A Sustainable Master Plan

“Sustainable Furman” will shape the way we teach, work and allocate resources

S
ince 1973-74, when the Arab oil embargo and the first energy crisis struck, American political leaders in both parties have extolled the virtues of energy conservation and independence. But American dependence on foreign sources of oil has increased while climate change has accelerated. Two years ago, a small group of college and university presidents, including Furman’s David Shi, resolved to help lead a renewed national effort to promote energy independence.

Since the fall of 2007, when the American College and University Presidents’ Climate Commitment (ACUPCC) was launched, some 660 presidents have pledged to work toward making their campuses climate-neutral. Participating schools represent 40 percent of the nation’s undergraduate population.

As part of their commitment, the schools must develop a climate action plan, a multi-year strategy to move their campus toward carbon neutrality—a point where campus-related activities do not increase the amount of greenhouse gases in the atmosphere.

“Sustainable Furman,” a sweeping 40-page master plan approved unanimously in November by the board of trustees, will impact every aspect of university life, from the academic program to campus operations, transportation and construction practices, environmental stewardship, and community outreach activities.

The climate action plan calls for the university to reach climate neutrality by 2026, the 200th anniversary of Furman’s founding.

Most of the proposed carbon-cutting efforts will be focused on improving energy efficiency (upgrading HVAC and lighting systems, appliances and roofing), conserving energy, and transitioning to eco-friendly transportation (continuing to purchase hybrid or all-electric vehicles and encouraging on-campus biking and walking).

Larger projects, such as the development of more renewable energy projects, will be implemented as funds become available, most likely through outside grants such as the recent $2.5 million awarded by the U.S. Department of Energy for geothermal heat pumps at the North Village apartment complex.

According to “Sustainable Furman,” about 50 percent of the university’s carbon footprint can be eliminated by developing renewable energy projects and improving the energy efficiency of campus buildings. Duke Energy, which supplies Furman with electrical power, plans to cut its net carbon emissions in half by 2030. These improved efficiencies should help reduce Furman’s carbon footprint another 24 percent.

The university believes the balance of its greenhouse gas emissions—about 25 percent—can be eliminated through conservation, decreasing transportation-related emissions, and investing in a community-focused energy conservation offsets program.

“Clearly, Furman is a leader in sustainability,” Nelson says. “It is almost embarrassing to see the number of awards you all have won.”

The Presidents’ Climate Commitment also stipulates that participating universities incorporate sustainability-related topics into their academic programs. “Sustainable Furman” reaches beyond the requirement by infusing energy and environmental issues across the curriculum and in co-curricular projects and research activities. It also seeks to involve alumni in related projects and promotes “sustainable service” as a form of community outreach.

Sustainability service opportunities could take the form of training members of the university community to “weatherize” energy-inefficient homes in low-income neighborhoods. To that end, the university helped to establish the Greenville Sustainability Community Coalition. The group, which includes community leaders and Furman volunteers, will target service projects for Greek organizations, athletic teams and the Heller Service Corps, among other groups.

Nelson and Elizabeth MacNabb, director of environmental programs for the Associated Colleges of the South, a consortium of 16 national liberal arts colleges, says that Shi’s passion for sustainability has driven the movement at Furman.

“David Shi is a shining star in terms of making sustainability a top-level commitment and being a workhorse in making things happen,” says Nelson. MacNabb adds, “Furman is the only [ACS] institution where the president is personally overseeing the various aspects of the [sustainability] plan. There is not another [ACS] school that is as interested in sustainability as Furman.”

Furman has been building its emphasis on sustainability for the last 15 years. In 1997 the university developed a strategic plan that designated sustainability as a strategic initiative, and in 1999 the board of trustees adopted a LEED (Leadership in Energy and Environmental Design) Green Buildings Rating System for all new and renovated construction on campus. In a new strategic plan approved two years later, the board resolved “to strengthen our commitment to the environment by promoting sustainability through educational programs, campus operations/ construction practices, and public awareness initiatives.”

(continued on page 8)
Assistant VP for Human Resources joins Furman staff December 1

Meet Jana Grimes

Grimes, who joined the administration December 1 from DePauw University, realizes that there’s a lot of anxiety out there and draws on her experience with how a sour economy has affected her family. “You need to understand the financial implications and economic situations at a university. But you also have to balance the fact that there are people’s lives involved,” says Grimes, who was executive director of human resources at DePauw.

“Be able to show empathy and recognize that there are hard decisions to be made, you go into it with maybe a little more sensitivity. My husband was laid off from work in January after 31 years in the printing industry. That helps me to understand on a personal level what many employees are going through with their own families,” she adds.

Grimes, a native of Greencastle, Ind., started out in accounting, but realized she liked dealing with people better than numbers. She applied to Indiana State University, which offered a degree in human resource development.

“I was what they categorize as a non-traditional student. I went back to college as an adult and worked full-time while raising my son and going back to school,” she says. She earned her bachelor’s and master’s degrees from Indiana State and says the support system she had at home with her husband of 22 years, Bruce, enabled her to juggle her responsibilities. Her son, Jerry, now 25, is a sixth-grade English teacher in Kentucky.

“She is proud that her son grew up to want to serve his community, something she practiced in her own life, particularly through her involvement with Leadership Wabash Valley, which identifies potential leaders and helps them develop their skills.”

