

Drones monitoring algal blooms capture high-quality, low-cost data to protect drinking water, swimmer safety

By Christine Billau

Low-flying eyes in the sky are improving the accuracy of water quality assessments in the Great Lakes and the rivers that flow into them.

A new study at The University of Toledo finds drones armed with sensors are useful tools in the fight against harmful algal blooms, particularly for monitoring key spots within Lake Erie, such as near drinking water inlets and off the shore of public beaches.

Researchers compared data gathered by the drones with satellite data and boat-based water sampling at 10 locations over Lake Erie and the Maumee River.

“We get the same results on both drones compared to more expensive and time-consuming measurements — including

some made by probes put directly into the water,” said Dr. Richard Becker, associate professor in the UToledo Department of Environmental Sciences.

The technology places a new weapon in the arsenal of water treatment plant managers protecting the drinking water supply and public health officials monitoring beaches.

Filling the short-range surveillance gap left by more expensive remote-sensing methods such as satellites and aircraft, the unmanned aerial systems offer increased algae awareness due to their ability to hover below cloud cover and to be deployed on short notice.

“Detecting the threat of toxic algae as early as possible is critical, but it can



Photo by Daniel Miller

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EYE IN THE SKY: Dr. Richard Becker launched a drone to assess water quality on Lake Erie.

See you at Art on the Mall July 28

By Chase M. Foland

Art on the Mall will return to The University of Toledo’s Centennial Mall Sunday, July 28, from 10 a.m. to 5 p.m.

This summer marks the free, public event’s 27th year of showcasing a variety of art on Main Campus. Attendees will have the opportunity to view and purchase all kinds of art, including acrylic, glass, pen and ink, oil, mixed media, metals, photography, ceramics, textiles, watercolor, woodwork, jewelry and more.

“This year we have invited more artists to participate in the show than we have in the past,” said Ansley Abrams-Frederick, director of alumni programming in the UToledo Office of Alumni and Annual Engagement.

A total of 115 artists are expected to bring their creations to Art on the Mall.

“People can expect a lovely setting, a very comfortable, walkable show that has amazingly talented artists displaying

beautiful works of art,” Abrams-Frederick said.

All pieces of art are for sale. Guests can pay cash or with a credit card at the artist’s booth or in the Thompson Student Union.

During the event, there will be food, music, kids’ activities, free parking and golf cart shuttle service from the lots.

In addition, Art on the Mall offers a young artist area for children to try their hands at creating their own masterpieces, a music tent featuring jazz throughout the day, a beer garden, and a food court.

More than 13,000 people attended last year’s show.

“I think the community really supports this event,” Abrams-Frederick said. “The event attendees know that this is a one-day show, so they buy, knowing that it might not be there after they walk away.”

Art on the Mall is supported by community sponsors 13abc, The Blade, Mail It and 101.5 The River.



The 27th Annual University of Toledo Alumni Association Outdoor Juried Art Fair

ART ON THE MALL

“The artists love the show because of our supportive and receptive community,” Abrams-Frederick added. “They love our volunteers and know that the people attending the show really appreciate their work. It’s a great show with wonderfully

talented artists in a beautiful setting. What more could you ask for?”

For more information, contact Abrams-Fredericks at 419.530.4316 or ansley.abrams@utoledo.edu

From the Heart Celebrity Waiter Event and Raffle

The ninth annual From the Heart Celebrity Waiter Event and Raffle will take place Monday, Aug. 19, at Loma Linda Restaurant, 10400 Airport Highway in Swanton.

The event supports the Mundt Cardiology Endowment Fund at The University of Toledo Medical Center. This fund, established in 2008 by the Mundt family, provides support for innovative programs in advanced cardiac care at the hospital.

Raffle tickets will be sold in advance of the event in UTMC's Four Seasons Bistro from 11 a.m. to 2 p.m. and 4:30 to 6:30 p.m. on:

- Tuesday, July 23;
- Wednesday, July 31;
- Thursday, Aug. 8; and
- Friday, Aug. 16.

