.D., 73, dean and professor emerita of Syracuse University and adjunct professor at the University of Utah

Tom Loveridge BA’79 MEd’81, 58, University of Utah administrator for more than 30 years
Steve McQueen called it the “Green Rat”: a 1957 Jaguar XK-SS roadster resplendent in British racing green, one of only 18 such machines built. McQueen would hop in the Jag and zip down narrow, two-lane Mulholland Drive in Los Angeles, squealing through hairpin turns and maybe slowing before his friend James Garner’s house just long enough to toss beer cans into the latter’s immaculate front lawn.

Reckless driving didn’t get McQueen (cancer claimed him in 1980) or the Green Rat, which ended up in the hands of private collectors. Now, for a limited time, the car will be among 18 other famous automobiles on display at the Utah Museum of Fine Arts, from June 2 to September 16. The “Speed: The Art of the Performance Automobile” exhibit has been in the works since October 2008, when avid car collector and ambassador John Price approached the museum with an idea: Why not host an exhibit of automobiles representing the highest achievements of engineers, designers, and drivers? Guest curator and automotive historian Ken Gross—who has spearheaded automotive exhibitions nationwide—was tapped to pull together the exhibit, with cars on loan from some of the country’s top automobile collections, including the National Automotive Museum, as well as many private collectors. “The most difficult part of an exhibit like this is convincing collectors that they should part with their cars for better than four months,” says Gross.

“Speed” is the first exhibit of its kind, bringing together these 19 automobiles, from a 1904 Peerless racer to a 1975 rocket-on-wheels that topped 432 miles per hour in 1991. But there’s more to this exhibit than horsepower and history. The vehicles—which Gross calls “rolling sculpture”—epitomize the curves and angles of their respective eras. “People are looking at these cars as 20th-century industrial art,” Gross says.
A New Way to Predict Risk for Preterm Birth
A simple blood test may help to spot preterm births in advance.

Though more than one in 10 American babies are born prematurely, there have been few clues to predict whether a particular baby is going to arrive too early. Now, a new blood test developed from research by scientists with the University of Utah, Brigham Young University, and Intermountain Healthcare could spot more than 80 percent of preterm births in advance.

The test measures three new peptide biomarkers that, in combination with other proteins, can signal high risk of preterm birth. It works by looking at just a drop of blood from a mother who is 24 weeks pregnant.

“With preterm birth, if we could even prolong a pregnancy by one or two weeks, we could make a very big impact on the number of babies that survive and make sure that those that survive are healthy," says M. Sean Esplin, an associate professor of obstetrics and gynecology at the University of Utah and an obstetrician for Intermountain Healthcare who was the lead author of the study that paved the way for creating the test.

Knowing she is at high risk for preterm birth is a big advantage for a mother when it comes to decisions about travel and activity level. Esplin also notes that a new hormone treatment can help a baby stay in the womb a little longer.

Esplin and Steven Graves, who directs the chemistry portion of the research at BYU, began searching for molecular clues to pregnancy complications in 2002. The new method for predicting preterm birth is patented by the University of Utah and BYU and has been licensed to a company called Sera Prognostics. The company hopes to wrap up testing by the end of 2012 and aims to have the diagnostic test on the market in 2013. The company recently secured $19.3 million in venture capital financing from private investors to develop the test.
After the Roar, RECYLE

U students take the lead in keeping cleanup green at athletics venues.

Story and photos by Stephen Speckman

Fans watch a basketball game at the Huntsman Center, and put their garbage on the floor.
University of Utah recycling coordinator and waste management supervisor Josh James last fall watched a man walk up to a recycling station in a tailgate lot at a U football game. The man proclaimed, “Recycling, that’s awesome,” and then proceeded to throw away his own recyclables in a nearby trash can.

The man’s garbage contributed that day to what James estimated is about six tons of trash generated before, during, and after each U football game. That adds up to about 36 tons of trash generated during the six home football games in 2011. About one quarter of that was diverted from landfills and recycled.

People power—or sometimes the lack of it—is the biggest reason those who are champions of improved recycling efforts at U athletic events aren’t ready yet to give an A grade for the University’s efforts to achieve greener games. The U often makes it easy for people to recycle at U football games, and yet it seems difficult for many people to take the critical next step, James says. “It’s really amazing.”

Still, James can at least feel comfortable giving a B+ these days to recycling work during U football games at Rice-Eccles Stadium and at gymnastics meets and basketball games at the Huntsman Center. “It’s catching on,” he says. That B+ is an improvement from the C that James would have issued just a few years ago. Since then, student volunteers have worked with U Facilities Management to take recycling to a whole new level at University athletics events.

Football, gymnastics, and men’s basketball are the three sports that generate the most waste out of all University athletics events; hence they are the three areas getting the most attention so far with the recycling efforts. Since 2007, the U has purchased two cardboard balers (think hay balers, only for boxes) for use campuswide, a battalion of bins for placing under desks, bins on wheels, and flatbed trailers to haul the bigger bins. Those changes have had a spillover effect on athletics events, but it was only minimal without a more collective endeavor on the part of students.

Winning ever more ground in the bin game, students came up with the idea of using three bikes with more bins on the backs. Previously, the bikes had been used elsewhere around campus but not at athletics events. Last football season, student volunteers rode the bikes around tailgate lots, mainly along Guardsman Way, spreading the green word and collecting recyclables.

Last year, U student Seth Crossley, who this past year has been associate director of sustainability for the Associated Students of the University of Utah, changed the game even more. Crossley showed what can happen when one person is able to mobilize more students than ever with the shared interest of reducing waste at athletic events. “He did a lot to get us where we’re at now,” James says.

Students in prior years had begun a “Recycle Rice-Eccles” petition drive to obtain signatures of people who supported the idea of having paid facilities workers separate garbage from recyclables, as well as encouraging more people to be recycling volunteers, but the effort gained little traction.

As Crossley looked for ways to improve the U’s recycling efforts, particularly at athletics events, he researched what other Pac-12 schools were doing. And it turns out many are doing more than the U on that count. So to help bolster the work at the U, Crossley set out to find sponsors who could help incentivize recycling support by giving T-shirts to students who volunteer to help reduce waste at U games. The students help by standing at recycling stations, encouraging others to recycle, and sorting through garbage. Crossley found support from the U Athletics Department, the Office of Sustainability, ASUU, Coca-Cola, The MUSS (the U’s esteemed student cheer section for sports events), and alumni. Fans who participate in the recycling efforts are now issued Frequent Recycler cards and awarded prizes for their efforts. And the “Recycle Rice-Eccles” movement has evolved into an annual initiative complete with its own brand and logo.

“If you give T-shirts to volunteers, it unites them,” says Crossley, who was scheduled to graduate from the U this past spring with degrees in political science and environmental and sustainability studies. He has used social media, email, and old-fashioned word of mouth to find students to help out. Volunteers dubbed “green police” began to feel like they’re part of something “bigger,” Crossley says. “Branding and marketing were the biggest thing for me.”

Back in 2010, before his efforts, often only 15 or so volunteers would show up at an athletics event, and it wasn’t enough to make a dent in the mountains of garbage generated. Some games now draw 50 volunteers who collect and sort recyclables and help with getting the word out during the events. The volunteers often stand at bins and urge people to deposit their plastic, paper, and aluminum in the recycling cans. Students also stick around after
games to sift through garbage in the stands for recyclables before paid crews move in to sweep up.

It’s that kind of people power that compels Crossley to raise the recycling grade at Rice-Eccles from what he thinks was a lowly D to a B+ and to a B at the Huntsman Center, where he says the older, indoor crowd isn’t as messy as football’s younger, outdoors audience and generates less garbage. The reason for the slightly lower grade at Huntsman, he notes, is because fewer student volunteers show up at events where the team (such as men’s basketball this past season) does poorly. “There’s a lot of work to do, but we’ve made up a lot of ground,” says Crossley.

The Sierra Club in 2011 ranked the U at 97 out of 118 colleges and universities that replied to a questionnaire looking at environmental issues such as energy...
use, transportation, and waste management. U Sustainability Coordinator Jen Colby answered in the questionnaire that 32 percent of the campus’ waste is being diverted from landfills. Vital to that percentage is what students have been able to help accomplish at football games, where volunteers helped divert an estimated 19,000 pounds of recyclables from landfills last season.

Ashley Patterson, the U Sustainability Office’s outreach and education coordinator, attributes last year’s success to Crossley and others including ASUU student volunteers Allison Boyer, a stalwart at the Guardsman Way tailgate lot, and Alec Van Huele, who was at every game and organized meetings to coordinate the efforts of the masses of green-minded student volunteers. “[Crossley] did a really good job of turning this into a collaborative effort,” says Patterson, who uses her office’s Facebook page (and its 830 or so followers) to help get the word out to rally volunteers. “Students say they want to do something, but they don’t know what to do or how to do it. Seth fully grasps all of that.”

Crossley pointed out in a presentation earlier this year to volunteers, “Fans’ views of recycling need to be influenced rather than forced—they have to want to recycle!” Even on a bad day at Rice-Eccles, James says that when the Utes have a big loss, fans are much less enthused about recycling. “Everyone says, ‘Leave me alone—I want to go home,’” he says. Happy fans are more apt to recycle.

Despite the U’s great strides with recycling at athletics events during the past few years, other Pac-12 schools get higher praise for their efforts, including the University of Washington, Arizona State University, and most notably, the University of Colorado at Boulder, which on its Web site lists 1976 as the year it officially began an on-campus recycling program. In 1991, University of Colorado student government leaders and campus administration officials became partners in recycling with the signing of a memorandum of understanding. Today, the students’ fingerprints on recycling are all over campus, not just at sports events. “Students here have a rich history of speaking up and putting their money where their mouth is,” says Ed von Bleichert, Colorado’s environmental operations manager for Facilities Management. “It really comes from our student body, and it has permeated up.”

