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UD’s Hugh R. Sharp Campus in Lewes is the site of a new wind turbine.
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To our friends in Southern Delaware:

♦ ♦ ♦ Welcome to the second issue of Southern UDelaware magazine, your guide to the UD people, programs and projects making a significant difference in the region and around the world. Southern Delaware’s global significance is no exaggeration. UD’s College of Earth, Ocean, and Environment (CEOE) in Lewes is one of the nation’s preeminent institutions of earth, ocean, and atmospheric research, and its work has enormous implications for environmental sustainability worldwide.

As this magazine goes to print, a 400-foot-high, 2-megawatt wind turbine is being erected on CEOE’s Hugh R. Sharp campus to take advantage of Southern Delaware’s favorable coastal winds. The single turbine, built and installed by the Gamesa Corporation, has enough energy-generation potential to power the entire campus. And when the turbine generates more—as the college’s experts predict it will—the excess will be fed to the electric grid for use by Lewes residents. But the land-based turbine won’t just provide clean, carbon-free electricity to Lewes; it will intensify UD’s coastal turbine research with Gamesa and pave the way for the first offshore wind turbines in the Americas—in just 2-3 years.

The project was conceived by CEOE Dean Nancy Targett and professors Willett Kempton and Jeremy Firestone, who have spent years studying the potential power supplied by the state’s offshore winds as well as public opinion regarding wind-energy use. Professor Kempton is also behind UD’s cutting-edge vehicle-to-grid (V2G) technology, which allows electric car batteries to absorb and store excess energy when demand for power is low, and return that energy to the electric grid when demand is high. This technology has people talking. Last fall, Governor Markell signed the nation’s first bill compensating owners of V2G cars for electricity sent back to the grid and, in January, UD licensed V2G technology to AutoPort in New Castle for its commercial fleet vehicles.

These are just two examples of CEOE’s research leadership in alternative energy technologies—leadership that will strengthen Delaware’s economy, safeguard its natural resources, and position Delaware as a national model for profitable sustainability.

Enjoy this issue of Southern UDelaware. Inside, you’ll find many more ways that UD and the region are gaining a reputation for excellence, innovation, and an abiding commitment to community.

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UD to establish lifelong learning program in Dover

The University of Delaware is expanding its age 50-plus lifelong learning program to Dover, with classes beginning in September 2010. A founding committee of local leaders has been meeting since last September to develop the program, which will be located at the Modern Maturity Center in Dover.

Larry Koch is a retired teacher and school administrator who has been instrumental in establishing the Dover program. “When I moved to the Dover area, I looked for lifelong learning programs in Delaware, and I saw they existed in Wilmington and in Lewes, each about 50 miles away,” he says. “Along with factors like cost of living and climate, I think more people are adding ‘nearby lifelong learning program’ to their list of criteria when making decisions about where to retire. Kent County is an area where we have a growing 50-plus community, and that’s a good thing for Delaware.”

Koch contacted the University’s Division of Professional and Continuing Studies, and it turned out that UD had already been contemplating a Dover program. Koch helped to form a founding committee of interested individuals in Dover, joined by University staff involved in existing lifelong learning programs.

“The introduction of the University’s lifelong learning program in Dover builds on long-standing organizations in Wilmington and Lewes,” says James Broomall, UD’s assistant provost for Professional and Continuing Studies. “Now, learning in retirement through the University is available in all three counties. This is consistent with our goal to be an ‘engaged university.’”

Carolyn Fredricks is executive director of the Modern Maturity Center in Dover, where the new program will be located. “Lifelong learning has always been part of the strategic plan of the Modern Maturity Center, so the UD program is a natural fit for our location, and expands on the services and programs that we already provide,” she says.

Designed as an educational cooperative, the program receives logistical and program support from the University of Delaware, but it is the individual members who develop and implement the program locally, including the design and teaching of the courses and activities.

“The biggest key to the program’s success is the instructors, who are teaching subjects for which they personally have great enthusiasm. That’s what brings life to the program,” explains Ruth Flexman, program coordinator at UD’s Academy of Lifelong Learning in Wilmington. “And their students are there for pure enjoyment and enrichment, not because they have to be.”

“Learning for its intrinsic value is at the core of programs of this nature,” adds Broomall. “Teachers and students engage in shared exploration of topics ranging across varied areas of study.”

“The best thing that a University can be is a community of learners,” adds Koch, who is a member of the storytelling group Tellers of Lower Delaware (TOLD), and plans to teach two fall classes on storytelling.

Other course topics being explored for Fall 2010 include local history, creative writing, American literature, music appreciation, and Shakespeare. Members who wish to do more than take classes may volunteer as instructors, or assist with registration, social events and marketing. The program is self-supporting through a membership fee ($130 per semester, $210 for fall and spring semesters combined) which covers the space rental and operating costs.

Fall semester classes will take place Tuesdays, Wednesdays, and Thursdays from Sept. 14 through Nov. 18. Classes will meet at the Modern Maturity Center, 1121 Forrest Ave., in Dover.

For more information about the new Dover program, please visit the Web page www.lifelonglearning.udel.edu/dover/ or contact Linda Osoinach at (302) 831-6870.
Southern Delaware alumni are invited to attend the University of Delaware Forum & Reunion Weekend, which will be held June 4-6 on the main campus in Newark.

The weekend will feature a return of the Town Hall meeting, during which UD President Patrick Harker will discuss the state of the University, as well as college showcases, the Blue Hen 5-kilometer run and walk and the popular Mug Night on UD’s picturesque Green.

There also will be a barbecue on the Green, a Melodies and Memories program, Boardwalk Night and a Family FeUD game modeled on the popular television show.

Also featured will be the UD Alumni Wall of Fame ceremony.

For more on the Forum & Reunion Weekend, see details on the special Web site at www.udel.edu/ReunionWeekend.

The inaugural Forum & Reunion Weekend in 2009 was deemed a great success, drawing more than 1,700 alumni from across the nation.

“I was thrilled to see so many Blue Hens come ‘home’ for the weekend. Everyone seemed to be having a fantastic time. Certainly, that’s a credit to the committees and the hundreds of volunteers who made each event such a success. They put in a tremendous amount of hard work, and I know that everyone who enjoyed the weekend is grateful for their efforts,” Harker said of the 2009 Forum & Reunion Weekend.

“Our first Forum and Reunion Weekend set a high standard, and we’re excited about the prospects for continuing this great new tradition,” Monica Taylor, vice president for development and alumni relations, said.

“It was great to have so many of our alumni return to campus and reconnect with friends and former faculty members,” added Cindy Campanella, director of alumni relations. “Many alumni thanked us for having the event, and it was a thrill for us in the Alumni Relations Office to see everyone having such a great time.”
UD Associate in Arts Program
a popular option

The University of Delaware Associate in Arts Program is a popular option for students in Southern Delaware, offering a UD education close to home.

Students can study for two years at UD Academic Centers on the Delaware Technical and Community College campuses in Georgetown and Dover before moving to the main campus in Newark as juniors.

“The University of Delaware is proud to serve the diverse higher education interest of students in Kent and Sussex counties,” says Maxine Colm, director of the UD Associate in Arts program.

Colm said the UD Academic Centers offer the first two years of the liberal arts core curriculum. Students who successfully complete the program are awarded the associate in arts degree and can seamlessly continue their studies on the Newark campus for the baccalaureate degree.

At Georgetown, students can also earn the associate in arts degree in elementary education and have the option of completing the bachelor’s degree in education in Milford.

“Expanding educational horizons for students across the state is enhanced by the SEED scholarship program that supports the tuition for qualified students enrolled in the Associate in Arts Program,” Colm says.

In addition, she says, “students enjoy small classes, exposure to experienced university faculty and personal attention as they chart their future educational goals and career options.”

For the 2009-2010 academic year, 150 students were enrolled at the Georgetown Academic Center and 157 students were enrolled at Dover.

“Because of the personal attention offered, many Southern Delaware residents find the Associate in Arts Program an attractive option for beginning their baccalaureate studies in a location that is close to home, and at low cost while developing their educational skills and talents for further career success,” Colm says.

Programs are in place to make the transition to the main campus as smooth as possible. The 2010 Transitions Day is scheduled for Thursday, July 22, and will introduce entering students and their families to the diverse academic programs and support services that will support their successful completion of the baccalaureate degree.

At Transitions Day, students and parents are provided a wealth of information about life on the Newark campus.

Katelyn Rowley, a senior who studied in the Associate in Arts Program in Dover, helped students find their way around campus during the 2009 Transitions Day.

Rowley says she thinks the student panels are the most beneficial aspect of Transitions Day. At the panels, Rowley says the transitioning students “really have a lot of time to ask any questions and talk about things that might cause them to have anxiety about coming up here. I think it is a good opportunity for them to talk to someone who was in their shoes just a few years ago.”

For more information on the UD Associate in Arts Program, see the Web site www.udel.edu/associateinarts
Cooperative Extension programs target health, nutrition

By Margo McDonough

 Obesity, adult-onset diabetes and heart disease are major public health issues in the U.S., and Southern Delaware isn’t immune to these problems. In fact, Sussex County has one of the highest rates of diabetes in the nation.

That’s why Cooperative Extension’s health and nutrition programs are such a vital resource for communities throughout Kent and Sussex counties.

“Scientific evidence indicates that if you eat right, you may reduce your risk of many chronic diseases such as heart disease, diabetes, osteoporosis, and certain cancers, and increase your chances for a longer life,” says Kathleen Splane, a Cooperative Extension educator in Kent County. “But limited time, limited money and limited knowledge can get in the way of healthy eating.”

Splane and her colleague Anne Camasso, a Sussex County Cooperative Extension educator, help Kent and Sussex residents overcome these roadblocks to good nutrition through a variety of free or low-cost programs, such as Dining with Diabetes.

If you happened into the Kent County Extension office one spring morning you would have seen Splane stirring up strips of beef in a sizzling stir-fry. On a nearby table, a cappuccino trifle, layered with pound cake, and an apple cobbler garnished with crumb topping tempted passersby.

But all of these dishes prepared at a Dining with Diabetes class not only taste good, but are good for you. What’s more, every recipe is easy to prepare (no more excuses about lack of time) and uses inexpensive ingredients that are readily available at area supermarkets.

“We teach diabetics that there are no ‘bad foods,’ that there are many creative ways to modify sugar- and fat-laden recipes into new, healthy favorites,” says Splane. “Class participants learn ways to reduce the sugar, salt, and fats in favorite recipes without sacrificing the taste.”

The three-part Dining with Diabetes program includes education, cooking demonstrations and samplings of healthy foods and is offered several times a year in both Kent and Sussex.

Individuals at risk of heart disease also can find support and resources at Cooperative Extension.

“Heart disease is the leading cause of death in Delaware,” notes Splane. “High blood pressure and high blood cholesterol are two independent risk factors for heart disease. We’ve developed a new program called Eat Smart for a Healthy Heart that focuses on simple changes you can make to your diet that impacts these and other risk factors.”

Eat Smart for a Healthy Heart features recipes with little or no saturated fat, trans fat and cholesterol; little salt; low-fat sources of protein; and plenty of fruits, vegetables and whole grains.

Splane has been cooking such a heart-healthy diet for her own family for more than a decade. Through plenty of research and trial and error, she has discovered how to present healthier versions of familiar foods without sacrificing taste.

Eat Smart for a Healthy Heart is presented by Camasso and Splane at multiple locations in Kent and Sussex counties throughout the year.

Kick it Up with Nutrition is a Cooperative Extension afterschool nutrition program that has received national recognition. It’s also one of Splane’s favorite programs because it targets young people, ages 10-to-14-year-old. “Research demonstrates that these ‘tween’ years are often when decisions are made about smoking, nutritional choices and other health-related behaviors,” says Splane. “It’s exciting to know we can make a difference in these students’ lifelong health habits.”

The program has been used by afterschool programs, 4-H clubs, schools and youth organizations in Kent and Sussex counties.
Greg Binford spends his days in college laboratories and cornfields miles from the Chesapeake Bay but his research has a direct impact on the water quality of this estuary, which is home to more than 3,600 species of plants and animals and more than 16.6 million people.

A plant and soil science specialist for University of Delaware Cooperative Extension, Binford works to optimize crop production for farmers while minimizing the impact on the environment of the fertilizer and manure nutrients essential for crop growth. Binford also serves as an associate professor in UD’s Department of Plant and Soil Sciences.

In 2009, he received a $550,000 grant from the U.S. Fish and Wildlife Service to develop a nutrient management system that will result in less nitrogen leaving cornfields and entering the Chesapeake Bay while improving overall profitability to growers.

The key, says Binford, is to revise the nutrient management plans currently used by growers so that there is a feedback mechanism in place that allows for an evaluation at the end of the season.

“Nitrogen management is one of the greatest challenges during the production of corn,” he says. “The challenge is in determining the difference between the optimal rate of nitrogen and any rate above this optimal.”

Binford adds, “Nitrogen can be lost from soils relatively easily and the availability of nitrogen from organic sources is strongly weather dependent. Growers can unknowingly apply too much nitrogen since plant health and grain yields do not change when rates applied are greater than the economic optimum rate.”
On the flip side, applying too little nitrogen can be very detrimental to yields so growers are reluctant to fine-tune their management program unless they can quantitatively evaluate it.

And that’s where Binford’s research study comes in. The ultimate project goal is to develop a performance-based nutrient management system. The study uses 300 fields as on-farm research plots and involves the cooperation of more than 75 farmers from Kent and Sussex counties in Delaware, as well as areas of Maryland.

The Chesapeake Bay watershed is comprised of some nine million acres of farmland so even growers who aren’t directly on the Chesapeake or its tributaries can have an impact on water quality.

The project kicked off last spring when Binford lined up a sufficient number of growers to commit to the project. In early August, aerial images were taken to assess each field. From the air, corn stalks that might be deficient in nitrogen appear yellow. However, Binford notes that there are other reasons for such stalk yellowing. These images were used to plot out research sites.

Susan White-Hansen, precision farming specialist at UD’s Carvel Research and Education Center in Georgetown, developed the protocol for selecting the sampling locations from each of the aerial images.

