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Study bets on no fun

A new study shows betting in office pools takes all the fun out of watching an event like the NCAA basketball tournament or a reality show such as "Survivor."

Professor Stephen Nowlis and Associate Professor Naomi Mandel of Arizona State University's W. P. Carey School of Business found conclusive evidence that office pools cause emotional uncertainty and discomfort, regardless of whether you win or lose. Their study is published in this month's *Journal of Consumer Research*.

"Intuitively, you would think you'd enjoy events like this more if you bet on them, but we found you enjoy them less," says Mandel, whose marketing research frequently focuses on consumer behavior and self-esteem.

She and Nowlis repeatedly found that making predictions – having something to win or lose – actually made the viewing experience unpleasant. Therefore, even though "prediction" Web sites and office pools are rampant, that doesn't mean they're good for you.

"Nobody likes to be wrong, so when they make predictions, they have this little sliver of doubt that causes mixed emotions," says Nowlis.

Office pool participants experience something called "anticipated regret," which may be worse than the experience of actually losing the pool.

ASU on the Web

Nearly two dozen ASU staff members will display and discuss their artwork at the second annual summer staff festival, The Devils' Workshop – Summer Showcase.

Everyone who attends the performances and demonstrations will be entered into a drawing to win prizes, including prints and photographs.

To see a complete list of scheduled events, go to the Web site www.asu.edu/artfest and check back for added events.

Some of the scheduled events include:

July 15 – Photography demonstration by Crys Gakopoulos, Piper Writers House.

July 16 – Dramatic reading by Tenisha Baca and Native American flute music by David Webb, Organ Hall.

July 17 – Photography demonstration by Richard Henne, Piper Writers House.

July 18 – Talk on Native American flutes by David Webb, Piper Writers House.

To suggest a Web site to be profiled in *ASU Insight*, send the site address to asuinsight@asu.edu.

Researchers find key to new vaccine delivery method

From foe to friend: Salmonella proves effective in administering vaccines

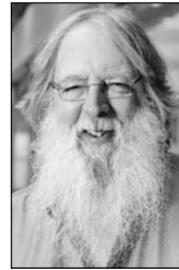
By Skip Derra

Researchers at the Biodesign Institute at Arizona State University have made a major step forward in their work to develop a biologically engineered organism that can effectively deliver an antigen in the body. The researchers report that they have been able to use live salmonella bacterium as the containment/delivery method for an antigen.

The work is a major step forward in development of a new means of biological containment that would be a key component to a new way to deliver vaccines in animals and humans.

If fully developed, the new method could be used to administer vaccines to many of those who do not benefit from traditional vaccines because of their cost, drug resistance or limited effects on children.

Outlined in the paper, "Regulated programmed lysis of recombinant Salmonella in host tissues to release protective antigens and confer biological containment," published on the online version (July 7) of the *Proceedings of the National Academy of Sciences*, the researchers describe a new, novel and effective means of biological containment for antigen delivery. The method not only effectively delivers the antigen in the body, but does so in a way that does not infect the body with



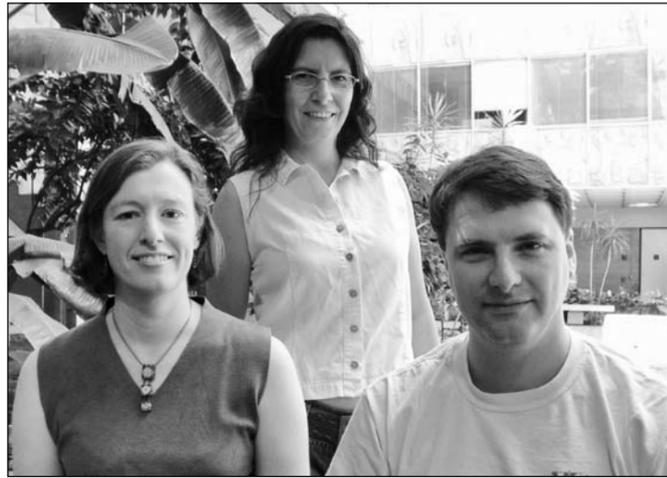
Roy Curtiss

salmonella and does not leave any vaccine cells in the environment.

The research team includes scientists formerly at Washington University, St. Louis, and Megan Health Inc., St. Louis, as well as those at ASU's Biodesign Institute and the School of Life Sciences.

"Our goal is to design, engineer and evaluate a live bacterial (using salmonella) antigen delivery system that would display regulated delayed lysis in vivo after invasion

(See BIODESIGN on page 6)



ASU PHOTO

A team of researchers, including (left to right) associate professor Anne Stone, graduate student Lucha Pfister, and assistant professor Michael Rosenberg, is working to establish a credible evolutionary timeline for tuberculosis.

Research team aims to decipher origins, pathways of enduring tuberculosis strains

By Rebecca Howe

Tuberculosis may call to mind Old West consumptives and early 20th-century sanatoriums, yet according to the World Health Organization, the disease took the lives of more than 1.5 million people worldwide in 2006. In the United States alone, thousands of new cases are reported annually making TB an enduring menace.

The need to better understand this disease is becoming critical, note researchers at Arizona State University, especially with the emergence of antibiotic-resistant strains and increasing globalization spurring pathogen migration.

Among those trying to decipher the origins and trajectory of Mycobacterium tuberculosis, the bacteria responsible for TB, are three researchers in ASU's College of Liberal Arts and Sciences. Graduate student Luz-Andrea "Lucha" Pfister, associate professor Anne Stone in the School of Human Evolution and Social Change, and

Michael Rosenberg, an assistant professor in the School of Life Sciences, are trying to establish a credible evolutionary timeline for TB.

Their research suggests that the disease migrated from humans to cattle – not the reverse, as has long been assumed. The research estimates that the evolutionary leap took place prior to the domestication of cows – more than 113,000 years ago – indicating M. tuberculosis is a much older pathogen than previously believed.

This outcome supports that of the French Pasteur Institute's Cristina Gutierrez, an evolutionary mycobacteriologist whose work first cast doubt on the cattle-to-human TB link and its date range. Gutierrez calls the findings of Pfister's team confirmation of TB's ancient origins and human-cattle transmission.

This summer, Pfister presented the results of the group's research at the annual meet-

(See RESEARCHERS on page 7)

New lab, hires aim to advance solar energy industry

By Joe Kullman and Karen Leland

ASU is strengthening its commitment to boost Arizona's economic development prospects in the renewable energy industry by establishing the Solar Power Laboratory to advance solar energy research, education and technology.

Prominent scientists and engineers are being hired to lead the endeavor to improve the efficiency of solar electric power systems while making them more economically feasible.

"The Solar Power Laboratory will further build up the university's already formidable solar energy research and develop collaborations with the energy industry to accelerate expansion of the state's economy," says ASU President Michael Crow.

The effort is a major part of ASU's response

to the Arizona Board of Regents' Solar Energy Initiative, aimed at encouraging research and development to meet future needs for renewable energy sources, as well as help Arizona protect its environment, says Crow.

The laboratory will be a collaboration partnering the university's Global Institute of Sustainability and Ira A. Fulton School of Engineering.

Christiana Honsberg, Stuart Bowden and George Maracas have been hired for the venture. Honsberg will be chief scientist, Bowden will be industrial liaison,



Christiana Honsberg

and Maracas will be chief operating officer.

Honsberg and Bowden are coming to ASU from the University of Delaware, where they worked in the most extensive university solar research program in the United States. Maracas has made his mark with more than 25 years of accomplishments in engineering research, research management and technology commercialization.

"Our goal is for ASU to have the pre-eminent academic solar energy research, development and training program in the United States, and one of the top such programs in the world" says Jonathan Fink, director of the Global Institute of Sustainability. "The establishment of the Solar Power Laboratory and the hiring of Honsberg,

(See NEW on page 7)

Cronkite School to lead digital media program

Carnegie-Knight initiative gives ASU \$7.5M grant to direct program

The Carnegie Corporation of New York and the John S. and James L. Knight Foundation are giving ASU a \$7.5 million grant to direct a bold, experimental digital media program at 12 leading U.S. universities.

The News21 initiative, which aims to help redefine journalism education and prepare a new generation of journalists capable of reshaping the struggling news industry, will be headquartered at the new downtown Phoenix home of ASU's Walter Cronkite School of Journalism and Mass Communication.

The Cronkite School also will operate one of the initiative's eight digital media "incubator" sites. As part of the incubator program, advanced journalism students will travel the country to produce in-depth news coverage on critical issues facing the nation and then experiment with innovative digital methods to distribute the news on multiple platforms.

The News21 program started in 2006 with incubators at the University of California at Berkeley, Columbia University, Northwestern University and the University of Southern California.

Under the three-year grant to ASU, four new incubators will be created at the Cronkite School, the University of Maryland at College Park, the University of North Carolina at Cha-

(See CRONKITE SCHOOL on page 7)

Cronkite graduates take expertise abroad as Fulbright Scholars

Two recent graduates of the Walter Cronkite School of Journalism and Mass Communication have been named 2008 Fulbright Scholars.

Ian Lee and Emily Falkner are among 12 Arizona State University graduates who won the prestigious scholarships this year. ASU has the fourth highest acceptance rate among public universities and ranks in the top 20 universities nationally in the number of students accepted to the Fulbright Program.

The program, sponsored by the U.S. Department of State, is the largest U.S. international exchange program, sending U.S. students, teachers, professionals and scholars to study, teach, lecture and conduct research in more than 155 countries.

"To have two students from the Cronkite School selected for the Fulbright in a single year is a real accomplishment, both for the students and the faculty who helped to prepare them," says Cronkite School Dean Christopher Callahan. The last time a Cronkite student was selected for a Fulbright was in 1998.