From the first minute students hit the Colorado campus in the fall, they are met by “zero-waste ambassadors” at residence halls, where students are educated then and throughout the semester about how to recycle. Between 25 and 30 ambassadors, also known as “goalies,” are also at each football game at zero-waste stations, and each volunteer receives a shirt, hat, meal ticket, and entry to the game. In order to get fans to use recycling services at games, von Bleichert says, “you’ve got to make it easy.” The university also touts a $470,000 facility built in 1992 near the football stadium, Folsom Field, to help with campuswide recycling. And Colorado collects a small fee each semester from its 30,000 students to support education and outreach about recycling at the university.

The recycling facility today employs about 25 students to help divert recyclables from landfills, which accounts for the university’s overall 42 percent diversion rate. “We’re shooting for 90 percent,” says von Bleichert. The current diversion rate puts Colorado in the middle of the pack among other colleges and universities, he says.

A big key to the recycling success at Colorado, von Bleichert says, is the full support recycling efforts receive from the university’s athletics depart-
being played, is sorted by students at the nearby recycling facility.

Other institutions, including the University of Utah, over the years have sought to emulate what’s happening in Boulder. “They definitely get the most attention,” James says. “They have a very well-designed program.” Students from other places in the nation tell James that Utah as a state is behind the times on recycling, and they’re upset that more people are not doing it. James says it will take continued student support to sustain and improve the U’s current recycling efforts at athletics events.

Steve Pyne BS’11, director of events and facilities for the U Athletics Department, says he supports the work of James and the student volunteers to improve recycling at athletics venues. “Whatever they recommend, every football game, I support them,” Pyne says. As part of those efforts, Pyne notes, vendors for games are now making sure boxes they use for supplies are being broken down and recycled instead of simply thrown away. “In my mind, I think we’re doing everything within the resources we have that we can do,” he says.

Universities including Colorado and the U have seen a spike in recycling at football games when sponsors such as the U.S. Environmental Protection Agency or the ESPN television network create a competition among institutions to see who can recycle the most. Crossley said earlier this year in a report to student volunteers that an ESPN game-day challenge at the U motivated the crowd to get involved without feeling forced, and volunteers were excited to be working alongside ESPN employees. “Much more fun than Dumpster diving,” Crossley says.

With the U as a new member of the Pac-12, James predicts audiences—and their trash—will increase at all U sporting events, requiring an even more
expanded recycling effort on campus. When crowds again roar inside Rice-Eccles and Huntsman Center for the 2012-13 season, James and Crossley are planning on more outreach and more student volunteers. But success will depend once again on two words: people power. “People complain there are not enough bins, but at some point you’ve got to take responsibility for yourself and your purchase,” James says. “You are the consumer; you bought the product.”

—Stephen Speckman is a Salt Lake City-based writer and photographer and a frequent contributor to Continuum.

Visit continuum.utah.edu to view a gallery with more photos.
Taking the Long View

For Fred Montague, founding the U’s organic gardens was a step on a larger path.

By Elaine Jarvik
Photos by Tom Smart
Five things you should know about Fred Montague: He’s 4.5 billion years old, and he’s a large animal, a heterotroph, a flux structure, and a killer. That’s the résumé Montague wants you to keep in mind, not just about him but also about you. It’s the backdrop, he says, for every other assumption you should have about the world—we are part of, not separate from, nature and our environment. If for no other reason than this, we should not be making such a mess of things.

Montague’s résumé also includes these entries: University of Utah professor (lecturer) emeritus of biology, wildlife biologist, author, artist, and gardener. Among his legacies at the U are two organic gardens that students plant and tend each year, one just east of Pioneer Memorial Theatre and one west of the Sterling Sill Center.

He remembers meeting, 16 years ago, with the committee that had to approve this addition to the U’s Service Learning Program. Other Service Learning initiatives had obvious beneficiaries: refugees, adults who can’t read, at-risk youths. And who would be the recipients of your project, the committee wanted to know. “I thought for a moment in a cold sweat and panic,” Montague remembers. “And then I blurted out: ‘They haven’t been born yet.’”

The simple answer would have been “the community food banks that will receive the produce grown in the gardens.” But Montague always takes the long view. What he had in mind was the next generation that would benefit if he taught the current generation how to grow food without resorting to pesticides, synthetic fertilizers, and patented seeds. Agribusiness, he argues, takes the short view, which is why its practices tolerate erosion, groundwater contamination, toxins in the food chain, and excessive use of fossil fuels, he says.

“I dispense guilt and despair,” says Montague. But gardens are the flip side of this jeremiad; in the garden, he finds joy and peace—and answers.

In 2009, Montague’s own publishing imprint, Mountain Bear Ink, released the limited-edition Gardening: An Ecological Approach, a book that took him 13 years to create. The book begins with a polemic about the unsustainable practices of industrial agriculture, moves on to textbook discussions of botany, and ends with every detail you’d ever need to plant any edible thing.

Montague painstakingly hand-lettered the 400 pages himself, and the book is liberally illustrated with his own pen-and-ink drawings. Each book is signed and numbered.

It was this same down-to-earth intensity that made him a popular teacher during his 17-year career at the U. When the Biology Department announced that it was eliminating his untenured position a decade ago, remembers U cell biologist David Gard, “the students...”
raised an uproar,” and the position was reinstated.

James Ruff, a biology graduate student who took classes from Montague and was his teaching assistant, says Montague enlivened the academic subjects he taught. “He bridged the gap between data, theories, and what those mean to you and me,” Ruff says. “And he still left room for wonder and inspiration from the natural world.”

Before retiring in 2010, Montague taught environmental science and wildlife ecology, was a recipient of a Distinguished Teaching Award, and was academic advisor to the Biology Department’s 1,000 students. On the first day of class, he would typically ask his students to write down five things about themselves. Answers usually included academic major, religious affiliation, gender. But what he wanted them to recognize was that each student could also be described in other ways: as old as the universe, primate, killer. Although vegans might balk at this last descriptor, Montague delights in pointing out that carrots are no less an integral part of nature than a cow. And what’s a bean, he adds, but a plant embryo.

“Every atom in your body was not created the day you were born,” he reminded his students. “You are made up of the environment. So don’t you want it to be clean?... If everyone realized they are environment with a spirit, everyone would be an environmentalist, including Newt Gingrich.”

When he served as academic advisor, first at Purdue University and then at the University of Utah, Montague also liked to challenge students to think hard about why they were pursuing their major. Write your obituary as if you had died at a ripe old age, he would tell them, and figure out what you would have wanted your life to add up to.

Montague’s own epiphany about the future came as a sophomore at Purdue in the mid-1960s. He was majoring in engineering, just as his father had done. But one fateful day, his English professor introduced the class to Robert Frost’s poem “Two Tramps in Mud Time,” with its last stanza that includes the lines, “My object in living is to unite/My avocation and my vocation/As my two eyes make one in sight.”

Montague had grown up in Indiana, and what had captivated him was the outdoors—how things lived, not how things were put together. He liked to hike, fish, and roam the fields around Lafayette, and even in high school he began to notice with dismay as wildlife habitats and small farms were converted...
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into industrial farms. So, not long after reading that Robert Frost poem, he changed his major to wildlife sciences.

After college and a three-year stint in the Navy, he returned to Purdue for a doctorate in wildlife ecology, supplementing his grad-student income by selling his nature drawings and woodcuts at Midwestern art fairs. His art can now be found in public and private collections in all 50 states and in 30 countries.

He and his wife Patricia (they met in a geology class in college; he calls her “the smartest person I’ve ever met”) moved to Utah in 1993 to escape the Midwest mold she was sensitive to. Once here, they began searching for the cleanest air they could find within driving distance of the U, settling on 20 acres of sagebrush and scrub oak in Summit County. What sold them was the lichen they found on the rocks there, because lichens only grow where the air is clean.

They built their dream, green homestead, and Montague built most of their furniture by hand. There is a greenhouse and what he calls a “modest vegetable garden” covering 900 square feet.

“Environmentalists make lousy neighbors”—they’re always hectoring people to recycle—but great ancestors,” Montague says. “Ecology emphasizes relationships more than individual entities.” And that makes it subversive, because “the dominant world view reveres the supremacy of the individual,” fostering the exploitation of nature, he says.

Montague is fond of testing our assumptions about the world, starting with the notion that “humans are No. 1,” and moving on through 129 other things we take for granted, including “nature equals resources,” “time is linear,” and “science and technology can solve all our problems.” Phrases like endangered species and extinction are “mealy-mouthed and wishy-washy,” he says. The words he prefers: condemned species and eviction.

Fred Montague works on a raised bed at his home in Summit County. He also founded two organic gardens at the U that students tend each year.
In 1979 Randall J Olson, M.D. was the only member of the Division of Ophthalmology at the University of Utah. He had a passion for research, teaching and serving every patient with empathy and care. Could Dr. Olson have imagined that just 30 years later a world-class team of 30 ophthalmology specialists would treat 120,000+ patients each year, and carry out nearly 7,000 surgeries? Or that his one-man department would have 58 Ph.D. research faculty members? What Dr. Olson did know was that over the years, eye care treatments, therapies and technologies would change, but his vision for the center would remain the same: "The Moran Eye Center is committed to the goal that no person with a blinding condition, eye disease or visual impairment should be without hope, understanding and treatment." For more information on how you can help the Moran Eye Center in its vision for better care and cures, call 801-585-9700. For an appointment with one of our world class ophthalmologists or optometrists, call 801-581-2352.

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which acknowledge humanity’s role in the process, he says. Not one to hold his tongue, he argues that universities (including his own) are often “research arms of industries” and that most students are learning how to “cash in” rather than be part of a sustainable larger community.

“Politicians say ‘as soon as the economy is fixed, we’ll take care of the environment,’” Montague complains. “The assumption is that nature occurs inside a chain-link fence.” But people and their economies “exist with the permission of nature.” What really makes the world work, he notes, are not humans but bacteria, fungi, plants. “Without bacteria, ecosystems would collapse in a matter of months.”