Grimes, who was in human resources at Rose-Hulman Institute of Technology in Terre Haute, Ind., before moving to DePauw, has drawn praise for fostering a collegial work environment on campus. “It’s clear the values of the university, the commitment to involvement with the community, really attracted me to Furman,” she says.

“Part of what I believe that I brought to DePauw and what I hope to bring to Furman as well is to bring out those things that are already good at Furman and work with others to help make them great,” Grimes says. “Sometimes it helps to have someone externally to look in and say, ‘Wow, you’ve got a lot of good things here. Let’s work together to make them great.’”

Building “Smart” Polymers and Composites

by Tim Hankes

Traditional plastics are electrical insulators, but electrically conducting polymers have been developed that provide a route to exciting new materials and devices. For example, organic light-emitting diodes based on conducting polymers are making their way into a new class of ultrathin, bright and energy-efficient TVs and computer monitors. Many other applications are under investigation, including artificial muscles, miniature sensors for biological and environmental monitoring, and molecular-scale electronic devices.

The Hanks group has worked for several years on attaching small molecules with specific functions to the surface of conducting polymer films. Very recently, they have been investigating ways of incorporating these polymers into the support media used to grow tissues. The goal is to add a degree of “intelligence” to biological implants; that is, to give them the ability to detect and respond to changes in the cellular environment.

Because conducting polymers are highly biocompatible, they can be used to directly interface with cells. This property allows them to direct the growth of nerve cells and may permit electrical communication between the nervous system and the metal electrodes that are part of a new generation of prosthetic devices. Over the next several years, we will work with collaborators in Australia and across South Carolina to develop materials to address the complex challenges involved in developing robust, long-lived materials for use at the human/device interface.

I asked Tim Hanks and Victoria Turgeon what the most rewarding part of their job is, you’d get the same answer:

“It’s experiencing that magical moment of enlightenment, the instant a student’s eyebrows rise, the mouth opens in awe and the head nods affirmatively. They understand. The proverbial pieces of the puzzle fit together.

For some, the moment may come during sophomore or junior year. Others take longer. It almost always occurs in the research lab.

“At first, the flood of information is intimidating or even overwhelming, but then the clouds part and they see how it all fits together,” says Hanks, a chemistry professor. “They get excited, and that’s when I know they are on their way to becoming a scientist.

For biology professor Turgeon, the moment comes when the handling and directing stops and a student takes charge of his or her project and begins to think and act independently.

Both professors were recognized earlier this year with distinguished mentor awards from the Howard Hughes Medical Institute (HHMI). They were chosen among dozens of nominees from across the country. Each received a $5,000 award from HHMI for research supplies that was matched with a $5,000 contribution from Furman.

“Furman is proud of the recognition Drs. Turgeon and Hanks have received with the Distinguished Mentor Award from the Howard Hughes Medical Institute,” says John Beckford, dean of the faculty. “Our commitment to engaged learning is clearly demonstrated through the rich experiences these two professors have brought to their students.”

Turgeon, a graduate of Randolph-Macon Woman’s College, has worked with about 40 students since joining the faculty in 1998 after earning her Ph.D. from Wake Forest. Most recently, she and her students have been studying the development of motor neurons, the cells that control all muscle movement, from breathing to blinking. A symptom of Amyotrophic Lateral Sclerosis and other neurodegenerative disorders is the destruction of these neurons.

Scientists don’t know why motor neurons, which are located in the spinal cord and brain, die. But they do know that motor neurons are mass-produced in embryos. Before birth many die. Turgeon and her students hope that by studying motor neuron development and death in chicken embryos, they can help unravel the mystery of what causes more neurons to die in patients with ALS and similar conditions. [See “Understanding Motor Neuron Death” article on facing page.]

“Most of the students know someone with a spinal defect or someone suffering from ALS or a neurodegenerative disease, so they can relate to the research and they become invested in the projects,” says Turgeon.

This past summer, she mentored four Furman students and four high school students, two of whom were participants in the Bridges to a...
Honored by Howard Hughes Medical Institute

Brighter Future program. She says, “During the summer it gets really intense, but by July they don’t need me as much. They understand the procedures, know how to operate the equipment and have confidence in themselves.”

Summers are also busy for Hanks, who teaches organic chemistry and directs Research Experiences for Undergraduates at Furman, in addition to managing his own research group. The 10-week program, funded through the National Science Foundation, supports undergraduate research opportunities for 10 students (half of whom are Furman students) and a faculty mentor.

Each student-faculty project is approved by Hanks. Last summer, teams from USC-Upstate, Newberry, Enkine and UNC-Ashville participated.

Hanks explains that Furman’s REU program is unique from the other 70 NSF-funded programs at colleges and universities. “Other institutions often use their EU programs as a recruiting tool for their graduate programs,” says Hanks. “The Furman program tries to increase the level of undergraduate research by involving faculty.”

“We like to say that our REU program is an undergraduate research incubator.”

“If a faculty member and student develop and work on their own project here, hopefully they will take it back to their home school and continue the research there. We want to improve the research programs at the student’s home institution. We like to say that our REU program is an undergraduate research incubator.”

Hanks says the teacher-student teams, who are paid for their work, enjoy immersing themselves in their studies along with the 60 Furman chemistry majors who engage in research each summer. In addition to coordinating the Furman REU, Hanks is a member of an REU leadership group, sponsored by the NSF, that advises and provides resources to help colleges and universities improve their programs.

