



The WaterPort team (clockwise from left): Victoria Di Napoli '12, Professor Ken Walsleben '83, Chris Grant '12, William Craine '12, and Hunt Lau '12.

SOCIAL ENTREPRENEURSHIP »

HARVESTING THE RAINS FOR A PARCHED WORLD

THE AMOUNT OF MOISTURE ON EARTH IS FINITE. THE WATER THE DINOSAURS drank eons ago is the water that falls as rain today. But its supply can no longer satisfy the needs of our planet's population. It was this humanitarian concern that inspired a team of students in the Whitman School of Management—Chris Grant, William Craine, Victoria Di Napoli, and Hunt Lau, members of the Class of 2012—to create an innovative technology for harvesting potable water from rain.

The origins of their achievement lie in Whitman's capstone course, Strategic and Entrepreneurial Management. In the course last September, Professor Ken Walsleben '83 challenged students to develop an original idea for a product, along with a business plan for a new venture. By December, the team had formed a company, WaterPort LLC, developed a product, the RainPort, and presented a plan that won instant recognition. "Their success reflects teamwork that can only be described as magic," Walsleben says. "Each of them brings a distinctive and vital skill set to the venture, yet they speak the same language and share the big picture."

In January, WaterPort was offered free office space and professional support services—financial, legal, accounting, and more—by the Tech Garden, a start-up incubator and accelerator for companies in Central New York. At the same time, the Syracuse Center of Excellence in Environmental and Energy Systems provided the space and expertise essential for developing the product prototype. Grant, now the company's chief executive officer, says, "If the RainPort is to become the unique, earth-shaking product we envision, it has to be totally self-contained—independent of any external infrastructure or energy source." In its present form, the RainPort meets this overriding criterion. Powered by a solar panel, it can turn every inch of rain collected in its 200-square-foot catchment area into 120 gallons of purified water—enough to satisfy the needs of a small village. "Essentially, we are there!" Grant says.

Besides organizing their company and refining the product, WaterPort's partners have been engaged in the trying but critical ritual of business plan competitions. So far, they have won national recognition and more than \$20,000 in targeted awards. With entrepreneurship professors Alex McKelvie and John Torrens G'93 as mentors, they've become polished presenters. "The competitions are a rigorous testing ground," McKelvie says. "Each event leads to further refinements in the plan and product. Each gives the team stronger presentation skills and confidence." Much will depend on the outcome of upcoming competitions, some of which carry cash awards of six figures. "Prize monies will help determine how fast the company can launch and progress," Torrens says. "The major challenge right now is raising capital without having to give up any equity in the company."

WaterPort is driven by a five-year vision with the initial goal of setting up shop in Africa, where "there is perhaps the greatest need for pure water," Grant explains. "One person needs five gallons to survive for 30 days in 90-degree heat. One RainPort could provide drinking water for 70 people for the entire year." As the first step in their entry strategy, the partners have identified five non-governmental organizations in Africa that are willing to serve as beta test sites. They have also developed a partnership with Maguigane Consulting Firm and its founder, Jose Cossa, in Maputo, Mozambique. "Our partnership will give us broad access to markets, as well as growth and funding opportunities, across the continent," Grant says.

Looking back, Walsleben can only marvel. "It's a thrill to see students master critical academic concepts, develop a plan for a product that can truly change the world, and then execute on that vision," he says. "They've changed their own lives for the better, and they'll likely change the lives of thousands of others."
—Tom Raynor



ORANGE WOMEN'S LACROSSE » A SEASON TO REMEMBER

The women's lacrosse team celebrates its double-overtime win against Florida in the NCAA semifinals.

THE SYRACUSE UNIVERSITY WOMEN'S LACROSSE team proved this season that heart and determination can lead to big rewards. For the first time in the program's history, the Orange women advanced to the title game of the NCAA tournament. In the championship showdown on May 27 in Stony Brook, New York, SU dropped an 8-6 decision to defending champion and No. 2 seed Northwestern. "I'm proud of my team," head coach Gary Gait '90 said in the post-game press conference. "They never gave up. They played all the way through. We learned a lot—the first time in the championship game."