So the trick to saving (insert your words of choice here: coral reefs, forests, biodiversity) and preventing (radioactive waste, dead zones, oil spills) is “responsible restraint,” he says, not “sustainable development.” Yes, “sustainable” is crucial, but “development” assumes we shouldn’t take a hard look at our dependence on economic growth.

Of course, creating an economy not based on growth, exploitation, and convenience isn’t easy. Even a professor of ecology might be known to drive 26 miles each way to teach his classes, he notes with a wry nod to his own inconsistencies.

These days, Montague occasionally gives guest lectures but mostly tends to his land. The U’s Edible Gardens, meanwhile, continue to flourish. Although there was concern that this prime University real estate might be turned into building sites or parking lots, says garden coordinator Alexandra Parvaz BA’06 BS’06 MS’11, the gardens have been put under the auspices of the U’s Office of Sustainability, and there is an effort afoot to write them into the U’s master plan.

A coalition of students and faculty launched a garden preservation campaign, and the result is not only four-season produce (more than 2,000 pounds in 2011) that is sold to the campus cafeteria and broader community, but also an integration of the gardens into the curricula of disciplines ranging from entomology to civil engineering.

So, yes, we should be filled with guilt and despair. But we should also celebrate Earth and the life on it, Montague says. Or, as he puts it, “Many organisms—from carrots to chickens—die so that we may live. Say grace.”

—Elaine Jarvik is a Salt Lake City-based writer and playwright, and a frequent contributor to Continuum.
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Solar panels generate power on the roof of the U’s V. Randall Turpin University Services Building.
On a breezy November afternoon in 2006, a small group of students waited in the Olpin Union Building theater on the University of Utah campus. Alexandra Parvaz, Lindsay Clark, Shane Smith, and other students affiliated with Sustainable Environments and Ecological Design, a group that goes by the acronym SEED, were frustrated. For more than a year they had fought for better recycling, less water waste, and more space for community gardening at the U, but with little success. The campus administration, they believed, wasn’t doing enough to work with them on their efforts.

A student-led effort has helped make the U campus a leader in being green.

By Ross Chambless
I felt the prevailing culture of the campus then was resistant to change," says Parvaz BA'06 BS'06 MS'11. "They didn't seem to account for wasted water, energy, and over-consumption." The students had invited campus administrators to a public discussion about a “Sustainable Campus Initiative” on this November afternoon. For the meeting, the students planned to use a charrette method, a group planning technique for helping brainstorm with all stakeholders, with the aim of defusing confrontational attitudes and eventually coming together to promote joint ownership of solutions. The students wondered, though, whether anyone would even show up.

Soon, a crowd of more than 70 staff, faculty, and community members, as well as students, filled the small theater. The audience included a representative from the Utah Office of Energy Development, a Salt Lake City Council member, and a Utah legislator. The students with SEED were elated. They talked to the group about their frustrations and discussed the need for different interests to unite. They asked for the group's ideas on what needed to be done to make the U an environmentally sustainable campus.

As it turned out, the audience was full of ideas. The students received a flood of information from people who seemed to have been waiting for a catalyst to get things rolling along. "It was amazing to see how supportive different groups of people were to the concepts we were raising, but they just needed a forum to express them," Parvaz says.

The forum broke barriers. "Our perception of an administration closed to creating something like an office of sustainability was shattered," Smith BA'01 BS'01 MAr'07 says. "It became clear that many staff at the University were already working to integrate ecological principles and that administrators were working hard to provide the necessary resources to support these activities.”

Indeed, just a month before their forum at the Union Building, Lorris Betz, then senior vice president of Health Sciences, had asked Bruce Gillars, the associate director of Space Planning and Management, to host a campuswide teleconference on sustainable practices for universities. After the October teleconference, and unbeknownst to students, Betz then had begun recruiting a group of faculty members to develop an action plan for what sustainability might look like at the U. At the forum, the students learned that faculty members...
and administrators were moving right beside them in support of campus sustainability. The U’s Facilities Office had already been taking measures toward sustainability, such as improving energy efficiency across campus. “Facilities was very much out ahead of us, but over time I believe SEED got everyone in the same room,” Smith says. As a result of that November meeting, and with the concept of campus sustainability firmly planted, the administrators, faculty and staff members, and students organized more forums, and they created a task force for designing an Office of Sustainability.

Six years later, the seeds of those efforts have grown. The University of Utah has a formal Office of Sustainability, and the campus is now nationally recognized for energy innovation and energy efficiency. The campus is on track to “water neutrality” by 2020 by capturing and using for irrigation only water that falls naturally on campus. The U is leading state efforts to design and construct energy-efficient, LEED-standardized buildings. And students have worked to legitimize their campus gardens as a valuable landscape feature and outdoor laboratory for academic research projects.

Last year, the U was one of five U.S. universities invited by the White House and the U.S. Department of Energy to be inaugural partners in the Better Buildings Challenge, a national initiative that has a goal of making American buildings 20 percent more energy efficient by 2020. And the U.S. Environmental Protection Agency ranked the University of Utah third in the nation on its most recent list of college and university “green power partners,” for taking extraordinary efforts to reduce the environmental impacts of electricity use and support renewable energy development.

Paul Rowland, president of the Association for the Advancement of Sustainability in Higher Education (AASHE), says the University of Utah’s achievements are nationally significant, but the U still has room for improvement. The U is one of about 200 institutions that currently participate in the group’s Sustainability Tracking Assessment and Rating System (STARS). The number of institutions that participate is only about 10 percent of all U.S. colleges or universities, so the U’s efforts are noteworthy, especially in the area of co-curricular education, he says. “The whole host of activities they do with students—that’s clearly one of the places where they shine.”

Compared with other Pac-12 schools, the U ranks somewhere in the middle. Rowland’s group gave the U a “Bronze” rating last year for campus sustainability efforts that include education and research, operations, planning, administration, and innovation. The only other Pac-12 schools to complete his association’s voluntary assessment last year—the University of Colorado and Oregon State University—both received “Gold” ratings. Another group, the Sustainable Endowments Institute, gave Utah a B+ on its “Green Report Card” in 2011. To determine its grades, the institute evaluated more than 300 colleges in the United States and Canada in the areas of climate change and energy, green building, food and recycling, student involvement, and transportation. However, as The Chronicle of Higher Education noted in an article last year about the report cards, “sustainability is an inherently difficult thing to measure, and some sustainability advocates have worried that sustainability-rating systems may—like the U.S. News & World Report rankings—do more harm than good.”

Back in the late 1990s, sustainability was on few people’s radars, at the University of Utah or on most other campuses nationwide. But as a U undergraduate student in 1998, Kevin Emerson BS’02 remembers discovering a student group through the Lowell Bennion Community Service Center called Terra Firma (which means “solid earth” in Latin). The group was a collection of students involved in environmental awareness and activism. They took on controversial local issues such as the then-proposed Legacy Highway, and they worked to tackle environmental problems at the U, including campus waste.

People want to do better. They want to be more sustainable. They want to reduce energy use. But oftentimes, they don’t know how. So our office provides a clearinghouse of answers.”

—Myron Willson, director of the U’s Office of Sustainability
about recycling, Emerson and Elise Brown BS’04, serving as co-directors of Terra Firma, found more success with another project: a campus wind-power campaign. In the fall of 2001, they began promoting the concept that a $1 student fee each semester could help the University purchase renewable energy certificates to help offset some of its electricity use. “Part of that campaign was to help educate students about the story of our electricity, that it comes from fossil fuels, and primarily coal,” says Emerson. “That really motivated lots of students to say, ‘We have the [cleaner] technology today. We want to be responsible with the energy we use at our university that we are proud to go to.’ ”

More importantly, Emerson says, the concept was easy to understand. “One dollar every semester was palatable,” he says, “whereas the challenges with recycling at that point seemed almost insurmountable, because we had to prove where we were going to sell the cardboard and the plastic to make it cost-effective for the University. The wind-power campaign made [students] feel they could have an impact.”

Up until then, students consistently struggled to influence administration decisions regarding sustainability policies. “Students felt like there were major contradictions between what the University was doing and what we were learning,” says Emerson. “Students were saying, ‘We’re learning about all these amazing new technologies, or environmental problems, or entrepreneurial solutions, yet there’s not a clear pathway to help our university lead.’ ”

Yet sympathetic faculty members were also speaking up. “Over the years, there have been students and faculty who cared about issues related to sustainability. But those efforts tended to be isolated,” says Chris Hill, a Distinguished Professor of biochemistry. After Hill saw the widespread student enthusiasm for the wind-power campaign, he encouraged other faculty, staff, and supportive community members to also pitch in. “I realized we could open it up for other people to contribute, because the rate at which the University could purchase [renewable energy certificate] credits was much lower than most average people could, because it’s about economies of scale,” says Hill. At that time, $30 per person, per year of purchased renewable energy certificates was enough to offset much of the University’s overall electricity consumption. The achievement made the University one of the U.S.
**CAMPUS GARDENS**

The U organic gardens serve as a living lab and provide food for market and dining.

Just east of the Simmons Pioneer Memorial Theatre, 4,000 square feet of raised-bed garden boxes cradle sprouting vegetables that bask in this sun-filled outdoor classroom. Vines of pole beans grow overhead to form playful tunnels next to towering stalks of red amaranth. Nearby, student volunteers use pitchforks to turn piles of composting leaves and cafeteria food scraps. Each summer and fall, students harvest hundreds of pounds of produce such as tomatoes, lettuce, fava beans, and squash from here and the U’s other organic gardening plots in front of the Sill Undergraduate Studies Center. These are the “interdisciplinary” edible campus gardens.

When Fred Montague, a professor (lecturer) in biology, retired in 2010, the future of the campus gardens was in peril. Montague had been instrumental in establishing the Sill Center gardens in 1996 and later the Pioneer gardens in 2002, and had worked to organize students to maintain them. His departure, and the worries it generated about the gardens’ continuation, prompted students, staff, and faculty to form a coalition to campaign for more administrative support and garden-centered programming.