Hanks’ love of research and his desire to have the flexibility to pursue his own interests led him to a career in education. After earning degrees from South Dakota School of Mines and Technology and Montana State University, he was working as a visiting professor of chemistry at Clemson when Furman and Michelin offered him jobs.

“I’ve had a number of job offers to work in the private sector, but in higher education, I have the freedom to pursue my research interests,” says Hanks, whose specialty is electroactive polymers, which have been used in tissue engineering.

To that end, Hanks will spend part of his next year on a sabbatical near Sydney, Australia, where he will work with researchers at the University of Wollongong. The university houses a world-renowned intelligent polymer laboratory.

A dozen and three centuries

It’s also the combined years of service of a dozen longtime university staff who took advantage of a voluntary enhanced retirement plan earlier this fall. The university hosted a collective retirement reception for the group December 3 at the Younts Conference Center.

The group includes Jerry Andrews, Mitch Byers, Jesse Hamby and Bud Leher (Facilities Services), Jo Ann Williams (Academic Records), Linda Cook (Continuing Education), Sandra Clark (Career Services), Carolyn Lancaster (Library), Frances Dobson (Health Services), Barbara Grissop (Music) and Carolyn Heaton and Elaine Hudgins (Athletics).

Six in the group, Williams, Clark, Cook, Grissop, Hamby and Hudgins, have served the university more than 25 years. And two, Lancaster and Grissop, graduated from Travelers Rest High School together, joined Furman in the same year and now will retire after working 37 years at the university.

A quick survey of the group revealed different plans. All will enjoy family. Lehn, an amateur vocalist and disc jockey, will return to the university weekly to host a radio show. Byers has planned a cruise to Hawaii. Lancaster hopes to volunteer with a group that will give school tours of Greenville.

Some have more simple plans.

“I’m going to sleep some,” says Andrews. “I’m looking forward to the clock not going off every morning at 4:30.”

Understanding Motor Neuron Death in Embryos Could Yield Cure for ALS
by Victoria Turgeon

Motor neurons are over-produced in the early development of an embryo, and then a subset dies through a naturally occurring process referred to as Programmed Cell Death. While this process is important for the proper development of the nervous system, it is detrimental if it is reactivated in a body that has already completed embryonic and fetal development.

The mechanisms through which motor neurons die in the embryo have many similarities to those cells that die in people with ALS or other neurodegenerative diseases. Chick embryos, due to their shared homology with mammals, are ideal models to study nervous system development.

One way to study neuron development is to observe what happens to these cells under specific conditions in the developing embryo. To do this, a small hole is cut out of the egg shell, allowing the embryo to be treated and monitored as needed.

The developing embryo is connected to the yolk via specialized veins called vitelline veins. These veins make treatment quite easy. As long as the treatment is capable of being absorbed by the solution, it can be gently added through the hole in the shell and taken into the embryo.

In this model organism, the spinal motor neurons are fully developed by the 10th day of incubation. To examine these cells, the embryo must be removed and then sliced into thin sections so they can be examined under the microscope.

Motor neurons possess a specific receptor on their plasma membrane called PAR-1. When activators of this receptor are added to developing embryos, the rate of neuron cell death significantly increases. Furthermore, it has been shown that the activator of this receptor is increased following spinal cord injuries and in people with ALS.

Our research teams are trying to figure out how activating this receptor causes neuron cell death and how this pathway can be inhibited.

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Child Development Center to have a new home

On life support just a few years ago, the Furman Child Development Center will soon have a new home and secure future. Next year the center, currently located near the Woodlands retirement community, will open next year at the university-owned Quinn House. The 2,400-square-foot house is located off Duncan Chapel Road, across the street from Pepsi Stadium and adjacent to the rails to trails pathway.

Mary Lou Merkt, vice president for business affairs, says the university will spend approximately $450,000 to upgrade and retrofit the house. The renovations—adding a parking lot, upgrading utilities and constructing a playground—will be completed this summer in time for the 2010-11 school year.

The university once considered closing the Child Development Center (CDC) as a cost-cutting measure. The current CDC building will be razed.

The preschool enrolls 26 children, 16 of whom are dependents of Furman faculty or staff. Meredith Burton, CDC director, says the new building will accommodate 36 students.

“It’s going to fit our needs perfectly,” she says. “It will give us room for office space and a conference room. It will also be easier to access from campus.”

Sustainable Living

November

Erin Dickerson, Women’s Basketball

October

Jonathan Brown, Paladin Club

Robert Knox, McAlister Auditorium

Warwick Bashford, Men’s Tennis

New Employees

September

Robert Knox, McAlister Auditorium

Warwick Bashford, Men’s Tennis

Steven Hopkins, Sports Medicine

Jonathan Brown, Paladin Club

MILESTONES

New Employees

September

Robert Knox, McAlister Auditorium

Warwick Bashford, Men’s Tennis

Steven Hopkins, Sports Medicine

Jonathan Brown, Paladin Club

October

Melissa Hamme, History

Erin Dickerson, Women’s Basketball

November

Elizabeth Hamlett, Library

Anniversaries

September

20 years

Nina Anthony November

Jane Burton December

Mark Thomson December

15 years

Lisa Bridges November

Mary Fairbairn November

10 years

Boyd Yarbrough December

5 years

Antoinette Harrill November

Soren King November

Tianne McCullough November

Kay Cornelison November

Renewable energy technology on campus

Solar Photovoltaic: These electricity-producing solar panels can be found in five places at Cliffs Cottage. The photovoltaic panels produce approximately 50,000 kilowatt hours of electricity per year, which completely meets the electrical needs of the building.

