For University of Wisconsin-Madison Alumni and Friends

OnWisconsin

FALL 2009

Nature's Laboratory

To those who will listen and learn, the UW Arboretum tells many stories.

Who's at the Wheel?

The UW helps steer American automakers toward recovery.

Enlarging Darwin's Legacy

Lynn Margulis MS'60 has refined the science of evolution.

Wolf Gang

UW researchers try to help the state manage wolves.

Not a Single Polka

These songs that say Wisconsin may surprise you.

GARY SCHULZ

Mary Kassner, Leland School 1958

Great ideas

THE UNIVERSITY of WISCONSIN MADISON

then.

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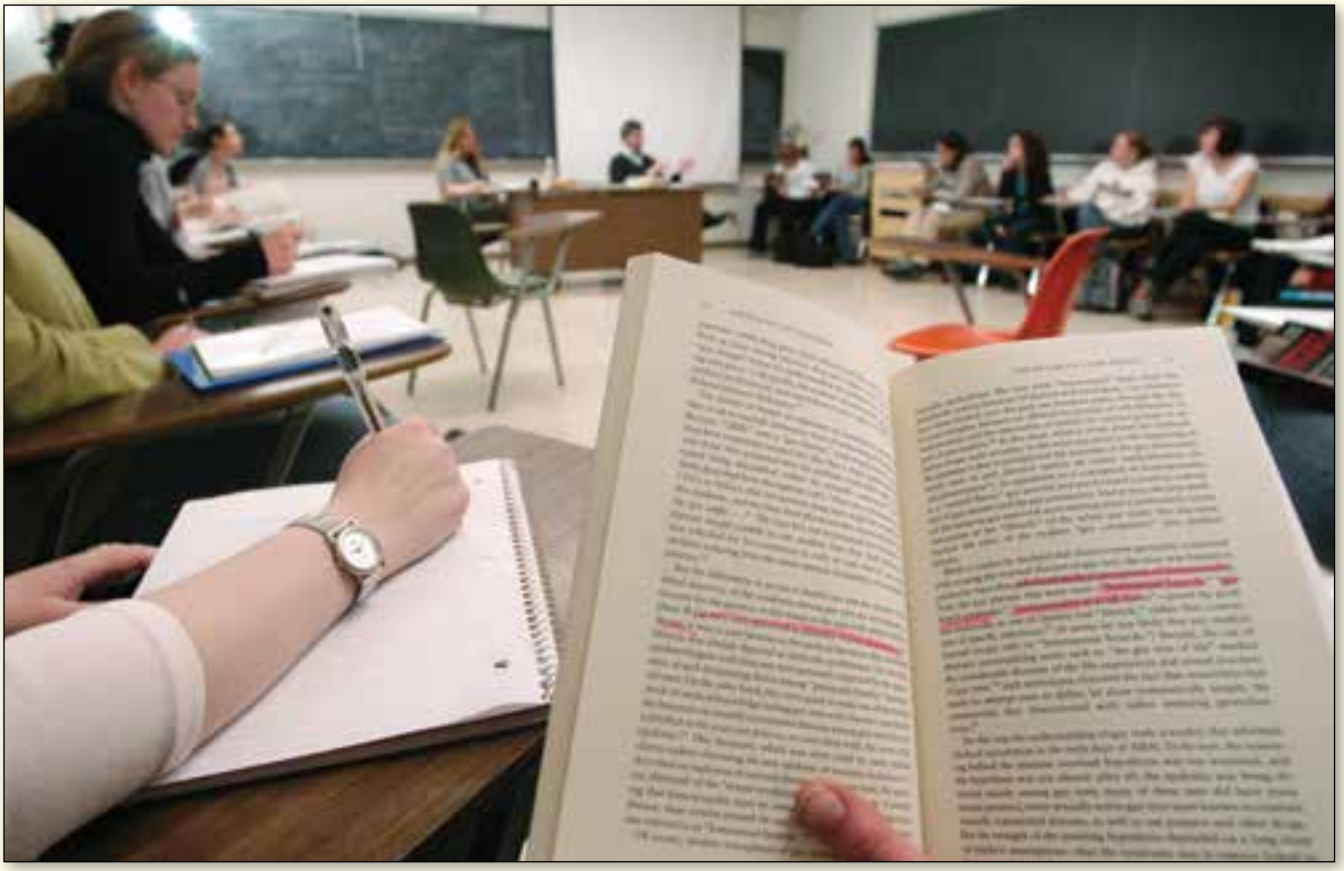