The aerial photography work has been the most nerve-wracking part of the project for Binford. “We had a narrow timeframe in which to complete the photo sessions and rain kept our plane grounded many days,” he says. “I breathed a sigh of relief when we got our last photo session in.”

The end of the crop season, late August to early September, was the hectic time for Extension associates Shawn Tingle and Warren Willey, who were joined by private consultants who assisted with the project.

Under Binford’s direction, this team fanned out into all 300 fields to utilize an innovative test based on the concentration of nitrate in the lower part of the cornstalk. If concentrations are above a recommended value it indicates that excessive nitrogen was applied during the growing season.

Binford developed this specialized test in the early 1990s and it has since been widely evaluated in other research projects. Although the test method is popular with researchers, it hasn’t been used much in production agriculture.

This summer marked the first growing season for the three-year project. Although Binford already has preliminary results he doesn’t want to make recommendations based on one year’s findings.

“Because it’s a biological system, weather and management will greatly affect the amount of nitrogen available to the crop,” says Binford. “Therefore, it’s important that drastic changes not be made in nitrogen management after only one or two years of collecting stalk nitrate results.”

“Dr. Binford’s research is making a valuable contribution to the coordinated efforts of farmers, Extension advisors and researchers to put new diagnostic tools into place on the farms in the Chesapeake Bay watershed,” said Tom Sims, T.A. Baker Professor of Soil and Environmental Chemistry and deputy dean of UD’s College of Agriculture and Natural Resources. “His studies represent the application of our understanding of plant biology to the practical problems farmers face in managing nitrogen in an environmentally sustainable manner. Greg is a national leader in nutrient management and I have no doubt the results of his latest research grant will be adopted and benefit agriculture while protecting the environment.”

Sims adds, “Susan White-Hansen’s contributions have been critically important to this study as the aerial remote sensing technology she developed should provide a means to diagnose and correct nitrogen management problems on thousands of acres of farmland in the Bay watershed.”

“This research is critically important to Delmarva farmers,” says Jan Seitz, associate dean of the college and director of UD Cooperative Extension. “At monthly Friends of Ag meetings and other agricultural events I’ve spoken to many farmers who are eagerly awaiting the results of Greg’s research. Delaware’s farmers are stewards of the land who are committed to best practices in nutrient management.”

“We need to create a paradigm shift in our current nutrient recommendation system. It’s my goal to see my research contribute to that shift in thinking.” — Greg Binford
Representatives of the University of Delaware’s internationally acclaimed art conservation program have been working with the Smyrna School District to restore important works for display in the local school buildings.

Most recently, UD conservators worked through Winter Session 2010 to restore two very large, historic murals that are housed in the John Bassett Moore Intermediate School. The 12-person team included current UD undergraduate, graduate and doctoral students, two UD alumni, a UD adjunct professor, and two other conservators.

Dawn V. Rogala, Coremans Fellow in UD’s Preservation Studies doctoral program and the project’s coordinator, says that such a “multi-level educational experience” is highly unusual.

Joyce Hill Stoner, director of the Preservation Studies doctoral program, Edward F. and Elizabeth Goodman Rosenberg Professor of Material Culture and consultant for the Smyrna project, elaborates on the learning opportunities that this undertaking offers. “It is ideal for students at each level to be able to meet and learn from each other,” she says, adding, “The graduate and postgraduate students who are helping to manage the project may have an interest in teaching in the future, and this is a helpful exercise to prepare them for teaching responsibilities. Some of the tasks are challenging but repetitive and provide an excellent opportunity for
undergraduate students to increase their hand skills under the supervision of professional conservators and students with more experience.”

These talented individuals dedicated much of the month of January to restoring and preserving two 14-by-10-foot canvas murals, which continued an ongoing partnership with the Smyrna School District. In 2003, UD students and faculty restored eight other murals for the district. “We are always very pleased if the University of Delaware can be involved with a project that will serve other institutions within the state of Delaware,” says Stoner.

The murals preserved this year were painted by Willard Borow of Philadelphia in the late 1940s. Each depicts a ship coming into port in colonial Delaware, and the paintings are named for those ships—one is called Muriel, the other Reba—that bear the names of women who lived in the area at the time the paintings were created.

This was a complex project, as the murals suffered damage due to dirt build up, structural deterioration and age. Treating these murals required documenting and reporting their current condition, researching their histories and construction, proposing and selecting methods of treatment, stabilizing their structure, cleaning their surfaces and some in-painting.

The students gained valuable hands-on experience with each of these steps. Rogala remarks that applying what you’ve been taught to a real-life project is the best way to truly learn about art conservation. Projects like this offer “a much better sense of what the field is like; it’s how you learn about the field,” she says.

In addition, the size of the murals represented another rare opportunity. “It’s not often students get to work on such a large-scale project as this. It’s interesting to translate the techniques you use on a small painting to something of this scale,” Rogala says.

Throughout January, the conservators spent four days a week working on the murals at the intermediate school, some for nine or 10 hours a day. Such a hefty time commitment leads to a more intimate experience, for “as you work on these things, you start to form a connection with the paintings and with the artist—you travel into the painting as you work on it,” Rogala explains.

The participants also got a chance to share what they’re learning and what they’re doing with Smyrna School District art classes that visited the work site. Rogala notes that the school district and those in the surrounding area have been very supportive of the project.

Deborah Wicks, the Smyrna School District superintendent, says the district “is delighted to partner with the University of Delaware and Joyce Hill Stoner again to save and restore more of Smyrna’s art. We worked together in 2003 to successfully restore eight large Depression-era Works Progress Administration (WPA) murals. The conservators’ work ethic and their attention to detail is impressive. I appreciate their constant care and concern that the restoration be perfect while working in one of our maintenance buildings.”

She adds that Rogala’s group “is always willing to have school groups and staff visit the site to learn firsthand what a conservator does. We all look forward to seeing these murals back up in the auditorium of our John Bassett Moore Intermediate School over spring break.”

UD’s art conservation graduate program, a cooperative effort with the Winterthur Museum and Country Estate, is one of only three in the country. Accordingly, it is a very competitive and challenging program.

Stoner explains that you need at least 400 hours of hands-on experience just to be considered for admission and that “students who wish to go into conservation are generally taking additional coursework in chemistry, art history, and studio art—we require essentially a triple major.”

Art conservation graduate student Gwen Manthey works on a portion of the mural by artist Willard Borow.
Pat Mossel’s opera class at the University of Delaware’s Southern Delaware Academy of Lifelong Learning got so popular that it outgrew the Academy’s classrooms. When the Academy looked for a larger space, a great relationship with Cadbury at Lewes retirement community developed. The Academy has a great place to house the course, and many Cadbury residents get to enjoy it, too.

“The very first class I offered at the Southern Delaware Academy of Lifelong Learning was Behind the Scenes at the Opera,” says Mossel, who spent part of her distinguished career as director of development for the San Francisco Opera and executive director of the Washington National Opera. The class explored all the facets of producing an opera, from selecting singers to costumes and sets.

The response was so enthusiastic that Mossel began to talk about the operas themselves. Another course focused on legendary opera singers. Mossel found recordings from as early as 1903 and played the historic tracks for the class. Most recently, Mossel has taught a course in which the class watches and discusses a selection of opera recordings. For the past two years, OperaDelaware has come to the class to present arias from their current season.

Eventually, the opera classes became so popular that there was not enough space for them at the Southern Delaware Academy of Lifelong Learning’s home at the Lewes School.

Cadbury at Lewes had hosted the OperaDelaware visits and their comfortable auditorium and excellent sound system made the location appealing. In exchange for the use of the space, non-Academy members who live at Cadbury can attend as well.

“By partnering with Cadbury at Lewes,” says Anna Moshier, the University coordinator at the Southern Delaware Academy of Lifelong Learning, “we have been able to provide this stimulating course not only to our members but also to the residents of Cadbury.”

As a bonus, the many Academy members who live at Cadbury find they have a very short commute to their opera class.

Richard Sciorra, the Southern Delaware Academy of Lifelong Learning’s council chairperson, adds that the proximity of the Academy can be a consideration for retirees considering a move to the area. He notes one example of a northeast Maryland resident who chose Cadbury specifically because of the short commute to the Academy.

For Mossel, the best benefit is sharing her passion for opera. “I love going to class and teaching. For me it’s a real high to talk about something I love and have the class attentively listening and engaged. It is very fulfilling,” she says. “We have a core of opera lovers, a middle ground of people who love music and have listened to some opera, and some who have never heard opera before and tell me, ‘I didn’t know what I was missing!’ They are enthusiastic converts—one you love opera you will always love opera.”

In addition to her positions with the San Francisco and Washington opera companies, Mossel taught college level English literature and Shakespeare honors and served on the boards of the National Society of Fund Raising Executives and Opera America. She is currently on the board of the Dallas Morse Coors Foundation for the Performing Arts.

The Southern Delaware Academy of Lifelong Learning was established by the University in 1989 as an opportunity for people over 50 to create and participate in a unique, cooperative learning experience in the southern part of the state.
Project aims to support older adults affected by cancer  

BY LAURA CROZIER

A team that includes two researchers from the University of Delaware’s School of Nursing—Paula Klemm, professor of nursing, and Veronica Rempusheski, the Jeanne K. Buxbaum Chair of Nursing Science—has been awarded a two-year, $600,000 grant to conduct research aimed at supporting older adults affected by cancer and their caregivers throughout the state.

The other members of the team are the Cancer Care Connection (CCC) and the Christiana Care Center for Outcomes Research (CCOR).

Awarded as a Recovery Act supplement to UD’s ongoing National Institutes of Health IDeA Networks of Biomedical Research Excellence (INBRE) grant, the new funding will support the development of an outreach program to inform the community about resources available to those with cancer, specifically older adults.

The goal of the cancer project is to create a nationwide model for outreach to older adults in communities all over the United States. Ultimately, access to services through organizations like the CCC may reduce health care costs.

“Delaware is currently facing the highest population of elderly we’ve ever had,” says Rempusheski. “By the year 2030, 30 percent of our population will be age 60 or older, and one-third of those will be 75 or older, with the 85-plus age group the fastest growing population.”

Research and outreach for the project have already begun. Members of the grant team attend community events, health fairs and visit senior centers encouraging older adults with cancer and their caregivers to call CCC if they need help in coping with the financial, emotional or healthcare issues related to this disease.

“We will be conducting face-to-face outreach at 68 sites in Delaware to speak directly to the elderly and their caregivers to let them know about the services Cancer Care Connection provides,” says Klemm.

The CCC is an agency with a nationwide database of cancer resources. Founded to make getting help after a cancer diagnosis easier, the agency offers a simple telephone service that connects patients to the best treatment centers, hospice services, mental health counselors, food services and even wig manufacturers.

The organization is committed to ensuring that persons with cancer have everything they need, including a shoulder to cry on or financial assistance, if necessary.

“A diagnosis of any life-threatening disease is life altering. Cancer is no different. And as with any diagnosis of a potentially deadly disease, people often times don’t hear what the doctor says after the announcement of, ‘you have cancer,’” says Janet Teixeira, executive director of Cancer Care Connection.

Teixeira also notes that cancer awareness organizations have been established to help those who have been diagnosed to deal with the changes they will experience emotionally, physically and financially.

Yet the numbers of organizations that exist are so vast—and mainly focused on the young—that it’s difficult for a newly diagnosed elderly patient to determine who will be able to help them most. For the elderly in particular, navigating the World Wide Web to find the best treatment options, long-term care or mental health counseling is daunting.

After 18 months of hands-on outreach within the target population, the team will then review the data to determine whether their efforts have been successful. Leading the analysis will be CCOR.

Established in 2005, CCOR conducts research aimed at improving patient care by providing new evidence-based, medical knowledge that could help shape healthcare policy. CCOR investigators evaluate quality-of-life issues, economic impact and cost-effectiveness.
I didn't choose a difficult pregnancy ... It chose me. But I did choose the very best care.

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clean wind power is the energy source of choice at the University of Delaware’s Hugh R. Sharp Campus in Lewes with the installation of a utility-scale 2-megawatt Gamesa Corporación Tecnológica wind turbine this year.

The University, which has a leadership role in green energy with leading-edge research in wind power, hydrogen fuel cells, vehicle-to-grid (V2G) electric technology, solar cell development and public policy, signed an agreement with Gamesa last fall to install the new wind turbine. Construction is expected to be complete and the turbine generating electricity by June 2010.

UD and Gamesa representatives signed the agreement in a ceremony attended by several dignitaries, including Delaware Gov. Jack Markell, Delaware Department of Natural Resources and Environmental Control Secretary Collin O’Mara, and City of Lewes Mayor Jim Ford.

Project partners anticipate the land-based campus turbine to stand approximately 400 feet high from its tower base to the apex of its blade at peak rotation. Each of the turbine’s three blades will be approximately 140 feet long.

UD President Patrick Harker, one of the signers of the agreement, said at the ceremony, “The University of Delaware is thrilled to partner with Gamesa on wind
power research and technology. Today, we celebrate Delaware’s leadership in sustainable energy, and pave the way for even greater collaboration and even bigger plans in the years ahead.”

A typical 2-MW turbine provides enough emissions-free electricity to power about 500 average homes, so the single turbine is expected to provide clean, carbon-free electricity for the entire campus, which is part of UD’s College of Earth, Ocean, and Environment (CEOE).

As a result of this agreement, project partners anticipate the campus to have 100 percent of its electricity provided by wind power, thus meeting all its electricity needs with no net carbon emissions and making it a model for other institutions in the nation.

“We are excited to be able to reduce our carbon footprint at the Lewes campus and at the same time undertake research on and provide educational opportunities for a technology that will be part of tomorrow’s economy,” said CEOE Dean Nancy Targett.
UD officials chose wind power to meet its commitment to reduce its carbon footprint due to the favorable winds in the coastal area of Lewes. At times, the turbine is expected to generate more than enough power for the campus; the excess will be fed to the electric grid for use by others in Lewes.

Markell said, “Delaware has made clear that the health of our economy and the health of our environment can be intertwined. We can, and will, put more people to work while creating a more sustainable environment in which to live.”