Solar Thermal: These solar panels use the sun to preheat water for Cliffs Cottage, the Greenbelt and the Lay Physical Activities Center, reducing the use for grid electricity or natural gas by up to 85 percent.

Solar Concentrators: This hybrid system, located between Townes Science Center and the soccer field, focuses sunlight from parabolic mirrors onto photovoltaic cells to make electricity. In addition, water circulated to keep the PV cells cool becomes quite hot and is used in the Townes Science Center and the adjacent solar aquatic wastewater treatment center.

Geothermal: Cliffs Cottage has a ground source geothermal heat pump providing efficient heating and cooling to the building.

More renewable energy coming to campus: geothermal heat pumps at North Village

The university continues to garner national recognition for its sustainability initiatives. As part of Furman’s ongoing effort to reduce energy consumption and serve as a demonstration site for renewable energy technologies, the university recently received a $2.5 million grant from the U.S. Department of Energy (USDOE).

The money will be used to install geothermal heat pumps at the North Village apartment complex. Furman was the only private liberal arts university in the nation to receive such a grant.

The North Village project will be Furman’s second major geothermal system. The other one provides heating and cooling for the Cliffs Cottage. These projects, along with the half dozen solar energy systems on campus, place Furman in the forefront of renewable energy in the Southeast. Data from these projects will be used to assess the feasibility of geothermal heat pumps to decrease energy usage in homes, schools and companies across the region. The project will take approximately three years to install, and will be the focus of various faculty/student research initiatives.

The geothermal heat pump system will involve the drilling of roughly 200 wells, each 300 feet deep. Taking advantage of the near constant year-round temperature of the earth, the system will circulate water from the building through the wells, enabling the heat pumps to operate at significantly higher efficiencies than commonly used residential heat pumps.

Once installed, the system is expected to decrease energy usage at North Village by 1,041,520 kilowatt hours per year, which translates to a carbon reduction of 676 MT CO2 per year and $55,000 in annual savings. Since electricity rates in South Carolina are expected to increase, the annual savings figure will also increase; over the lifetime of the heat pumps, savings to the university’s budget will range from $1.9 to 2.6 million.

In addition to the financial savings and reduction in carbon emissions, the geothermal system will serve as another sustainability living/learning laboratory. (For a list of all the university’s sustainability living/learning laboratories, see www.furman.edu/sustain.) It will create opportunities for student engagement through research and community demonstrations beyond the scope of the grant.

Geothermal heat pumps are becoming increasingly common in residential areas. If you are upgrading your heating, ventilation, and air conditioning (HVAC) system or are building a new home, a geothermal (or ground source) heat pump could be a great option. According to the South Carolina Energy Office, residential geothermal heat pumps often pay back the initial investment in a few years because of their greater efficiency. They also have lower maintenance costs over time.

Renewable energy systems provide an amazing opportunity for Furman students, faculty and staff to learn firsthand about these systems, the science that enables them, and their application in homes and in the larger community.

—Angela Halfacre, Director, Shi Center for Sustainability

with contributions by Shi Center for Sustainability staff, Facilities Services, and Research and Grants
Employee HRAs Promote Preventive Medicine

Benjamin Franklin once said, “An ounce of prevention is worth a pound of cure.” In the midst of national health care reform, Furman has refocused its attention on preventive medicine. Furman’s Employee HRAs are a self-insured entity. This means that Furman pays employee health claims directly, which currently costs the university approximately $7 million per year. Each dollar saved helps to keep employee health insurance premiums as low as possible. And the prevention of chronic diseases promotes the well-being of Furman employees and their loved ones.

Many chronic diseases could be prevented through the adoption of healthy practices such as regular physical activity, a healthy diet, maintaining a healthy body weight, and avoiding tobacco. Additionally, knowing and managing medical conditions and conducting preventive screening techniques can significantly improve disease outcomes and survival rates.

On a personal level, early detection has saved my life. At a skin cancer screening several years ago, a dermatologist identified a potentially fatal melanoma on my leg. With the help of many talented and conscientious health care providers, the cancer was removed and my prognosis remains relatively favorable. I have learned to never take my personal health for granted again.

Any employee who is covered through Furman’s health insurance was eligible to participate in a Health Risk Assessment (HRA) this fall. For those who elected to participate, monthly health insurance premiums will be reduced by $32.98 per month in 2010 for the Core plan ($635 per year) and $76 per year) and $24.62 for the Basic plan ($295.44 per year). The HRA was conducted by Dr. Marcus Blackstone and his physicians at Stonewall Medical Clinic. It consisted of measurements for height, weight, abdominal circumference and blood pressure, plus a blood draw to analyze cholesterol, triglycerides and glucose.

Dr. Blackstone has also selected the University of Michigan’s Health Management Research Center’s (HMRC) Online Health Risk Appraisal Questionnaire to be used in conjunction with the physical examination results. The HMRC’s appraisal is one of the earliest developed and considered to be the gold standard in terms of assessment tools.