In 2010, Chartwells, the company that runs the U’s Dining Services, agreed to provide food scraps (more than 500 pounds each week just from the Union Food Court) for composting in the gardens. The company also became the biggest purchaser of the vegetables the students grow in the gardens. Students also established an annual fall farmer’s market and a “Social Soup” lecture series with the College of Social Work that is held on campus monthly during the academic year to discuss issues of sustainability relating to food. A Gardens Advisory Committee was created, along with a part-time garden coordinator position for long-term maintenance and expansion.

In recent years, students have worked to make the gardens a living laboratory for various disciplines. In 2011, students taking the annual summer Organic Gardening biology course worked with the Biology Department’s stable-isotope analysis laboratory to test the authenticity of locally and commercially grown vegetables labeled organic or conventional. While they found no deception or nutritional differences between the two types, the store-bought vegetables had higher nitrogen levels from fertilizers than the locally grown samples, indicating possible nitrogen runoff problems at the large commercial farms from where the store-bought produce originated. Meanwhile, two entomology students created an internship-based research project by documenting the rich insect diversity in the gardens compared with nearby lawn landscapes. An MBA student assessed the financial feasibility of an industrial-scale composting system on campus and recommended such a facility be built. Social Work students researched the practicalities and values that a community-supported agriculture project using the gardens would bring to the campus, and created a strategic plan for implementation. Architecture students drafted plans for the expansion of the Pioneer Memorial Theatre garden, which have been partially carried out. And Civil Engineering students plan to build a bioretention filter to capture storm water and possible landscape contaminants from periodically flooding the gardens. “We are higher ed, with regard to the gardens,” says Office of Sustainability Director Myron Willson. “So we have the capacity to bring in civil engineering and botany and continuing ed and social justice, and bring all of those things together in an interdisciplinary effort. It’s not just growing food.”

Although students still fight for sufficient funding for garden stewardship, the gardens are generally now more accepted as functionally and aesthetically important to the campus landscape, compared with past years. “They’re not just some throwaway, granola program down in the corner,” says Willson. “We can show that the gardens actually enhance six of the seven principles guiding the Campus Master Plan.”

Scott Allred harvests lettuce in a University of Utah campus garden in 2011.
LEED BUILDINGS

Energy-wise construction on campus aims for beauty and efficiency.

The University of Utah in recent years has committed to building environmentally friendly buildings. Most of the new buildings on campus, as well as those under construction, surpass new state building requirements and do or will meet the U.S. Green Building Council’s requirements for LEED certification, the foremost rating system for green buildings. LEED, which stands for Leadership in Energy and Environmental Design, is intended to guide green considerations in everything from building design to construction and operations.

The Spencer F. and Cleone P. Eccles Health Sciences Education Building was the first LEED-certified building on campus, in 2006. In 2008, the University Facilities Planning Department and collaborating community members created a Campus Master Plan that aspired to have all future buildings consume less energy and water, and be built with a high percentage of locally produced and sustainable materials. Achieving LEED certification would mean spending more money up front, but in the long term would save the University money, energy, and other resources.

In 2009, the state required that all new public buildings be certified LEED Silver, or roughly 20 percent more energy efficient than the minimum building code. New U buildings that were built after that—the Sutton Geology and Geophysics Building, the James L. Sorenson Molecular Biotechnology Building—A USTAR Innovation Center, the Spencer Fox Eccles Business Building, and the Natural History Museum of Utah—all attained that standard or higher, as did the renovated V. Randall Turpin University Services Building, which achieved LEED Gold status. Then, in 2011, the University raised the bar to 40 percent more energy efficiency for all of its planned new buildings, including the Student Life Center, the Beverley Taylor Sorenson Arts and Education Complex, and the planned new football training center.

Many existing and aging buildings will eventually require remodeling, and the U is aiming for new energy efficiency standards in those renovations. That mindset helped shape plans for changes in the College of Architecture + Planning building, which is currently undergoing a net-zero retrofit, meaning it may eventually generate as much energy as it consumes.

Bruce Gillars, associate director of Space Planning and Management, says many more buildings will eventually need to undergo similar revisions. “On central campus, for every building built since 2000, we have 12 buildings built between 1901 and 1999, including 40 built before 1960. All these buildings have aged and sometimes have failing infrastructure, but are fully occupied the majority of the day and into the night.” Eventually, Gillars says, all of these buildings will need to be upgraded or replaced to meet the University’s future sustainability goals.

Last year, the U joined the U.S. Department of Energy’s Better Buildings Challenge, a national leadership initiative designed to stimulate economic growth through energy savings by making American buildings 20 percent more energy efficient by 2020. “We’re going to see in the next few years buildings even better than 40 percent above code,” says Office of Sustainability director and green architect Myron Wilson. “There’s been a real change, in the last two years even, on how our buildings will be performing. They will be beautiful and incredibly efficient.”
Environmental Protection Agency’s Top 10 Green Power Power Partners, and that national recognition continues today.

By 2005, “sustainability” was being discussed more frequently on university campuses across the country. Groups like AASHE were emerging to support a burgeoning crop of universities now aspiring to be “green.” By this time at the U, Terra Firma had disappeared, and a new group had sprung up to take its place: SEED. Concerned with growing local food and creating sustainable landscaping, this handful of students envisioned making a community garden for campus residents near the Bennion Center building then located on Officers Circle at Fort Douglas. After months of talking with administrators about their idea, they thought they had won approval. Instead, their garden proposal was rejected. The campus grounds supervisor worried about possible disturbances to the historical area, water damage, and the University not having enough manpower or budget to permanently maintain the gardens.

“We felt as if our work had been completely uprooted,” wrote Clark, in an Environmental Studies thesis in 2007 that documented SEED’s efforts. Other students, including Smith, saw the rejection as part of a larger pattern in the campus culture. “Administrators seemed to wait out the frustration [with sustainability issues] until a new batch of students came along,” Smith says. “I’m not trying to point fingers. It was clear that diving in was not the best way to appeal to the administrators and get higher level support.” According to Clark BA’07 BS’07, the garden rejection catalyzed a student movement to create a sustainability center for campus. “We realized that we needed to change our approach to how we would help the University of Utah become a more sustainable environment, and not to perpetuate a legacy of minimal student involvement,” she wrote.

Still, individual faculty and staff members and administrators had tilled the ground for making sustainability possible at the U. Beginning in 1991, Norman Chambers, then assistant vice president for Auxiliary Services, and Alma Allred, director of Commuter Services, had steered the campus from building large parking structures by partnering with the Utah Transit Authority and expanding the U’s shuttle bus system. Faculty lecturer Fred Montague, a biology professor, encouraged students to champion sustainability through his Global Environmental Issues classes. Montague also established the University’s first campus food garden outside the Sill Center in 1996, with support of the dean of Undergraduate Studies, John Francis. And librarian Joan Gregory worked to educate colleagues at the Eccles Health Sciences Library about
environmental issues and started recycling and composting for her workplace.

Among the most passionate and involved with campus sustainability was Craig Forster. Trained as a hydrogeologist, Forster held a research faculty position in the College of Architecture + Planning with a focus on urban system dynamics and sustainability. “He was kind of an idea man about campus,” says Dan McCool, director of the Environmental Studies Program. “He had to be entrepreneurial and constantly look for projects to work on. Craig was a wonderfully creative and innovative individual.” Early on, Forster encouraged students to generate their own projects and collaborate with administrators and faculty. He championed efforts to improve campus recycling, install an advanced watering system and a co-generation plant, and begin a campus farmers market.

After the faculty and staff members, students, and administrators had their meeting of the minds at the Union Building forum in 2006, students Parvaz, Clark, and Smith, as well as Emerson—who had recently returned from Edinburgh, Scotland, with a master’s degree in sustainability—set to work to craft a proposal for a formal Office of Sustainability at the U. In February 2007, they presented their proposal to the Campus Planning Advisory Committee. They received a unanimous endorsement. By April, University President Michael Young approved a pilot year for an Office of Sustainability. The program was to be a division of Facilities Management, housed in the Annex Building and headed by Forster, and with one full-time staff member, Jen Colby, who had been the SEED students’ staff adviser, serving as a sustainability coordinator.

Among Forster’s initial efforts in the first months of the new Office of Sustainability was helping students begin crafting a fund that would empower them and other students to plan and manage sustainability projects around campus. He envisioned creating a cross-disciplinary sustainability curriculum with degree programs, and he talked about the need for a center for sustainability research. To help achieve those aims, a President’s Sustainability Advisory Committee—composed of students, staff, faculty, administrators, and community members—was formed to provide guidance for Office of Sustainability staff and to review policy recommendations to be forwarded to the president.

A year later, on Earth Day 2008, Young signed the American College and University Presidents Climate Commitment. The pledge placed the U among 650 other colleges and universities nationwide that were formally agreeing to achieve sustainability and completely reduce their carbon emissions. “That really demonstrated commitment to the issue,” says Emerson. “It gave University students, staff, and faculty members something to point to and say, ‘We’re going to do this.’ ”

The following November, Forster fell from a ledge and died while hiking in Zion National Park. But his death only strengthened the resolve of the administration and students alike to achieve sustainability goals at the U. A memorial service was organized for him in the College of Architecture’s Bailey Hall. “The room was absolutely packed,” remembers McCool. “There was definitely a sense among the speakers and the people in that room that it would be a disservice to Craig’s memory if we let this thing die on the vine.”

The milestones accrued after that. In April 2009, the Sustainable Campus Initiative Fund (SCIF)—an idea modeled on the wind-power campaign—was approved. A $2.50 student fee each semester would allow students seeking to develop economic, social, or scientific solutions to environmental problems. In 2010, the University completed its Environmental and Energy Stewardship Initiative, or "Climate Action Plan," for steering the University toward zero carbon emissions by 2050. And in 2010, the U added a Sustainability Research Center, designed to bring researchers together from different
WATER CONSERVATION

With landscape irrigation, the University’s aim is “water neutrality.”

For decades, the University of Utah irrigated its manicured Kentucky bluegrass lawns using culinary water from Salt Lake City. Excess rain and snowmelt runoff was channeled away through storm drains, sometimes adding to erosion or pollution problems downstream. But in recent years, the U’s Plant Operations realized that the campus could save money while keeping the lawns green by capturing the runoff water.