The governor added that “centers of innovation such as the University of Delaware and Gamesa, through their own work and partnerships like this turbine, will only enhance Delaware’s growing reputation as a leader in clean technology.”

In addition to providing carbon-free electricity generation, the project will enhance the two parties’ research in areas such as turbine corrosion, avian impacts, and policy issues related to renewable energy. Information gained from the project will help the University and Gamesa establish the first offshore wind turbines in the Americas in 2011 or 2012.

“Gamesa’s turbines can help to create a stronger economy, a safer world and a cleaner environment by harnessing the wind to generate homegrown energy with zero emissions,” said Dirk Matthys, CEO of Gamesa North America, who participated in the ceremony along with Chief Corporate Officer Luis Miguel Fernandez. “We are excited about the opportunity to work with the University of Delaware and its students to reshape America’s energy future. This partnership fits perfectly with our ‘energy culture’ ethos and positions Gamesa to remain the world’s leader in wind energy technology.”

Targett and CEOE professors Jeremy Firestone and Willett Kempton conceived the project. Firestone and Kempton have studied the amount of power supplied by Delaware’s offshore winds as well as public reaction to and policies for wind-energy use.

Gamesa and UD have a long-standing relationship. In March 2008, for example, more than 20 students and faculty from UD’s College of Engineering toured Gamesa’s manufacturing facility at the Keystone Industrial Port Complex in Fairless Hills, Pa., where the company makes the nacelles that sit atop a turbine’s base tower. Nacelles contain mechanical gears as well as the turbine generator, transformer, power conversion equipment and control equipment.

To learn more about the turbine, visit the Web site at www.ceoe.udel.edu/LewesTurbine.
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summer after summer, university of delaware students and alumni serve the state’s coastal communities as members of the beach patrols that stretch from Lewes to Fenwick Island.

The work is hard but extremely fulfilling, according to several students who kept watch on the ocean-front from lifeguard stands throughout the summer of 2009, through wind and rain, chilly weather and baking sunshine.

Alexandra Hellams of Lewes, a junior in UD’s College of Health Sciences, spent her third summer on the Rehoboth Beach Patrol in 2009. To become a Rehoboth lifeguard is not easy, she says. “There is a rigorous six-week training program that you have to endure and it culminates in a rookie test at the end. After that you’re in, but it is the worst six
weeks of your life,” Hellams says. “All I did was eat, sleep and work.” The intense work is worth it when you can help save a life, Hellams says. “I love the feeling I get after I make a save. I can leave work and know that I really made a difference in someone’s life. Not too many 19-year-olds can say that when leaving a summer job,” she says.

Hellams says the summer of 2009 was “pretty calm,” despite the fact that she “had quite a few pulls this summer, and also a few spinal injuries.” In one incident in an earlier summer, she had to perform cardio-pulmonary resuscitation (CPR). “That was an insane experience,” she says, adding, “It is serious work out here and you have to be ready at any time.”

Hellams says she believes the most important personality trait of a lifeguard is attention to detail. “All the little things that we do throughout the day and setting up your stand in the morning make such a difference in the job we are able to perform,” she says. “If everything is set up correctly it makes dealing with any emergency that presents itself much easier to resolve.”

To other college students considering working on a beach patrol, Hellams advises them to “get in shape and be prepared for your life to never be the same. The people you meet here are unlike anyone else you’ve ever known and you will bond with them in a way you never thought possible. My best friends are on this patrol and I know they will be friends for life.”

When it came time to select a university, Hellams says she “chose UD because I was a Delaware resident and it was the best deal for price and quality. I know that I am getting a great education.”

Further south, Adam DiSabatino, a junior in the College of Agriculture and Natural Resources, spent the summer keeping watch as a member of the Bethany Beach Patrol. DiSabatino has spent four years at Bethany, and was drawn to the work because both his father and brother had been lifeguards.

To join the beach patrol, he had to complete an examination and interview with the captain and lieutenants, plus undergo a physical test with a mile run under 8 minutes, swim 500 yards in less than 10 minutes, do 60 sit-ups in a minute and 50 push-ups in a minute, one right after the other.

The exciting thing about the work, DiSabatino says, is “every day you see something new, whether it be a kid having an asthma attack, a lost child, or a grown man coming out of the surf with an injured neck. So every day is a challenge in its own unique way. Pulls are an adrenaline rush regardless of the situation. They are necessary, and the feeling of accomplishment is gratifying.”

Asked his advice to prospective beach patrol members, DiSabatino says to “stay in touch with your
surroundings, be attentive, and be quick to react.”

Just as family influenced him to become a lifeguard, family and friends had a hand in selecting UD. “I love what I am learning, and I am deeply appreciative of all the professors, coaches, family and friends. Without them I would not be where I am today,” Di-Sabatino says.

Several UD students and alumni served on the 2009 Fenwick Island Beach Patrol, including Shelby Crawford of Newark, Del., who is graduating from the Lerner College of Business and Economics with a major in marketing and a double minor in international business and advertising, and Courtney Aburn of Jarrettsville, Md., who is graduating from the College of Health Sciences with a major in sport management.

Last summer was Crawford’s first on a beach patrol after being a swimming pool lifeguard for five years, and she says the experience was completely different.

To join and remain with the FIBP required a great deal of work, she says. “We do aggressive physical training, which includes distance and sprint runs, strength training, swimming, and more. We also are fully trained in first aid and undergo a lot of situational training and drills. The other rookies and myself endured intense scenario drills for about the first month of our employment until our captain felt we were on the same level as the veteran guards.”

Crawford says she wanted to be a lifeguard on a beach patrol because “it’s a pretty awesome way to spend your summer—getting to help people when they need it. Also, what other job pays you to work out, swim in the ocean, and sit in the sun all day?”

For anyone considering joining a beach patrol, Crawford says, “A person needs to be motivated and ready to do their job 100 percent every day. There are a lot of days where absolutely nothing goes on in the water and no one has to go in for any pulls, but we always have to be alert and ready for that possibility. It is very beneficial to be physically fit if you want to be a lifeguard, as we do work out every weekday. We get a lot of questions and comments while on the stand, so it is also important to have people skills, because people are always watching.”

Crawford lives in Newark and her father is a UD alumnus, so there was something of a predisposition to choose Delaware. It is a choice she says she does not regret. “The best experience I’ve had with UD, without a doubt, would be the study abroad program I participated in,” she says. “That is actually how I met Courtney and she later influenced me to become a lifeguard. We went to New Zealand and I had the absolute best month of my life. Words cannot describe how amazing it was.”

Aburn, who helped convince Crawford to join the Fenwick Island Beach Patrol, is a UD scholar-athlete who competes as a member of the Blue Hens women’s lacrosse team. She has been a lifeguard for four years, all served with the FIBP.

“A person needs to be motivated and ready to do their job 100 percent every day.” — Shelby Crawford

During her years of service, Aburn says she has “had multiple pulls, some significantly more intense than others.”

In summer 2009, she says, she “was involved in a lot of saves, but the most challenging was when a man on my beach was body surfing and got slammed right into shore, face-first. His body went limp and I recognized that he was in trouble right away. The man ended up having shooting pains and loss of feeling so we had to get a helicopter to take him to the hospital. He ended up being alright but it was definitely one of the more scary things I’ve had to do as a lifeguard.”

Another challenging pull came during a hurricane. “A teenage girl got stuck in a really big rip and was quickly getting sucked out,” Aburn recounts. “After trying to direct her out of the rip with my whistle and flags, I could tell that she was panicking and immediately went to go get her. She had gotten sucked out very far, very fast, but swimming out in the rip helped me get to her fast. Getting back in was very challenging considering the strength of the rip, the strong current, and the big surf. It was definitely one of the more difficult pulls, but very gratifying once she was safely on the beach.”

In order to be an effective lifeguard, Aburn says she believes a person “needs to be truly dedicated and hard-working. They need to be able to rise to the occasion under pressure. The best advice to someone hoping to join the beach patrol is to be prepared to work hard and take your job very seriously.”
Dual Enrollment offers UD courses to high school students

By Tara White Kee

Three academically talented high school students in the Cape Henlopen, Milford and Smyrna school districts were able to complete their freshman English requirement for college while in high school this year, thanks to an agreement between their districts and the University of Delaware.

Through the Dual Enrollment program, high school students take UD’s ENGL 110: Critical Reading and Writing. The course is taught at the high school and the University trains a designated high school English teacher to teach the class and coaches the teacher throughout the year.

James Broomall, assistant provost for Professional and Continuing Studies, comments, “Consistent with the University’s Commitment to Delawareans, these courses offer students in Kent and Sussex Counties the opportunity to begin collegiate work.”

He notes that faculty from the University’s Writing Center and Department of English work closely with the teachers in the high schools to ensure student success.

Through another aspect of the Dual Enrollment program, qualified high school students can enroll in one or more of four designated online courses at the University. Courses available are BISC 104: Principles of Biology with Laboratory, BISC 105: Human Heredity and Development, NTDT 200: Nutrition Concepts, and PHIL 100: Philosophies of Life.

“It was a real pleasure teaching the high school students in the Dual Enrollment program,” says Charlene Hamilton, who has taught Nutrition Concepts in the Dual Enrollment program. “They were highly motivated throughout the course, and our weekly chat room sessions were stimulating and enjoyable. The program is a great opportunity for high school students to experience a college-level course.”

Instructors assist students via email, phone or in person at the University Newark campus. These four online courses will be enhanced with extra question-and-answer sessions with the faculty, and study skills exercises appropriate for high school students.

The Dual Enrollment program benefits Delaware high school students by allowing them to earn high school and college credits simultaneously. It also gives students early experience taking college courses and enhances their college applications.

The program benefits the high schools, by providing advanced curriculum for their academically talented students.
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looking for a Fun, Educational Event for the whole family? Mark your calendars for the University of Delaware’s annual Coast Day, to be held Sunday, Oct. 3, on the Hugh R. Sharp Campus in Lewes.

Coast Day, which is free and open to the public, will provide those who attend an opportunity to tour research ships, meet scientists in their labs, and try lots of cool hands-on activities.

Visitors also can see what’s being done to ensure that Delaware’s coastal and marine resources remain healthy and available for future generations to enjoy.

Adults and children alike will have an opportunity to take an up-close look at dogfish sharks and other marine life and find out how they live, and also to compete for prizes and enjoy fresh-cooked seafood and other culinary delights.

The University’s Coast Day introduces thousands of people each year to the wonders of the sea and the importance of Delaware’s marine and coastal resources.

Hosted by the UD College of Earth, Ocean, and Environment and the Delaware Sea Grant College Program, Coast Day began more than 30 years ago as a small open house designed to introduce visitors to research being conducted on the campus.

Public interest was so great that Coast Day rapidly evolved into a major event. Now, Coast Day is a highly anticipated Delaware tradition.

Coast Day offers something for everyone. Visitors enjoy hands-on exhibits, lectures on popular science topics, ship and laboratory tours, crab races, a crab cake cook-off, seafood cooking demonstrations, a boat show, and much more.

Kids have special opportunities to speak with marine scientists and learn firsthand about their discoveries. They can also explore the many fascinating careers available in environmental science fields.
Over the years, more than 200,000 visitors from nearly all 50 states and several foreign countries have flocked to Coast Day to learn about cutting-edge coastal and marine research, explore the aquatic world, sample delicious coastal fare, and have a great time.

Coast Day 2009 drew a large crowd to the campus under sun-splashed skies.

“It was really a delight to walk around and see how engaged people were in learning about the work we do and how much fun they were having as they made fish prints, watched a chemical magic show, tonged for oysters, listened to fish sounds, looked through microscopes, learned about electric cars, and on and on,” said Nancy Targett, CEOE dean and Delaware Sea Grant director, of the event.

At the event’s kick-off ceremony, UD President Patrick Harker highlighted many of the University’s efforts to be a true sustainability leader, a greener university, and an international resource for environmental research technology, education, and policy. Many of those projects were highlighted at Coast Day.

“There are all sorts of lectures and exhibits going on today so you can see exactly what’s happening, exactly how we’re putting our research into practice,” he said. “Coast Day is a lot more than just educational—it’s about having fun with those ideas and having fun seeing how we can make a difference through all of our collective efforts.”

During special ceremonies, Targett, along with Harker, Delaware Department of Natural Resources and Environmental Control Secretary Collin O’Mara and Lewes Mayor Jim Ford congratulated the winners of two Coast Day contests for Delaware school kids. Both contests centered on this year’s Coast Day theme: “Climate Change and Our Coast.”

The 2009 Fifth Grade Essay Contest Winner was Sam Schubert, a student in Marilyn Vallejo’s class at St. Ann School in Wilmington, Del. Schubert wrote about the effects of sea-level rise and some steps people can take to mitigate it, including switching to energy-saving light bulbs.

The winner of the new High School Video Contest was a group of students from Caesar Rodney High School. The video “Recycle Now!” was submitted by students Zachary Dailey, Tyler Stokes, Zachary Johnson, Colin Kent, Alexia Ratajack, Ryan Norfleet, and John Bubniak under the direction of teacher Paris Crockett.

Throughout the day, crowds of hungry visitors swarmed the seafood competitions for a chance to taste contestants’ creations. “Pan Grilled Crab Cakes with Roasted Shallots” by Raymond Williams of Bear, Del., took first prize in the Crab Cake Cook-Off. Williams, who took third place in 2008, said he enjoys the competition for the camaraderie with other people who enjoy cooking as much as he does.

The annual Chowder Challenge face-off set a record with more than 1,300 visitors voting for their favorite soup after a two-ounce taste test. Once the votes were tallied, the First State Chefs Association took first prize over the Delmarva Chefs and Cooks Association.
While the blue and gold jerseys worn by the University of Delaware Fightin’ Blue Hens are a familiar sight to folks all across the First State, visitors who come to watch autumn football games at Delaware Stadium are also familiar with the colorful uniforms worn by members of the UD Marching Band.

Among its 300-plus members of the band are two students from Southern Delaware who contribute to the band’s spirited sound both on and off Tubby Raymond Field.

Danielle Precourt, a graduate of Kent County’s Caesar Rodney High School, served in 2009 as a graduate assistant working under UD Marching Band Director Heidi Sarver. On the field and in uniform was trumpeter Jordan Marvel, a junior in the College of Arts and Sciences and a graduate of Indian River High School in Sussex County.