Your HRA information will be held strictly in confidence in accordance with current HIPPA regulations. Furman University and Human Resources will see aggregate data but will not have access to your personal medical information without your written permission.

INSIDE FURMAN

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John Roberts, editor
Ann Green, contributing writer
Jeremy Fleming photographer
Rosanne Chase, art director

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Sustainability and Townes Center

The why Architecture Matters, author Paul Goldberger, architecture critic for The New York Times, answers the why of his book title by describing an important building as one that “brings delight and sadness and perplexity and awe along with a roof over our heads.”

The stunning features of one of the most important facilities on the Furman campus, the Charles H. Townes Center for Science, come together to provide a place where students regularly experience all four of these emotions in the course of a day’s work.

Housed in recent months, the center has sprouted some important appendages. One of them, in particular, perplexed those who aren’t regular denizens of the building, which houses the biology, chemistry, earth and environmental sciences and physics departments.

The south end of Townes, across from the Stone Soccer Stadium, saw an erecter set of solar panels rise from the ground, along with a huge greenhouse. They represent a dramatic one-two punch of a declaration that science is being done here and that Furman is committed to sustainability, energy/water conservation, and environmental awareness.

Biologist chair Joe Pollard talks about putting “science in sight” as a key mission of the Townes Center. And while Furman has had a greenhouse for a number of years, the new one is in a prominent location and will be available for use not only in science projects, but also by members of the university community growing their own produce in Furman garden plots.

There’s also the center’s wastewater treatment and recycling project, known as the “Living Machine.”

It’s all part of Furman’s goal to have the science center go beyond LEED requirements, an internationally recognized certification system that sets high-performance sustainability standards in design and construction.

The Living Machine mimics the ecology of tidal wetlands. Wastewater is diverted from the Townes Center’s sewer line, collected in a buried tank and pumped into computer-controlled wetland basins. Tidal cycles furnish the oxygen and nutrients for microorganisms that make their home in the wetland basins, and they are enlisted as nature’s way of treating the wastewater. The resulting high-quality effluent can be recycled as water for flushing toilets and urinals or for washing the cages in science labs, for example.

Jeff Redderson, assistant vice president of facilities at Furman, translates into layman’s terms the expected savings from the Living Machine and the solar concentrators.

“The Living Machine wastewater reclaim system processes up to 5,000 gallons a day of sanitary sewer water,” he explains. “The reclaimed water, or graywater, will soon be pumped back into the building to flush urinals and toilets, which will reduce our freshwater consumption by another 5,000 gallons a day. This is enough water to fill up the main fountain every four months, or enough water for 100 showers each day.”

More than a dozen states have used the Living Machine system for wastewater treatment and reuse, according to an official with Worrell Water Technologies, a Charlottesville, Va.-based firm that engineered the system and is partnering with Furman on the project.

As it is being treated, the water is kept below the surface of a gravel-packed medium with plant life above the surface. So there’s no danger of accidental human contact with untreated water or of the Living Machine becoming a breeding ground for mosquitoes, the official says.

The Living Machine leaves a small ecological footprint—120 square feet. A custodian spends about 30 minutes a day making sure the system is running properly.

As for the solar concentrators, they use parabolic mirrors to concentrate the sun’s energy over 1,000 times normal levels. According to Redderson, they will produce 14 kilowatts of electricity and 70,000 BTUs per hour of hot water during peak operating periods. That’s enough to meet the power and hot water needs of a small residential building, he adds.

Allison Claire Davis, a junior from Kingsport, Tenn., has been at Furman long enough to remember the inconvenience caused by the construction of Townes and describes taking tests to the drumbeat of hammers and loud machinery.

The rewards of the building made it all worthwhile, however.

“This is a place where you want to be and where you can be happy doing the hard work that goes on here—and it truly is hard work,” says Davis, who is pursuing a double major in biology and music.

From the natural light that cascades into the building to the solar concentrators outside that will provide energy savings, students feel good about what is going on in the science center. Both consciously and subconsciously, they are becoming foot soldiers in Furman’s sustainability campaign.

Furman president David Shi has called higher education “the seedbed of the sustainability movement.” Davis, who is planning to go to graduate school and focus on a career in genetic counseling, demonstrates how those seeds have taken root in her life.

She recalls her frustration when she paid a recent visit to a university campus where Furman was playing football. She couldn’t find a recycling bin and realized it spoke volumes about that school’s lack of commitment to protecting the environment.

It wouldn’t happen at Furman, she says. —Ann Green
Actually, you can now cozy up to an e-book. The library has acquired a new Kindle e-book reader. This spring we will pilot a program for faculty to check them out, examine the technology and experiment with usability. The market for e-book readers seems to be on the verge of a burst of innovation as new devices hit the marketplace. It will be fascinating to see how that will affect use patterns. For more details on this project, intrepid faculty should contact robyn.andrews@furman.edu or call her at extension 2264.

The science library will be going through a transition phase in January, and personnel from the Duke Library will be supporting operations there until a new science librarian is hired. Special Collections and Archives is running a new exhibit titled “The Archives of Ibel.” We cannot house a complete collection of works in every language. However, Special Collections and Archives does contain a surprising array of texts written both in English and a variety of languages. With this exhibit, we display a small and diverse sampling of materials featuring different languages. Understanding language to be an effort at comprehension, articulation bound by context, we aim to broaden traditional notions of language and our use of it.