Prizes will be drawn Monday, Aug. 19, and include:

- Use of the UToledo Department of Medicine suite (up to 20 guests) at a Rockets' basketball game, a \$1,200 value.
- A \$300 Loma Linda Restaurant gift card.
- Three \$100 Ventura's Mexican Restaurant gift cards.
- Two tickets to a Rockets' football game in the UTMC suite, a \$300 value.

Contact jennifer.schaefer@utoledo.edu for more information about the From the Heart event.

Drones

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be foggy for satellites looking through different layers of the atmosphere," Becker said. "These drones are focused and have the ability to assess the condition at the shoreline, which people care about for swimming."

Determined to safeguard the community's health, Becker built and tested an algae monitoring drone in summer 2017, costing roughly \$2,000. The drone took off from either the UToledo research vessel or the shoreline and flew at an altitude of between 5 and 10 meters above the water's surface.

"Since drones are inexpensive, quick to launch, and can fly under cloudy skies, they have a lot of advantages that make up for the practical limitations of satellite, aircraft or boat-based observations," Dr. Thomas Bridgeman, director of the UToledo Lake Erie Center and professor of ecology, said.

The study published in the *Journal of Great Lakes Research* shows Becker's team in collaboration with Michigan Tech Research Institute successfully demonstrated the utility of drones outfitted with hyperspectral spectroradiometers to measure water-quality parameters that include chlorophyll, suspended minerals, cyanobacteria index and surface scums.

The sensor is used to produce a cyanobacterial index, which is a measure of algal bloom intensity.

"Dr. Becker and his colleagues show that sophisticated optical measurements of harmful algal blooms collected by drone-based sensors are just as good as similar measurements made from a boat," Bridgeman said.

Bridgeman's research team aboard the UToledo Lake Erie Center's research vessel collects water samples and tracks harmful algal blooms once a week every summer throughout algal bloom season to help sound the early warning for water treatment plant operators.

"This new research means that harmful algal blooms impacting a swimming beach, a reservoir used for drinking water, or the Maumee River could be scanned by someone standing on the shoreline piloting a drone," Bridgeman said.

Making measurements with a higher spatial resolution, the drones bridge a gap and complement the measurements of satellites, Becker said, but they're not the stand-alone solution.

"A drone is not always the right tool for the job. A satellite or airplane is a better choice when talking about wide swaths of Lake Erie, instead of a targeted area," Becker said.

The research was supported by NASA's Glenn Research Center and the National Science Foundation.

From the Heart  *9th Annual Celebrity Waiter Event*
In Loving Memory of Alfred Mundt

Benefitting the Mundt Cardiology Endowment Fund at The University of Toledo Medical Center
 August 19, 2019



Making waves

"Blue Wave" by Mike Sohikian is one of 10 new works installed for The University of Toledo's 14th annual Outdoor Sculpture Exhibition. It rolls between UToledo Medical Center and Mulford Library.

Photo by Daniel Miller

UToledo names new baseball coach

By Paul Helgren

Rob Reinstetle has been named the head baseball coach at The University of Toledo.

A Columbus, Ohio, native, Reinstetle is the 12th coach in program history and comes to Toledo following a four-year stint as an assistant coach at Western Kentucky University.

"We're very excited to have Rob Reinstetle take over as the leader of our baseball program," Vice President and Athletic Director Mike O'Brien said. "Rob has played a key role in the success of each program he's been a part of through both his coaching and recruiting. Rob is a detail-oriented individual, and I am confident he will take our program in a new direction and be an outstanding mentor for our student-athletes."

Prior to arriving at WKU, Reinstetle served on coaching staffs at Ole Miss (2007 to 2009), South Alabama (2006), College of Charleston (2004 to 2005), Northwest Florida State College (2003), Cincinnati (2002) and Ohio Dominican (2000 to 2001). Before beginning his coaching career at ODU in 2001, Reinstetle served as an associate professional scout for the Los Angeles Dodgers.