A 2007 UD graduate with a bachelor’s degree in music education, Precourt will graduate with a master’s degree in instrumental conduction in 2011.

Precourt says one of the main reasons she decided to return to UD after teaching at Woodbridge High School in Bridgeville was the chance to work with Sarver and to share the marching band experience from a different perspective.

“Professor Sarver has such interesting teaching styles and ways of expressing ideas and that I could not pass up working with her on the ‘other side,’ versus being on the field,” Precourt says. “She can motivate people like I have never seen before. Her talent with marching bands and music education is second to none.”
Besides going up in the lift to gain a better perspective of how the UD Marching Band is executing its many routines, Precourt says she enjoyed the chance to discuss music education with Sarver and James Ancona, assistant marching band director and assistant professor of music.

“Hearing their thought processes on what is going on, what they want to do and how we can fix it is so beneficial,” Precourt says. “Every time I walked away from rehearsal, I learned something, and I feel that I can use this knowledge to become an even better music educator.”

Post-graduation plans for Precourt, who enjoys reading, relaxing and spending time with friends when not in the classroom or on the practice field, include continuing to teach at the high school level and perhaps beyond.

Previous teaching duties at Woodbridge High for Precourt included concert band, chorus, music appreciation, music theory, select ensemble, theatre arts, marching band and directing the school’s drama club plays.

“I really enjoy teaching high school, and would like to return to it once I graduate,” Precourt says. “It is also a dream of mine to one day, perhaps, teach college, but that is quite far down the road.”

Jordan Marvel’s decision to come to UD and join its marching band makes sense, he said, as a continuation of a family tradition.

“I was a member of the marching band at Indian River High School, and my dad, Mark Marvel, is the director of the marching band there,” Marvel says. “Being in the marching band there was pretty much a given.”

Marvel, who also plays bass guitar, says growing up in a musical family also exposed him to all musical styles, from marching band to country rock and beyond.

“I like all kinds of music,” Marvel says. “My dad is a big fan of classic rock, so I grew up listening to this kind of music.”

Marvel says that coming to the University of Delaware is great because it’s close enough to family and friends, but far enough away to enjoy the campus experience on his own.

He also noted that one of the greatest things about being a member of the UD Marching Band is the connection between the band and UD fans and alumni—especially during football season in Delaware Stadium.

“It’s a great feeling when you march through the tunnel under the stadium before the start of each game.” — Jordan Marvel
Gary and Margo Ramage of Lewes describe themselves as “longtime theatre buffs,” but until they began a collaboration with the University of Delaware’s resident theatre company, they had never traveled to the Newark campus to see a production.

Neither had many of their friends or their fellow students in the Southern Delaware Academy of Lifelong Learning, a self-supporting learning cooperative for those ages 50 and older that meets in Lewes.

But that began to change last year, when the Ramages noticed that the University’s Resident Ensemble Players (REP) were performing John Steinbeck’s Of Mice and Men. Because Gary Ramage says he has a passion for Steinbeck—and because he and his wife were planning to lead a class at the academy in Lewes about the author—they came to Newark to see the play.

“We’ve seen a lot of professional theatre, and we were so impressed at how sensitively and artistically the play was done by the REP that we introduced ourselves afterward to the lead actors,” Ramage says.

“We asked if they’d be interested in coming to the class I was going to lead in the fall, to share a little of what they do on stage in the classroom.”

As a result, actors Mark Corkins (who played Lennie in the REP production) and Michael Gotch (who played George) visited the Steinbeck class last fall, in which about 60 students were enrolled. The actors read from the scripts and, despite the lack of costumes or scenery, their performance was a hit.

“The class was very responsive to the quality of the scenes they did,” Ramage says. “It was so moving and so exciting to have them here.”

Not only did the actors visit, but Sanford Robbins, chair of the Department of Theatre and director of the graduate Professional Theatre Training Program at UD, accompanied them and took part in a question-and-answer session with the class about theatre productions and the University’s programs. The REP, which consists of 10 professional and experienced actors and a stage manager, performs as well as working with students in the theatre training program.

Ramage says the visit was so successful that he invited actors from another play to visit a different class, one in “Readers Theatre,” this spring. This time, the class members invited guests, and about 100 people were able to get a preview of the REP production of Death of a Salesman, which hadn’t yet opened.

Stephen Pelinski, playing Willy Loman, and Kathleen Pirkl Tague as his wife, Linda, read scenes from the play in what Ramage says was “a very powerful presentation.” They followed the readings by taking questions from the audience.

As a result of the interactions with the REP actors and others, Ramage says a large number of students in the Academy of Lifelong Learning in Lewes have become subscribers or frequent visitors to the REP productions on the Newark campus. He says he expects the educational exchanges to continue.

“This just benefits everyone,” Ramage says. “The REP gets new audiences, and our students learn a lot from having the actors visit and perform. And we’ve learned that we can see excellent theatre that’s much closer to home than taking a bus trip to New York.”
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Heritage tourism ‘a natural’ for Sussex County

BY MICHELE WALFRED

Sweet potato houses may not be the first attraction a typical Delaware tourist has on their itinerary to visit, but David Ames, director of the University of Delaware’s Center for Historic Architecture and Design, has a strong hunch that this is about to change. And heritage tourism is the reason why.

Ames spoke before one of several heritage tourism planning sessions held at the Elbert N. and Ann V. Research and Education Center in Georgetown, Del. at the invitation of UD’s Coastal Communities Enhancement Initiative (CCEI).

CCEI is a collaboration between the three public outreach arms of UD: Sea Grant Marine Advisory Service in the College of Earth, Ocean, and Environment; the Institute for Public Administration in the College of Education and Public Policy; and Cooperative Extension in the College of Agriculture and Natural Resources.

CCEI is taking the lead in assembling community leaders, organizations and businesses and asking them to be key actors in developing the strategic marketing of lesser known, charming locations and bringing attention to the elements that comprise Delaware’s unique heritage.

Bill McGowan, Sussex County community development agent, and co-director of CCEI, has been organizing a series of workshops over the past year exploring the ways to develop a heritage tourism industry for southern Delaware.

“Heritage tourism is a natural for Sussex County,” says McGowan. “While most people think of the resort/beach aspect of Sussex, we have so much more to offer visitors and in turn create economic opportunities for Sussex County residents.”

Sussex County is at a crossroads, balancing the reality of unprecedented growth with a desire to preserve working agricultural land and historic vistas. Heritage tourism meets these challenges by designing itineraries around an appreciation of Delaware’s unique and diverse history and rural economy. Promoting this type of tourism can provide much needed economic development to the area. The concept integrates the use of scenic byways and discovery zone locations.

As with much of the nation, the small towns of Sussex County, affectionately known as “the 25 jewels,” have been hard hit by the recent economic downturn. Revenue streams that relied heavily on real estate transfer taxes have dried up.
Heritage tourism seeks to inject new opportunities for these towns by offering a new way to look at what they already have in place.

Sharing that new vision is the mission of Christine Thomas, a former CCEI intern and current field representative for Preservation Delaware and the National Trust for Historic Preservation.

Thomas encourages town leaders and citizens to “look at a structure in different terms.” An old house doesn’t have to be restored as a house museum. Instead, it can be a gateway to a larger, more inclusive concept. “Rethinking gives a structure, and by extension the community, a larger purpose,” Thomas says. She asks towns to consider “how can this structure, house, artifact, become an economic engine?”

Heritage tourism’s focus isn’t just upon history and artifacts however. It also seeks to celebrate the cultural ingredients that give communities their identity—qualities that draw tourists and their dollars.

Thomas and the heritage tourism planners say they are eager to include artisans, agri-tourism sites, garden centers, gift shops, art leagues, and galleries into the dialogue and plan.

An inspiration for Sussex County heritage tourism has been Southern Maryland Trails, successfully in place for more than two years. Speaking before the planning group last May, Christine Bergmark, executive director, says that Maryland’s heritage tourism concept works because it allows tourists to “feel the countless generations of people who worked the land.” Sites on their publicized driving trails are designed to “meet the maker” she says.

And this includes places with personality. Scott Thomas, executive director of Southern Delaware Tourism, recently organized a heritage tourism field trip with fellow planning group members to experience firsthand what Maryland has in place and says he believes Southern Delaware also offers similar treasures.

It is smart business to invest in heritage tourism, Thomas says. “There is less economic leakage leaving the community. We shouldn’t put all our economic eggs in one basket.”

Thomas points to the seven common threads or themes on which heritage tourism can provide meaning to people—the natural environment, maritime tradition, beach resort communities, historic architecture, agriculture and agri-tourism, small towns, and religion.

Sue Fox, of Milton, Del., attended one of the workshops and found the exchange of information and ideas an important first step. She believes the development of heritage tourism would also benefit those who have made Southern Delaware their new home. “There is a thirst for knowledge about their surroundings. They want to know as much as they can about the area,” Fox says.

Interest in heritage tourism is growing. Its emergence as a major trend can have profound influence on the well-being of towns, especially in western Sussex. According to Ames, a typical heritage tourist will plan three trips a year, and has a special appreciation for authentic experiences, artifacts and activities of a region’s past.

In January 2010, Delaware Department of Transportation approved a new Western Sussex Scenic and Historic Highway, Ames says. Agricultural buildings will be part of the featured narrative.

Ames envisions a conversation that heritage tourism hosts will have with their temporary guests on a variety of topics, each beginning with the question “Did you know…?” followed by a fascinating tidbit about Delaware history, culture or architecture.

And, that includes sweet potato houses. In the mid-19th century, sweet potatoes were a major production crop in Delaware, peaking in the 1920s. After harvest, the sweet potatoes required a storing process in a specially constructed building—tall, with double-lap exterior siding, an interior furnace to maintain a constant temperature and a trap door flue located in the floor. Although they have been placed on the National Registry of Historic Places, their specific category does not mandate restoration. Many have fallen into disrepair or have been converted to other uses.

Though only a few vintage sweet potato houses remain to dot the Delaware landscape, they still have stories to tell, and with heritage tourism in place, a brand new opportunity to experience them.
The Loockerman name is well known in Delaware, if only as a main thoroughfare in Dover and a prominent building on the Delaware State University campus, but little formal research has traced the history of this once-influential family. Seaford native Kathryn (Kate) LaPrad is working to change that.

A 2007 University of Delaware alumna with a double major in art and art history, LaPrad worked for a year after graduation at the Plimoth Plantation museum in Massachusetts before returning to UD for graduate school. As she nears the completion of her master’s degree in the University’s Winterthur Program in American Material Culture this spring, LaPrad is exploring the Loockermans’ history by examining the objects they owned and the architecture of their homes.

In a brief written summary of her research project, LaPrad notes that the Loockerman family patriarch, a Dutch sailor who became an affluent Colonial merchant, was one of the wealthiest men in North America, but the family wasn’t active in politics during the years leading up to the American Revolution.

“The family traced a wide trajectory across the British colonies, but it remains surprisingly silent in the history of Delaware,” she writes.

In contrast to the relative lack of written historical research, LaPrad says, the Loockermans’ furniture and other possessions remained largely in the family until the 1960s, making them valuable for the kind of material culture research on which UD’s Winterthur Program focuses.

“So many of their pieces from the 18th century have survived, and the items were very carefully inventoried,” LaPrad says. “And the two houses survive—one in downtown Dover and one on the Delaware State University campus—so that’s also very fortunate for my research.”

As she learned more about Vincent Loockerman Sr., who lived from 1722-85, LaPrad says she also learned more about the city of Dover. Loockerman established mercantile businesses, often serving as a conduit of goods from Philadelphia to southern Delaware.

“Dover in the 18th century was quite cosmopolitan, more than I would have thought before I started this research,” LaPrad says. “The residents had access to luxury goods like rum, sugar, coffee, tea and silk,” primarily thanks to Loockerman’s commercial ventures.

Ritchie Garrison, director of the Winterthur Program in American Material Culture, agrees that Loockerman and his son, Vincent Jr., “were among the most prominent residents of Dover in the second half of the 18th century.” LaPrad’s research, he says, “is important to the state’s plans for the First State Heritage Park in Dover.”

That program, run by the state Division of Parks and Recreation, offers tours and living history programs interpreting the history of Dover around the time of the Revolution. LaPrad says she hopes her research will provide additional information the program can use in its educational efforts. She adds that she’s indebted to the Delaware Public Archives, the state Division of Historical and Cultural Affairs, the Biggs Museum of American Art in Dover and the descendants of the Loockerman family.
A unique 10-year partnership between the University of Delaware and the Milford School District is a win-win situation, offering prospective teachers in UD’s undergraduate program outstanding learning opportunities in the classroom and providing Southern Delaware a supply of highly motivated and well-prepared educators.

The University of Delaware/Milford School District Professional Development School strives to offer an innovative approach to teacher preparation, according to Laurie A. Palmer, instructor in UD’s School of Education and director of the school.

That approach consists of a clinical component that immerses UD students in the school community with a strong connection between theory and practice, shares the responsibility for preparing new teachers with the Milford School District, and creates a strong learning community for University students, teachers and faculty, as well as district school students.

Teacher candidates come to the Professional Development School during their junior and senior years to both take classes and participate in student internships in district elementary schools, Palmer says.

Students in this program are referred to as interns and work on both the theoretical and practical knowledge of teaching. “Just like medical interns, teaching interns participate in a more intense learning experience that requires a strong commitment during the junior and senior years,” Palmer says.

Students must participate as full-time interns and commit to the rigid schedule of teaching and learning, logging in more than 1,500 hours in district classrooms and participating in all of the responsibilities of a teacher for two years.

District teachers take on a stronger role in regard to assignments, evaluation and instruction for the
Learning BY DOING

UD, Milford are partners in teacher education  BY NEIL THOMAS

interns than in traditional field experiences, Palmer says, adding that the interns continue to take a full load of courses throughout their internships.

Courses are taught by a core group of faculty from both the University and school district who work to integrate courses that provide an interdisciplinary approach that increases efficiency and integrates instruction and field experiences.