An interdisciplinary course on the global AIDS pandemic is taught by experts in medical history and anthropology.

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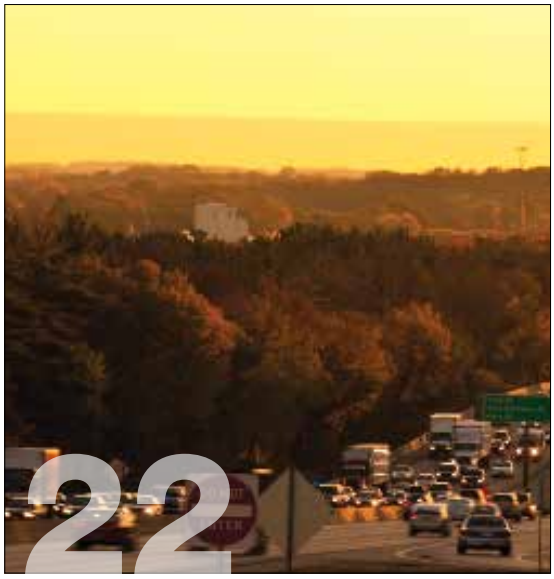

Departments

Cover
As part of a panorama on pages 22–23, sunlight streams through the trees during a fall day at the UW Arboretum.

Photo by Bryce Richter

On Wisconsin
FALL 2009

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You could say that

Bryce Richter took one for the team, but that would be an understatement.

BRYCE RICHTER

Fauna — including wild turkeys — and flora greeted photographer Bryce Richter during the many hours, days, and seasons he spent at the UW Arboretum.

Richter, a University Communications photographer, weathered swarms of mosquitoes, sweltering heat, and subzero temperatures to capture the splendor of the UW Arboretum for our cover story (see page 22). He was on the job during all four seasons, early in the morning to catch sunrises over Curtis Prairie, and after dark to capture the lights of traffic on the West Beltline Highway shining through the branches of Leopold Pines. When it was time to brave Gardner Marsh, he borrowed a pair of hip waders from the UW's Center for Limnology.

Then there were the turkeys.

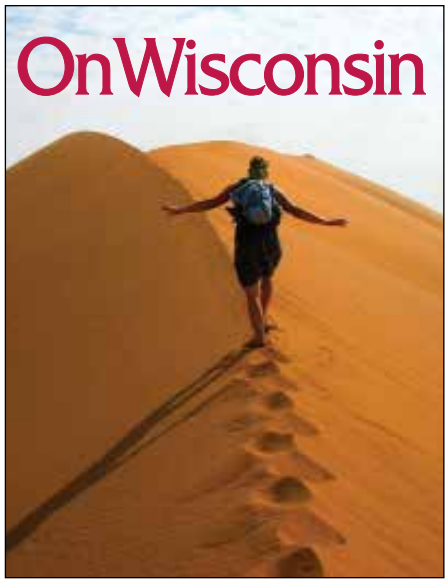
At first, Richter just saw them in passing. The wild birds seemed oblivious to him as they strolled along during some of his photo shoots. But things became a little more up-close-and-personal on the day he was photographing a controlled prairie burn. A turkey burst through the flaming grasses, heading right toward him. Based on his previous encounters, Richter thinks the bird was "running as fast as he could — for a turkey."