"It has always been a dream of mine to be a head coach at the D-1 level," said Reinstetle, who has coached 24 All-Americans as an assistant coach. "I am incredibly honored that Mike O'Brien and [Deputy Athletic Director]

Dave Nottke are giving me this opportunity. I was impressed by the administrative support our program will receive, and I'm confident Toledo is a place where we can win championships. We want to be excellent in everything we do on the field and in the classroom."

Reinstetle said he is eager to get started and return to the Buckeye State after spending the last four years with the Hilltoppers.

"Having grown up in Ohio, I am familiar with the Mid-American Conference and know what it takes to be successful," Reinstetle said. "My goal is to put some passion and energy into the program by recruiting at a high level and creating a culture where winning is expected. We want to build a program that gives the players a first-class student-athlete experience. I'm really excited to get started."

In 12 seasons as a college assistant, Reinstetle was part of programs that compiled records of 449-313-1, won four conference championships, advanced to six NCAA Regionals, as well as a pair of Super Regionals. Seventy-nine players coached by Reinstetle have been selected in the Major League Baseball Draft, highlighted by major leaguers Zack Cozart, David Freese, Brett Gardner, Lance Lynn and Drew Pomeranz.

This past season, Reinstetle helped mentor Jake Sanford, who earned All-America honors after becoming Conference USA's first regular-season Triple Crown winner (.402



average, 22 HR, 65 RBI) and a third-round draft pick by the New York Yankees in this year's MLB draft.

From 2007 to 2009, Reinstetle served as the recruiting coordinator at Ole Miss, where he helped sign four top 20 recruiting classes and aided the Rebels in two Super Regional appearances. In his last season, Ole Miss fell one game shy of the College World Series and had five everyday starters finish the season with a batting average of .335 or higher.

He left Ole Miss following the 2009 season to work in the private sector for his family-owned business in Powell, Ohio. During this time, he also provided personal baseball instruction for 6- to 18-year-olds.

Reinstetle also helped attract a top 50 recruiting class as the recruiting coordinator at South Alabama in 2006. The Jaguars set single-season school records in hits (707) and batting average (.326), in addition to posting a 39-21 record and making an NCAA Regional appearance.

A 1999 graduate of Ohio Dominican University, Reinstetle and his wife, Christy, are the parents of one son, Cale (9). He also has two stepdaughters, Brittany (24) and McKenzie (18).

Rockets one of 40 programs in nation to post 3.0 GPA or higher in 2018-19

By Steve Easton

The Toledo men's basketball team has received the National Association of Basketball Coaches Team Academic Excellence Award.

The award is in its seventh year of existence, and the Rockets have received the honor in four of the last six years.

Toledo was one of two Mid-American Conference schools to be honored this year and is one of 14 schools to achieve this accomplishment at least four times in the last six years.

The Team Academic Excellence Award recognizes NCAA and NAIA men's basketball teams that earned a cumulative grade-point average of 3.0 or better throughout the 2018-19 academic year. Forty of the 159 teams to make the list were NCAA Division I-affiliated programs.

The Rockets posted a 3.136 GPA throughout the last two semesters with Luke

Knapke and Spencer Littleton earning spots on the MAC's Academic All-MAC team.

Other NCAA Division I schools posting a 3.0 GPA in the 2018-19 academic year were Bradley, Brigham Young University, Bucknell, Butler, California Baptist, Creighton, DePaul, East Carolina, Florida Gulf Coast University, Gonzaga, Harvard, High Point, Holy Cross, Houston Baptist, Idaho State, Indiana University-Purdue University Indianapolis, Liberty, Louisville, Marist, Nebraska-Omaha, New Mexico State, North Dakota State, Northern Kentucky, Northwestern, Notre Dame, Ohio State, Oral Roberts, Quinnipiac, Seattle, Seton Hall, Stanford, University of South Carolina Upstate, Utah Valley, Villanova, Wake Forest, Western Carolina, Western Michigan, Wright State and Yale.