“We asked, ‘What would it take for campus to run all of its operations without using any more water than what naturally falls on campus all year?’” says Cory Higgins, director of Plant Operations. The idea grew into a goal of achieving “water neutrality” by 2020: The campus aims to harvest and retain for irrigation the annual average 18 inches of rain and snow that falls on its 600 acres of land.

But there are challenges to becoming water neutral. “For one thing, our water doesn’t come evenly throughout the year,” says Higgins. Winter snowpack and fall and spring rains bring pools of water to campus, but the grounds crews need the water most in the summer and early fall. So Plant Operations staff members explored how big of a storage tank they would need to retain the water for use when the landscape plantings needed it. Historically, the campus had accessed all of its water from onsite wells near Rice-Eccles Stadium that drew from a natural aquifer below campus, says Higgins, so his office decided to tap into that aquifer for irrigation water. “We realized nature provides us with a storage tank in our aquifer,” Higgins says.

Since 2010, the University has installed two of six planned sections of a secondary water system for moving ground water around campus. The U also plans to construct bio swales along the new HPER mall and USTAR interdisciplinary malls to capture the water flowing down from the Health Sciences and Fort Douglas areas, as well as the adjacent buildings and parking lots. Bio swales are gently sloped drainage courses in the landscape that help remove silt and pollutants from surface runoff water. Although the proposed HPER bio swales are currently in need of funding, if completed they would capture about a third of the campus’ water needs.

With the new policy changes, the U will continue to purchase drinking water from Salt Lake City. Non-potable water was used during summer 2011 for irrigating the lower-campus lawns around Presidents Circle. This summer, the non-potable water will be used for most of the grounds westward from Orson Spencer Hall. “The summer after that, we’ll do even more, working our way up, with a plan to get all the way up to the hospitals,” says Higgins. And all new building projects will be designed to help detain water, or slow it down in order to avoid erosion problems downstream.

Eventually, the campus hopes to retain the amount of water that historically fell during 10-year major storm events. Still, as the campus becomes more water wise, Higgins says, his office will monitor how much water the University can legally store. State laws regarding water harvesting allow for directing or storing water as long as it is eventually released back into the drainage system. “Legally, we have to let a certain amount of water run across campus, because historically it did,” says Higgins. “As we push that, at some point, we might be retaining more than our legal limits. But we’ve got a long ways to go.”

Meanwhile, the University is also working to reduce overall water consumption, by installing low-flow toilets and high-efficiency showerheads, and using secondary water to flush toilets in some cases. The campus will also see more xeriscaping around new developments and renovations, with drought-tolerant, native plants.
ENERGY EFFICIENCY

The U is powering new technologies while cutting consumption and saving money.

In recent years, the University of Utah has made itself a hub for energy innovation and a model for cost-saving efficiency measures. With the creation of its revolving loan fund in 2008, the U's Energy Office can now perpetually finance long-term energy efficiency projects using the savings earned from existing energy-optimizing projects.

One milestone came in 2008, when the U replaced two 1960s-era coal-burning boilers with a state-of-the-art, natural gas-powered cogeneration plant. The plant supplies 10 to 15 percent of the U's electricity needs and uses excess heat for warming lower-campus buildings. The $18 million price tag for the plant was expected to be offset over the years by saving up to $600,000 a year in energy costs. Those expectations are being exceeded because of lower natural gas prices and increased electricity costs, strengthening the economics of the project.

Office of Sustainability Director Myron Willson says the U will benefit from other planned improvements in energy efficiency and technology. "The data show that in the short term, at least in the next 10 to 15 years, most of the changes we want to make will actually save cash," Willson says.

Even before the Office of Sustainability's creation in 2007, U Facilities Management saw the financial benefits of saving energy and going green. As early as 1998, Facilities Management leaders began investing $44 million to improve energy efficiency in 80 buildings, saving $4 million through upgrades between then and 2002.

The University is also seeking additional renewable energy installations. In the past year, the new Spencer Fox Eccles Business Building included solar-powered water heaters on its roof, and the HPER East complex and new Natural History Museum of Utah gained rooftop solar photovoltaic panels. These improvements added to solar arrays on the V. Randall Turpin Building and the Sill Undergraduate Studies Center.

In 2010, a $1.05 million grant from the U.S. Department of Energy helped the U create the Energy Commercialization Center, which is charged with developing new energy technologies and policies. The University is now an important part of what the Energy Department calls the nation’s “innovation ecosystems,” or the network of inventors and institutions that will conceive new energy technologies. Student researchers are also exploring novel approaches such as solar panel-covered parking facilities. And an undergraduate student has gathered funds to install “solar ivy,” small photovoltaic panels that resemble ivy leaves hanging down the side of a building. The solar ivy will be placed on the south wall of Orson Spencer Hall.

To help measure the effectiveness of all these efforts, metering systems are essential to knowing how much energy, and money, the campus is expending. In the past, not all buildings had power meters, and they needed skilled personnel to physically read them. The Energy Office hopes to have automated energy meters—for electricity, water, and heating—installed on most major buildings by 2013. Public metering dashboards inside buildings will eventually allow occupants to see and compare their energy consumption.

“...This will help promote energy conservation to individual departments," says Jeff Wrigley BS'99, the U's energy manager. Simple actions such as turning off unused lights and computers, keeping thermostats at moderate levels, and eliminating space heaters will be critical to helping the campus meet its sustainability goals, says Wrigley. “We hope this will impact the behavioral components of sustainability, and also motivate individual people to conserve energy.”
disciplines and levels for funded research in sustainability-related topics. A sustainability curriculum and professorship program also was established to integrate sustainability more firmly into the University’s curriculum.

Today, sustainability is an emerging cultural canopy at the University of Utah. “[The change] has definitely been evolutionary,” says Myron Willson MAr’97, who became the director of the Office of Sustainability in 2009. “Something I’ve really come to understand is that people want to do better. They want to be more sustainable. They want to reduce energy use. But oftentimes, they don’t know how. So our office provides a clearinghouse of answers.” Current projects include requiring University-wide green purchasing practices, which now are voluntary. Willson’s office also is working with senior administrators and Facilities Management leaders to create a revolving loan fund to finance more sustainability projects. And the office continues to support departmental Green Teams that encourage administrators and faculty and staff members to adopt sustainable behaviors at work and at home.

With the University’s goal of achieving carbon neutrality by 2050 now a priority, the campus faces an enormous and exciting challenge, says Bruce Gillars BS’98, the U’s director of space planning and management. “Think about that for a minute,” Gillars says. “We’ve set a goal for the University of Utah having the same exact carbon footprint in 2050 as we did when we turned our first shovel of dirt in 1850. This will take the entire intellectual capital of the University to achieve. But think about what we’ll learn. Think about what we’ll be able to teach.” And think about what a difference for the planet those students, administrators, and faculty and staff members will have made, not just with that achievement, but with their myriad steps along the way.

—Ross Chambless MA’11 interned for the Office of Sustainability before graduating with a degree in environmental humanities from the U. He now works as planting coordinator for TreeUtah, a Salt Lake City-based nonprofit group dedicated to tree planting and education in the state.

Visit continuum.utah.edu to view a gallery with more photos.
Tivo-ing Heat and Cold

Engineer Kent Udell works with the elements to seek energy innovations.

By Marcia C. Dibble
Photos by August Miller

Kent Udell, a U professor of mechanical engineering, checks on his "ice ball" experiment behind the Sterling Sill Center.
Under the lawn behind the University of Utah’s Sterling Sill Center, mechanical engineering professor Kent Udell MS’78 PhD’80 has buried a 35-foot-wide by 40-foot-deep “ice ball” about 10 feet below the surface. On a spring afternoon, he stops to sit on a patch of grass marked by a web of shallow trenches as he checks the tubing covered by green valve boxes that provide the only evidence above ground of his experiment in testing how heat and cold can be stored for later use.

Like much of Udell’s current research, the ice-ball experiment focuses on various aspects of what he calls “Tivo-ing” energy. His initial idea for the ice ball was for it to be a collector that would absorb some of the many days of deep cold that northern Utah gets in the winter for later use as building air conditioning in the summer. But with the “aha!” addition to the experiment’s equipment of a simple compressor from a standard air-conditioning unit, he says, the project developed the potential to be used for both cooling and heating. “It opened up the possibility that even in the worst climate, you could still save a lot of money and a lot of carbon dioxide being produced.”

Udell’s deep belief in the importance of environmental sustainability permeates his research and his life. With decades of groundbreaking work in environmental mitigation under his belt, he now directs the U’s Sustainability Research Center, conducting research and fostering the work of others on campus to help modern civilization become more green.

In casual interactions, Udell exudes a mellow grooviness. Dressed in a Hawaiian shirt, khakis, and Merrells, he refers to his wife, Cherise (a onetime ecotourism guide in Ecuador who later went on to graduate school at Yale), as “my Amazon jungle lady.” His office shelves are dotted with small brass Buddhist figures. (“I enjoy contemplating Buddha. Concerns disappear. If there was a mudstorm, everybody would be muddy but Buddha. It would just run off.”) Ethics for the New Millennium by His Holiness the Dalai Lama sits on a shelf right alongside Fundamentals of Heat and Mass Transfer.

When Udell starts talking about the latter, it’s evident that he’s really smart as well as groovy. He spent more than 25 years as a professor at the University of California-Berkeley and is now professor emeritus there, having been lured back to the University of Utah in 2005.

Udell’s path to the U began in the quiet little town of Lehi, Utah. But when he was 4, his father, “a bit of an adventurer” who worked in a midlevel job with the U.S. State Department, took a position in Afghanistan and relocated the household to Kabul. The youngest of seven, Kent and his three next-youngest siblings (the others were already out of the house and married) attended an international school there for the next few years, meeting other young students from around the world and learning a smattering of French and Farsi and Arabic. Udell points to the experience as one that opened his eyes to the world’s possibilities.