For Gait, who completed his fifth season as head coach, it was the third time his Orange had reached the Final Four—and there was no lack of excitement in getting there. In an NCAA quarterfinal matchup against fifth-seed North Carolina in the Carrier Dome, the fourth-ranked Orange rallied from a two-goal deficit with three minutes left to post a 17-16 victory over the Tar Heels. All-American Michelle Tumolo '13 netted the game-winning shot with five seconds left.

Squaring off against top-ranked Florida in the NCAA semifinals at Stony Brook, Syracuse once again put on a heart-stopping display. The Orange women trailed by seven goals with 17:15 left in regulation, but rallied back to claim a 14-13 win in double overtime against the Gators. Sarah Holden '12 hit an unassisted shot 58 seconds into

sudden death. It was the second largest comeback in the tournament's history and moved the Orange into the final. "With a little bit of luck, drive, and heart, we were able to come out on top," Gait said. "This kind of heart never gives up."

The Orange women completed the season with a 19-4 mark, the most wins and best record in school history. They won the Big East regular season title and reeled off 15 straight wins before losing to Loyola (Maryland), 13-7, in the Big East tournament final.

Tumolo, a Tewaaron Trophy finalist and Big East Attack Player of the Year, was joined on the Women's Lacrosse Coaches Association All-America First Team by teammates Becca Block '13 and Alyssa Murray '14, while Katie Webster '14 received third-team honors. Murray also led the nation in scoring, collecting a career-high 105 points on 74 goals and 31 assists. Tumolo scored a career-high 95 points to finish sixth in the nation and was ranked 10th in assists (43). Goalkeeper Alyssa Costantino '14 completed her season ranked in the top 10 in two categories: sixth in goals-against average (8.37) and seventh in save percentage (.492).

Gait, the Hall of Fame player who led the Orange men to three national titles, will look to reload next season with the core of the squad returning—no doubt ready and determined to make another title run.

—Jay Cox



SPINNING ART

WHEN YOU DOWNLOAD DIGITAL MUSIC THESE days, the idea of music on a disc—let alone accompanying album covers and artwork—seems to be going ever more remote. That's quite a contrast from the World War II-era vision of a Detroit businessman named Tom Saffady, who launched Vogue records with the goal of blending high-quality sound, physical durability, and intriguing artwork on a series of 78 rpm records. From May 1946 to April 1947, Saffady's Sav-Way Industries manufactured a series of 74 picture records, which featured original illustrations for each song, before going belly-up that August.

While picture records were not a new concept then, Saffady's process for creating them was. His innovative method sandwiched an aluminum core between two paper pictures and coated it with vinyl. The records were sold for \$1.05 in clear packaging, allowing customers to view the art. At the time, album cover art was just creeping into existence, and vinyl—an alternative to shellac—was still a few years away from its surge in popularity with the 33 rpm LP. "Hear your favorite artists at their finest with some of the most sensational improvements ever made in the history of phonograph records!" proclaimed a Sears Roebuck catalog ad that also touted the albums as "Unbreakable...Warp-Proof...Less Surface Noise...Longer Life... Illustrated."

According to Jenny Doctor, director of the SU Library's Belfer Audio Archive, Saffady was fascinated by automation. "He invented this way of pressing them that was supposed to stamp out records a lot faster, but in the end it never worked," she says. "He tried to do too many new things at once."