Choral students, faculty sing in Scotland

By Angela Riddel

Five University of Toledo choir students and several UToledo faculty traveled through Scotland in June as part of a tour with Perform International.

The tour, led by Dr. Brad Pierson, UToledo assistant professor of music and director of choral activities, included time in Inverness, Edinburgh and Glasgow, along with an afternoon in Ayr and Alloway.

The students performed as a part of the American Burns Choir, an ad hoc choir of amateur singers from all around the United States. The choir performed music with lyrics by the Scottish poet Robert Burns, as well as a collection of traditional drinking songs.

Performances were held at the Robert Burns Museum in Alloway, and the Blair Athol and Glen Ord whisky distilleries, plus the Scotia Bar in Glasgow, and the Dalriada Bar on the beach in Edinburgh.

The performances at the two pubs were part of trad nights — or evenings of traditional music — and the choir was joined by local musicians in their performance of Scottish music.

UToledo choral students on the tour were Sterling Wisniewski, a music education major; Caris Croy, who is majoring in theatre and music; Cheyenne Kastura, a media communications major; Karina Gibson, a paralegal studies student; and Madeline Repka, a psychology major. Amanda Rasey, artistic director for the UToledo Children’s Choir, also went.

In addition, three UToledo faculty members from the Department of Pharmacy Practice joined the tour as a part of the choir: Dr. Michelle Seegert, associate professor; Dr. Megan Kaun, associate professor; and Dr. Sarah Petite, assistant professor.



MELODY SWEETLY SANG IN JUNE: UToledo students posed for a photo during a trip to Scotland last month with Perform International. Making the journey were, from left, Caris Croy, Madeline Repka, Cheyenne Kastura, Sterling Wisniewski and Karina Gibson, who are shown with Dr. Brad Pierson, right, who led the tour.

Yes, deer



Photo by James A. Molnar

James A. Molnar, web and digital media specialist in the College of Medicine and Life Sciences, spotted three fawns outside Mulford Library, and Kelsi Rooks, a graduate student in the Counselor Education Program, took a photo of a deer by Ottawa River on Main Campus.



Photo by Kelsi Rooks

Sew cool: Alumna creates funky cats for Art on the Mall

By Vicki L. Kroll

Carrie Hawkins will bring more than 500 fun, fuzzy felines to her booth for Art on the Mall.

Dubbed Ragamuffins, the recycled kitty dolls come in three sizes and sport tags that say “saving ugly sweaters from landfills since 2018.”

“I make all the cats from recycled sweaters. I go to rummage sales and thrift stores, so it’s kind of neat: It helps charity, and then I turn around and make it into something else,” she said. “I use everything — the collars and the cuffs of the sweaters will become the collars of the cats. I use mismatched earrings for charms.

“Any way I can reduce waste — that’s my big thing: I love to recycle.”

She sews the cute creatures in her home studio in Temperance, Mich. Jars of antique buttons line a shelf above bolts of fabrics. Two sewing machines and a box of jewelry and trinkets sit atop a table. Bins of ribbon and fabric scraps are stacked in the corner. And, oh yes, there is a Siamese cat: Ellie is sleeping on a chair.

“Ellie likes to get up on my lap and help me,” Hawkins said and laughed. “Sometimes I sew and she’s hitting the bobbin on the machine constantly like it’s a toy.”

Two other muses roam about the house — Saki, a black cat, and Lilith, a tiger tabby.

The 2001 UToledo alumna found her creative groove by fusing her passion for the past with her fondness for felines.

“I wanted my art to represent me and what I stand for,” Hawkins said. “So I designed the pattern for the cats and decided to make them as earth-friendly as possible and recycle.

“Creating is just something I have to do,” she added.

That love of art began early. The Toledo native recalled having her own art studio at age 6.