The exhibit runs through January 22.

Pongracz Senney

Dining Services

This fall, Dining Services welcomed two new members to our management team, April Clark and Chad Rowland. April is a controller who comes from The Citadel. She has made a positive impact immediately with dining services, largely due to her many years of financial management and food service experience. Chad, a culinary supervisor in the dining hall since its renovation three years ago, has moved into a managerial role as a sous chef. Chad has years of fine dining experience—from Charlotte to New Orleans—and he has helped to energize the menu. We welcome Chad and April to the team!

—Adam Summer

Facilities Services

As Furman continues to use more sustainable practices, our attention has turned to its landscape. Though several aspects of campus maintenance—mulching grass clippings to return nutrients to the soil, grinding tree trimmings for use as ground cover—are inherently sustainable, we are broadening our scope in an effort to maintain beauty while conserving resources. Turfgrass is a highly visible and pleasing aspect of the campus landscape. Healthy, sustainable areas are also an important part of preserving and protecting soil, air and water resources in a given setting. Depending on location, turf can be maintained in different ways to meet the needs of students, sports teams, visitors and the environment while presenting an appropriate aesthetic to complement the surroundings.

We have converted 10 acres of the campus to “low maintenance” zones which are mowed only two or three times per season. By encouraging the growth of native species, these areas require less fertilizer and other inputs for good health. In areas where frequent maintenance is required, the challenge is to achieve good results while using fewer resources and more environmentally friendly products. To that end, we are experimenting with mowers which are powered by propane, which has lower emissions and costs less to operate. We also hope to fertilize more areas with organic material instead of synthetics. We are experimenting with applying nutrients derived from recycled organic material which is produced near campus. The organics improve the quality of the soil, resulting disease suppression. Thanks to innovations in plant production, varieties and cultivation techniques, it is now possible to replace some of our landscape with material which is bred to be more tolerant of adverse conditions. We may be able to reduce our use of resources, labor and chemicals in some of the formal gardens by replanting with the newest cultivars. In other areas where it is difficult to grow anything, we could plant moss. These plants, also known as bryophytes, provide a sustainable solution because of their tolerance of drought, shade and sun as well as their pest resistance and ability to prevent erosion.

Although those ideas might sound like a departure from our current aesthetic, they are really just new ways of producing the beautiful landscapes we identify with the Furman campus.

—Scott Sherman

Public Safety

John Divittorio started working for the department in July. John had 23 years of police experience with the Greenville County Sheriff’s Office, where his last assignment was as a major crimes investigator. John has been in the U.S. Naval Reserves for the past 12 years. His assignment is intelligence. He served in Iraq in 2001 and 2008.

This summer we continued our project to remove metal parking signs from the campus in lieu of curb markings. All public safety patrol cars are now hybrids. The use of mopeds among students has continued to increase. This semester, our officers focused on an education program to have owners register their mopeds, travel in the same direction as motor vehicle traffic, and stay off the sidewalks. We have marked areas at the activities center, dining hall and lake side housing for moped parking, and also encouraged drivers to park their mopeds on designated mulch areas.

The traffic and parking committee, which develops policies and regulations regarding motor vehicles on campus, and the traffic appeals board, which hears appeals for citations, have been combined into one committee. The committee met twice this semester. Lastly, a 12-hour certified women’s self-defense course will be offered December 5 and 6. Employees are also welcome. Contact Amanda Murrow or Bob Gibson in our office (ext. 2111) to make a reservation. Public Safety has conducted five sexual assault educational programs for Furman students this year.

—Bob Miller

Library

In the course of the fall semester the library has been working with publishers to switch many of our journal titles to electronic format. User studies conducted over the past years made it clear that patrons prefer electronic journals, and many publishers are favoring that format as well, adding content and areas otherwise not found in the print versions. As a result, we will stop receiving print issues of many of our subscriptions (about half of the titles will switch) in January and February of 2010. We will make sure to mark the shelves for those titles that have switched formats.

The library is also experimenting with an array of electronic books (e-books). Publishers are producing a large number of these new products and they come in different user interfaces. Some publishers are experimenting with e-book only publications. Although no one will likely use an e-book, the new format allows for uses and applications that are altogether impossible in a print world, such as data linking and electronic dictionaries and concordances into the text.

As a result, we will continue to order print versions of a few high-demand journals and all of our law journals. Also, there is a need to carefully consider the cost of making materials required in the classroom available online. We will be considering these and other questions as we examine the technology and implement it into our user services.

We believe that the move to electronic formats will serve the needs of the Furman community well. We welcome faculty and students’ feedback on this change.

—Mark Christensen

Human Resources

Fall is always an active and exciting time in Human Resources, and this year is no exception. More than 640 members of the faculty and staff participated in our Health Risk Assessments (HRA), which will hold over eight days in February. By engaging in this important wellness activity, they will receive substantial health insurance premium discounts in 2010. Twelve staff employees accepted the Voluntary Enhanced Retirement Plan. A reception was held to honor these individuals in the Younts Conference Center on December 3 from 11:30 a.m. to 1:30 p.m. (See the article on page 4).