“We believe in learning by doing, learn about teaching by getting out there and doing it on day one,” Palmer says. “Our interns spend an extraordinary amount of time out in the classroom being coached and mentored by district teachers, working with students, learning about the many facets of today’s diverse classrooms and doing a lot of teaching. Both our junior and senior interns participate in all of the responsibilities of a teacher. They go beyond providing instruction to children. They learn about and participate in everything that a teacher does including in-service activities, faculty, team, and district meetings, all of the paper work and record keeping demanded of teachers, parent conferences—every little thing that a teacher does, they experience for two years.”

Palmer says “this is a very demanding and challenging program,” adding, “We have high expectations for all of our interns. They are treated at the PDS and in the district as novice teachers and that carries a lot of responsibility.”

Although interns can be stressed by the demands of this program, Palmer says they would not trade field hours for more free time. “They see the value in that time and truthfully, that is why most students choose our program. They want that extra time teaching. When we hear back from our graduates they say that all of the hard work and extra time was worth it,” she says. “They see a difference in their knowledge and performance compared to other new teachers. They start their teaching career with a level of confidence that most new teachers don’t have because our interns have experienced so much during their internships. They don’t start in the survival mode found with most new teachers, but can get right down to teaching and working with kids knowing what to do and what is expected.”

HOW PDS BENEFITS INTERNS

“The greatest benefit for the student interns is the total immersion in a school community for two years,” Palmer says. “They see and experience everything that a teacher deals with, so when they start teaching they aren’t surprised by what comes up. They have faced what I call the good, the bad and the ugly under the watchful eye of a skilled mentor teacher. They learn how to deal with every situation, so that when they face it on their own in their own classroom, they are
Another benefit is the amount of teaching that the interns do, she says. “The interns start in August when teachers return and participate in everything that that teachers do,” Palmer says. “We use a co-teaching model in this program which has even our junior interns up and supporting their mentor teacher and student learning on day one. They are given more teaching responsibilities than in our traditional program allowing them additional practice in effective lesson planning, implementation, and assessment.

I firmly believe that the extended time in the field and the total immersion in the school community is our greatest teaching tool, where the most important learning happens for our interns and why our program produces strong and effective educators who are sought after by districts in Southern Delaware.”

One graduate, Sean O’Grady, now working at the Phillis Wheatley Middle School, said, “The PDS, to me, was the difference between having a career and a job. There were several times within the first month that teachers were asking me where I had previously taught and were shocked when I told them I just graduated. The classroom management and reflection aspect of the schooling are the two essential elements that I haven’t seen any other teaching program be able to offer that is anywhere near on a par.”

HOW THE MILFORD SCHOOL DISTRICT BENEFITS

In a Professional Development School partnership, everyone involved learns from one another, Palmer says. “All of us from UD faculty and teachers to UD interns and elementary students are all learners at a PDS,” she says. “It is true that the interns learn volumes from their mentor teachers, but the mentor teachers hope that the interns will bring something new to the classroom that they might use. The interns spend time learning about the latest research on best practice in teaching and assessment and are encouraged to bring that to their internships. The interns then become the teachers and share what they have learned with their mentor teachers. Our mentor teachers are open to the interns trying new strategies and activities and look forward to learning something new that they can add to their own teaching repertoire.”

Another benefit is the focus on reflective practice. “Mentoring an intern requires that a teacher reflects on her own teaching with her intern. This leads to improved practice by our mentor teachers,” Palmer says.

She adds that having an intern in the classroom brings in another teacher, albeit novice, to work with students. Interns teach lessons, support the teaching of their mentor teacher, monitor student learning, provide individual assistance, and assist with classroom management.

“It stands to reason that if you have another teacher in the room, you can better meet the needs of students,” she says. “Teachers in this district trust that the interns are well prepared to support the work going on in the classroom and that they will provide quality instruction. They trade their mentoring and coaching skills and time for extra classroom support. The hope is that this extra support will help student achievement.”

One final benefit for the district is being able to watch potential teacher applicants perform in the classroom for two years, Palmer says. Principals observe the interns in the classroom, meetings, training sessions, and with other staff.
for two years, which provides invaluable data when the interns seek their first job.

“Principals in the district know the quality of the program and the skills of the graduating interns. They know what the interns have been exposed to in the way of curriculum and professional development,” Palmer says, adding, “They are confident that if they hire a PDS graduate, they aren’t really hiring a new teacher—they are hiring a teacher that has worked in the district for two years, is familiar with curriculum and district policies and procedures, and who has established themself as part of the learning community. They know the graduates when they hire them and the caliber of their work and professionalism.”

Kristine Haring, a teacher at the Lulu M. Ross Elementary School, says that as a former intern, a current mentor and a member of the advisory board, she believes the program “is valuable to the entire learning community within our district. The hands on experiences within the classrooms help to develop the interns’ understanding of the teaching world while developing working relationships with teachers and specialists.

“From the start of the school year, the interns are active in setting up the classroom prior to the first student days. They help to establish the classroom rules and routines during their fall placements. The interns play an active role in staff meetings, in-service days, and planning. This program is unique because mentor teachers and interns collaborate and learn from each other to ensure student success. Learning is something that never ends and this program allows for all involved to continue the process of learning and growing.”

HOW UD FACULTY MEMBERS BENEFIT

UD faculty also benefit from the partnership. “We are part of the UD community but we are also part of the school community,” Palmer says. “We teach our University courses based on theory and research, but also bring in the practicalities of today’s classrooms. We are out in the field with our interns and see the curriculum used, instructional strategies, assessments, behavior management—really every aspect of the school. We use this to improve and inform our teaching to make sure that it is relevant to the classroom and meets the needs of teachers.”

UD faculty also “see our students out in the field and use that to get a holistic view of their strengths and needs so that we can better assist them in their preparation so that they are the best teachers that they can be,” Palmer says.

SERVING SOUTHERN DELAWARE

“We are just finishing our tenth year in Southern Delaware,” Palmer says, adding, “One of our founding goals was to create a four-year teaching program in the community where students live and want to work. Many students in Southern Delaware want a University of Delaware degree, but want to stay in Southern Delaware. This program allows them to do that. It also creates a pool of competent graduates each year who have an understanding of the culture and Southern Delaware community and who want to remain here to teach in the community where they live. A majority of our graduates work in Southern Delaware.”

The program also creates a strong presence for the University of Delaware in Southern Delaware, “something that is strongly desired by this community,” Palmer says. “Although we are small, we have a solid reputation down here and that creates a favorable perception of the University of Delaware in this community.”
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Connor Armstrong applied to the 2009 TIDE Camp, offered each summer by the University of Delaware, because he wanted to get an in-depth look at Delaware Bay. By the end of the two-week camp, the high schooler said that’s definitely what he got.

“We learned everything and more than I was expecting,” he says of the camp, which is hosted by the University’s College of Earth, Ocean, and Environment (CEOE) and the Delaware Sea Grant College Program.

Armstrong, from Potomac, Md., was one of 10 high school students from here in Delaware and around the country who took part in the second annual camp. TIDE, short for Taking an Interest in Delaware’s Estuary, is aimed at introducing students to the study of the scientific processes that occur at and along the coast.

With that goal in mind, the students spent the time at camp doing things such as taking part in a daylong research cruise, visiting state-of-the-art research labs, touring a marsh, interacting with a variety of faculty members, and studying wildlife at the beach. The field trips and lectures taught them about topics such as marine animals, tides, habitat loss, species adaptation, wind power, and climate change.

Armstrong’s favorite activity? When the students worked in groups to build their own remotely operated vehicles (ROVs), machines used by scientists to study life on the ocean floor. The students received all the materials they needed—PVC tubing, propellers, motors, and an underwater video camera—and were asked to do everything from constructing the vehicles’ frames to wiring the motors. Then they got to test them in the pool at Carpenter Sports Building.

“It was tough doing all the trials and figuring out the wires, but it was fun,” he says. “We learned how sophisticated and really cool all the technology is behind all the science.”
Camper Cansu Culha, of Derwood, Md., also found the ROV exercise challenging but a good time, and very rewarding. “It was fun how all of our minds came together to form a robot.”

Another popular project involved beach profiling, in which the students took measurements of the beach and did calculations to see how its shape had changed over time. “Since most of their first impressions of the ocean is going to the beach, I think it really resonated with them,” says Dana Veron, a research faculty member who organized the camp with CEOE Assistant Dean Frank Newton.

Veron, who compiled the camp’s curriculum, says she wanted the students to not only see what it’s like to be a marine scientist but to also understand that different academic disciplines interact during the scientific process. One of the many activities to demonstrate that idea was the 12-hour cruise aboard UD’s 146-foot ship, R/V Hugh R. Sharp.

On the cruise, the students learned about the university’s autonomous underwater vehicle, a piece of equipment operated by Art Trembanis, assistant professor of geology, that glides underwater and gathers information such as water quality data. They also helped Doug Miller, associate professor of oceanography, dredge the ocean floor and got to meet all the creatures once the net came to the surface.

“We saw a ton of horseshoe crabs,” says camper Jason Truong, adding that marine science is “massive, you can do almost anything—geology, biology, chemistry…” Truong, from Philadelphia, and the other campers had to demonstrate an interest in marine science and show they have solid math and science skills in their camp applications. For these science lovers, it was an amazing two weeks. “It’s a great opportunity for any person,” Truong says. “If they can work hard, they can learn a lot.”
The University’s Southern Delaware Professional Development Center is in only its third year of operation, but it already is collaborating with 12 school districts and charter schools to provide workshops, coaching and other help for classroom teachers.

“We work all over Kent and Sussex counties, and what we offer is not a cookie-cutter approach,” says Tracy O. Hudson, the program’s coordinator as well as the English language and literacy specialist on the four-person team. “We ask districts what they want, what their goals and their weaknesses are, and then we offer them 32 days of professional development that’s tailored to their needs and based on their data.”

In addition to Hudson, the team consists of specialists in science, social studies and math education, all at the secondary school level. The center director is Joseph R. Pika, the James R. Soles Professor of Political Science and International Relations and director of the Center for Secondary Teacher Education at UD, as well as interim associate dean of the College of Arts and Sciences.

When the center was launched in fall 2007, Hudson says, the staff searched for similar programs around the United States from which they could learn.

“What we found is that there really aren’t a lot of programs like this,” she says. “We were a new model, so we consulted with teachers, principals, curriculum leaders and others, and we began creating customized professional development.”

That first year of operation, the center worked with five partner districts that contracted for its services. The next year, three or four more districts joined in, and growth continued in the current school year. In addition to southern Delaware public school districts and charter schools, the center’s specialists also are providing some training to state Department of Education staff.

In the schools, Hudson says, each content specialist conducts instructional workshops on such subjects as vocabulary development in reading and writing, aligning classroom lessons and assessment with state standards, more effective use of science laboratory time or resources that are available for social studies teachers. In addition to the workshops, the specialists will provide individual teacher support in a range of subjects including classroom management, best practices and improved communication with parents.

This year, some of the programs they provide are based on an instructional model known as “learning-focused strategies,” which is increasingly being implemented in schools and in which the Southern Delaware Professional Development Center specialists have been trained. The specialists also provide some individual coaching—to a new teacher, perhaps, or to a teacher who has been moved into an unfamiliar situation—and sometimes monitor classrooms to offer additional help. When they find a teacher who is especially successful in a particular area, they might take others on visits to that model classroom.

By now, Hudson says, the center is even reaping some unexpected benefits. Because it occasionally brings educators from more than one district together for a program, more collaboration is occurring.

“A great side effect has been that teachers are sharing ideas more than before,” Hudson says. “Teachers from Seaford are talking to teachers from Indian River, and that’s very valuable. It’s like we’ve developed our own professional learning community in southern Delaware.”

UD assists educators

BY ANN MANSER

From left, Timothy Young (social studies specialist), Molli Carter (math), Tracy Hudson (literacy and the center coordinator) and Michael Buoni (science).

For more information, visit www.udel.edu/sdpdc
For almost two decades, citizen monitors in the Inland Bays watershed have volunteered to collect water quality data to support public policy decisions and to increase support for the management and protection of the bays. But it wasn’t until the late 1990s that the University of Delaware’s Citizen Monitoring Program began to flourish under the leadership and management of the Delaware Sea Grant College Program.

One of the key people responsible for the growth and success of the program was recently recognized for his work. The Center for the Inland Bays presented program coordinator Ed Whereat with the 2009 “Friend of the Bays” award at its annual volunteer recognition event. The award is given to an individual or organization to recognize exemplary efforts to restore, conserve and protect Delaware’s Inland Bays.

Whereat began his involvement with the Citizen Monitoring Program more than a decade ago as a volunteer monitor with a sampling station in Little Assawoman Bay. His participation soon evolved into part-time employment with UD as the program’s coordinator. Joe Farrell, of Delaware Sea Grant and program manager for the Citizen Monitoring Program, recognized the value of Whereat’s contribution and later hired him in a full-time capacity.

“Ed brings a rare mix of qualities and skills to the program—strong scientific training, a keen curiosity of how coastal and estuarine ecosystems function, patience and talent for sharing information with our volunteers and public, ability to juggle 10 things at once, and a long-term commitment to our program,” Farrell says. “His personal effort has increased the credibility of our program and he is an example of university outreach at its best.”

Whereat, who holds a doctoral degree in plant ecology from the University of Maryland, was instrumental in expanding the Citizen Monitoring Program to train volunteer monitors to identify a variety of phytoplankton species in sampled bay waters, including those known to be harmful to human health. His outreach efforts to raise awareness about the dynamics between algae and water quality in the Inland Bays have been critical to the public’s understanding of this important issue.

The Center for the Inland Bays is one of 28 National Estuary Programs dedicated to the restoration and protection of our estuaries of national significance. It was enabled by the Delaware General Assembly in 1994 to promote the wise use and enhancement of Delaware’s Inland Bays and their watersheds.
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Southern Delaware stars boost Blue Hen field hockey

BY JERRY RHODES

The university of Delaware's field hockey team enjoyed a stellar season in fall 2009, thanks in part to two key players from Southern Delaware—Casey Howard and Rae Everson, both graduates of Caesar Rodney High School in Dover.