“I took a toy box in the closet and that was my art table. And I made little refrigerator pictures, but I didn’t give them to my mom, I sold them to her,” Hawkins said. “I had a little portfolio, and pictures were a nickel if they were a little more detailed. There were a couple penny ones if she just needed something quick to throw on the fridge.”

Since receiving a bachelor of arts degree in graphic design and painting, and taking graduate courses in art education at UToledo, she has been selling her award-winning creations for more than 20 years. Hawkins and her company, Scaredy Cat Primitives, have been featured in *Prims* and *Your Cat* magazines.

“Once my family moved to Temperance, my parents and I would go to a lot of antique shows and estate sales, and I was always fascinated with rescuing all the things. You’d go to estate sales and it’d be kind of sad because you’d see photos and letters that got left behind that nobody wanted,” she said.

That desire to save is strong.

“We moved to a rural dead-end street, which was a dumping ground for unwanted cats. I was very well-known for bringing home strays,” Hawkins said. “At one time, I had eight rescues. I learned how very different their personalities were and the little quirks they had that made them different.”



CAT’S MEOW: Carrie Hawkins showed off a large Ragamuffin she made from a mohair sweater, above, and sewed eyes on an owl doll.

She repurposes found objects, bits and pieces to give her Ragamuffins distinct personalities.

“I love how something can tell a story by its wrinkles, dents, chips and stains. That inspires my art. I love paying tribute to the past by recycling. People give me all kinds of things for my work. I’ll make use of it instead of throwing it away. If I didn’t have an outlet for it, I’d end up being a hoarder,” she joked.

Some owls will fly in with Hawkins and her cats for Art on the Mall Sunday, July 28, from 10 a.m. to 5 p.m. at the University.

“I make owls out of tweed and wool skirts and blazers,” the deconstructionist artist said. “Some I make out of a linen fabric and put a little bit of coffee dye on them. I dye them really lightly, let them dry, and then I do embroidery.”

Coming to Centennial Mall on Main Campus for the juried art show is a highlight of summer.

“This is probably my seventh year at Art on the Mall. I love it,” Hawkins said. “The atmosphere is nice, and it’s a great, laid-back crowd.”

When she’s not in her studio with her cats, Hawkins is a member service associate at the Francis Family YMCA in Temperance, where she also teaches art classes.

“I love creating unique things. I hope people appreciate these are one-of-a-kind pieces of art, something they can’t find at a big-box store,” she said. “Like the tag on the back says, these [cats and owls] are handmade with love.”



Photos by Daniel Miller

Art Department alumna designs mural for inner-city beautification project

By Angela Riddel

Artist Caroline Jardine, who earned a bachelor of fine arts degree from The University of Toledo in 2017, recently designed and completed a mural project intended to beautify abandoned homes on North Huron Street in the historic Vistula district, the Glass City's first neighborhood.

The houses have good bones and may yet be rehabilitated. The project is intended to protect the homes from vandalism in hopes a buyer may one day remodel them.

Jardine's mural consists of panels that cover the windows and doors of the structures. Each panel has a unique design that connects in color scheme and concept to the other panels.

The project was initiated by Reginald Temple, director and vice president of community development for First Federal Bank of the Midwest. Temple, a UToledo College of Arts and Letters alumnus who received a bachelor's degree in communication in 2003, often partners with the Lucas County Land Bank on various projects.

Temple said this mural is similar to other board-up projects the Lucas County Land Bank and the Arts Commission have done, like the one for the former residence of Art Tatum, Toledo's legendary jazz pianist.