Last year, Belfer received a gift of 52 Vogue picture

records from the late Lila Savada, the widow of Manhattan record shop proprietor Morton J. Savada, whose estate had previously donated more than 200,000 78 rpm recordings to the Belfer archive. Doctor finds herself captivated by the Vogue art and its role in marketing the product. "I'm interested in the idea that somebody felt you needed to have a visual to engage people in the audio," she says. "We're used to that now, but in the 1940s, the golden age of film before television, the visual was already starting to be predominant. I think that's signaled by the Vogue picture disc conception." Saffady had a stable of illustrators whose signed color pictures ran the gamut from edgy pulp and schlocky romance to cartoony. As for the music, there was big band (Art Mooney), jazz (Charlie Shavers), country (Patsy Montana), children's, and even instructional rhumba lessons. "He didn't get the big artists of the day," Doctor says. "His artists didn't have big hits until later. If he'd had a hit, it might have carried them financially through the hard times."

One mystery that swirled among record collectors was whether future rock 'n' roll star Bill Haley brandished his guitar for the Down Homers on a couple of their Vogue recordings. The country group's leader, Kenny Roberts, who was known as "The King of the Yodelers," acknowledged Haley played with the band, but not on the Vogue discs. Roberts also reported that his first recorded yodeling was on the group's Vogue single "Out Where the West Wind Blows." Today, like Roberts, Vogue is gone, but not forgotten. As Belfer archivist Patrick Midtlyng, who accessioned SU's collection, notes, "The Vogue picture record is a unique slice in the history of the record business." —Jay Cox



OUTDOOR EDUCATION » ON THE TRAIL OF ADVENTURE

ILYSE SHAPIRO '14 WON'T SOON FORGET rappelling down a 200-foot waterfall in Costa Rica. She'd been rappelling before, but the experience was nothing like this one on a cold, rainy spring day in 2011, when she took a step back off the cliff and let the adventure begin. "The first step is always the worst," she says. "But once you start down, you think, 'This is the coolest thing I've ever done.' It was the most amazing feeling getting to the bottom, looking up, and watching other people come down."

The activity was just one of the highlights of a nine-day Outward Bound experience arranged in collaboration with SU Recreation Services Outdoor Education Program (OEP). The group also took surfing lessons, went whitewater rafting, zip-lined in a rain forest, and hiked around a volcano. "Students really bond through sharing these amazing activities," says Scott Catucci, who directs OEP. "It becomes a huge learning experience and we help them identify ways to reflect on it, so they see it not just as an activity, but as a metaphor for learning and how to carry that experience back to their lives."

Nearly 1,500 students participate annually in OEP offerings, which are supported in part by the student co-curricular fee. There's whitewater rafting on the Black River in Northern New York, bobsled and skeleton runs in Lake Placid, dogsledding and snowshoeing in Algonquin Provincial Park in Ontario, and a Grand Canyon backpacking and Colorado River rafting expedition. Locally, students go on hikes in nearby parks, and snowboard and ski. Nir Swenson '13 loves adventure and got a good dose of it on the six-day Outward Bound dogsled trip in January. Amid bone-chilling temperatures and no communications with the outside world, the students took turns dogsledding and snowshoeing in the Ontario wilderness and shared chores, feeding the dogs, setting up camp, gathering firewood, and cooking. "The dogs were great," Swenson says. "Some of them were so small, you wouldn't suspect they were sled dogs, but they could pull you. They haul."

For Catucci, such experiences are designed to offer more than adventure. The students share responsibilities, learn teamwork, reflect on their experiences, build trust with one another, and often establish friendships. Catucci introduces incoming first-year students to OEP through the Leadership Outdoor Orientation Program (LOOP), a pre-orientation initiative in August that includes whitewater rafting, a ropes challenge course, and other team-building activities in the



Katie Bero '13 rappels down a waterfall in Costa Rica—one of many adventures students can experience through SU's Outdoor Education Program.

Adirondacks. "I loved it," says Shapiro, who participated in LOOP and now serves as a leader for the program. "I came to school not knowing anyone and I was terrified, but once I did the program I had 40 friends and felt comfortable."