Lee, 24, of Lander, Wyo., received his bachelor's degree in journalism in December, along with certificates in Islamic



Ian Lee

Studies and Arabic. He will spend a year at American University in Cairo, Egypt, studying the reporting differences between newspapers written in English and those written in Arabic. He also will monitor Arab satellite networks for the Adham Center for Electronic Journalism and do some freelance stories for American media outlets.

After his Fulbright year, Lee said he plans to continue pursuing journalism abroad. "I want to go to conflict zones and report from there," he says. "My mom is a little nervous."

While a student, Lee reported for Cronkite NewsWatch, the school's award-winning newscast and was recognized as being part of the nation's Best News Team for 2007-2008 by the Broadcast Education Association.

He spent part of this summer traveling in Egypt and Qatar as part of a select group of students awarded a Carnegie Knight Middle East Journalism Scholarship. He also has traveled and studied in Jordan, Syria, Israel and Palestine.

"Ian distinguished himself as a young journalist with a keen interest in and understanding of issues facing the Middle East," says Mark Lodato, news director and professor of practice at the



Emily Falkner

Cronkite School. "The Fulbright is a wonderful acknowledgment of his hard work and dedication and the perfect opportunity for him to continue his studies in a part of the world that is ever-changing."

Falkner, 28, of Tempe, Ariz., received her Master of Mass Communication degree from the Cronkite School in May. Her award will take her to the Slovak Republic for nine months, where she will be a teaching assistant at the University of Constantine the Philosopher. She will help students with their English composition skills and possibly assist with an American studies course.

She also plans to write a blog about what the country is like from the perspective of an American living there.

Falkner, who received her undergraduate degree in literary and cultural studies at the College of William and Mary in Virginia, says she has always been interested in Eastern Europe.

"It's an area with intense traditions that is encountering a lot of changes," Falkner says. "Slovakia is a country that remains very religious, while the rest of Europe has become more secular. I'm interested in the sociology behind that."

As a student at ASU, Falkner volunteered tutoring a family from Burundi through the International Rescue Committee in Phoenix. She says she hopes to work for the U.S. Foreign Service after her Fulbright year.

Program supports research enterprise

By Debra N. Fossum

Chartered in July of last year through the sponsorship of Rick Shangraw, vice president for Research and Economic Affairs, the Enhance program is identifying and completing the necessary enhancements to ASU's research infrastructure that will support growth of the research enterprise to \$350 million by 2012.

Enhance was developed to ensure that all research administration staff have the appropriate training and resources to complete their assigned responsibilities.

Creating an atmosphere that encourages cooperation and communication, as well as universal training of all staff whose jobs impact research and sponsored projects administration, is one of several enhancements.

"The participation of research advancement staff is essential to the Enhance program," says Gary Delago, part of the Enhance Project Team and assistant director of ORSPA. "Research advancement team members are administrative staff from all four campuses that support sponsored project activities in the departments and colleges."

Enhance will continue to improve the research administration process at ASU. They have created the SuperReport, established formalized career progressions for Research Advancement staff, and deployed an electronic routing tool for the Proposal Routing and Approval Form. In the future, Enhance plans to implement new tools for managing research activities, from the project's start to close, and a new research administration Web site.

"We've got great people working in research administration here at ASU. This project is about providing processes, tools and training to make their jobs more efficient and rewarding," says Tamara Deuser, project manager for Enhance.

Moreover, Enhance representatives have met with more than 50 percent of all ASU colleges and departments, including the Biodesign Institute, the Fulton School of Engineering and the College of Design, to review the process, responsibilities and potential organizational structure that best meets the needs of ASU researchers.

For more information on the Enhance program visit <http://pride.asu.edu/management/enhance.shtml>.

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Office reflects three decades of unmatched success

ASU's Office of American Indian Projects weaves colorful network of national supporters

By Corey Schubert

The bulky, 1970s-era phones stacked in a corner of Edwin Gonzalez-Santin's office remind him how far he's come. Back when the phones were new, he taught courses via conference calls to students in Navajo communities from Tempe to New Mexico who would have lost their vital jobs if they'd left their reservations to attend classes on campus.

Now, Gonzalez-Santin pauses from answering several dozen new e-mails in his inbox at ASU's School of Social Work to reflect on three decades of success with the Office of American Indian Projects, the oldest program of its kind in the nation.

Located in the College of Public Programs at the Downtown Phoenix campus, the office has helped to graduate nearly 300 American Indian students in the past 31 years. That's likely more than any other native project in the nation, says Gonzalez-Santin, the office's director.

He and three project members have woven a colorful network of supporters who have influenced thousands of American Indians across Arizona and the Midwest. The Office of American Indian Projects staff includes associate director Tim Perry, School of Social Work faculty member Michael Niles, and administrative secretary Shannon Pete. Gonzalez-Santin is quick to credit much of the team's success to project support from colleagues within the School of Social Work and across the university.

The office works to identify, recruit and support students who are interested in working with American Indian communities. It also assists tribal governments in developing policies that affect their people.

"I can go to most of the tribes in Arizona and find some of our graduates," Gonzalez-Santin says. "Many of the regional directors and principal social workers of the Navajo nation are graduates of ASU's School of Social Work."

Along with helping to obtain academic grants for students, the office supports American Indian students in finding ways to continue their studies when cultural issues conflict with their class schedules.

For example, "the culture is very family-oriented, so if there's an illness or a death in the family, students are expected to be on the reservation instantly," he says. "I work to mediate and reduce cultural misunderstandings that sometimes occur, and this helps to increase the opportunity for American-Indian students to matriculate."

The office helps tribal governments evaluate programs, and it provides consultation and feedback on proposed funding for programs that help tribal programs, including the Navajo nation. It assists the social



PHOTO BY FELIPE RUIZ-ACOSTA

ASU's Office of American Indian Projects includes, from left to right, director Edwin Gonzalez-Santin, School of Social Work faculty member Michael Niles, administrative secretary Shannon Pete and associate director Tim Perry. The office has helped to graduate nearly 300 American Indian students in the past 31 years.

service and early childhood working groups of the Inter Tribal Council of Arizona Inc. in promoting Indian self-reliance through public policy development that affects 21 tribes across the state and other indigenous communities in the nation.

"That puts us in a unique position to know how to respond to laws and help the tribes, and helps us recruit students because we're actively engaged in the American Indian communities," Gonzalez-Santin says.

The office also is home to the Indigenous Early Intervention Alliance (IEIA) and the Indigenous Early Intervention Alliance-Urban Contexts (IEIA-UC), the brainchild of Niles. The purpose of IEIA and the IEIA-UC is to increase the capacity of indigenous communities in developing early childhood intervention programs that fit their unique culture and ideals in both rural and urban areas.

For information about the Office of American Indian Projects, call (602) 496-0099 or visit the Web site <http://ssw.asu.edu/portal/research/oaip2>. The Indigenous Early Intervention Alliance Web site can be found at <http://indigenous-early-intervention.com>.

Schubert, with the College of Public Programs, can be reached at (602) 496-0406 or corey.schubert@asu.edu.

College of Law examines Indian gaming laws

By Janie Magruder

Organizers of a national conference this fall at the Sandra Day O'Connor College of Law have gone "all in" to ensure the program — an examination of the Indian Gaming Regulatory Act (IGRA) — is provocative, balanced and educational.

"Indian Country's Winning Hand: 20 Years of IGRA," Oct. 16-17 at the Radisson Fort McDowell Resort & Casino in Fountain Hills, Ariz., will be conducted by the College of Law's Indian Legal Program.

"I doubt any other university could match the talent, knowledge and expertise that will be offered at this conference," says Bradley Bledsoe Downes, a co-chair of the planning committee and partner at the Phoenix law firm of Bledsoe Downes & Rosier, PC.

Also notable is the decision to honor four individuals who have influenced gaming in Indian Country during a banquet Oct. 16. The event will be hosted by Wallace Coffey, chairman of the Comanche Nation.

Now through June 15, the law school is accepting nominations from tribes, tribal

gaming associations and commissions, practitioners in Indian Country, government agencies and lobbyists of people, to be called Pathbreakers, who deserve recognition for their contributions to gaming. The honorees will be announced in July on the conference registration Web site www.law.asu.edu/ilp.

According to the National Indian Gaming Association, Indian gaming was a \$200-million industry when the Indian Gaming Regulatory Act was enacted in 1988. Today, the industry earns \$19 million a year, revenue that is spread among tribes across the United States, according to the association. The conference will focus on how the act has changed Indian Country, and affected tribal government relationships with the states, the federal government and tribal members.

For more information about the conference or to register, go to www.law.asu.edu/ilp. To nominate a Pathbreaker, e-mail aipi@asu.edu or call (480) 965-1306.

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Newfound ambition fuels student's career

By Debra N. Fossum

Bryan Rolfe, whose interest in math and science was sparked at a young age, is now pursuing degrees through the Ira A. Fulton School of Engineering and the College of Liberal Arts and Sciences in chemical engineering and math. He credits his father as one of the greatest reasons he has a science-oriented mind.

"Although he never got his degree, my father was always interested in science," Rolfe says. "When I was in high school, he bought me an 8-inch Newtonian Reflector with an Equatorial mount, a big telescope. Seeing galaxies and star clusters was mind-blowing."

In high school, Rolfe enrolled in an honors chemistry course that only reinforced his love of scientific inquiry. His father had told him that advanced chemistry was horrible, so he entered his first class tentatively.

"The teacher argued that chemistry is really just the study of the interactions of atoms, and atoms make up everything, so chemistry is absolutely fundamental to everything," he recalls. "These words won me over."