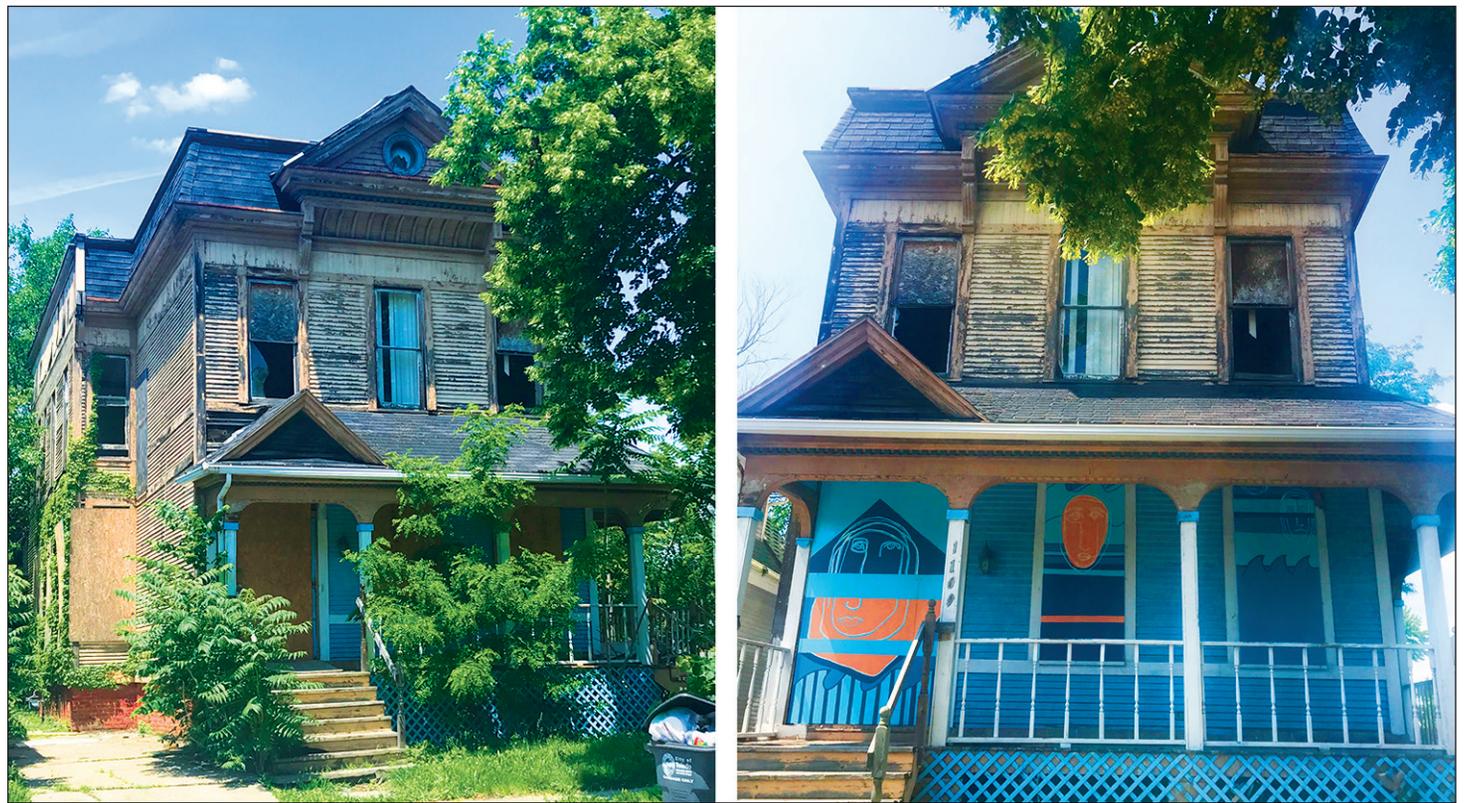
The Huron Street project was organized through the collaborative efforts of First Federal Bank of the Midwest, the Lucas County Land Bank and the Arts Commission of Greater Toledo. First Federal Bank provided volunteers, plus lunches and restrooms for the volunteers. The Lucas County Land Bank provided the properties, and the Arts Commission commissioned an artist and provided the paint and boards.

Ryan Bunch, communications and outreach coordinator for the Arts Commission, asked Jardine to design 16 murals for the North Huron Street properties.