Catucci hopes to further enhance student team-building activities with the addition of an outdoor ropes challenge course on South Campus anticipated to be open during the spring 2013 semester. It will complement an indoor ropes course that was installed in Flanagan Gym last August. Swenson, a ropes course instructor, says the ropes can be intimidating, but team support and encouragement often help people master the challenge. "You have to take that leap of faith," he says. Catucci believes the challenges of outdoor recreation pursuits create memorable learning opportunities and instill confidence. "If you think you can't overcome an obstacle and then accomplish it through perseverance, wow, you can apply that to anything," he says. "Instead of thinking you can't do it, you think you can—and you give it a try." —Jay Cox



“We want our passion for Syracuse University to be seen and felt long after we’re gone.”



Throughout her career in public education, **PATRICIA MAUTINO '64, G'66** witnessed raw, young talent and identified personally with students who needed financial aid to help them pursue their educational goals. Her husband, **LOUIS MAUTINO '61, G'62**, attended SU on an athletic scholarship and went on to be a business owner in the building industry. Together, they are committed to helping young people prepare for successful lives and feel privileged to share their “Forever Orange” spirit with future generations.

As an active member of the Syracuse University Alumni Association and the iSchool Board of Visitors, and a longtime supporter of SU Athletics, “Pat” Mautino already has a strong presence on campus. And with the four scholarships the Mautinos have endowed through their bequest, their love for SU will become an everlasting legacy.

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SCIENCE HORIZONS

Science Horizons students use nets to collect samples of aquatic life in Onondaga Lake.

INSPIRING YOUNG PEOPLE TO EXPLORE SCIENTIFIC WORLD

WHAT DOES THE NUMBER OF FISH IN ONONDAGA LAKE TELL us about the level of pollution? How does identifying types of macroinvertebrates found in the lake help evaluate the cleanup activities under way? These are some of the questions participants in the Bristol-Myers Squibb Science Horizons Program posed to experts during a boat cruise of the lake and field experiments.

The program, a partnership with University College, celebrated its 20th anniversary in June, offering local seventh- and eighth-graders an interactive look at the field of science. Since its inception, more than 800 students have participated in the week-long program held at SU.

Fully funded by Bristol-Myers Squibb, Science Horizons gives students an opportunity to learn from science and engineering faculty, medical personnel, and working scientists and technologists while taking part in hands-on activities and demonstrations both on and off campus. Students also visited the pathology and cardiology departments at Crouse Hospital, where they examined organs, learned about diseases, and studied the human heart.

Science Horizons began in 1993 to mark Bristol's 50th anniversary in Syracuse. Kim Buchanan, a science teacher in the Fabius-Pompey Central School District, has been with the program from the beginning. She believes it's important for students to interact with people passionate about science-related work. "When it comes to careers, science provides a wide range of opportunities that continues to change," she says. "Just looking at the evolution of Bristol-Myers over the last 20 years, changing from making penicillin to now using biologics, illustrates how science is constantly expanding." Whether it's saving lives, protecting our country, producing alternative energy, or improving the environment, Buchanan believes Science Horizons helps students understand how to use science to better our world.

A highlight of the program is a day-long visit to Bristol's Thompson Road facility. Students learn about the research and development processes at the pharmaceutical plant through a series of interactive sessions, and have lunch with the scientists and engineers. "At Bristol-Myers Squibb, we've dedicated our careers to leveraging science to discover, develop, and deliver innovative medicines to help patients prevail over serious diseases," says John R. Mosack, general manager of the Syracuse plant. "We support programs that encourage students to explore how science plays a critical role in bringing so much benefit to the world. To foster successful scientists and engineers of the future, we introduce young people to the excitement of scientific application in industry."