The Blue Hens won 11 more games than the previous year, and Howard and Everson were among a remarkable group of players on a team that finished 14-6, won a Colonial Athletic Association championship, reached the NCAA Division I championship tournament and was ranked 11th nationally at the end of the regular season.

Howard, an elementary education with a minor in special education from Camden who graduated from UD in January, set single-season records by stroking 22 goals and scoring 51 points.

A two-time National Player of the Week selection who finished second in the CAA in goals and points, Howard says that she followed her sister into the sport.

“My older sister Bridget played field hockey in junior high and high school,” Howard says. “Growing up, I attended all of her games, so I naturally became interested in the sport.”

Coming to UD, Howard says, was a combination of the school’s relative closeness and the reputation of its academic and athletic programs.
“One of the reasons I chose UD was because its elementary education program is prestigious,” Howard says. “An additional factor was the athletic department and the field hockey program.”

Everson, who also graduated from UD in January, started all 20 games for the Hens and finished the season with 15 points, four goals and seven assists. Defensively, Everson helped Delaware post four shutouts, including a 1-0 victory over Drexel University in the CAA championship game.

An athletic training major from Felton who minored in strength and conditioning, Everson posted 30 career points, including five goals and 10 assists. She also served as president of the Student-Athlete Advisory Council, was a perennial member of the CAA Academic Honor Roll and was selected to participate in a prestigious internship program at Disney’s Wide World of Sports complex in Orlando, Fla.

Everson says her involvement in the sport of field hockey began in the beginning of the seventh grade, when she was running to get in shape for basketball but found she did not enjoy logging all those countless miles. After attending a field hockey meeting with friends the following spring she signed on for the next season.

“What originally began as a means to get in shape turned into a very enjoyable experience because all of my friends played field hockey as a fall sport,” Everson says. “If I recall correctly, we went undefeated that next year except for a tie that came against Casey’s middle school team.”

While she picked UD because of its academic successes and competitive programs, Everson says that once she arrived on campus she also felt it would be a good idea to continue her athletic career.

“One I was accepted and decided that UD was a place that I wanted to be a part of, I thought it would be hard to sit around and not play a sport, because I was a three-sport athlete at Caesar Rodney,” Everson says. “I decided to contact field hockey Head Coach Carol Miller, and after speaking with her an official visit was scheduled. The rest is history.”

Favorite UD courses for Everson included athletic training, taping and bracing, upper and low extremity, spine evaluation, as well as prevention and rehabilitation of athletic injuries.

“I really enjoyed all of my athletic training classes, even though they were very challenging and resulted in numerous sleepless nights due to all of the studying that they required,” Everson says. “If I had to pick an all-time favorite, it would have to be functional anatomy with Dr. [Charles] ‘Buz’ Swanik. In this class we actually worked with cadavers. I know, creepy, but we were able to actually see all of the muscles and bones that we had spent years learning about.”

Everson also noted the help received from her academic adviser, Thomas Kaminski, professor in the Department of Health, Nutrition and Exercise Sciences.

“Without him, I’d probably still be trying to figure out what I want to do with my life and what classes I should be taking from year to year.”

Glancing back on the 2009 field hockey season, Everson and Howard says that key victories against tough opponents stand out as being most memorable.
“The regular season games that stick out the most were beating Old Dominion 4-0, and beating James Madison University 2-1 at JMU,” Everson says. “Both were teams that we had not beaten in the four years that Casey and I had been at UD.”

Everson also noted that it was nice to win a rematch against Drexel, a team to which the Hens had lost during the final game of the regular season.

“Winning the conference championship my senior year is a feeling that I will cherish for the rest of my life,” Everson says. “Just being blessed with the opportunity to come back for another season and being a member of this team is something that I will always look back on with a smile.”

For Howard, winning against Old Dominion and Drexel and clinching the CAA championship also stand out as high marks during a stellar field hockey career at UD. “Like the 2004 team, we won the CAA tournament, so this was something very special.”

In looking back at successful academic and athletic careers at UD, both players credit parents, family, friends and high school and college coaches for their support along the way.

“My parents played such an important role in my dedication, determination and success in the sport, and my other family members also attended games, showing their support, which ultimately added to the excitement of the game,” Howard says. “The guidance my coaches provided along the way will never be forgotten. The experience they created was an experience not many individuals will go through. I also thank my teammates for always showing up at practice and dedicating themselves to the team.”

Everson thanked God for a “family that has always been there for me through the ups and downs,” and for the mentoring and inspiration given by her high school basketball coach, Bill Victory, who instilled in her the importance as an athlete of getting better each day, being a team player, and about the overall importance of life.

“Coach Victory taught me that sports weren’t the most important thing in life, and to enjoy the blessing of family, friends and a community that has always supported me,” Everson says. “I also want to thank UD’s Student Services for Athletes—specifically Tim Morrissey, James Coleman and Kristine Ritz-Coll—for always being there just to listen on a daily basis.”

Everson also thanked Coach Miller for “always being there for me on and off the field. She’s always been there to listen and offer advice on hockey and life, and for that I’m very appreciative.”
Dedicated docents guide visitors to Lewes campus

On a muggy summer morning at the University of Delaware’s Hugh R. Sharp Campus in Lewes, about 25 visitors gather in the lobby of Cannon Lab, the campus’ main building. Though dressed in summer attire—shorts, tees, flip-flops, and sunglasses—the group isn’t assembling for a trip to cool off at the beach. They’re about to be taken on a free tour of UD’s Lewes campus, where they’ll learn about research on topics such as the use of marsh plants for biodiesel fuel, superheated geysers at the bottom of the ocean, genetics in shellfish recovery and Delaware’s offshore wind resources.

If this sounds like a fascinating way to pass a morning, you’re not alone. Since UD’s College of Earth, Ocean, and Environment (CEOE) began offering 90-minute walking tours of its marine research complex in 1992, more than 17,000 guests have visited. Making all those tours possible is a team of 11 volunteer tour guides, a dedicated group of retired professionals from education, business, law, medicine and science, who have made understanding and passing on knowledge about marine research their passion.

“Our backgrounds are diverse, but we are united in our commitment to increasing awareness about our vulnerable marine and coastal environment,” says Roz Troupin, a retired radiologist and head docent. “Another common bond is our huge admiration for the contributions of our CEOE faculty and our desire to educate visitors about their work.”

Attracting everyone from locals, scouts and vacationers in the summer to school classes, retirement communities and church groups year-round, the tours begin with a 15-minute video that showcases some of the many ways CEOE researchers and students explore the coastal environment in Delaware and beyond. Next, the docents lead a walking tour of the research buildings, which includes a stop at the greenhouse and the tropical reef tank, as well as multiple posters and exhibits. This year, a new interactive Google Earth display will often be available to touring groups.

Being ready to talk science is a must, Troupin says, and docents spend hours brushing up. They educate themselves through activities such as taking courses, reading current research literature and getting periodic updates from the faculty. New docents also learn the ropes by shadowing veterans of the program for a few weeks.

And, as visitors will tell you, their work shows. Rehoboth Beach resident Beverly Sanderson and several visiting family members from out of the state recently went on a tour. Sanderson’s 15-year-old granddaughter’s interest in marine biology was the initial motivating factor, she says, but it turned out to be educational for the whole group. “We all found it extremely interesting,” she says. “The research is so varied.”

The docents try to tailor their tours specifically to the day’s group, which may include kids ages 10 and up. Gordon Blizard, who has a physics and engineering background and is in his sixth year as a docent, says he particularly enjoys seeing youngsters’ reactions to live fish and invertebrates in the tropical coral tank.

Tours take place Friday mornings in June and Tuesday and Friday mornings in July and August. Tours begin at 10 a.m. Individuals can call (302) 645-4346, no later than noon the day before, to reserve a place.
The Delaware Assistive Technology Initiative (DATI) is part of the Center for Disabilities Studies at the University of Delaware, and connects Delawareans who have disabilities with the tools they need in order to learn, work, play, and participate in community life safely and independently.

DATI’s mission is to improve access to assistive technology for all Delawareans with disabilities. Its services are available to Delaware residents of all ages, level of disability and income.

With the exception of some training events, most DATI services are provided at no cost and are available at its Assistive Technology Resource Centers. Barrier-free centers are located in each county—one in Dover and one in Georgetown—and they are open to the public and contain examples of all types of assistive technology.

Highly qualified assistive technology specialists are available to demonstrate equipment and help identify technology options for a given need. Most of the equipment is available for a two-week loan period, enabling users to “try before they buy.” Financial loans may be made for the purchase of assistive technology devices.

DATI initiatives include improving access to assistive technology devices and services for children through the state’s early intervention and public education systems; for eligible individuals who have disabilities through Delaware’s Division of Services for Aging and Adults with Physical Disabilities, Division for the Visually Impaired, and Division of Vocational Rehabilitation; and for individuals with intellectual disabilities through the Division of Developmental Disabilities Services.

DATI also works to improve coverage for, and timely acquisition of, assistive technology devices and services through public and private medical insurance. The program strives to empower consumers in the selection and acquisition of technology, increase the skill level of providers through the operation of an information and referral program, and create greater awareness about assistive technology through a multifaceted outreach and training agenda.

DATI disseminates information about assistive technology and its services through informational material in a variety of formats, a quarterly newsletter, and workshops and other training sessions, and by participating in conferences, community meetings, and health fairs. DATI advocates for improved assistive technology access policies and funding.

DATI’s administrative headquarters is located in Wilmington at the Nemours/Alfred I. duPont Hospital for Children, which also is the site of the New Castle County center.

For questions regarding equipment demonstrations and loans, personal assistive technology options, or to speak with a specialist, contact your local center by calling 1-800-870-DATI (3284) or the local number below.

**Kent County Assistive Technology Resource Center**
Easter Seals Kent County Center
100 Enterprise Place, Suite 1
Dover, DE 19904-8200
(302) 739-6885; (302) 739-6886 (TDD);
(302) 739-6887 (fax)
Eddie Jory, AT Specialist (eddie@udel.edu)
Beth Shinn, Administrative Support (bshinn@udel.edu)

**Sussex County Assistive Technology Resource Center**
20123 Office Circle
Georgetown, DE 19947
(The office is in the north end of the Georgetown Professional Park across from Walmart on Route 113, facing North Bedford Street, across from the North Georgetown Elementary School.)
(302) 856-7946; (302) 856-6714 (voice or TDD);
(302) 856-6990 (fax)
Dan Fendler, AT Specialist (fendler@udel.edu)
Sandy Walls, Administrative Support (swalls@udel.edu)
The observed decline in populations of American black ducks has been a topic of great debate among wildlife researchers and managers. Once the most abundant ducks in eastern North America, black ducks have recently declined to as few as 188,000 on traditional wintering grounds.

University of Delaware graduate student Kurt Anderson—a self-proclaimed “quack addict” and biologist with Ducks Unlimited (DU) in Delaware and New Jersey—is working with wildlife biologists at DU and several federal and state fish and wildlife agencies to find out why.

“We know a little bit about the fall migration of black ducks thanks to banding efforts and harvest data, but we know even less about the timing of spring migration, their migration routes and habitat use patterns on stopovers,” says Anderson. Biologists are unclear as to how migration proceeds among ducks from different wintering areas.

“Conditions encountered during spring migration have a lot of influence on the reproductive success of birds,” Anderson notes. “Ducks must acquire sufficient resources (weight) both before and during
spring migration to make it to their breeding grounds in good enough condition to reproduce successfully.”

The topic is of so much concern that the 1986 North American Waterfowl Management Plan (NAWMP) called for the establishment of the Black Duck Joint Venture (BDJV) to research black duck ecology, identify limiting factors, and provide management recommendations. The BDJV is one of only two joint ventures assigned to a particular species; most serve a wide geographic region.

Anderson’s master’s thesis work entails outfitting female black ducks with satellite transmitters to obtain critical information about spring migration. The ducks are trapped, measured and weighed, given federal leg bands for traditional tracking purposes and are then equipped with the transmitter.

“Mature females, those in their third calendar year or older, and with a sufficient body weight, are outfitted with a harness and solar-powered satellite transmitter, almost like a little backpack,” says Anderson. Hens over 1,000 grams are selected, with the harness material only adding 38 grams. “After second year (ASY) females are selected because of their importance in population dynamics and familiarity with migration routes. Waterfowl are philopatric, meaning they will often return to the same location they were born to reproduce, sometimes even to their same nests.”

During the winter of 2007-2008, Anderson, in conjunction with DU, the U.S. Fish and Wildlife Service, and state fish and wildlife agencies in New Jersey, Ohio and Virginia, outfitted 29 black ducks with satellite transmitters. An additional 31 ducks were released during 2008-2009 in the states listed above and were joined by three from New York and five from Prime Hook National Wildlife Refuge in Milton.

“Our initial analysis shows some interesting trends,” says Anderson. “Year two is bound to provide more information because more of the transmitters are responding.”

Anderson received his bachelor of science degree in fisheries and wildlife from Michigan State University. He came to the Mid-Atlantic region to work with waterfowl before starting school in Delaware, but isn’t the only Blue Hen working on this project who spent his graduate years studying black ducks at UD.

Matt DiBona, game bird biologist for the Delaware Division of Fish and Wildlife, studied seasonal food availability for wintering and migrating dabbling ducks in the Hackensack Meadowlands of New Jersey under the tutelage of Anderson’s adviser, Jacob Bowman, associate professor of wildlife ecology.

Similarly, Dane Cramer, a UD master’s candidate under Chris Williams, assistant professor of wildlife ecology, is determining food resources and estimating habitat carrying capacity for wintering and spring staging black ducks in coastal and bayside New Jersey. Cramer currently works for the New Jersey Division of Fish and Wildlife and helped Anderson with trapping black ducks in the state.

“This project has been a unique collaboration of state, federal and private partners.” — Kurt Anderson

Viewers can follow the black ducks at this Ducks Unlimited Web page www.ducks.org/Conservation/BlackDuckStudy/3415/FollowtheDucks.html
Ounce of prevention

Indian River Inlet Bridge to feature UD-designed monitoring system

BY DIANE KUKICH

The new Indian River Inlet Bridge, which serves as a vital link between coastal communities in Southern Delaware, will feature a unique structural monitoring system through a project undertaken by the University of Delaware in cooperation with the Delaware Department of Transportation (DelDOT).