Rolfe now works with Dr. Laura Wasylenki, a research scientist in the School of Earth and Science Exploration at ASU. Together, they conduct research in the study of isotope effects on environmental systems at the W. M. Keck Foundation Laboratory for Environmental Biogeochemistry, a mass spectrometry facility in the basement of the Physical Sciences building.

"Isotopes of any given element have the same number of protons in their nuclei but a different number of neutrons, which results in a mass difference," he explains. "An isotope fractionation

occurs when the isotopes of an element behave differently during a chemical reaction because they have slightly different atomic masses."

Rolfe and Wasylenki are studying how isotopes of the metal molybdenum (Mo) fractionate during adsorption to manganese (Mn) oxide particles because such adsorption happens on the ocean floor and governs the Mo isotope composition of seawater and ocean sediments. Once this phenomenon is understood in the laboratory, the results will aid interpretation of isotope signatures recorded in ancient ocean sediments.

Rolfe's specific role in the project involves varying temperature and salinity to see how they affect the isotopic fractionation. "Basically, I create test-tube experiments using a solution of dissolved Mo and Mn oxide particles that I synthesize," he explains. "The samples are analyzed with a mass spectrometer to measure precisely the ratio of Mo isotopes relative to a known standard."

When the research is complete, Rolfe and his mentor believe the information will help other researchers interpret the Mo isotope compositions of natural samples that tell us about oxygen levels in the deep past. Their research will also help Rolfe decide what he will be researching in graduate school.

After completing his graduate degree, Rolfe



Bryan Rolfe

is considering pursuing a Ph.D. or doing something that he has dreamed about since third grade: becoming a fighter pilot for the United States Air Force.

Wasylenki, his mentor, says Rolfe is mostly self-taught in science, as "his ability to learn very quickly are just amazing."

Moreover, Rolfe worked hard to get where he is today and has reaped the rewards. In high school, Rolfe admitted to being a procrastinator with less than average grades. By his junior year, he managed to take control and reprioritize his goals. While he could not salvage his GPA, he would make up for it with his work at the university. This past April, Rolfe was one of three ASU juniors to be awarded a Barry M. Goldwater Scholarship, the nation's premier award for undergraduates studying science, math and engineering.

Previously, he received a NASA Space Grant and has given a presentation at the American Association for the Advancement of the Sciences conference in Boston and attended the Pale Blue Dot III conference in Chicago. Last year, Rolfe obtained a German Academic Exchange Research Internship and was selected as one of 10 American Chemical Society Research Internships in Science and Engineering scholars. The internship paid more than two hundred American students to aid researchers at a German university for three months.

"I am extremely thankful for the opportunities I've had at ASU," he says.

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Professor brings pioneering work to medical post

By Margaret Coulombe

"What do hippopotami and medical students have in common?" Rebecca Fisher makes you want to ask questions.

Fisher is an assistant professor in ASU's School of Life Sciences and the department of Basic Medical Sciences at the University of Arizona College of Medicine-Phoenix in partnership with Arizona State University.

It is Fisher's out-of-the box scholarship, as well as her creative course development and teaching of anatomy, that garnered her the coveted Basmajian Award from the American Association of Anatomists – an award that recognizes exceptional health science faculty who are in the formative stages of their career.

Fisher teaches two anatomy courses at the College of Medicine-Phoenix. According to her, most medical school anatomy courses are fairly encyclopedic, presenting "a lot of detail without necessarily a lot of clinical correlations." In addition, the hours dedicated to anatomy courses have declined dramatically in recent years. So when offered the challenge of developing her own anatomy course for first-year medical students, Fisher took a fresh approach. She rooted her class in clinical practice.

"Anatomy lectures are good for learning terminology, but the light bulb never really goes on until you go into the lab," she says.

Fisher's course is entirely based in the lab, with plasma screens next to the cadaver tables. It was this hands-on, clinically oriented, entirely lab-based study that grabbed the attention of the Basmajian Award committee, along with her incorporation of active and retired clinicians in the labs. Fisher invited specialists who were tied to whatever body region she and her students were studying, so students could then ask an experienced practitioner questions pertinent to that body region.

Fisher's colleague, Kenro Kusumi, who co-teaches a musculo-skeletal class with her, believes that "true to the spirit of creating a new medical campus in Phoenix, Rebecca has created a dynamic and interactive clinical anatomy course lauded by the inaugural class of medical students and faculty who had the pleasure of participating in or observing the class."

"Fisher's work is truly pioneering and sets an example for others to follow," says Stuart Flynn, associate dean of academic affairs and professor at the UA College of Medicine-Phoenix in partnership with ASU.

Fisher's research also has captured attention in other ways. Some of the special delivery packages Fisher receives border on the macabre – gory, but highly instructive remnants of carnivores and artiodactyls (even-toed ungulates, like deer) that died of natural causes in zoos. She dissects out, literally, answers to evolutionary puzzles haunting their history and relationships within the mammalian family tree.

Fisher examines modern mammals' muscles and constructs maps that document their attachments to bones. She then compares these modern muscle maps to correlates in fossil species. She has worked up muscle maps for common and pygmy hippos, sun bears, red pandas (a carnivore that is an herbivore, with a pseudo-thumb, but unrelated to giant pandas), and binturongs (a carnivore with a prehensile tail).

What seems like an assortment of unrelated mammalian species with enigmatic evolutionary histories do, in fact, have connectivity for Fisher.

"Not many people work on such disparate groups of mammals, but to me they seem very similar, in terms of the hypothesis and the theoretical framework of the question. I like working on animals with unresolved

phylogenies," Fisher notes. "I also enjoy working on functional anatomy, particularly adaptations to different behaviors as reflected in the musculo-skeletal system. That is the common thread."

Hippos have been a passion since she was a graduate student studying primate anatomy. She worked with Andrew P. Hill, a professor of anthropology at Yale, and curator of anthropology in the Peabody Museum. On their first field trip to Kenya, she discovered not only a passion to do field work, but was also unexpectedly drawn to hippos and the questions that surround their prehistory.

"Common hippos are huge, fascinating looking creatures, like a sausage with legs. We'd camp by a lake and in the evening, they'd come up onto the land and feed at dusk and on into the night.

"I started picking up hippo fossils when we'd go out, prospecting for them while everyone else looked for primates. I guess what struck me most was how understudied hippos are. Sure, they are in zoos and popular with the public. However, in terms of their anatomy and their evolution, there wasn't a lot of research going on. That was a very exciting thought as a graduate student."

Fisher makes hippos seem convincingly attractive. Semi-aquatic sausages with legs they might be, but by some accounts they also kill more people than any other mammal in Africa, are related to ancient whales, and lack sweat glands. Hippos are a keystone species, which means that while they are fascinating and peculiar creatures, they are also crucial to the sustainability of their environments.

"Hippos create their own little ecosystems," she says. "And they poop a lot."

What National Geographic correspondent and scientist Brady Barr termed their "explosive fecal discharge" provides a food source for a plethora of species. There are also different types of birds and fish that feed off the parasites of hippos and clean their wounds.

Hippos are also instrumental in the physical movement of lake and riverbed sediments and establishing healthy aquatic water systems, according to Fisher. "Without hippos, lakes become stagnant. The food source is gone," Fisher notes.

Her move to the College of Medicine-Phoenix in 2006 allowed her to bring all of her passions together, from hippos and evolution, to mentoring ASU undergraduates, to teaching anatomy to medical students.

"I realized early on in graduate school that I really wanted to teach med students, that I wanted to make a contribution that was palpable. Training people to save lives is very rewarding to me."

Some 31 faculty members form the backbone of the College of Medicine-Phoenix. Fisher is one of 10 from ASU's College of Liberal Arts and Sciences, seven of whom have appointments in ASU's School of Life Sciences. Fisher is also a research associate in the Division of Mammals at the National Museum of Natural History, Smithsonian Institution.

As an anthropology undergraduate, turned paleoanthropology doctoral student, turned functional anatomy post-doctoral fellow and finally, assistant professor of anatomy, Fisher offers this advice to students who are trying to find their path: "The number one thing is discovering what gets you excited. Be a sponge and try as many different disciplines as possible."

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In THE NEWS

ASU experts frequently are called upon by the local and national news media to provide insight and opinion on current events and issues of public interest. Following are excerpts of recent news articles featuring ASU representatives.

In an effort to speed up airport screening, the Transportation Security Administration is asking passengers to choose a line based on their familiarity with checkpoint procedures. However, human nature may void this approach. **Rene Villalobos**, industrial engineering professor, has studied ways to decrease waiting times at border crossings. Applying those lessons to airport security checkpoints, he says, "People are going to go to a shorter line, especially if they're self-selecting." *CNBC*, June 10.

After the success of discovering ice water on Mars, some scientists say that a serious search for life would likely move towards the Martian north pole, where the ice water sometimes melts. However, the melting and refreezing of water could also erase records of previous life or organic material. "We don't know exactly how fast the ice comes and goes," says **Jack Farmer**, ASU astrobiologist. "If it's on a routine basis, then you may end up losing the biosignatures." Farmer and other scientists may prefer a region that remains frozen year-round, preserving organic material and possible traces of past life in the ice. *Space.com*, June 27.

ASU is spreading solar panels across the rooftops of the Tempe campus, creating the largest solar array at an American university. "We have a tremendous number of buildings that have flat roofs. It's an ideal place to put these things," **Jonathan Fink**, director of the Global Institute of Sustainability, says. ASU researchers have worked on solar technology since the 1960s, Fink says, and that makes this project especially exciting. "We like the idea of being able to see results of research actually being used in our physical plan," Fink says. *Forbes*, June 11.