Matthew Noyes, a 2003 participant, attends the University of Rochester. He says his experience in Science Horizons—and meeting like-minded individuals—had a huge influence in building his passion for science. "The program covered many different fields, from ecology to rocketry, and presented active engagement I would not have had otherwise," he says. To enhance his undergraduate studies, Noyes landed a work-study opportunity at NASA's Johnson Space Center, where he worked on 3D visualization of rocket telemetry and several other projects. He also worked at NASA's Kennedy Space Center, helping with launch control system software for a new rocket project. "Science is an educational process, and education is life long," Noyes says. "Children are naturally curious, and if parents, teachers, and role models feed that curiosity with intellectual endeavors, they will stay with them forever."

Mosack enjoys knowing the program has such an impact. "It is our hope that this program is an inspiring and motivating experience on the students' journey to successful futures as scientists, engineers, or other science-oriented careers," he says.

—Eileen T. Jervis

BOOKS AND COOKS! »

COMMITMENT TO ACTION

Student volunteers offer local schoolchildren valuable lessons in literacy and good nutrition through an innovative program

TIM BIBA '11 WASN'T NERVOUS about appearing on national television until *Today Show* host Ann Curry told him he would be seen by millions of viewers. Biba had been invited to talk about Books and Cooks!, a program he and fellow interns at the Mary Ann Shaw Center for Public and Community Service created that provides tutoring and nutritional information to elementary school children to improve their literacy rates and instill healthy eating habits. "I was thrilled to have the opportunity to represent the Shaw Center and all of the good work it does in the community," Biba says. "It was fun once I got over my initial butterflies."

Books and Cooks! is the result of a collaboration among Shaw Center interns who in 2010 decided they wanted to attend the Clinton Global Initiative University (CGIU), which requires applicants to submit a Commitment to Action—a yearlong set of goals that can be measured and evaluated. On their own, literacy interns Biba, Allison Stuckless '11, and Greg Klotz '10 teamed up with nutrition intern Kate Callahan '10 to create a fun and informative after-school program that would address some of the literacy challenges and health issues facing inner-city children in the Syracuse community. "The center's staff first learned about the Books and Cooks! idea when the interns asked us to edit their draft proposal," says Pamela Kirwin Heintz '91, G'08, associate vice president and director of the Shaw Center. "Not only was their proposal accepted, it was selected as an 'Outstanding Commitment' to be featured at the conference."

The team had one year to turn its innovative idea into a hands-on after-school program consisting of lessons in reading, craft activities, and healthy meal preparation based on a variety of cultures. They researched third-grade curriculum requirements, developed lesson plans, learned how to make and keep a schedule, and recruited and trained tutors. They also learned how to budget financial support from the Wal-Mart Foundation and Shaw Center to cover transportation costs and purchase books, maps, craft materials, and cooking supplies for each lesson. "This was the first time I had to see something through from conceptualization to implementation," Biba says. "It was daunting because we knew a lot of people would be watching—we had to deliver."

When the original Books and Cooks! team graduated, another group of students was eager to step in and run the program. Literacy intern Victoria Seager '14 researches and develops lesson plans designed to teach the children about the geography, climate, currency, and customs of a different country



The Books and Cooks! team poses with Bill Clinton at the 2010 Clinton Global Initiative University. Pictured (from left) are Tim Biba '11, Greg Klotz '10, Clinton, Allison Stuckless '11, and Kate Callahan '10.

Nutrition majors Victoria Li '12 (facing page, center) and Shelby Keyes '12 give children in the Books and Cooks! program a lesson in French cooking by having them make crepes filled with their choice of fresh fruit and healthy toppings.



each week. She then creates a craft project related to the country's culture. "It's a lot of work, but it's awesome," says Seager, who purchases the supplies and spends several hours a week writing lesson plans. "When we studied Ireland, we made Blarney stones, for Puerto Rico we made maracas, and for Brazil, we made Carnival face masks."

Nutrition majors Marissa Donovan '13 and Victoria Li '12 plan the weekly cooking lessons, which expose students to the cuisines of various cultures and guide them toward healthy food choices. "When we studied Japan, we brought in some sushi for the kids to try, and then had them make their own with bread, humus, and vegetables," Donovan says.