Jana Grimes started work December 1 as assistant vice president for human resources. Please plan on taking a moment to drop by and meet her. Jana and her husband are from Indiana, where she has been in human resources at DePauw. (More on page 2.)

Development

“Furman United” is the special effort to raise scholarship funds for our students. The goal of this campaign is to raise extraordinary hard funds due to the current economic recession. The goal of this effort is to secure $800,000 over the next two years. Forest Stuart, director of financial aid, says, “I knew that Furman families would face unprecedented challenges, but it really hit me when I heard from a student about her father taking a fourth job to give her the opportunity to continue her Furman education. According to my estimates, student need has increased 17 percent over last year. We believe 10 percent of our students have either requested additional financial aid support or requested support for the first time. These students are already part of the Furman family, and I am relying on ‘Furman United’ to provide the additional resources so my office can help these students.”

“Furman United” is an opportunity for faculty and staff to rally together and stretch beyond their usual contributions or to give for the first time. The board of trustees has truly led by example and has been joined by generous initial gifts from other supporters in launching this worthwhile effort. Even current students have stepped forward to help as the Association of Furman Students voted to contribute a portion of their annual budget to “Furman United.”

Faculty and staff are encouraged to consider making a gift to support Furman students who have increased need in order to remain at Furman. For more information, call
**FACULTY/STAFF**

“**My financial aid package for my senior year includes funding from Furman United. That has helped to provide me with aid that I needed to finish out my senior year at Furman.”**

—Caroline Davis ’10

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**Biology**

Wade Worthen, Scott Henderson (Education), Paul Rasmussen (Psychology) and Lloyd Benson (History) edited a book titled *A Multidisciplinary Analysis*, published by Sense Publishers. The book contains 14 chapters authored by Furman faculty members and examines the nature and impact of competition in nature and human culture, from philosophy, education and psychology to economics, politics and sports.

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**Classes**

In September, Christopher Blackwell was awarded a National Science Foundation grant of $25,000 to pursue research on digitization of cultural artifacts. He contracted to write a biography of Alexander the Great for Cambridge University Press and held a workshop on digital photography of ancient manuscripts at the Pan-Hellenic Conference of Academic Librarians at the University of Patras in Greece in November.

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**Earth & Environmental Sciences**

C. Brannon Andersen co-authored an article with Amy Williams ’07 and Gregory P. Lewis (Biology) titled “Evaluating the Effects of Sampson Reservoir Treatments on Alkalinity Measurements” in the *Journal of Hydrology* (September 2009).

John M. Gartham, with C.W. Clendenin, Jr. and W.R. Doar III, completed the “Geologic map of the Tigerville 7.5-minute quadrangle, Greenville County, South Carolina” (2009), published as a Geologic Quadrangle Map through the South Carolina Geological Survey, Department of Natural Resources.

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**Education**

Paul Thomas authored the article, “Of Rocks and Hard Places—The Challenge of Maxine Greene’s ‘Mystification’ in Teacher Education,” which was accepted for the online peer-review *Journal of Educational Controversy* (http://www.vco.wvu.edu/ajour/). Thomas presented on the work of Lou Labrant and the need for nonfiction in English classrooms to the National Council of Teachers of English in Philadelphia November 19–22.

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**History**

Lane Harris presented “Language, Prestige, and Power: Debates about Romanization Systems for Chinese, 1860–1940” at the American Association for Chinese Studies Conference (October 16–18) and “Intercultural Commerce: The Qiaoqiu, Transnational Networks, and Colonial Modernity” at the Mid-Atlantic Regional Association for Asian Studies Conference (October 31-November 1). Harris was also a commentator at Mary Brown Bullock’s “Sino-US Relations” at the opening of the Confucius Institute at Presbyterian College November 6 and authored “Defining the Nationalist Party Center: The Text and Context of Gan Naiqiang’s Outline of Sun Wencen,” *E-JSAP*, which is forthcoming.

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**International Education**

Kailash Khandke was nominated and selected as a 2009 Presidential Fellow by the Association of International Education Administrators (AIEA). Khandke, as a new International Officer, will be paired in a mentorship program with a more experienced Senior International Officer at an institution similar to Furman.

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**Mathematics**

Doug Rall titled a plenary talk titled “Recent Work on Vizing’s Conjecture” in September at the 13th Workshop on Graph Theory. Colours, Independence and Domination, held in Sllanka Poreba, Poland.

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**Modern Languages & Literatures**


Ronald Friis and Jeremy Cass hosted and organized the 59th annual Mountain Interstate Foreign Language Conference at Furman October 6–10. Nearly 200 participants from universities across the United States, Spain and France presented research on all aspects of foreign languages and literatures and enjoyed a series of roundtable events on study abroad, academic publishing, and the evolution of the language major. Maria Rippon presented “Modern Martyr, Agnostics in Anguish: Crisis of Faith in Ushara’s San Manuel Bueno, Marte and Brian Moore’s Catholicisms” at the Mountain Interstate Foreign Language Conference.

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**Music**

Robert Chesnodo served as adjudicator for the Music Teachers National Association South Carolina Woodwind Competition held at Converse College November 4–5. In October, he performed with the Kaden Clarinet Quartet in concert at The Ravines in Greenville and participated in a benefit concert for cancer held at Concord Baptist Church in Anderson, South Carolina. Mark Kilstrofe’s *Four Hopkins Settings* has been declared the winning work in a choral composition competition sponsored by the William Jewell College Department of Music and the school’s Center for Justice and Sustainability. In addition to performance of the work, Kilstrofe will address the 2010 Summit (“A Better World”) in a planetary session and will conduct a master class for composition students.