ASU energy expert **Mark Edwards** says the concept of Phoenix-based XL Renewables Inc., which grows algae that can be sold to make animal feed, biodiesel and food oils, shows potential because it looks at other uses for algae. "Arizona will probably be Algae Central," he says. "We have sunshine, temperate weather, not a whole lot of freezes, brine water underground that can't be used for crops, lots of cheap desert land. We have exactly what the industry needs." *Arizona Republic*, June 12.

According to an ASU study by professor **Stephen Nowlis** and associate professor **Naomi Mandel**, office pools cause emotional uncertainty and discomfort. That's the case no matter if a person wins or loses. "Intuitively, you would think you'd enjoy events like this more if you bet on them, but we found you enjoy them less," Mandel says. *Arizona Republic*, July 4.

ASU researcher **Naomi Mandel** co-studied a report that found when people think about their own death, it could make them reach for the cookie jar. The report states, "When people are reminded of their inevitable mortality, they may start to feel uncomfortable about what they have done with their lives and whether they have made a significant mark on the universe. One way to deal with such an uncomfortable state is to escape from it, by either overeating or overspending." *Reuters*, June 23.

ASU alumni debut book at art gallery



PHOTO BY ERICA VELASCO

ASU alumni Zachary Cook (left) and Neil Gillingham debuted their artful book "Henry" at Five15 Arts in downtown Phoenix. The writer-artist team will exhibit their project throughout July.

Meet Henry, a man deeply afflicted by a midlife malaise and not certain of how to fix it. He tries to remember if he ever felt loved or accomplished. He is convinced that crows flutter inside his head all day long, and he can't help but wonder if the crows are all he has.

Although a fictional character, Henry's struggles to find his own truth and satisfaction in life are very real, say ASU alumni Zachary Cook and Neil Gillingham, the creators of "Henry" – a picture book for grown-ups.

Nearly a year and a half ago, Cook, the writer, ASU staff member and College of Liberal Arts and Sciences alum, approached Gillingham, the artist and Herberger alum, with the first few lines of what would become an artful story, or illustrated poem, about a woodworker coming to terms with his own existential crisis. Now, the writer-artist team have debuted their picture book at Five15 Arts, a local artist cooperative gallery on Roosevelt Row in downtown Phoenix.

Gillingham says he has observed the graphic novel medium crossing over to galleries more in recent days, offering viewers a second look at what was once considered a low art, especially in the United States.

In their exhibit, Cook's carefully crafted words, communicating Henry's internal dialogue, set the stage for abstraction, which Gillingham's painfully fervent images confirm.

"The story was ripe with imagery," says Gillingham, who created 22 image panels to illustrate the life of a man who thinks "crows are nestled in the concave of his skull where his brain should be."

Gillingham says his main objective was how to best visually represent this universal idea of a person wrestling with an omnipresent void in his life and then the outward manifestation of it.

"For me, creating the art was parallel to Henry's crisis, in a way – it was the outward manifestation of what was going on internally for Henry."

"There is something inside of Henry just like there is something in all of us, and he's actively trying to break out of it," says Cook, who sees the piece as

somewhat of a coming-of-age tale, only later in life.

Gillingham adds that the crows in Henry's head can be seen as representative of the character's crippling boundaries out of which he is trying to break.

Cook, who manages a team of students and full-time staff for ASU Parking and Transit Service, received his bachelor's degree in English and has found that the university has nurtured his creative work as well as offered him a community of friends and artists. Gillingham's bachelor's degree in art and master's degree in education also have helped cement his ties to the university, as well as influenced his decision to apply for a membership role at Five15 Arts.

"There have always been a family of artists at the gallery," says Gillingham. "I applied for the membership specifically with the Henry project in mind. For me, the gallery show was always the main product."

Launched at the First Fridays downtown monthly art event that has helped build up the Phoenix urban community, "Henry" invites viewers to walk the circumference of the space as they experience each page of the story framed on gallery walls. Visitors can purchase their own copy of the graphic poem to take home as artifact, enclosed in a wooden case. And a set of woodworking tools also is on display in the center of the space, as well as a sculpture of Henry with a crow head.

"If Henry thinks there are crows in his head, than there are," says Cook. "People have these crises at any age, and what I discovered in my 20s is that a lot of it is self-imposed. This is really a story about finding personal freedom."

"Henry does things, he leads a life, he's a bit sad, but he breaks through the barriers with which he's struggling," says Gillingham. "Hopefully, people find him relatable."

"Henry" will be on display through the month of July. Five15 Arts is located at 515 E. Roosevelt in Phoenix. Gallery hours are 5-9 p.m., Friday; 1-5 p.m., Saturday; and also by appointment. For more information, call (602) 256-0150.



Events are free, unless otherwise noted. Items in the "Exhibitions" section run at exhibit opening and on the first of each month only. Building abbreviations are listed according to the official ASU phone directory. Send information to Judith Smith at jps@asu.edu or fax (480) 965-2159. For information about ASU events, visit the Web at <http://events.asu.edu>.

Lectures

■ Tuesday, July 15

"Moving From Activity To Achievement: Keys For Transforming Your Life and Your Business," The Mercado, Downtown Phoenix campus, 502 E. Monroe St., Phoenix. Speaker: Les Taylor, professional speaker, consultant, executive coach and owner of Achievement Solutions. R.S.V.P.: ASUlectures@asu.edu or (602) 496-1000.

■ Wednesday, July 23

"Everything You Wanted To Know About Computers-Don't Be Afraid To Ask!" The Mercado, Downtown Phoenix campus, 502 E. Monroe St., Phoenix. Speaker: Rozanne Hird, founder and president of R R Hird & Company. R.S.V.P.: ASUlectures@asu.edu or (602) 496-1000.

Miscellaneous

■ Monday, July 14

"Job Search Strategies for New ASU Grads," 1-2:30 p.m., Student Services Building (SSV) room 329.

Sponsored by ASU Career Services. Information: (480) 965-2350.

"Resumes and Cover Letters: Show 'em What You Got!", 3-4:30 p.m., SSV room 329. Sponsored by ASU Career Services. Information: (480) 965-2350.

■ Friday, July 18

Decision Theater Tour, 3-4 p.m., Decision Theater, Brickyard Orchidhouse (BYOH) room 126A. Information: Michele.nobles@asu.edu.

Locating Funding, 3-4 p.m., Computing Commons (CPCOM) room 107. A hands-on workshop to introduce faculty and staff to the basics of locating funding from government, foundation and commercial sponsors. Sponsored by Office for Research and Sponsored Projects Administration. Information: <http://researchadmin.asu.edu/Training/workshops.cfm>.

■ Saturday, July 19

Twilight Tour, 7-8 p.m., Deer Valley Rock Art Center, 3711 W. Deer Valley Road, Phoenix (approximately two miles north of Highway 101 and two miles west of I-17). Admission: \$6.50 adults; \$3.50 students and seniors; \$2.50 children 12 and younger. Reservations and information: (623) 582-8007.

■ Thursday, July 24

"Sun Devil CareerLink: A Job Seeker's Best Friend," noon-1 p.m., SSV room 329. Sponsored by Career Services. Information: (480) 965-2350.

July Mixer, 2-4 p.m., SSV Amphitheater. Sponsored by Career Services. Information: (480) 965-2350.

Exhibitions

ASU Art Museum, Nelson Fine Arts Center—Regular hours: 11 a.m.-9 p.m., Tuesday; 11 a.m.-5 p.m., Wednesday-Saturday; 1-5 p.m., Sunday. Summer hours:

10 a.m.-5 p.m., Tuesday-Saturday. Information: (480) 965-2787.

Through Aug. 30, "Exploring Dreams: Images from the Permanent Collection." Ninth Annual Family Fun Day, Sat. July 12, 10 a.m.-2 p.m. The exhibition examines the concepts and science of dreams; what dreams are and their purpose and meanings.

Family Fun Day will be a dream-inspired day with activities such as making dream-catchers and other dream-inspired arts and crafts, and dance, music and theatrical performances in partnership with CONDER Dance, AZ Opera in a Box and other local groups and volunteers. Eight, Arizona PBS (KAET) will bring a favorite character for photos with children. "Exploring Dreams: Images from the Permanent Collection" is made possible in part through an investment by IKEA, Changing Hands Bookstore, the ASU Art Museum Advisory Board and the Friends of the ASU Art Museum.

Defenses

Tara Schuwerk, PhD, Comm., 10:00 a.m., Jul. 14, FULTN 1496.

EunJin Bang, PhD, Curr. and Instr., 11:00 a.m., Jul. 14, EDB 209.

Anjanette Darrington, PhD, Curr. and Instr., 2:00 p.m., Jul. 14, LL 215.

Ramazan Kilinc, PhD, Pol. Sci., 10:00 a.m., Jul. 16, COOR 6761.

Xinyu Xu, PhD, Comp. Sci., 3:00 p.m., Jul. 16, BYENG 365.

Wang Jang, PhD, Elec. Eng., 9:30 a.m., Jul. 17, ERC 490.

Kevin Roche, PhD, Ind. Engr, 12:30 p.m., Jul. 17, GWC 510.

Preethy George, PhD, Psy., 10:00 a.m., Jul. 18, PSYN 267.

Peter Harakas, PhD, Psy., 10:00 a.m., Jul. 18, PSY 289.

Karalee Jarvis, PhD, Sci. and Engr. Of Mat., 10:00 a.m., Jul. 18, PSB 234.

Anna Kratz, PhD, Psy., 10:00 a.m., Jul. 22, PSY 289.

Carol Mejia, PhD, Engl., 2:00 p.m., Jul. 23, LL 316.