Transplanted back in Utah, Udell says he was always “into building stuff, making things, taking stuff apart and putting it back together.” He recalls taking a skills test in about ninth grade that concluded that he “seemed to have an aptitude for a Ph.D. in engineering mathematics. I had no idea what that meant. But when the time came, I looked for a major that was something related to my background in hands-on, mechanical construction, and mechanical engineering just seemed like it fit me.” He headed to Utah State University for a bachelor’s in the field,
then to the U for master’s and doctoral degrees in the same. Udell’s doctoral thesis at the U was on oil shale, which continues to resurface as a hot new thing in energy about every 10 years. Yet Udell’s conclusion then, more than 30 years ago, remains the major concern of today, with no workaround yet found: It creates a huge amount of waste product, at great environmental cost. “It’s probably the most carbon-intensive form of energy possible,” he notes.

As he was completing his doctorate, Udell in 1979 took his first position at Berkeley, where he taught petroleum engineering for about five years. After achieving tenure, he decided he wanted to branch out and began exploring more in environmental engineering. At the time, California was just beginning to tackle cleaning up its Superfund sites, where hazardous liquids such as dry-cleaning solvents had been dumped into the subsurface. Udell says he and his colleagues “applied stuff from petroleum engineering to removing those contaminants and developed technologies that are still the gold standard today in terms of their effectiveness.”

With the new technologies, Udell says, they found they could “take something super-polluted to drinking water standards in less than a year.”

In 2004, Udell was approached by University of Utah College of Engineering Dean Richard Brown, who was looking to bring in a new chair for the Department of Mechanical Engineering. Brown had asked for the names of some potential candidates from K.L. “Larry” DeVries BS’59 PhD’62, now a Distinguished Professor of mechanical engineering at the U, who has taught here for more than 50 years. Brown was looking for promising candidates with a U connection who were at “name universities,” DeVries recalls, and Udell’s was one of two names that DeVries put forward. “I remembered [Udell] from when he was here, of course,” DeVries says. “And I had talked to him a time or two when I was down to California for NSF [the National Science Foundation], evaluating programs for potential grants. He had talked about his work down there in cleaning up oil spills and things of that sort, and those are things, of course, of considerable interest nationally and to Utah.”

In considering Brown’s invitation,
Udell realized that though he’d loved his time at Berkeley, he wasn’t sure it was where he necessarily wanted to spend the rest of his career, and he found the prospects at the U—and back in Utah in general—intriguing. He had also recently started a new family, and having already raised a daughter in Berkeley, he knew it was expensive and difficult to find good, safe neighborhoods and schools. Between extended family and recreation, Udell had regularly returned to Utah during his time in California, and after visiting the U with an eye for a new home base and new professional challenges, he returned as professor and chair of mechanical engineering.

Udell notes that his focus had long been shifting toward examining the ramifications of human-caused global climate change. “As an engineer and as someone who teaches ethical engineering, I realized I had abilities that I could bring to that problem, and that my best use in serving people and serving society would be to look for ways that I could make a contribution to reducing our reliance on fossil fuels. So, it was something I’d been wanting to do for a long time, and coming to Utah gave me the opportunity.”

While Udell was resettling at the U and refocusing his efforts toward sustainability-related research here, the U’s Craig Forster was helping work on two related proposals, one for what eventually became the Office of Sustainability and another for a Sustainability Research Center. “As an engineer and as someone who teaches ethical engineering, I realized I had abilities that I could bring to that problem, and that my best use in serving people and serving society would be to look for ways that I could make a contribution to reducing our reliance on fossil fuels. So, it was something I’d been wanting to do for a long time, and coming to Utah gave me the opportunity.”

Udell eagerly took up the cause, and the center became a reality in 2010. Based in a small corner office adjoining his on the second floor of the College of Engineering’s Kennecott Building, the center is a bit of a living demonstration lab in sustainability, with cork flooring, a conference table made from recycled milk cartons, and an abundance of plants to optimize the air quality in the room. But the center’s primary purpose is to attract and disperse sustainability-related research funding.

“As engineers, we always need to be thinking about the larger implications of what we do,” says Udell. “We always should be thinking about the ‘if’ and ‘why.’ I’m lucky that being an academic I have the opportunity to be able to shift my focus, to say, ‘This is what I believe, and these are the kinds of technologies that need to be developed,’ and then with a little bit of an understanding about how to get technologies out there and into the marketplace, to be able to make a contribution. So, given that I can and I should, it’s obvious that I will.”

That technological exploration is the significant difference between the Sustainability Research Center and the Office of Sustainability. “What we’re worried about is the creation of new knowledge and funding research and understanding all of the interactions between the various forces that determine whether we’re moving in a sustainable direction,” explains Udell. “What they deal with is looking at the sustainable attributes of the U itself.”

Udell emphasizes that he is looking to create marketable, real-world solutions, so he is at least as much concerned with the economics as the gee-whiz of inventing. With his ice ball experiment, for example, he notes: “Everywhere we look, everything that we’re examining, the cost becomes a big issue. How can we make this cheaper? How can we produce it with fewer materials? How can we install it using less energy, as well as less destructive technology? We’re always looking at ways to make it as efficient as possible, because ultimately, it’s the economics that will determine whether this thing will really run.”

Through his connections with a dean at the University of Alaska-Fairbanks, Udell is also working on a giant ice ball project there to provide inexpensive air conditioning for some commercial buildings. “And yes, really, they have air conditioning needs in Fairbanks, Alaska,” he notes. With long days of sunshine during parts of the year, plus high energy prices, air conditioning can be very expensive. Udell helped come up with an experiment that will essentially freeze a good portion of a lake. “If the data can show some good economics from that, great—then that idea can migrate down to the south,” Udell says. “Same thing with the heating technology: If we can show that it’s a great idea in Southern Utah and down in Arizona, then the idea will migrate north.”

“As an engineer and as someone who teaches ethical engineering, I realized I had abilities that I could bring to that problem, and that my best use in serving people and serving society would be to look for ways that I could make a contribution to reducing our reliance on fossil fuels.”

— Kent Udell, U professor of mechanical engineering
This concept of energy storage has so far been neglected in most work on renewable energy, Udell says, including solar energy. “You’ve got to figure out some way of storing energy so you can get past those cloudy, dark winter days.” Energy storage is a key to being able to make the transition to renewable energy, and thermal energy storage is just as important as electrical energy storage, he says. “There’s been a lot of money put into electric batteries, but not as much put into the idea of storing energy as heat.”

Udell’s most recent project is examining how to build thermal batteries for an electric car. An electric car can use 40 percent of the energy from its electrical battery just to heat or cool the car, he says. “So, in Minnesota on a cold day, if you think you’re going to get 100 miles out of your car and you’re dead. In Arizona, if you think you’re going to get that 100 miles out of your car and you’ve got your AC on, 60 miles and you’re dead.” Udell and his team want to develop batteries that would be used for thermal storage, so that the air conditioning and heating systems would run independently from the battery driving the car down the road. The researchers won a grant for the project from a Department of Energy program focused on “transformational energy ideas,” and Udell is collaborating with colleagues from metallurgical engineering who have been working with various metal hydrides that store hydrogen at high and low temperatures, trying to create separate batteries to provide heating and air-conditioning. Further, the technology is not limited to cars and could be put into a building, Udell says. “You could have a big concentrated solar collector, with one system that you’re recharging one day while you’re operating the other, and the next day switch. So you could get all the heating and air conditioning for a building from solar.”

Next year, Udell is taking a year’s sabbatical from the U to go back to Berkeley, do some writing, spend time with his grown daughter there, attend lectures and seminars by longtime colleagues, and work with some of those colleagues to explore additional projects. His enthusiasm and curiosity are boundless as he plunges into still more possibilities: “Another area I’m really interested in pursuing is compressed air energy storage, and the injection of fluids for energy storage—using geologic material for storage. I think compressed air is a really interesting technology and will be really valuable for Utah.”

— Marcia Dibble is associate editor of Continuum.

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Founders Day Scholar Aims to Help Military Bases Go Green

Randy W. Cardon, a University of Utah student and gunnery sergeant in the U.S. Marine Corps who has served five deployments, including two tours in Iraq, was selected to receive this year’s Founders Day Scholarship.

Cardon, who grew to appreciate nature during his childhood years working outdoors, is majoring in environmental sustainability, and he hopes to work as an environmental safety officer on a Marine Corps base after he graduates with his bachelor’s degree. “I think the military has a long way to go before they’re environmentally friendly,” he says, and he wants to help address the problem.

The University of Utah Alumni Association awards the Founders Day Scholarship annually to honor students who have overcome difficult life circumstances or challenges and who have given service to the University and the community.

“There are a few attributes about Randy’s character that stand out—the strength of his integrity, his enthusiastic commitment and drive to become better, and his sense of duty, honor, and service,” wrote Kathleen Nicoll, an assistant professor of geography at the U, in a letter recommending Cardon for the scholarship. “Randy is truly someone who sees opportunities instead of obstacles, and he finds a way to stay motivated and optimistic, and to inspire others.”

Cardon attributes much of his resilience and mental toughness to his childhood experiences growing up in a family that struggled through financial hardships and other adversity. He was born in St. George, Utah, and grew up working with his family on various ranches in southern Utah and a dairy farm near Shelley, Idaho. It was a hard life—the family of five at one point lived in the southern Utah desert in a 19-foot camping trailer that at times had no running water. Cardon’s mother competed in barrel racing in rodeos so she could use her winnings...
and pawn trophy saddles to help buy groceries. And kids in the local schools picked on him because he had to use duct tape to hold his boots together. “I didn’t want to go to school,” Cardon recollects now. “School was secondary to living. I had to work to survive, and school wasn’t very nice because of things like that.”

His parents divorced when he was 8, and his stepfather took in Cardon and his two sisters and treated them as his own. But the family still struggled financially, and Cardon worked to help the family with the ranch and dairy work from the time he was 11. When a Marine Corps recruiter found him at age 15, Cardon says he saw an opportunity. “I wanted to join the Marine Corps to escape the small town,” he says. “I thought of it as a way to have a future.”