Three UD researchers have received a $1.1 million grant from DelDOT to design and install the system, with the work being carried out through the University’s Center for Innovative Bridge Engineering. They are Michael Chajes, dean of the College of Engineering; Harry “Tripp” Shenton, professor in the Department of Civil and Environmental Engineering; and Robert Hunsperger, professor in the Department of Electrical and Computer Engineering.

“The concept of a structural health monitoring system for a bridge is similar to the computer-controlled sensing and diagnostic systems installed in modern cars,” Shenton says. “Just as various lights on your dashboard show you when the car is low on oil or the trunk is open, the sensing system on the bridge will provide feedback about how the structure is performing.”

According to Jim Zammataro, applications specialist with Cleveland Electric Labs, industrial partner on the project, fiber-optic structural health monitoring systems have been used widely across Europe and Asia for years but have been slow to catch on in the U.S.

“Until now,” he says, “much of the health monitoring of bridges in the U.S. has been short term and usually covers only parts of the structure. Short-term monitoring is a great way to get a snapshot of what is happening, but a long-term monitoring system with fiber-optic sensors provides a continuous real-time picture of how the structure is performing.”

Zammataro adds, “We believe Indian River is the first significant bridge built in the U.S. to have an all-fiber-optic monitoring system designed into it from the beginning. It is significant that DelDOT and the Federal Highway Administration chose to go with this optical system because it signals a shift in the way structural health monitoring is viewed here in the U.S.”

According to DelDOT project manager Doug Robb, the bridge has a 100-year design life, and inspection and maintenance over that time will require a substantial investment in time and resources. “The monitoring system will enhance our ability to...”
efficiently and effectively manage this significant resource for years to come,” he says.

The UD-Cleveland Electric team will design and install a computer-controlled fiber-optic system consisting of some 120 sensors to measure a variety of conditions, from temperature and wind speed and direction to strain, deck inclination and expansion joint movement.

Data will be collected at prescribed intervals—for example, hourly—as well as during extreme events such as high winds or the passage of overweight vehicles requiring a special permit.

“The data gathered will allow DelDOT as well as the general bridge community to understand the short- and long-term performance of this long-span cable-stayed bridge,” says Chajes. “We anticipate that the lessons learned both in instrumenting the bridge and in analyzing the data will expand our fundamental knowledge about bridge behavior and maintenance.”

Sensors will be placed in the deck and pylons, on selected stay cables, at deck level and at the top of the pylons.

“Everyone has heard about bridge failures of the past, including the Tacoma Narrows Bridge, the Silver River Bridge and the I-35W Bridge in Minneapolis,” says Dennis Mertz, director of UD’s Center for Innovative Bridge Engineering. “Health monitoring systems can provide a wealth of information that has the potential to prevent such catastrophic collapses in the future.”

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**Center offers innovative business solutions**

The Small Business Technology Development Center in Georgetown is the premier resource for innovative business solutions to Delaware’s entrepreneurial community for long-term growth and success.

The center, which is part of the University of Delaware Office of Economic Innovation and Partnership, “creates values for Delaware by engaging, challenging and guiding businesses to grow, prosper and achieve their goals,” according to William F. Pfaff, director of the Sussex County facility.

Pfaff says this has been an important year for the center, which recently completed a year-long accreditation process to receive the “technology” designation.

“We are one of just seven centers in the country to achieve the ‘T’ status,” Pfaff says.

The center offers a variety of general services to entrepreneurs in Southern Delaware, from business planning and cash flow projections to market research and a free business health check.

Specialized services include technology commercialization, market research and assessment and technology transfer. The center also can assist with Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grant proposals.

Training and educational programs also are offered by the center through workshops, seminars and classes with material ranging from basic to in-depth. Programs can be in-person or online.

In addition, the Procurement Technical Assistance Center, or PTAC, helps identify and prepare bids on contracts with federal, state and local government, and also prime contractors. PTAC services include electronic bid matching, interpreting government regulations, subcontracting opportunities and information, researching the buying habits of specific agencies and bid packaging.

The Small Business and Technology Development Center is at 103 W. Pine St., Georgetown, telephone (302) 856-1555 and fax (302) 854-6979.

The University’s Office of Economic Innovation and Partnerships is working to establish UD as a recognized center of invention, innovation, entrepreneurship, partnering and economic development.

It serves as a gateway that enables outside entities to access the University’s knowledge-based assets and provides UD personnel support to form partnerships outside the University.

For more information about OEIP, see the Web site www.udel.edu/oeip/.
As a plant science major at the University of Delaware, Marcie Smith is accustomed to studying plant cells under a microscope. But during the summer of 2009, she took a macro view of plant life as she worked to develop an issues book about “green infrastructure” in Sussex County.

“I’m used to studying how things work biologically, and this is very different. I’m learning as I go,” says Smith, who served an internship with the University’s Coastal Community Enhancement Initiative (CCEI) program.

The CCEI program was formed by a coalition of UD experts to work with Sussex residents on public issues and plan for the future. Smith’s internship supervisor was Bill McGowan, a Cooperative Extension agent who focuses on community development.

Sussex County has seen significant growth in the last several decades, but remains largely rural, says McGowan. However, the current comprehensive land-use plan allows up to 854,000 more housing units. That’s seven times more than exists today.

Although all those houses and townhouses and condos will not be built for a long time, what happens to the natural environment? Will there be any green spaces left? Will there be clean water and clean soil?

That’s what green infrastructure is about, explains Smith. Green infrastructure takes into consideration the natural environment when making decisions about land-use planning. It can mean setting aside a subdivision for a park, developing green corridors that link open space, using pervious concrete to reduce run-off, and rehabilitating wetlands.

“I’ve interviewed town managers, representatives from the Delaware Department of Natural Resources and Environmental Control (DNREC) and the Nature Conservancy, and also have talked to farmers and developers,” says Smith. “The point is to get a lot of different viewpoints on the benefits, costs and consequences of decisions about green infrastructure.”

Smith has pushed herself out of her usual comfort zone, in front of a microscope, and in the process is exploring new interests. “I recently added a minor in political science and I also have a minor in landscape horticulture,” says Smith. “The internship was a good trial run to see if I want to work in policy or public outreach instead of a laboratory.”

And Smith did not go it alone as she worked to develop the green infrastructure issues book. There were two other interns working on the project—Bo Pratt, a student at Wesleyan College in Middletown, Conn., who is from Lewes, and Dana Young, a Seaford resident who attends Mt. Saint Mary’s University in Emmitsburg, Md.

“As a kid I would come down to the beach with my parents and over the years the landscape really changed on Route 1,” says Smith, who was born and raised in Newark, Del. “There is change taking place all over Sussex and I want to help the residents develop a plan for what they value about the county.”

For more information about the issues book or the CCEI program, contact McGowan at billmcg@udel.edu

Marcie Smith has conducted research on the “green infrastructure” of Sussex County. Photo by Michele Walfred
wish you were here!

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IN A FEB. 18 ARTICLE TITLED “FIX THE BRIDGES BUT DON’T FORGET BROADBAND,” Wall Street Journal business writer Samuel Palmisano warned, “Without pervasive broadband, our country will not be prepared for a new world that is increasingly built on the fusion of the physical and the digital. Yet today the United States, the country that developed the Internet, ranks 12th in broadband penetration and 15th in average broadband speed.”

Regional economic prosperity—including that of Southern Delaware—depends in large part upon the provision of infrastructure. Roads, sewers, and drinking water systems have long been critical pieces in the economic-development puzzle.

Today, broadband infrastructure is emerging as a necessity for regions seeking to compete in a knowledge-based economy. It affords high-speed connections to the Internet and provides businesses, governments, and households with access to a host of time-saving, educational and commercially valuable applications made possible by the rapid transfer of data.

The National Telecommunications and Infrastructure Administration (NTIA), which is part of the U.S. Department of Commerce, and the Rural Utilities Service, which is part of the U.S. Department of Agriculture, are in the middle of putting $7.2 billion in stimulus funding to work building broadband networks in parts of the country that lack high-speed Internet access.

In November, 2009, NTIA awarded the Delaware Department of Technology and Information (DTI) approximately $1.5 million for broadband data-collection, mapping, and planning activities, as part of a national broadband data initiative.

“We’re at a point where high-speed access to the Internet is critical to the ability of people to be successful in today’s economy and society at large,” said Larry Strickling, head of NTIA.

At the request of DTI, the Institute for Public Administration (IPA) of the University of Delaware’s College of Education and Public Policy submitted a proposal to assist the state with these activities. This has resulted in a $371,419 award to IPA for work on two main project components over a five-year timeframe—broadband mapping and broadband planning.

Douglas Tuttle, IPA policy scientist, is the principal investigator and leads a project team of eight IPA staff and two doctoral students. IPA will be working closely with DTI’s project manager Baljinder Kamboj.

“This is an exciting project,” said Tuttle. “In terms of economic importance, the development of a national broadband-access system today has been likened to the creation of the interstate highway network during the mid-20th century. It is clearly evident how little of our state is directly served by the interstate highway system, and the same sort of regionalization of access need not exist with respect to broadband infrastructure.”

In July, 2009, nearly 50 participants in the workshop “Broadband Opportunities for Sussex County” identified potential opportunities for public-private partnerships and regional coordination to advance the expan-
sion of broadband infrastructure and service offerings in Sussex County and Delaware.

The workshop was held at the Elbert N. and Ann V. Carvel Research and Education Center on the University’s Georgetown campus. Participants included business, government, and higher-education officials from Sussex County and the region.

Workshop organizer Troy Mix, former IPA assistant policy scientist and now a doctoral candidate at the University of Illinois, opened the workshop by saying, “Rural areas such as Sussex County face major impediments to broadband deployment, but there are significant opportunities for businesses, households, and governments to benefit from broadband applications.”

Bryant Baker, a DTI program manager, discussed broadband-funding programs authorized by the American Recovery and Reinvestment Act of 2009 and identified the development of a state broadband plan and map as a priority for Delaware.

The workshop discussion identified major rural-broadband policy issues including supply, demand, and measurement. Broadband infrastructure has typically been deployed more slowly in rural areas than it has in suburban and urban regions. Figures from the 2009 Pew Internet and American Life Project report that 46 percent of rural households use a broadband Internet connection, compared to 67 percent of non-rural households, and no national broadband map yet exists to comprehensively assess the extent and location of gaps in coverage.

Patrick Mitchell, president and CEO of the Maryland Broadband Cooperative, recounted the development and ongoing activities of his organization, which has been successful in leveraging federal, state, and private funds to construct an open-access, fiber-optic network across areas of eastern, southern, and western Maryland.

Delaware’s chief information officer, Secretary James Sills, III, and Robert O’Brien, executive vice president of Sequentus International, participated, with Mitchell in discussing options for enhancing broadband offerings in Delaware.

“Today’s workshop was an excellent first step in exploring the issues and opportunities related to expanding broadband access and availability. Future conversations will be critical to ensure that investments in broadband make the most positive impact on Delaware’s economic vitality and quality of life,” said Sills in addressing a potential path forward for broadband policy discussions.

Jennifer Antonelli of Mediacom Communications and Thomas Worley of Comcast said that their respective firms serve broadband to significant portions of the county, but they acknowledged that gaps in infrastructure deployment and service adoption persist, due to factors such as low population densities and limited knowledge of potential uses for high-speed connections.

“The workshop was funded through the University’s Coastal Community Enhancement Initiative—a collaborative partnership among the College of Agriculture and Natural Resources, the College of Earth, Ocean, and Environment, and the College of Education and Public Policy that focuses on growth, land use, and environmental impacts in Southern Delaware.

“Businesses require the utmost connectivity. When it comes to attracting and retaining employers, regions offering widespread access to fast Internet connections have a competitive edge over those with lagging connection speeds and spotty broadband coverage,” said Julie Wheatley, director of Sussex County Economic Development, stressing the importance of broadband for economic prosperity.

However, the lack of broadband availability is only part of the challenge in Delaware, because even in places where broadband is available, not everyone subscribes.

According to the Commerce Department’s national figures, among households that do not have broadband, 38 percent said they don’t need it or are not interested. Twenty-six percent said it is too expensive. Only 3.6 percent said they do not subscribe because it is not available where they live.

“Much like a high-speed roadway, access to broadband can be impeded by barriers that are income-based as well as geographic,” said Tuttle. “That’s why our project starts with an inventory of the characteristics of broadband services currently available to key community-service institutions, and follows up with a variety of opportunities for public engagement in the discussion of broadband policy.”

“For policymakers,” Strickling said, “this means that helping people see ‘what they are missing’ is another important piece of the puzzle.”

“This is where IPA comes in,” said Tuttle.

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INTEGRAL INFRASTRUCTURE
Delmarva Poultry Industry honors Morgan

Robin Morgan, dean of the University of Delaware’s College of Agriculture and Natural Resources and professor of molecular biology, was awarded the Delmarva Poultry Industry (DPI) medal of achievement at its 53rd annual booster banquet in April, 2009.

DPI, which is the trade association for the Delmarva Peninsula’s chicken industry, recognized Morgan for her two dozen years of support for the industry as a teacher, disease researcher, and administrator at the University.

“Robin has been involved with Delmarva’s chicken industry for many years,” says Bill Satterfield, DPI’s executive director. “During our avian influenza challenge in early 2004, as dean of the college, she worked hard and caused her colleagues to work hard to keep up with the huge number of diagnostic tests needed to ensure the safety of Delmarva’s chickens and chicken industry. Her support for the diagnostic labs is one reason why the University’s two labs are so highly regarded.”

Morgan joined the faculty at UD in 1985 and has since been a University leader in working with the chicken industry and promoting the industry within the University system.

She is a national leader in the study of Marek’s disease virus, a herpes virus that causes infectious T-cell lymphomas in chickens.

Also, she has provided direction for a research program looking at the use of solar energy on chicken farms through the installation of a photovoltaic solar system on a poultry house in Laurel, bringing together industry, government, and academic partners.

As dean, Morgan helps direct resources and personnel to nutrient management programs—programs that are vital to the poultry industry’s environmental efforts.