Shay Capehart, PhD, Ind. Engr., 1:30 p.m., Jul. 25, GWC 510.

EMPLOYMENT

The following positions are available as of July 11 and are subject to change. All positions will be advertised in *Insight* only once. The staff requisition or job order number for each position is indicated by the (#) sign. ASU is an equal opportunity-affirmative action employer.

ASU POSITIONS

A complete job announcement for classified, administrative and service professional positions at the Downtown Phoenix, Polytechnic, Tempe and West campuses is available on the Human Resources Web page at www.asu.edu/asujobs, or the Telecommunication Device for the Deaf at (480) 965-3002.

For complete position descriptions and application requirements for academic positions, contact the appropriate department listed below. Faculty, academic professional and graduate assistant positions are also listed on the Human Resources Web sites and details must be obtained from the hiring department. Application deadlines are listed.

Dates listed are application deadlines, and application material is due by 11:59 p.m. on that date. Positions are 100 percent, full-time employment (FTE) unless otherwise noted. Codes below are: (O) – position is open to the public; (L) – position is limited to current ASU, Northern Arizona University, University of Arizona and Arizona Board of Regents employees.

STAFF POSITIONS

TEMPE CAMPUS

Professional

Academic Success Specialist (O) #17736 – University College-Academic Advising Services (July 21).

Assistant Director Organizational Development (O) #17820 – Office of Human Resources (July 16).

Business Manager Senior (O) #17756 – Barrett Honors College (July 16).

Continuous Improvement/Quality Manager (O) #17825 – VP-Research and Economic Affairs (July 21).

Coordinator, Data Management & Delivery (O) #17751 – W.P. Carey School of Business/Dean's Office (July 16).

Coordinator Senior (O) #17723 – W.P. Carey School of Business-MBA Programs (July 16).

Credentials Evaluator (O) #17810 – Student Initiatives-Undergraduate Admissions (July 21).

Instructional Specialist (O) #17732 – Intercollegiate Athletics-Office of Student Athlete Development (July 16, application deadline will be extended every week until search is closed).

Instructional Specialist (O) (Part-Time) #17733 – Intercollegiate Athletics-Office of Student Athlete Development (July 16, application deadline will be extended every week until search is closed).

Instructional Technology Analyst (O) #17575 – Walter Cronkite School of Journalism and Mass Communication (July 16).

Laboratory Coordinator (O) #17753 – Ira A. Fulton School of Engineering (July 16).

Management Intern (O) (Part-Time) #17779 – VP University Student Initiatives (July 21).

Management Intern (O) (Part-Time) #17786 – VP University Student Initiatives (July 21).

MBA Recruitment Manager (O) #17735 – W.P. Carey School of Business-MBA Admissions (July 30).

Medical Laboratory Technician (O) #17804 – Student Initiatives-Campus Health Service (July 16).

Psychologist (O) #17609 – Student Initiatives-Counseling & Consultation (July 25).

Specialist (O) #17776 – VP-Research and Economic Affairs (July 16).

Technical Support Analyst Assistant (Part-Time) (O) #17836 – College of Law (July 30).

Technology Support Analyst Associate (O) #17801 – Intercollegiate Athletics-Information Technology (July 25).

Administrative support

Administrative Assistant (Part Time) (O) #17749 – VP-Research and Economic Affairs (July 29).

MBA Programs, Office Specialist Senior (O) #17795 – W.P. Carey School of Business/Graduate Career Management Center (July 16).

Office Specialist Senior (L) #17717 – University Registrar-Graduation (July 16).

Office Specialist Senior (L) #17700 – University Registrar-Academic Files (July 18).

Service/field craft/maintenance

Groundskeeper (O) #17742 – University Business Services-Parking & Transit (July 17).

Maintenance Technician (O) #17741 – University Business Services-Parking & Transit (July 17).

DOWNTOWN PHOENIX CAMPUS

Professional

Program Manager (O) #17773 – College of Public Programs (July 21).

POLYTECHNIC CAMPUS

Administrative support

Office Specialist (O) #17651 – Polytechnic Campus-School of Applied Arts and Sciences (July 16).

WEST CAMPUS

Professional

Assistant Division Director #17827 – Division of Teacher Preparation in the College of Teacher Education & Leadership (Aug. 4).

Technical and computer

Application Programmer #17833 – Applied Behavioral Health Policy (July 25).

Professors earn accolades for classroom innovation

By Matt Crum

Three professors from ASU's College of Teacher Education and Leadership (CTEL) – Teresa Foulger, Mia Kim Williams and Keith Wetzel – received the 2008 Research Paper Award from the International Society for Technology in Education's Special Interest Group for Teacher Educators for their innovative teaching methods in producing K-12 teachers who embrace the use of new technologies in their classrooms.

Foulger, Williams and Wetzel authored the award-winning paper, "Innovative Technologies, Small Groups, and a Wiki: A 21st Century Pre-service Experience Founded on Collaboration." The publication is based on their experiences teaching CTEL's educational technology course to education majors who bring a wide range of technology skills to the class.

One of the professors' key strategies is to have students work in small groups to learn a technological tool and its potential classroom uses. Students then conduct an "Innovations Mini-Teach" session in which they showcase the tool to their peers in a simulated K-12 lesson.

"Students gain a sense of empowerment by working in small, self-directed groups," Foulger says. "When our students graduate and become K-12 teachers, we want them to use collaborative learning strategies with their fellow teachers as they refine their teaching techniques using new technologies."

Students were placed in groups of two to four to complete their Innovations Mini-Teach assignments. In many cases, students encountered difficulties with inter-group dynamics, but the vast majority of issues were resolved without intervention by the professor.

"The social side of innovating can be tricky," Williams says. "As instructors, we see these



ASU PHOTO

ASU professors (left to right) Teresa Foulger, Keith Wetzel and Mia Kim Williams earned international acclaim for their paper on technology and collaboration in the classroom.

struggles as learning opportunity for students to develop interpersonal skills – the same skills that can support their professional development processes once they become teachers."

Besides conducting an Innovations Mini-Teach, students post their findings about technological resources on a wiki, a Web site that enables multiple users to create content. The collaborative effort extends over time, as new students refine and add to the wiki each semester, while current and future K-12 teachers can make use of the wiki's resources.

Student focus groups conducted after the course ended show strong support for the Innovations Mini-Teach process and the benefit of the wiki.

"Most of the student presenters included a

tutorial on something like how to put a Podcast together or how to make an iMovie," says one student who participated in a focus group. "I may not have grasped all of the details at the time, but if I want to use that innovation, I can go back to the wiki and learn it step by step."

Wetzel says the exponential growth of new technology tools makes it impossible for the technology class to cover all of those tools.

"It's important for students to have the confidence to know they can learn new tools and be able to put them to use in their classrooms," Wetzel says.

Foulger says she has seen many "turning point moments" among students who went into the class without a strong base of technology skills. "Putting them into a situation in which they have no choice but to learn how to use an unfamiliar technology causes them to think differently about themselves," she says.

This summer Foulger, Wetzel and Williams are teaching approximately 40 of their CTEL faculty colleagues about social networking tools such as wikis. Participating professors will revise a unit from a course they teach in a way that relies on students' use of collaborative tools, and student feedback will lead to further curricular refinements in the future.

Faculty members at the University of Nevada-Las Vegas are replicating the teaching techniques described in the award-winning paper, and Foulger says other universities are expected to follow suit as well.

More information about the project is available at <http://web.mac.com/teresa.foulger/iWeb/Innovations/Home.html>.

Crum, with *Public Affairs at the West campus*, can be reached at (602) 543-5209 or matthew.crum@asu.edu.

Keynote speaker at women's conference says focus is crucial

By Judith Smith

How do you know if you're having a good day?

Raise your hands toward the ceiling, palms up. If your palms don't encounter a barrier, then it means you're having a great day – there's no coffin lid closing down on you.

With a bit of humor – and truth – motivational speaker Silver Rose opened the keynote address for the 19th annual Women's Leadership Conference sponsored by University Career Women.

This year's conference, held at the Fiesta Inn, carried the theme "Focus on Success."

Rose's topic was "Change Your Focus, Change Your Life!"

The former stand-up comedienne says that the "law of attraction" is the key to changing one's focus.

"You attract what you focus on," she said. "Try having a bad day when you're having a good day."

Getting what you focus on is more than wishful thinking, Rose emphasized.

"It's about taking action. What you have is where your focus is," she said.

How do you change your focus?

The three keys are to "heed your inner guide, measure for what you want, and practice, practice, practice."

And how do you know what your inner guide is telling you?

"We are all born with an inner guide," Rose said. "Some call it instinct or intuition. The only way your inner guide can speak is through your emotions – and we only have two emotions – negative and positive. Start trusting your own intuition."

After tuning into your emotion, decide what you want, Rose noted. "Feed your mind only what you want more of. When you pay attention to something, it's like putting in an order: 'More of that, please.'"

Rose, who said she credits the "law of attraction" for helping her end a 30-year depression, said that people often don't focus enough on their successes.

"Ask yourself what you have done and how you are going to celebrate it," she said.

Making a change from negative to positive will not happen overnight, and therefore, practice is essential, Rose stressed.

"Pay attention to your emotions, and give yourself permission to enjoy what you are doing."

She suggested creating a perpetual "to-do" list. "A to-do list gives you energy," she said. "Keep adding to it."

Setting goals is crucial, she added. "Talk about what you want and why you want it, especially to yourself. Plan to win. Your expectations become your reality."

University Career Women (UCW) is an organization for women at ASU who wish to enhance their professional and personal development.