Cardon had missed many days of school and wasn’t on track to graduate, so the recruiter helped him sit down with the high-school counselor and work out a plan for him to get his diploma. He went to summer school between his sophomore, junior, and senior years, and he attended night school during his junior year to make up missed work. “I did all that—I did double duty—and I graduated a half-year early,” Cardon says.

From there, he went straight into Marine Corps boot camp. “I found it quite easy,” he says. “A lot of it was common sense-oriented. A lot of it was being outside working hard.” And his upbringing had prepared him well for that. “The Marine Corps was a blessing,” he says.

He attended recruit training in 2nd Battalion Fox Company in San Diego, Calif., where he became the platoon honor man and was meritoriously promoted to lance corporal. He continued to rise through the ranks during postings in Washington, D.C., and Camp Lejeune, N.C. His first deployment came in 2002, when he spent seven months on a ship that stopped in different spots in Africa. After that came the invasion of Iraq in 2003, and as a squad leader and platoon sergeant, he spent seven months with his unit, pushing from the Kuwaiti border to Baghdad. Once the tour was up, he returned to San Diego to be a drill instructor.

Four years later, he was back for another tour of duty in Iraq, this time in Ramadi for another seven months, as a platoon sergeant. Two more deployments followed—on a ship in the Middle East in 2008, and in Mongolia in 2009, when he was one of four Marines selected for a mobile training team for the Mongolian army. He was promoted to gunnery sergeant in 2009, and in 2010, was picked to be assistant Marine officer instructor at the University of Utah. “After sucking in the 120-degree dust of Iraq and running for my life, I now enjoy the casual walk to classes,” he says.

Cardon says he chose to attend the U in order to be closer to his 10-year-old daughter, Elise, who lives in the Salt Lake City area. “I thought this would be a chance to spend a lot of time with her,” he says, “and let her know education is important.” He also coordinates the Marines’ local Toys for Tots effort during the December holidays, and he spends his summers as a drill instructor at the Officer Candidate School boot camp in Quantico, Va. “He stands head and shoulders above others on multiple levels of merit,” Nicoll wrote. “What stands out is Randy’s degree of motivation, his intellectual engagement, his fitness, the tremendous depth of his character, and his idealistic commitment.”

At left, Randy Cardon hugs his daughter, Elise. Center, Cardon, left, stands with two other Marines on the Kuwait/Iraq border in 2008. At right, then University of Utah Interim President Lorris Betz congratulates Cardon at the Founders Day Banquet this past February.
Save the Dates for Homecoming 2012, September 8-15

Homecoming at the University of Utah is slated for September 8-15. Save the dates, and don’t miss out on any of the festivities leading up to the showdown game versus Brigham Young University. The Homecoming theme this year is “Red, White and U.”

The week kicks off with the annual Legacy of Lowell Community Service Day on Saturday, September 8, with many opportunities for volunteers to donate their time and help. The following Tuesday, September 11, alumni who graduated 40 or more years ago are invited to attend the Emeritus Reunion, at the Natural History Museum of Utah.

Highlights for the rest of the week include the Crimson Rally on the Union Plaza the evening of Thursday, September 13. And alumni and others are invited to compete in the Homecoming Scholarship Scramble golf tournament on Friday, September 14, at the Bonneville Golf Course in Salt Lake City. The proceeds will go to help fund University scholarships for students. Early on Saturday, September 15, the U community and alumni will have yet another opportunity to have fun raising money for scholarships, with the Young Alumni 5K and Kids 1K Fun Run.

Everyone will head toward the stadium later Saturday, for the Alumni Association’s pre-game tailgate party on Guardsman Way that afternoon and then the big football game against BYU.

The chair of the 2012 Homecoming Committee is Liz Whitney BA’85 JD’87. The lead sponsor of Homecoming 2012 is University Credit Union.

Spring Awards Honorees Include Researcher and Counselor

The University of Utah Alumni Association honored a former U student and a staff member at its Spring Awards Banquet on April 10.

The Alumni Association’s Young Alumni Board presents its Par Excellence Award annually to a former student who attended the U within the last 15 years, in recognition of his or her outstanding professional achievements and service to the community as well as the University. This year’s honoree is Kiri L. Wagstaff BS’97, a senior researcher with the NASA Jet Propulsion Laboratory at the California Institute of Technology. She specializes in machine learning and investigating problems that lie at the interface between computer science, geology, and astronomy. Her projects at the laboratory have included finding ways to automatically identify landmarks and detect change in Mars orbital images, tracking the north polar ice caps on Mars, and predicting county-level crop yields from orbital images of Earth. Outside of work, she volunteers in the technology center of her local public library and serves on the LGBT Youth Task Force.

Wagstaff graduated from the U with a bachelor’s degree in computer science before going on to receive master’s and doctoral degrees from Cornell University and a master’s from the University of Southern California. She now works as a senior researcher at the NASA Jet Propulsion Laboratory at the California Institute of Technology. She specializes in machine learning and investigating problems that lie at the interface between computer science, geology, and astronomy. Her projects at the laboratory have included finding ways to automatically identify landmarks and detect change in Mars orbital images, tracking the north polar ice caps on Mars, and predicting county-level crop yields from orbital images of Earth. Outside of work, she volunteers in the technology center of her local public library and serves on the LGBT Youth Task Force.

McDonald, who holds a master’s degree from Ohio State University in addition to her bachelor’s degree from the University of Utah, has worked in student counseling at the University since 1997 and became associate dean of students in 2007. Her responsibilities include coordinating the student-conduct administration process and serving as the chief hearing officer for the University. She also advocates for students facing challenges and behavioral difficulties. And she advises the Associated Students of the University of Utah in all areas of student government.

Amid all this, she has been dedicated and disciplined in pursuing a doctoral degree at the University, in educational leadership and policy. “She is seen as a leader among both students and staff,” says Kari T. Ellingson, associate vice president for student development at the U.
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The University of Utah has educated dozens of “green grads” who have gone on to successful careers supporting environmental sustainability, both locally and nationally.

On the University of Utah’s campus, Office of Sustainability co-founder Alexandra Parvaz BA’06 BS’06 MS’11 is now the office’s campus gardens coordinator and serves as the driving force behind its rapidly expanding Edible Campus Gardens Project and an initiative to integrate the gardens into the campus curricula across the academic spectrum.

Fellow Office of Sustainability co-founder Lindsay Clark BA’07 BS’07 went farther afield with her green bent. She got her master’s degree at the University of British Columbia and is now the marketing and communications specialist with Canem Systems Ltd. in western Canada, helping promote its Centre for Building Performance and other sustainability initiatives.

Back in Salt Lake City, seven of the 10 staff members of the nonprofit group Utah Clean Energy graduated from the U, including Senior Policy and Regulatory Associate Kevin Emerson BS’02. As a U undergrad, Emerson helped coordinate the U’s first purchase of wind power and later also joined in the effort to spur creation of the Office of Sustainability. At Utah Clean Energy, a nonpartisan organization working to advocate for clean energy use, Emerson now leads energy-efficiency programs, partnerships, and energy-efficiency policy and regulatory activities. The group’s founder and executive director, Sarah Wright MS’89, works to foster clean-energy partnerships with state agencies, municipal governments, businesses, agricultural groups, and community organizations. She is a frequent intervener in regulatory proceedings and a witness in legislative hearings testifying in support of energy efficiency and renewable energy. Assistant Director Rebecca Nelson BA’98 MPA’07 oversees the administrative functions of the organization, including financial systems, contract compliance, grant writing and reporting, and human resources. Senior Policy and Regulatory Associate Sara Baldwin BA’05 HBS’05 manages the Solar Salt Lake Partnership Project as part of the U.S. Department of Energy’s Solar America Cities Initiative. She previously served on the Energy Development and Environment Subcommittee of Utah Governor Gary R. Herbert’s 10-Year Energy Initiative. Communications and Program Coordinator Brandy Smith BS’05 coordinates the organization’s public relations, outreach, fundraising, and special events. Executive Assistant Emily Harris MEd’03 has served and worked in the nonprofit sector for 10 years and oversees Utah Clean Energy’s overall office management. Meaghan McKasy MS’11 is the group’s first Utah Conservation Corps/AmeriCorps member. She also is the project coordinator for the Salt Lake City Community Energy Challenge.

Other U graduates have found careers in sustainability elsewhere in Utah. Amanda Smith BS’89, the Utah Department of Environmental Quality’s executive director since 2009, was appointed in early 2011 to serve double duty as Governor Herbert’s energy adviser. She previously worked as government-relations director for The Nature Conservancy and then as legislative director for then-Governor Jon Huntsman, Jr. Carl Fisher BS’05 is the executive director of Save Our Canyons, a nonprofit organization “dedicated to protecting the beauty and wildness of the Wasatch canyons, mountains, and foothills.” Jason Berry BS’03 MPA’07 is currently the Residential Energy Efficiency Program manager for Rocky Mountain Power and is the former State Energy Program Manager for the State of Utah under the U.S. Geological Survey.

U graduates are also doing their part with the overflowing sustainability initiatives in the San Francisco Bay Area. Elise Brown BS’04, who as an undergrad helped Kevin Emerson lead the campaign for wind-power purchases at the U, went on to work as the Renewable Energy Coordinator for the Utah Department of Natural Resources. She is now the associate director of the California Geothermal...
through the years

Energy Collaborative at the University of California at Davis Energy Institute. Kit Powis BS'82 is the marketing director for the 511 Regional RideShare Program, the Bay Area branch of an interactive, on-demand system that helps people find carpools, vanpools, or bicycle partners. Clayton B. Cornell BS'05 currently manages online strategy at One Block Off the Grid, which organizes communities into solar “buying clubs” that use the aggregate buying power of a group to lower the cost of residential and commercial solar panel installations.