"If you have kids do the cooking, they're much more likely to enjoy the foods."

For Li, the most rewarding part of the program is seeing the children's enthusiasm for learning. "It's a great feeling when the kids repeat facts they've learned from previous lessons and place them into current lessons," Li says. "When we made smoothies they remembered why milk is essential to our bodies and that shows me they're gaining basic nutrition knowledge that will lead to healthier lives."

This year, the team added exercise to the program because it seemed like a perfect match with literacy and nutrition. "Many children today aren't getting outside and moving, so we really wanted

to expand their knowledge and promote physical fitness," Donovan says. "Now we have literacy on Mondays, nutrition on Wednesdays, and exercise on Fridays."

When Seager and Donovan attended the 2012 CGIU (www.cgju.org/default.asp) this spring, they were excited to discover other schools and colleges were interested in replicating the Books and Cooks! program. "Our original goal was to create a model that could be replicated at other after-school sites in Syracuse," Heintz says. "Now our goal is to have Books and Cooks! expand beyond Syracuse to become a model for other schools and colleges nationwide."

—Christine Yackel

RESEARCH SNAPSHOT

A FOCUS ON RESEARCH AT SYRACUSE UNIVERSITY



ACOUSTIC BEHAVIOR

» **PROJECT:** ACOUSTIC BEHAVIOR OF NORTH ATLANTIC RIGHT WHALE (*Eubalaena glacialis*) MOTHER-CALF PAIRS

INVESTIGATOR:

Susan Parks

SPONSOR:

Office of Naval Research

DEPARTMENT:

Biology

AMOUNT AWARDED:

\$677,629 (January 1, 2012-September 30, 2015)

BACKGROUND:

There are currently several areas of concern relating to human interactions with marine mammals. The most critical risks may result in the injury or death of individual animals, for example, through collisions with vessels, entanglement in gear, and exposure to explosions and high-intensity sounds. Being able to detect the presence of an individual animal is critical to reduce the probability of encountering these high-risk events. The North Atlantic right whale is a highly endangered

species of baleen whale found off the East coast of the United States. These whales regularly traverse regions with high levels of human activity, and there is an urgent need to determine their presence in an area to prevent collisions or exposure to high-intensity sounds.

Two major methods of detection are currently employed: visual surveys from aerial- or vessel-based platforms, and passive acoustic monitoring to detect vocalizations from right whales in an area. Despite these efforts, reproduc-



Biology professor Susan Parks with pop-up buoys used to passively monitor marine mammals by recording their acoustic signals.



Susan Parks (facing page) prepares to attach an archival suction cup recording tag to a North Atlantic right whale in Cape Cod Bay. The tag records sounds the animal makes and hears, and also contains sensors that document its movements. Parks conducts her research off the coasts of Florida and Cape Cod in the winter and spring and in the Bay of Fundy, Canada, in the summer (top photo). A mother (above left) surfaces with her calf in Florida, while an adult female (above right) breaches above the surface.

tively active females and their young offspring seem to be at increased risk for collisions with vessels. This research will undertake an extensive study of the surface and acoustic behavior of right whale mother-calf pairs to assess what factors increase their vulnerability to collisions with vessels and determine how best to detect these individuals. The study will span the entire development of the calf, comparing the behavior of extremely young right whales shortly after birth through their growing periods of independence prior to weaning in the late

summer months. This study will address topics related to monitoring and mitigation of injury of right whales, acoustic propagation of baleen whale calls in multiple habitat areas, and basic scientific studies of the individual development of behavior in an endangered baleen whale.

IMPACT:

The data collected in this study will improve our understanding of the behavior of this highly endangered species, aiding in its protection and conservation.



Go to sumagazine.syr.edu to listen to a North Atlantic right whale do an "up call," a sound mothers make to reunite with their calves.

A whale flashes its fluke off the coast of Cape Cod. Photo by Dana Cusano, Parks Lab, SU biology department