UCW's goals are to provide a mechanism for women to affect issues; provide professional and personal development programs; take an active role in improving the status of women; and create and inspire opportunities in a supportive and accepting environment.

For more information, visit asu.edu/ucw.

Smith, with *Media Relations*, can be reached at (480) 965-4821 or jps@asu.edu.

Barrett Scholars learn, practice mock-trial skills

By Janie Magruder

It was what you'd expect, at least initially, from a bunch of teenagers in a courtroom: backpacks heaped onto the prosecution and defense teams' tables, witnesses sitting with their friends instead of behind said tables, and a smattering of backwards-worn baseball caps and sunglasses.

But a mock trial performed on Wednesday, June 25, by 16 middle-school students from around the state far exceeded the expectations of their coach and teacher, Jimmy Cool, a second-year student at the Sandra Day O'Connor College of Law. Without banging a gavel, Cool brought order to the courtroom, directing that backpacks be stowed, witnesses be organized and attire be proper.

"The students did wonderfully," Cool says. "None of them had any prior experience in trial advocacy, and few had any experience with public speaking, yet they were able to deliver well-crafted and insightful examinations and speeches."

The gifted students are Barrett Honors Scholars, who spent three weeks in June on the campus of Arizona State University's Barrett, The Honors College, including two days preparing and trying two imaginary cases in the College of Law's high-tech courtroom. The students, from as far away as Lake Havasu City, took a humanities course, then chose from electives in four fields – engineering, biology, computer digital animation and the law. Those choosing law got to play the roles of attorneys and witnesses for both the prosecution and defense.

Sean Currie, a 15-year-old from Fort Mohave near the Arizona-Nevada state line, delivered a convincing, professional opening argument as the defense attorney in the case of *The State v. Jordan Archer*. Tailor-made for teenagers, it was a case involving manslaughter in connection with an accident and an alleged charge of driving under the influence, in which the defendant swerved her car twice to avoid hitting two possums crossing the road.

"This is a case about a curve ball," Currie solemnly told the two jurors, also students. "Nature threw a curve ball at Jordan Archer, and she swung and missed. This was just an accident."

Currie, who will be a sophomore this fall at River Valley High, wants to be a defense attorney when he grows up.

"One of my teachers said I'd make a good lawyer," he says, admitting to an argumentative streak.

Katie Biegel, 14, an incoming sophomore at Mountain View High in Mesa, says she plans to seek out a mock trial club at her high because of her experience in Cool's course, which was dubbed, "The Barrett Summer



TOM STORY PHOTO

Students in the Barrett Summer Scholars program participated in the first of two mock court sessions at the Sandra Day O'Connor College of Law at ASU. Kathryn (Katie) Biegel, acting as prosecutor, addresses the court.

Stock Production of 'Law & Order.'

"Law is something I've never really explored," says Biegel, who appeared prepared enough to start work at the Attorney General's Office tomorrow. "I can take engineering or science classes any time, but the law isn't something I can get just anywhere."

In the course, "Jury Trial Advocacy: Perspectives on Legal Persuasion," Cool taught the students the basics of public speaking, oral and written rhetoric, acting and portraying a character, how to analyze legal and factual material from both sides of a problem, the Federal Rules of Evidence, trial procedure, how to work with others in a small group setting, and storytelling.

Cool acted as the judge in the cases, and provided narration on a DVD, copies of which were given to the scholars' parents.

Barrett Summer Scholars is a residential program hosted by the Office of the Vice President for University Student Initiatives and Barrett, The Honors College at Arizona State University. The law course was added this year at the suggestion of past students in the summer program, says Jo Ann Martinez, coordinator of ASU's University Student Initiatives.

Magruder, with the *Sandra Day O'Connor College of Law*, can be reached at (480) 727-9052 or jane.magruder@asu.edu.

Sandra Day O'Connor College of Law earns State Bar disability award

The Sandra Day O'Connor College of Law recently received the Honorable John R. Sticht Excellence in Disabilities Accessibility Award from the State Bar of Arizona for its efforts in making its buildings and services fully, physically accessible to students, faculty, employees and the general public, and for promoting full inclusion in student activities.

The award is named for the late judge, a well-respected Maricopa County Superior Court judge who became a quadriplegic as the result of a trampoline accident while he was

training for the gymnastics team at the University of Arizona.

Sticht's son, John M. Sticht, a 2004 College of Law alumnus and associate at the Phoenix law firm of Jennings, Haug & Cunningham, says the award was established in 2006. His father died in 2004 at the age of 63, having spent nearly 45 years in a wheelchair.

"When he became a lawyer, there were many, many physical barriers that existed in the legal profession," Sticht says. "At his first job interview, he had to call someone from

outside the office because he couldn't get into the building, since there weren't any ramps.

"We have come a long way since then...but there are still a lot of physical and attitudinal barriers."

Dean Patricia D. White says the late judge was an inspiration to the community and adds that she is appreciative that the State Bar of Arizona chose to honor his legacy through the award.

"ASU has done a great job integrating disabled students into student life," Sticht says.

Biodesign team discovers salmonella as effective vaccine delivery vector

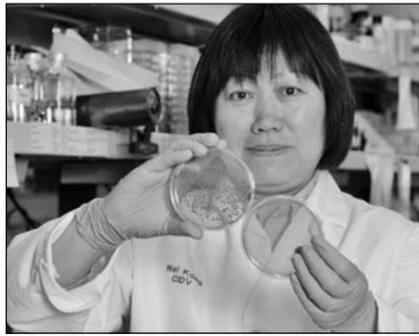
(Continued from page 1)

into and colonizing internal lymphoid tissues in an immunized individual," says Roy Curtiss, director of the Center for Infectious Diseases and Vaccinology at the Biodesign Institute and a professor in ASU's School of Life Sciences. Curtiss was part of the research team that made the discovery.

"We wanted to do this in a way so that no disease symptoms due to salmonella would arise, a protective immune response would be induced to the pathogen whose protective antigen was delivered by the vaccine construction (in this case against *S. pneumoniae* due to an immune response to PspA), and there would be no ability for live bacterial vaccine cells to either persist in vivo or to survive if shed into the environment," Curtiss adds.

"The biological containment system we developed is sufficient by itself on conferring attenuation, the inability to cause disease symptoms, and ability to deliver an antigen to induce protective immunity," says Curtiss. "We have high expectations that this delivery system will be safe and effective when administered to animals and humans."

A key to the project, according to Curtiss, is "turning a foe into a friend." That foe is the salmonella bacterium – the leading cause of human food-borne illness and which is currently in the news due to contaminated tomatoes and other food crops. Curtiss'



Wei Kong, a researcher in the Biodesign Institute at ASU, holds plates demonstrating the enhanced growth of *Salmonella enterica* (left) in the presence of arabinose.

team, through genetic know-how, has developed a variety of ways to tame salmonella in the lab and use it as a delivery vector for vaccines.

"We try to genetically modify the salmonella bacterium to eliminate its harmful effects – the diarrhea, gut inflammation and fluid secretion – while keeping the wherewithal to induce immunity against the bacteria causing pneumonia or other infectious diseases," says Curtiss. Several in his research team attack the problem from different angles, with some focusing on weakening salmonella, others boosting the immune response and others optimizing the

self-destruct mechanism.

Speaking about the application of a pneumonia antigen, team leader Wei Kong, of the Biodesign Institute, says: "If we tried to use live *Streptococcus pneumoniae* causing pneumonia for a vaccine, we would obviously kill the patient. The benefit of a live vaccine that uses a weakened form of salmonella, is that the salmonella can be taken up through the intestinal lining and stimulate an immune response by using just a portion of the bacteria causing pneumonia that itself is not deadly."

In experiments, the genetically modified *Salmonella enterica* bacterium colonizes the lymph tissues of the host and manufactures a protein from the *S. pneumoniae* bacterium, which then triggers a strong antibody response. Unlike most vaccines that are entirely manufactured by a vaccine company, the attenuated recombinant salmonella vaccine after entry into the immunized individual serves as its own factory to produce (manufacture) the protective antigens (proteins) from the *S. pneumoniae* pathogen. According to Curtiss, this ability to cause manufacture in the immunized individual dramatically decreases the cost of such vaccines to make them affordable for use in the developing world.

An important factor for the research team was to genetically program the *S. enterica* bacterium to destroy itself so that it is not released into the environment, notes Curtiss.

"Biological containment systems are important to address the potential risk posed by any unintentional release of the modified salmonella into the environment," he explains. "The salmonella life cycle is balanced to allow enough time to enter the body and build an immune response, while leading to cell death by bursting the cells and preventing the vaccine strain from spreading into the environment."

"The data show that the system we have devised results in cell lysis in the absence of arabinose and clearance of the strain from host tissues," the researchers state in the PNAS article.

They add: "More importantly, our strain was fully capable of delivering a test antigen and inducing a robust immune response comparable to that of a vaccine strain without this containment system, thereby demonstrating that this system has all of the features required for biological containment of a recombinant attenuated salmonella vaccine."

The research was funded by the U.S. Department of Agriculture and the National Institutes of Health.

Derra, with Media Relations, can be reached at (480) 965-4823 or skip.derra@asu.edu.

In BRIEF

Bravo honored as outstanding reviewer

Jesus Bravo, assistant professor with the Morrison School of Management and Agribusiness at the Polytechnic campus, has been given an Outstanding Reviewer Award for 2008 by the Organizational Behavior Division of the Academy of Management (AOM). Bravo is one of 86 out of 1,079 reviewers to receive such a distinction, recognized for providing "exceptionally high quality feedback," according to Sandra Robinson, program chair at AOM.