"I designed the panels so that they would function as individual pieces and as a whole," Jardine said. "Lindsay Akens [creative place-making facilitator with the Arts Commission of Greater Toledo] and Ryan Bunch showed the Vistula community members the designs and received their approval to move forward with the project."

Jardine added that her design was inspired by her own work and the houses themselves.

"I chose to include abstracted, minimalist figures that look out to the



BRUSH UP: These photos show the house at 1109 N. Huron St. in Toledo before and after the mural project.

viewer," she said. "The vacant houses are given character and life through these figures. The house at 1109 N. Huron was partially blue to begin with, so I brought in blue as one of the colors in this mural."

Temple arranged for nearly 60 volunteers from his company to carry out the painting.

Jardine said she was impressed with the volunteers because they did so much more than paint: "The houses that the murals were installed on needed a lot of work. Volunteers cleared brush, mowed the lawns, picked up trash, pulled weeds, and cleaned the porches."

Volunteers did some brushwork, too. Some of the large panels were four feet by eight feet.

"Once we finished priming each of the 16 panels, I outlined the designs and color-coded them so that the volunteers could begin painting them," Jardine said. "We had two to three days of painting, one and a half days of touch-ups and detail work, and one and a half days of installation. Finally, we clear-coated the panels and installed them on the first floors of the houses."

Three young girls from the neighborhood came by daily and watched as the project unfolded. Lindsay Akens and Liam Johnson of the Arts Commission suggested the scope of the project be increased so the girls could participate.



Jardine

Photo by James Dickerson

Jardine designed several additional panels to cover the basement windows for the girls to paint. Temple noted that the girls were thrilled to be included. "The excitement on their faces was phenomenal," he said.

The houses are adjacent to each other at 1105 N. Huron and 1109 N. Huron St.

In the classroom



Dr. Kevin Czajkowski, professor of geography and planning, led a professional development course on the Maumee River watershed for teachers in Defiance and Williams counties. He teamed up with Dr. Amanda Gilbert, assistant professor of education at Defiance College, to help teachers develop long-term, classroom-integrated watershed educational experiences for their students. Local students then will take observations of their watershed, develop research questions, conduct investigations, and present their results at the SATELLITES Conference at The University of Toledo next May. Czajkowski is director of the SATELLITES program, which stands for Students and Teachers Exploring Local Landscapes to Interpret the Earth from Space. The class was funded by the National Oceanic and Atmospheric Administration through the Great Lakes B-Wet Program.

Hanging around



Photo by Vicki Kroll

Catherine Radon, left, and Elizabeth Osborn rode their bikes to campus and were visiting last week in front of Libbey Hall. Both graduated in May. Radon received a bachelor of science degree in nursing and will start working in August at St. Luke's Hospital in Maumee. Osborn received a bachelor of arts degree in economics and will leave in September to work one year with the Teaching Assistant Program in France.

In memoriam

Kymberly A. Bauder-Callis, Toledo, who was a nurse at MCO/MUO in 2004 and 2005, died July 6 at age 57.

Phillip L. Marquart, Sandusky, Ohio, who was an adjunct instructor who taught business classes at the University, died June 19 at age 84.

Robert W. Preston, Oak Harbor, Ohio, who was a volunteer with the Satellites Auxiliary, died July 8 at age 81.

UTNEWS

UT News is published for faculty, staff and students by the University Marketing and Communications Office weekly during the academic year and periodically during the summer. Copies are mailed to employees and placed in newsstands on Main, Health Science, Scott Park and Toledo Museum of Art campuses. UT News strives to present accurate, fair and timely communication of interest to employees. Story ideas and comments from the UToledo community are welcome. Send information by campus mail to #190, University Marketing and Communications Office, Vicki Kroll. Email: vicki.kroll@utoledo.edu. Fax: 419.530.4618. Phone: 419.530.2248. Mailing address: University Marketing and Communications Office, Mail Stop 190, The University of Toledo, Toledo, OH 43606-3390.

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