“A faithful ex-officio member of the DPI Board of Directors, Robin seeks chicken industry input on many University projects and programs,” Satterfield says. “We are fortunate to have her working with us. She is a huge chicken industry advocate who attends countless meetings, including faithful attendance at DPI Board of Directors’ and committee meetings.”

University of Delaware College of Agriculture and Natural Resources faculty and Cooperative Extension professionals, and their extensive contributions to the poultry industry, have been recognized by DPI since 1960. Past winners of the DPI medal of achievement from UD include:

1960: J. Frank Gordy
1961: George Worrilow
1963: W. T. McAllister
1965: Morris Cover
1968: Ray Lloyd
1971: William H. Henderson
1976: Spangler Klopp and John Rosenberger
1979: George Chaloupka
1986: Edward H. Ralph
1988: William Benton
1990: Daniel H. Palmer
1992: George (Bud) Malone
1993: Edwin M. Odor
2001: Jack Gelb
2005: Mariano Salem
2007: Conrad Pope
2008: Bill Saylor and Tom Sims
2008: Special award to Lasher Lab team

Robin Morgan. Photo by Danielle Quigley
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We invite you to also discover our Kent County developments.
working in Delaware’s wetlands, researchers at the University of Delaware have discovered a new reason why the tall, tasseled reed *Phragmites australis* is one of the most invasive plants in the United States.

The UD research team found that Phragmites delivers a one-two chemical knock-out punch to snuff out its victims, and the poison becomes even more toxic in the presence of the sun’s ultraviolet rays.

The study, which was published in the June 2009 issue of the scientific journal *Plant Signaling & Behavior*, is believed to be the first to report the effects of UV-B radiation on plant allelopathy, the production of toxins by a plant to ward off encroachment by neighboring plants.

The authors include Thimmaraju Rudrappa, a former postdoctoral researcher at UD who is now a research scientist at the DuPont Company; Harsh Bais, assistant professor of plant and soil sciences; Yong Seok Choi, postdoctoral researcher in the Department of Chemical Engineering; Delphis Levia and David R. Legates, both associate professors in the Department of Geography; and Kelvin Lee, Gore Professor of Engineering and director of the Delaware Biotechnology Institute.

The research was conducted in the state’s wetlands and in Bais’s lab at the Delaware Biotechnology Institute, a major center for life sciences research at the University of Delaware.
“The toxin secreted by Phragmites is degraded by sunlight—ultraviolet rays—and causes severe deleterious effects on other native plants,” Bais says. “Our research also addresses the growing questions of increased UV-B incidences because of global warming and its ultimate effect on plants. In this case, an invasive plant is accidentally utilizing the changed global conditions for its survival and invasion.”

Two years ago, Bais led a study that discovered that Phragmites actively secretes gallic acid to kill off plants and take over new turf. Gallic acid, also known as 3,4,5-trihydroxybenzoic acid, is used for tanning leather, making dyes and inks, and formulating astringents, among other applications.

In this research, the scientists found that the gallic acid released by Phragmites is degraded by ultraviolet light to produce another toxin, mesoxalic acid, effectively hitting susceptible plants and seedlings with a double-whammy.

The mesoxalic acid triggers a similar “cellular death cascade” in victim plants as gallic acid does, Bais says, destroying the tubulin and actin, the structural protein in the roots, within minutes of exposure.

The scientific team detected the biological concentrations of mesoxalic acid in Delaware wetlands, in stands of both exotic and native Phragmites australis. The study highlights the persistence of the photo-degraded phytotoxin, particularly potent in the exotic species of the plant, and its enhanced effects against the native species of Phragmites, which is becoming increasingly endangered in the United States.

Walnut trees, pine trees, ferns and sunflowers are among the plants that release harmful chemicals to prevent other plants from growing too close to them. However, Phragmites uses this strategy not so much to keep other plants away, but to aggressively conquer them and invade new territory, Bais says.

Funding for the project was provided by the University of Delaware Research Foundation.

Sea Grant, CEOE extend lines of communication through social networks

The Delaware Sea Grant College Program and the College of Earth, Ocean, and Environment are inviting Web users to get social online, with presences on some of the Internet’s most popular social networking sites—YouTube, Facebook, and Twitter.

SeaTalk, the public service announcement series produced by the University of Delaware and Delaware Sea Grant, now has its own channel on the video-sharing website YouTube. Tune in to watch video podcasts on wide-ranging topics including new educational resources, fun facts about native marine critters, and insight into the latest research being conducted by Sea Grant scientists.

The channel currently features more than 20 short educational videos and more are being added each month. Viewers can access the channel at www.youtube.com/DESeaGrant, and users with a YouTube account can subscribe to the channel, rate the videos, and leave comments and suggestions.

Delaware Sea Grant also now has a page on Facebook, the Web’s most popular social networking site. Facebook members can show their support by surfing over to the Delaware Sea Grant page, becoming a fan, and writing a message on the wall. Fans can also check out the latest Sea Grant events, photos, news, videos, and resources, and will be able to keep on top of what’s happening through Facebook’s updates feature. The page can be accessed by searching for “Delaware Sea Grant” in Facebook’s toolbar or by entering this link http://tinyurl.com/deseagrant-facebook.

Finally, Twitter is answering the question “What are CMES and Delaware Sea Grant doing?” with short, instant updates called “tweets.” Delaware Sea Grant is tweeting the latest news stories and events, and providing resources on timely topics on its feed at [http://twitter.com/DESeaGrant], while OCEANIC, the Ocean Information Center at CMES, is providing ocean data news and information at twitter.com/oceandata.

Also, stay tuned for new Twitter feeds coming soon from the college and the R/V Hugh R. Sharp, UD’s state-of-the-art research ship.
A new university of Delaware College of Earth, Ocean, and Environment (CEOE) project is giving scientists a totally new perspective of the world. The college’s Global Visualization Lab uses Google Earth to view real-time data streams on everything from ocean temperature and currents to the movement of ships in Delaware Bay—all at once.

The data come from a wide variety of sources—including satellites, autonomous underwater vehicles, and floating buoys—and are pulled into Google Earth via KML files, special file types that let you see geographic data.

When viewed on the lab’s flat panel TVs and navigated with a 3-D mouse, the Google Earth globe and any data illustrated on it are seen with such high resolution and great detail that viewing the image feels more like a high-flying helicopter ride.

Not only is it incredibly impressive to see in action, the technology represents a new way for oceanographers to see a wide variety of real-time data all in one spot and in a standardized format that anyone with Google Earth and the right KML files can use.

The technology provides a completely new sense of the ocean, says the lab’s creator, Matt Oliver, assistant professor of oceanography.

“Oftentimes you’re out on a boat and you wonder what it is that you’re missing. When you’re out there you feel so small,” Oliver says. “This technology really allows you to see the large scales of the ocean unfold in front of you.”

Oliver is part of a larger cooperative effort between multiple universities and institutions working on the visualization project, including the Mid-Atlantic Regional Coastal Ocean Observing
Leveraging several organizations’ resources has helped illustrate another strength of the lab: It allows the data-gathering technologies to not just work parallel to each other; for the first time, they can actually work together. That has positive implications for how data is collected and viewed, Oliver says.

In their first test of the system, Oliver and his collaborators used satellites, underwater vehicles, and other devices to study winter algal blooms in the mid-Atlantic over a two-week period in November. As the data came in, computer models automatically analyzed it, created forecasts, and reported directly to the autonomous underwater vehicles to tell them where to sample next.

The approach allowed the scientists to analyze the data on the fly, which helped optimize their sampling patterns.

Other applications for the technology are expected to be far and wide. Scientists could use it to study the health of coral reefs, the amount of chlorophyll in the ocean, the movement of electronically tagged wildlife, the interaction of the coastal and open ocean, or even to plan research sampling sites virtually. Oliver is using it for a NASA project studying how climate change has affected habitats on the West Antarctic Peninsula.

Further extending the technology’s usefulness will be the increased availability of KML files that allow researchers to see new types of geographic data. Collaborating with Oliver on that effort are graduate students Matt Grossi and Erick Geiger. Geiger’s project, for example, is to map the salinity of Delaware Bay.

Sea Grant resources meet state science standards

Teachers who currently use Delaware Sea Grant College Program publications can now learn how some of the most popular resources—the Horseshoe Crab Bulletin and the Horseshoe Crab and Dogfish Shark models—correlate to state science standards.

Delaware Sea Grant offers a variety of publications and resources that teachers can use to instruct students in disciplines ranging from marine and aquatic science to language arts.

New state science standard guides, now available for free download from the Delaware Sea Grant Web site, provide teachers with detailed information on how these publications meet state science education standards in Delaware, Maryland, New Jersey and Pennsylvania.

The teacher guides include the specific state standards that are covered by each publication, and highlight how the publication fulfills each standard. Guides are currently available for The Horseshoe Crab: A Creature That Crawled Out of the Past, a full-color, six-page educational bulletin that reviews the biology, medical uses, and population trends of the unique marine animals, and the Horseshoe Crab and Dogfish Shark models. Both are full-color, three-dimensional models that students can cut out and assemble with tape in approximately 15 minutes, and include interesting facts and statistics about the creatures.

An essential part of meeting state science standards is to engage students in activity-based learning. The models help fulfill those standards by providing hands-on activities for students. Also, all three publications include a wealth of natural history facts that can be adapted for additional classroom activities.

The state science standard guides can be downloaded online at www.deseagrant.org/education/curriculumresources.html.

Copies of Delaware Sea Grant publications are free to Delaware educators for classroom use. Nominal fees may apply for non-educator requests. For more information, contact the University of Delaware Marine Public Education Office at (302) 831-8083 or send email to MarineCom@udel.edu.
If you’ve ever stepped a bare foot on the bottom of the Delaware River, you’ve discovered what scientists already know—there’s gooey, grey muck down there, and lots of it. Each year, more than a million tons of sediment washes into the Delaware River estuary, which winds 134 miles from Trenton, N.J., to the mouth of the bay.

Not only is the sediment plentiful, it’s crucially important in maintaining the natural balance of the estuary’s ecosystem. Some of the sediment settles to the river bottom, where it adds to its stability and helps deter erosion. Some of it is deposited in neighboring marshes, where it helps maintain the marsh above sea level and provides nutrients that allow plants and animals to survive there.

But there’s a lot that scientists are still learning about all that mud.

In a three-year, $1.1 million project funded by the National Science Foundation, the University of Delaware’s Christopher Sommerfield and Rutgers University’s Robert Chant are determining just how efficient the estuary is at trapping sediment supplied by rivers.

The project builds on nearly a decade of Delaware Sea Grant and other research, in which Sommerfield and his colleagues have developed a “sediment budget” that accounts for the amount of sediment that is added to and removed from the Delaware estuary. Now the scientists are trying to understand how different processes affect the timing and movement of sediment from sources throughout the estuary watershed to resting places, or sinks, in the estuary seafloor and fringing tidal marshes.

The project’s findings could shed light on how human or natural changes to the flow of water and sediment could affect the estuary. Natural changes include erosion by coastal storms and sea-level rise, whereas human changes include the construction of bulkheads and dredging.

“In an estuary, when you change the flow of water and sediment in any way, it feeds back into the condition of seafloor, shoreline, and estuarine fringe environments. This has major implications to the living ecosystem,” says Sommerfield, associate professor of oceanography in the College of Earth, Ocean, and Environment.

Previous work by Sommerfield’s research group has shown that much of the muddy sediment delivered by rivers is temporarily stored within a region of the middle estuary that has high sediment concentrations, or turbidity, before being dispersed to other areas. But, exactly how the mud moves from place to place is a lingering question.

To answer this question, Sommerfield and Chant, associate professor of physical oceanography at Rutgers, are turning to UD’s 146-foot research vessel Hugh R. Sharp, from which they will monitor turbidity, salinity, currents, and temperature along the estuary over the next two years. They’ll also measure the distributions of naturally occurring radionuclides to track the movement of mud through the estuary.

With this project, Sommerfield is satisfying his longtime interest in how natural and human factors influence sedimentation in coastal environments. “Our project is hypothesis driven science; it’s basic research relevant to estuaries worldwide,” he says. “But it so happens to have relevance to very specific issues in the Delaware River estuary.”
Coastal Delaware residents can include native plants in home gardens

BY ELIZABETH BOYLE

The University of Delaware maintains an award-winning garden in Lewes that demonstrates how coastal residents can include native plants in their home gardens.

The garden, located on the College of Earth, Ocean, and Environment's Hugh R. Sharp Campus, received a 2009 special award for education from the Delaware Nursery and Landscaping Association. The garden was created in 2004 by the Delaware Sea Grant College Program, the University of Delaware and the Partnership for the Delaware Estuary.

“People weren’t familiar with the color, shape, texture and variety that natives can bring to a home landscape,” says Wendy Carey, coastal processes specialist with Delaware Sea Grant. “You can go native and still have a beautifully landscaped yard.”

At the project’s outset, Carey turned to UD alumnus Christopher Valenti, owner of JB Landscaping in Lewes, for help with design. Valenti developed the initial landscape design and continues to collaborate on the garden’s layout and upkeep.

It was the garden’s outstanding educational purpose and goals that the Delaware Nursery and Landscape Association recognized. The group is a nonprofit that serves the state’s horticultural-related businesses and the companies that supply them.

Thousands of people have visited the garden, whether through guided tours at the University’s annual Coast Day event or through free self-guided tours throughout the year.

Visitors learn that native plantings are attractive alternatives to traditional nursery stock because they require little maintenance and are specifically adapted to heat, drought and soil stresses common to coastal areas. Native plants also provide important feeding, nesting, and resting habitat for many birds and animals and can add variety to a garden, creating a compatible extension of the natural ecosystem.

A wooden path and informational brochures and signage help guide visitors through the garden. White rose mallows, blue mistflowers, red chokeberry, and many other plants bloom throughout the growing season. Natural coastal Delaware ecosystems such as a meadow, woodland, a freshwater wetland and a dune system are modeled throughout the garden, as well.

Additional support for this project comes from the Delaware Department of Natural Resources and Environmental Control, the U.S. Fish and Wildlife Service, Sussex County Master Gardeners, and Cape Henlopen High School.
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