Bravo will serve as a discussant at the annual meeting for the AOM in August, presenting a session on "Outcomes of the Psychological Contract." He has been reviewing papers for the AOM for two years, after joining the organization as a PhD student in 2003. Bravo has presented several papers as author and co-author, and plans to continue to review papers for the AOM in both the Human Resource Management and Organizational Behavior Divisions.

AOM, founded in 1936, is a member-driven network dedicated to the professional development of scholars of management. For more information about the academy, visit <http://www.aomonline.org/>.

Piper Book Club announces new books

Two works of fiction, a non-fiction book and two books of poetry are on the list for the rest of 2008 for the Virginia G. Piper Center for Creative Writing's online book club.

The club is open to anyone who loves to read and discuss books.

The monthly selections are as follows:

July: "Look at me," by Jennifer Egan.

Charlotte, who spent her adult life getting by on appearances, literally loses her face in a catastrophic car accident. As Charlotte's face heals, she goes unrecognized at her old haunts and must grapple with the lives and losses she has tried to outrun.

August: "Eat, Pray, Love," by Elizabeth Gilbert.

Gilbert sets out on a journey to Italy, India and Indonesia to find herself after a punishing divorce and anguished love affair. Reviewers say that Gilbert is "irreverent, hilarious, zesty, courageous, intelligent, and in masterful command of her sparkling prose" and "a captivating storyteller with a gift for enlivening metaphors."

September: "Native Guard," by Natasha Trethewey.

Trethewey was born in Gulfport, Miss., in 1966. She earned an M.A. in poetry from Hollins University and M.F.A. in poetry from the University of Massachusetts. "Native Guard," published in 2006, received the Pulitzer Prize for Poetry. Trethewey writes about the history of the American South, her own multiracial heritage, and the loss of her mother.

October: "The Road," by Cormac McCarthy.

In this novel, which is bleak and hopeful at different times, a father and his son walk alone through burned America. Nothing moves in the ravaged landscape save the ash on the wind. It is cold enough to crack stones, and when the snow falls it is gray. The sky is dark. Their destination is the coast, although they don't know what, if anything, awaits them there. Winner of the 2007 Pulitzer Prize.



PHOTO BY CHRIS LAMBRAKIS

Moving Week

In between unpacking boxes, business manager Katherine Jager in the College of Technology and Innovation takes a call. She and several hundred faculty and staff moved into the new academic space at the Polytechnic campus this week. The additional 240,000 square feet of space provides the classroom and lab space needed to accommodate the increased number of classes now offered at Polytechnic.

November: "Dog Years," by Mark Doty.

Doty was born in 1953. He has won several major prizes for his work, including the National Book Critics Circle Award and Britain's T. S. Eliot Prize, and has received fellowships from the Guggenheim, Ingram Merrill, Rockefeller, and Whiting foundations, and from the National Endowment for the Arts. He teaches at the University of Houston. Doty explores the complicated territory inhabited by devoted dogs and their loyal humans. When the author's longtime lover dies of AIDS, beloved pet Arden keeps Doty afloat.

December: "The God of Animals," by Aryn Kyle.

When her older sister runs away to marry a rodeo cowboy, Alice Winston is left to bear the brunt of her family's troubles – a depressed, bedridden mother; a reticent, overworked father; and a run-down horse ranch. To make ends meet, the Winstons board the pampered horses of rich neighbors, and for the first time Alice confronts the power and security that class and wealth provide. For more information, and to sign up for the club, go to www.asu.edu/piper, or call (480) 965-6018.

New issue of Emeritus College journal

The second issue of *The Journal of the Emeritus College* at ASU is now available both online and in print. Printed copies are available at the College office, Wilson Hall room 101, on the Tempe campus, or by mail. This issue includes fiction, poetry, memoirs, articles, a book review and photography.

The fiction is "Codes" by Paul Jackson, "A Wonderful Day" by Stan Smith, and "Three Conversations," by Ernie Stech. Poetry contributors are Richard Jacob, "Confessions of a Philistine," and Frances New, "Walking On Stones." Memoirs are "My Most Memorable Meal" by W. Walsh Doane, "Rena and Me" by Len Gordon, "Childhood" by Elaine Katzman, and "China 1945: Fukien Christian Uni-

versity" by Marjorie Bong-Ray-Liu.

Articles include Allan Brawley's "on the Reformer Robert Hunter" and Don Sharpes' "on Cochise." Jerry Buley contributed photography, and Charles Brownson wrote a review of Charles Dantzig's "Dictionnaire égoïste de la littérature française" (Paris: Grasset, 2005).

The Journal of the Emeritus College is published twice a year. Single copies are \$20; a two-year subscription is \$60. Proceeds after printing costs will accrue to the Emeritus College Endowment Fund.

To order copies by mail, send checks, payable to ASU Foundation – Emeritus College, to the Emeritus College, Wilson Hall 101, P. O. Box 875203, Tempe, AZ 85287-5203. For more information, call (480) 965-0002.

Law student wins big scholarship

Brian Barner, a student at the Sandra Day O'Connor College of Law, has received a \$15,000 RMLF Scholarship from the Rocky Mountain Mineral Law Foundation in Colorado.

Barner, who will be a third-year law student this fall, was among five recipients of the foundation's annual scholarships and also will attend its institute, July 17-19 in Snowmass, Colo.

"The selections were especially difficult for the committee members because of the large number of very talented and deserving applicants," says David P. Phillips, the foundation's executive director.

Barner, a 26-year-old Eagle Scout who has spent considerable time working in and enjoying the outdoors, says he was delighted to receive the scholarship.

"It's a great benefit to students and will be useful for helping create more lawyers in the area of natural resources law," he says.

Barner's award was based on an essay he wrote.

Cronkite School to lead digital media program

(Continued from page 1)

pel Hill and Syracuse University. In addition, four other Carnegie-Knight schools – the University of Missouri at Columbia, the University of Nebraska at Lincoln, the University of Texas at Austin and the John F. Kennedy School of Government at Harvard University – will send students to the eight incubators.

ASU President Michael Crow applauded the Carnegie Corporation and the Knight Foundation for their investments in the future of the news and journalism education.

“ASU is an institution that is forward-looking and one that takes as a major part of its mission solving the most significant problems facing our nation and our world,” says Crow. “In that regard we are especially pleased to be involved in a project focused on the future of news, which is so vitally important to a free society. I thank the Carnegie Corporation and the Knight Foundation for making these investments and selecting ASU to be the headquarters of the News21 initiative.”

News21 is the latest digital news program at the Cronkite School, which has taken a national leadership role in preparing students for the dramatic changes in the news industry triggered by the digital revolution. Cronkite already is home to the Knight Center for Digital Media Entrepreneurship, in which students learn to create and launch their own online news products; the New Media Innovation Lab, which serves as a research and development lab for news companies looking for digital solutions; and the Azcentral.com Multimedia Reporting Program, a partnership with The Arizona Republic in which students cover breaking news in multiple media for the Web site of the nation’s 10th largest newspaper.

“News21 is precisely the kind of innovative, unconventional and intensive learning experience that journalism schools desperately need to not only help educate the next generation of journalists, but to find solutions to help the news industry evolve in the digital world,” says Cronkite Dean Christopher Callahan. “It is a great honor to help build on the first three years of News21 with an expanded group of schools.”

The Cronkite School will hire a national News21 director, a national Web developer and a program manager over the next few months. News21 will be based in the Cronkite School’s new building, a six-story, state-of-the-art journalism education complex that opens next month on the university’s new Downtown Phoenix campus.

Initiative to foster new era of journalism education

Seeking to change the way journalism is taught in the United States, Carnegie Corporation of New York and the John S. and James L. Knight Foundation are investing more than \$11 million in the expansion of a national initiative to adapt journalism education to the challenges of a struggling news industry.

ASU is one of three new journalism schools joining the effort to redefine journalism education and train a new generation of journalists capable of reshaping the news industry.

The expansion will deepen and extend such components as News21, an experimental online news incubator; curriculum enhancement; and a journalism education policy task force. Each foundation will contribute half of the new funding, and allocate it among each of the initiative’s three distinct efforts.

With the addition of Arizona State University, University of North Carolina at Chapel Hill and University of Nebraska, Lincoln, the initiative now funds curriculum enhancement and student fellowships at 11 journalism schools and one research center.

“Although traditional models of newspaper, radio and local television news dissemination are severely challenged,” says Alberto Ibarguen, president and CEO of Knight Foundation, “every community in this democracy continues to have a core need for reliable information, news that informs and news that helps build the common language that builds community. Journalism schools have a once-in-a-lifetime opportunity to lead the industry. Carnegie and Knight want them to succeed.”

The initiative’s credo – to accelerate change at universities educating tomorrow’s journalists – has begun to have an impact on the news business as the pipeline of young and innovative reporters from initiative-supported schools bring their skills to newsrooms around the country and across all media platforms.

In addition to an emphasis on the fundamentals of the journalism craft, initiative-funded schools are encouraged to draw on the resources of the larger university to help reporters-in-training build specialized expertise to enhance their coverage of complex beats from international affairs and economics to health care and education. Exposure to experts on their own campus helps students to gain first-hand knowledge of the societies, languages, religions and cultures of other parts of the world.

Experimental reporting on little-covered issues generated during the summer by students participating in the News21 incubator has been published or broadcast by news organizations including the *New York Times*, *San Francisco Chronicle*, *Miami Herald*, *L.A. Weekly*, *Forbes.com*, the Associated Press,

Canadian Broadcast Corporation and CNN. This summer student-produced reports will be published on NPR.org, the incubator’s current national news partner, as well as at news-initiative.org.