Ron Barness led the effort to place what is expected to be the largest rooftop solar array in the United States, atop the Calvin L. Rampton Salt Palace Convention Center in Salt Lake City. Barness works in the western United States for CarbonFree Technology, a Toronto-based solar energy project development and finance company. The 1.651 megawatt Salt Palace array—the brainchild of Salt Lake County Mayor Peter Corroon—will be owned and operated in a joint venture of Salt Lake County and CarbonFree Technology. Through a 20-year power purchase agreement, the solar generation plant will sell power to the Salt Palace at a contracted rate that is expected to be a hedge against utility inflation. Barness was previously business development director in Utah for Bella Energy, a Denver-based solar energy company that is general contractor for the solar project. Construction on the array was completed in April, and it began generating power in late May. The solar energy system is expected to satisfy about 17 percent of the Salt Palace’s annual energy needs, for a projected overall savings to Salt Lake County of $2.4 million after 25 years.

Alumni who are incorporating key aspects of sustainability into their work in restaurants and urban agriculture along Utah’s Wasatch Front include Ryan Lowder BS’98, chef/owner of both The Copper Onion and Plum Alley, and Scott Evans BS’02, owner of Pago, all of which emphasize using local, farm-fresh (and whenever possible, organic) produce and other products from local purveyors. Lowder studied at the Culinary Institute of America in New York and joined the kitchen of Restaurant Jean-Georges. He then fine-tuned his skills in Colombia, Spain, and back in New York before returning to his hometown of Salt Lake City and opening Copper Onion in early 2010. Evans has 16 years of restaurant experience, including managing venues ranging from neighborhood eateries (Sage’s Café) to five-diamond hotel restaurants (Stein Eriksen Lodge’s Glitretind). Before opening Pago, he had most recently been with Squatters Pub Brewery, which is also known for its various sustainability initiatives. Sharon Leopardi BS’08 is the owner of Backyard Urban Garden Farms, an innovative community supported agriculture (CSA) business that uses Salt Lake City residents’ backyards to grow, tend, and harvest fresh produce to sell. In addition to feeding CSA subscribers, she also supplies local restaurants, including Pago, Forage, Les Madeleines, and Caffe Niche. Daisy Fair BS’03 runs Copper Moose Farm in Park City, which uses a 2,400-square-foot passive solar greenhouse and two hoop houses to grow certified organic vegetables and cut flowers for an area CSA, and also sells wholesale to local restaurants such as High West Distillery, The Farm, Montage Deer Valley, and Promontory.

We know we have just barely scratched the surface of the sum of U grads out there doing innovative, significant work on sustainability issues. We encourage you to share your updates with us! Please see the contact information box on Page 47.

LM Lifetime Member of the Alumni Association  AM Annual Member of the Alumni Association
through the years

’70s

Ann Weaver Hart BS’70 MA’81 PhD’83 is the new president of the University of Arizona. Hart had been president of Temple University, in Philadelphia, since 2006. Her achievements at Temple included increasing undergraduate and graduate applications while raising the academic qualifications of incoming students, producing an institutional record number of Fulbright scholars, and improving the freshman retention rate and time to degree. Hart previously held positions as president of the University of New Hampshire from 2002 to 2006 and provost and vice president for academic affairs at Claremont Graduate University in Claremont, Calif., from 1993 to 1998. While at the University of Utah, Hart served as professor of educational leadership, dean of the Graduate School, and special assistant to the president. She was honored as a Distinguished Alumna in 2008. She currently serves as a member of the Association of Public and Land-Grant Universities Board of Directors and as a member of the association’s Commission on International Programs, which she previously chaired. She has been recognized for her achievements and service by organizations such as the Business and Professional Women’s Foundation and the University Council for Educational Administration.

Douglas G. Mortensen BS’74 JD’77 taught American tort law this past spring to 31 students at Masaryk University in Brno, Czech Republic. Mortensen, a civil trial lawyer who lives in Salt Lake City, taught American civil litigation, with emphasis on injury law. “Much of the tort law theory I taught came straight out of the torts class I took from Prof. Kristine Strachan at the U law school some 36 years ago,” he notes. For extra credit, some of the students gave reports on American movies dealing with issues of law and justice, including Erin Brockovich, To Kill a Mockingbird, and The Insider (dealing with 60 Minutes’ difficulties in covering a tobacco industry conspiracy). Mortensen says he and his students also discussed and dispelled widely held misperceptions about personal injury law and practice in the United States. “There now may be more people in the Czech Republic than in Utah who know the real facts of the McDonald’s hot coffee spill case,” Mortensen quips.

’90s

Douglas L. Christiansen BS’88 MPA’93 PhD’93, Vanderbilt University’s vice provost for enrollment, dean of admissions, and assistant professor of public policy and higher education, is among three new national trustees elected to the College Board. Founded in 1900, the nonprofit College Board works to expand access to higher education. Christiansen’s term runs through October 2015. Prior to his appointment as trustee, Christiansen served on the College Board’s National Task Force on Admissions in the 21st Century, the Advanced Placement National Higher Education Advisory Council, the trustee-appointed Membership Committee, and the National Colloquium Planning Committee. He also led Vanderbilt as a pilot member in the College Board’s Access Success Initiative. Prior to coming to Vanderbilt in 2006, Christiansen was assistant vice president for enrollment management and dean of admissions at Purdue University in West Lafayette, Ind. He also served as associate director of student recruitment and high school services at the University of Utah.

Mickey Ibarra Med’80 (as well as an honorary doctorate) received the inaugural Medallion For Excellence in Government Relations and Public Affairs from the United States Hispanic Leadership Institute. The award will be named in honor of Ibarra and presented annually to an individual who has excelled in government relations and public affairs on behalf of the Latino community. After serving as assistant to the president and director of Intergovernmental Affairs at the White House from 1997 to 2001, Ibarra established the Ibarra Strategy Group, a government and public affairs firm based in Washington, D.C. In 2006, he founded the nonprofit Latino Leaders Network. He serves as a member of the Board of Directors for the Mexican American Legal Defense and Educational Fund, the Ibarra Foundation, and eLeaderTech, Inc. In 2007, Ibarra donated his White House and Salt Lake 2002 Olympic Winter Games papers to the University of Utah’s J. Willard Marriott Library. This spring, he gave the U’s Hinckley Institute Forum keynote address and was honored at a reception recognizing The Mickey Ibarra Papers.
Bryan Jones BS’95 PhD’03, a neuroscientist at the University of Utah’s Moran Eye Center, recently won the National Science Foundation’s International Visualization Challenge. His first-place submission isolated the different types of cells—from muscles to the retina—in an eye and assigned a unique color to each different type of cell, merging information with beauty. Jones is research assistant professor of Ophthalmology & Visual Sciences with the U’s School of Medicine, adjunct research assistant professor in its Department of Physiology, and joined the research faculty of the Moran Eye Center in 2006. His image, which to many resembles a piece of candy, is actually a metabolic look at the wide diversity of cells in a mouse eye—in all, 70 different types of cells, from muscles to retina, each colored a unique shade. To map out the tissues, Jones used a technique called computational molecular phenotyping. This approach, pioneered by Robert Marc, also at Moran Eye Center, takes advantage of the unique array of molecules in all cells in a tissue.

Bryan Johnson BS’08, the University of Utah’s quarterbacks coach for the past two years, has been elevated to offensive coordinator, following a national search. “Brian is a leader and a special coaching talent, just as he was a special player, and he is the right person to lead our offense,” says head coach Kyle Whittingham, who himself in 1995 became Utah’s defensive coordinator after just one year as an assistant coach. Johnson, the winningest quarterback in Utah history during his career (he was 26-7 as the starter in 2005, 2007, and 2008) and the MVP of the 2009 Sugar Bowl, will continue to coach the quarterbacks in his new position.
Solar Ivy
Leaf-shaped photovoltaic panels bring a green twist to the walls of academe.

Ivy-covered walls have long been a hallmark of academe. The University of Utah plans to bring that emblem a new significance later this summer, with the installation of an array of solar panels crafted to resemble ivy leaves.

The “solar ivy” will cover about 800 square feet of the south wall of Orson Spencer Hall and is scheduled for installation in late August. The installation is expected to generate an average of about three kilowatts of electricity—a relatively small amount equivalent to the power needed for the kitchen and living room of a four-person household—and will feed into the University’s main power grid, says Tom Melburn, a U student who came up with the idea for the project and found the funding for it. Melburn, who graduated in May with a bachelor’s degree in environmental studies, says he learned in 2011 that a company in New York called Sustainably Minded Interactive Technology had developed the solar ivy. Melburn approached the U’s Office of Sustainability with his idea and then sought financing for the $42,000 cost of his project through the University’s Sustainable Campus Initiative Fund, which is supported by student fees. He was awarded a $30,000 grant and then raised the remaining $12,000 in donations over a two-month period.

The installation on Orson Spencer Hall will feature small photovoltaic panels that are green, to resemble leaves, as well as red ones placed in the shape of a block U. “I like its aesthetic value the most,” Melburn says. “This isn’t just something that goes on top of a building and is out of sight and mind. It’s going to attract interest to how we produce and consume energy.”

Samuel Cochran, chief executive officer of the company that makes the ivy, says the installation at the University of Utah will be the first in the United States, and the second in the world. An exhibit of solar ivy was scheduled to be installed this past spring at the Environment Museum of the Montreal Biosphere, in Canada.

The company uses environmentally sustainable practices in manufacturing the panels, Melburn says. The leaves are made of recycled plastic, and the company doesn’t use silicone-based photovoltaics that contain rare-earth minerals that are harmful to the environment. “The downside is that these aren’t as efficient when it comes to energy generation” as silicone-based panels are, “but we wanted to take into consideration the sustainability of the production,” he says.

Orson Spencer Hall may be renovated or replaced during the next 10 years, and if and when that happens, the solar-ivy installation can easily be removed and reinstalled. Beyond the logistics, Melburn says he loves what the installation signifies. “This is a really unique project, because it is representative of how fast technology is changing and how fast we can adapt this into our lives and change the ways we think about energy.”

Visit continuum.utah.edu to view an artist’s rendering of the solar ivy installation at the U.
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