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**Political Science**

Jim Guth presented a paper titled “Militant and Cooperative Internationalism Among American Foreign Policy Scholars,” at the annual meeting of the Working Group Conference on American Foreign Policy, British International Studies Association, University of East Anglia, September 17–19. He authored two book reviews, one of Jeffrey Dudas’ *The Cultivation of Resentment: Treaty Rights and the New Right in Political Science Quarterly* (Fall 2009), and the other of Frank Lambert’s *Religion in American Politics: A Short History*, *Politics and Religion* (December 2009). Guth also delivered two lectures at the University of South Carolina November 12 on “Religious Voting in the 2008 Presidential Election” and “Religion and Public Attitudes on American Foreign Policy.”

Angela Halfacre co-authored two selected peer review articles. The first, with Patrick Hurley and Brian Grabbatin, is titled “Sewing environmental justice into African-American sweetgrass basket-making in the South Carolina Lowcountry,” and was published in Southeastern Geographer. The second, co-authored with Cassandra Johnson and Patrick Hurley, is “Resistant place identities in rural Charleston County, South Carolina: Cultural, Environmental, and Racial Politics in the Seewee to Santae Area,” published in Human Ecology Review, Summer, 2009. Halfacre also received a $43,000 grant from the Rocky Mountain Institute Research Project (2009) for “Climate Action Plan Acceleration for Campuses: Revolving Loan Fund.”

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**Psychology**

Charles Brewer received the American Psychological Association’s Education Advocacy Distinction Service Award in honor and recognition of his “extraordinary and long-standing personal and professional commitment to advancing psychology education and training.” He also presented the Psi Chi Distinguished Lecture at the annual convention of the New England Psychological Association in Worcester, Massachusetts, October 9–10.

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**Religion**

David Rutledge was elected to a three-year term as president of The Polanyi Society, an international scholarly organization of 200 members. The society sponsors annual meetings, conferences every five years, a journal and a speakers bureau, and works with publishers to increase the visibility of the work of Michael Polanyi and others interested in religion and philosophy. Echó Nix’s article “Paul Tillich as Apologetic Preacher: Theology in the Form of Sermons,” was published in the Fall 2009 professional Bulletin of the North American Paul Tillich Society.
Since that time, Furman’s sustainability movement has gathered momentum, involved more people, and garnered millions of dollars in outside grants and donations. The university partnered with the Cliffs Communities to construct Cliffs Cottage, the Southern Living sustainable showcase home; introduced a revised curriculum that requires all students to take at least one course dealing with “Humans and the Natural Environment;” and created a Center for Sustainability, funded by an $800,000 grant from the Andrew Mellon Foundation, which the trustees recently named in Shi’s honor.

Frank Powell, a health and exercise science professor who has championed environmental issues since joining the faculty in 1974, says that Shi has taken a “methodical and deliberate” approach to promoting sustainability.

“It’s clear that David’s leadership and vision have been the defining factors in what we have accomplished,” says Powell. “He helped to create and build a knowledgeable group of university decision-makers who were not simply going to follow him but were willing to go in other directions.”

That once-small group of environmentally minded faculty, staff and students now numbers in the hundreds. More than 100, in fact, contributed to the development of “Sustainable Furman.”

And within the last year, several new student groups have sprouted, among them Sustainable Connections, Conserve Furman, Furman in the Garden (FIG) and a university chapter of Upstate Forever, a community organization that promotes “smart” growth and the protection of natural resources.

“Students hear about it on campus and in the classroom. The interest has grown exponentially,” says Jenni Asman, a junior neuroscience major. Asman, who grew up in Mauldin, co-founded Conserve Furman last year. The group works to attract speakers to campus to discuss environmental issues.

Powell says the student interest is evidence that sustainability, initially a “top-down” initiative, has become “baked into” the Furman culture. The combination of student support, a large group of young faculty and staff who are devoted to the cause, and “Sustainable Furman” ensures that the movement will continue long after he, Shi are other early champions of eco-friendly initiatives are gone.

“The university has made a substantial commitment by embracing ‘Sustainable Furman.’ In essence, I think we have future-proofed sustainability,” he says. “It has been incredibly gratifying to me to see how far we have come.”

“Watching It’s a Wonderful Life”!
—Amy Cockman

“When I was growing up we used to go to Chicago every year for Christmas. I loved that.”
—Ashley Sang

“For my wife Judy and me, one of our favorite Christmas traditions is the decoration of our Christmas tree. Over the years we have collected special ornaments from our travels with the Furman Singers.”
—Bingham Vick, Jr.

“On Christmas Eve we used to eat hamburgers on paper plates so that we could throw the plates away (avoid the kitchen clean-up time) and get to opening up presents.”
—Nancy Griffith

“One of my favorite memories was when I was expecting a b-b-gun for Christmas. Instead, under the tree I found a note to look under my bed. And it was there.”
—John Armstrong

Sustainable Furman
(continued from page 1)

From recycling to harnessing solar energy, cleaning up the lake and cultivating an organic garden, students, faculty and staff have launched an array of sustainable projects in recent years.