The News21 journalism incubator will grow from four to eight campuses, increasing the number of competitive, paid summer fellowships to 93 from 44. The summer fellowships, open to students at each of the 12 initiative supported schools, are preceded by a semester of self-guided research and intensive seminar work with professors who are acknowledged experts in the student’s field of inquiry. During the summer, students report their stories and produce their material for publication or broadcast across a number of platforms.

Christopher Callahan, dean of the Walter Cronkite School of Journalism and Mass Communication at ASU, which will spearhead the News21 project from its new Phoenix campus, believes the new storytelling techniques and “convergence” journalism practiced by News21 fellows is precisely what today’s newsrooms are demanding. “This type of journalism prepares students for the newsroom of the future where the person who shoots the piece may also write it and edit it,” says Callahan. “And, the following day will be expected to produce a story for the Web or something altogether different.”

The Carnegie-Knight Task Force joins together one-time competitors in journalism education to work toward addressing and adapting to the sea-change taking place in the news business. Renewed funding for the Task Force, housed at Harvard University’s Shorenstein Center on the Press, Politics and Public Policy, will allow it to produce policy-oriented research for the deans of the 12 participating institutions.

The Task Force allows the schools to speak out in a single, authoritative voice about the importance of upholding the highest standards and ideals of journalism and will continue to take public stands and issue public statements pertaining to the rights and responsibilities of media companies, journalists, educators, government and American citizens. It will stand in opposition to institutional, structural, and commercial threats to the integrity of the profession and will work to improve the quality of the journalism industry and journalism education.

Carnegie Corporation of New York was created by Andrew Carnegie in 1911 to promote “the advancement and diffusion of knowledge and understanding.”

The John S. and James L. Knight Foundation promotes journalism excellence worldwide and invests in the vitality of the U.S. communities where the Knight brothers owned newspapers. Since 1950 the foundation has granted more than \$300 million to advance journalism quality and freedom of expression.

New hires bring expertise to solar lab, help power state’s renewable energy industry

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Bowden and Maracas combined with our ongoing research efforts help us meet this objective.”

The lab’s goal in large part will be to support a significant facet of the economic development objectives of Arizona and the Southwest, says Fink, noting that expansion of the solar energy industry has been identified as an economic priority by Arizona Gov. Janet Napolitano, the state Department of Commerce and Science Foundation Arizona.



George Maracas

“ASU and the state of Arizona have a number of exciting economic development and research opportunities associated with renewable energy. These three new faculty members will play key roles in making sure that these efforts are successful.”

Honsberg is considered a pioneer in photovoltaics – the solar cells that convert sunlight into energy. She helped establish the Center for Photovoltaic Engineering at the University of Delaware, which developed the first undergraduate degree in photovoltaic engineering.

Bowden has been working at the University of Delaware’s Institute of Energy Conversion. He is credited with helping make major strides in improving the efficiency of silicon and crystalline silicon solar cells and the cell manufacturing process.

Maracas is returning to ASU after leaving 14 years ago to work with Motorola Inc., where he founded the company’s Molecular

Technology Lab and Motorola Life Sciences, and held director positions in Motorola’s advanced technologies and nanotechnology research operations. He had 30 patents issued during his time with the company.

Honsberg will serve as a professor, Bowden an associate research professor in electrical engineering, and Maracas a professor in electrical engineering and at the School of Sustainability.

Solar power groups such as the university’s Advanced Photovoltaics Center and Photovoltaic Testing Laboratory will be affiliated with the new lab under the Global Institute of Sustainability. The lab “will bring together other ASU researchers, from materials engineering, physics, chemistry, electrical engineering and architecture” to collaborate on projects, says Stephen Goodnick, ASU’s associate vice president of research and economic affairs.

“For four decades, ASU has been a leader in research related to virtually all aspects of solar energy,” says Fink. “To build on these accomplishments and increase the chances for Arizona to attract more international solar companies, we decided ASU needed to bring in new faculty members who have outstanding reputations in the global solar industry.”

Kullman, with the Ira A. Fulton School of Engineering, can be reached at (480) 965-8122 or joe.kullman@asu.edu.

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Stuart Bowden

Researchers work to establish tuberculosis origins, trajectory

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ing of the Society of Molecular Biology and Evolution in Barcelona. She also presented during the April assembly of the American Association of Physical Anthropologists and subsequently saw the group’s research reported on in the journal *Science*.

With no fossil evidence to consult, studying the deep history of bacteria has only recently become possible. Genomics holds the key. Using DNA, Pfister, Stone and Rosenberg are making inroads into calibrating the watershed moments in TB’s development, such as when it expanded in the human population. Through their work, they also plan to address the biogeography of the disease and what types of TB ancient people had relative to modern strains.

Why are scientists interested in TB’s status thousands of years ago? Pfister puts the research into perspective: “An accurate timeframe can help us learn about the development between host and pathogen. It can aid in understanding the disease and the way it evolves, how it creates new strains to stay alive.”

As Stone is quick to point out, “The data we generate can be used by clinicians to study this disease and formulate appropriate treatments. Our work is historical, but the implications are far-reaching.”

One of the primary goals is to calculate a meaningful mutation rate. The established model for bacteria was developed in the 1980s in regard to *E. coli*.

“This mutation rate has been used as the universal standard, but that is not feasible. TB and *E. coli* are very different,” says Pfister. “Bacteria may evolve at different rates. We cannot say that one model applies to all.”

Pfister, Stone and Rosenberg worked with

108 genes, compared to just over 20 genes used in the *E. coli* formula. As a result, they were able to delve deeper than Gutierrez at the time she conducted her groundbreaking research.

“The Pasteur Institute looked at a small piece of the genome; the full genome gives a much better idea,” says Stone, alluding to the team’s comprehensive approach and its possibilities.

“The work we have done so far is only one aspect of a bigger project,” explains Rosenberg. “There are different directions we want to go with it. Of course, the main target is to get a better estimate of the rate of mycobacterium evolution, but a lot of things branch off from that.”

Rosenberg, a computational evolutionary biologist who designed the program to analyze many of the sequences, says the project shows that “as we get more data and complete sequencing of full genomes, we find new ways of looking at issues, which can do away with assumptions. An example is the belief of cow-to-human transmission of TB. That was a long-held notion, but it was just an assumption.”

“It is the evolutionary way of thinking that has caused us to explore this issue from new and varied angles,” states Pfister. “An evolutionary perspective is also important in a contemporary sense because our species’ population is growing dramatically. Soon we will reach carrying capacity. We will start producing pathogens and opportunities for problems at escalating rates.”

Howe, with the School of Human Evolution and Social Change, can be reached at (480) 727-6577 or rebecca.howe@asu.edu.

Grounds Services brings new sustainable practices to campus

Fish emulsion and compost tea used for fertilizer. Lawn mowers with mulching decks. Organic pest control. Three-wheeled bicycles for staff to ride across campus.

What's next for Grounds Services?

The answer is solar-powered carts, according to Ellen Newell, the assistant director of Grounds Services. The carts are on order and should be arriving by mid-July.

What has prompted the staff to start looking at all its practices and try to make them more sustainable?

"It's President Crow's emphasis on sustainability, Gov. Napolitano's executive order banning blowers and requiring that less polluting equipment be purchased and used, my own personal feelings on sustainability, feelings from a number of Grounds leadership personnel, and last but not least, often sustainable work practices are more economical," says Newell.

One of the first practices inaugurated by Grounds Services was to switch to mowers with mulching decks, as old mowers were replaced. Mulching decks are areas on the mowers where grass clippings are cut up several times and then dropped back on the grass.

"We started leaving the clippings on the lawn the fall of 2004 when I came to ASU," says Newell. "The mowers we have purchased since then have mulching decks. The advantage of leaving the clippings on the lawn is that they add organic matter back to the soil and also nutrients.



Using three-wheeled bicycles on campus is just one of several new sustainable practices Grounds Services has adopted.

"The only time clippings would be removed is if the lawn is not mowed for some reason and gets very long. The clippings then might be unsightly and would be removed and composted. If a lawn is mowed properly, you hardly notice the clippings even with a regular deck on the lawnmower.

"We used to send all of our green waste – about 12 tons

per month – to the landfill. Now all the green waste goes to Ken Singh, who owns a farm in Scottsdale and makes compost out of it. That saves the \$69.95 a ton that we used to pay for hauling it to the landfill."

The fish emulsion and organic compost teas, used for fertilizer, also come from Singh. While Singh buys the fish emulsions in Canada, he makes the compost tea at his farm, Newell says.

"The compost tea is made from the liquid that drains from the compost pile during the digesting."

When the order came to ban blowers, Grounds Services invited a broom salesman to visit ASU with samples, and "we let the groundskeepers choose the ones they specifically wanted," Newell adds.

Grounds Services also is looking at IPM – integrated pest management – which means that pests are not exterminated unless their numbers are high enough that they are doing damage.

"We have lined up several options for moving bee swarms rather than killing them. We are working with the trade shops at sealing small holes in buildings where rats, bats or other vermin enter," Newell says.

"We also work with building occupants to keep their areas free from food waste or wrappers that attract pests. When we need to use chemicals, we use the least toxic to the environment."

Hydrogen, bacteria and biological waste.

The Power of Three

Arizona State University scientists are harnessing this unexpected trio of renewable energy sources to create innovative fuel cells. Researchers at ASU have invented a fuel cell containing a tiny hydrogen-gas generator which lasts five times longer than today's conventional batteries to power laptops, cameras and small electronic devices. Another ASU invention - a microbial fuel cell - enables bacteria to generate electricity when feeding on human sewage and other wastes. These fuel cells convert abundant materials into clean, efficient power. ASU is developing new energy sources to ensure a sustainable future.

Leading the way to energy independence.

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