When Richter started shooting images for our story in fall 2008, he had no idea (nor did we) that it would turn out to be the longest assignment of his career. He returned to the Arboretum again and again, and completed his work this summer, shooting about one thousand images and developing a deep appreciation along the way for the area's beauty and ecological diversity. Now, he considers it a second home.

His favorite spot? Wingra Woods in the fall. When sunlight streams through the trees and yellow leaves rain down, he says, it's "a fairy-tale kind of place."

Jenny Price '96

letters



Globally Competent Before Competence Was Cool

My wife and I are really enjoying your Summer 2009 issue of *On Wisconsin,* especially "Global Views" by Masarah Van Eyck. After growing up in Watertown and Tomah, respectively, then graduating from UW-Madison in 1964, my wife and I were attracted to Caterpillar Tractor Company, in Peoria, Illinois. Soon we were moving to Geneva, Switzerland; Salisbury, Rhodesia; Johannesburg, South Africa; and Paris, France. Our global competence developed from living and working in these great places for the next four years.

Reflecting on Masarah's article, and our foreign experience in the 1960s, makes us keenly aware of how the UW prepared us for this journey. The interaction in Madison with students and faculty from all over the U.S. and the world caused us to crave a bigger world.

We fondly remember shopping in a *boucherie* in Geneva soon after we arrived, asking for a dozen chickens with our newly acquired French when we meant a dozen eggs. We entertained the entire village while the owner brought out a chicken in one hand, and an egg in the other, and showed us the difference! Vive la France!

We didn't have much global competence in 1964, but we were not afraid to take a huge global step. Thanks to the University of Wisconsin for giving us the confidence!

Jan and Dan Frey '64
Savannah, Georgia

Joyce Carol Oates Profile Strikes a Chord

Thanks to *On Wisconsin* for having the courage to reprint "Nighthawk," Joyce Carol Oates's memoir of her soul-crushing year at the university [Summer 2009]. I cannot describe how affirming it was to see my own experience mirrored in a biographical narrative of someone about whom judgments of mediocrity are laughable in retrospect. In the twenty-five years since I graduated, the faculty who taught in my program have completely turned over; undoubtedly, everything else about the place is different as well. And yet I could never really integrate the experience until I read these words of hers: "I've arrived at an age when, if someone welcomes you, you don't question the motives. … Rejoice and give thanks! Of our hurts, we make monuments of survival. If we survive."

Alice Lieberman PhD'83
Lawrence, Kansas
(Chancellor's Club Teaching Professor at the University of Kansas)

I deeply appreciated "Reflecting on Joyce Carol Oates." This two-author piece demonstrates courage, clarity, honesty, accuracy, and great understanding of the complex matter of literary study at the graduate level and of the creative process.

I speak from experience; I went to Madison as a doctoral student in English in 1962 and I was there for five years, receiving my degree in 1968. Although I was slightly older than Oates, and although I was a male in a mostly man's realm, her description and analysis of the graduate program in English is almost shocking in its accuracy. She evokes old memories of classrooms, attitudes, and professors. Like Oates, I did have some humanely redemptive experiences to offset the general drought; I think especially of Karl Kroeber, Robert Kimbrough, and Madeleine Doran, all of whom were scholars, teachers, and warm, caring human beings.

Thank you for publishing this important article. I respect *On Wisconsin* for its willingness to consider the whole picture of our fine university. This, I think, is "sifting and winnowing."

John D. Smith PhD'68
Tucson, Arizona

"Reflecting on Joyce Carol Oates" has been churning around in my imagination for a week now. Her stories showed that she had lived in Madison, but never anything like this horror-romance. I came from the southeast to do graduate work in mathematics, and many of her impressions (especially of the spooky weather) resonate with my memories.

Mathematics is housed in Van Vleck, Bascom's nearest neighbor, yet my experience was just the opposite of [Oates's]. The men and women of my department treasured new and imaginative approaches, and, to an extreme, they treated graduate students fairly. So my first reaction to this story was almost disbelief. In the end, UW and Madison defined us both.

This was a great story about one of my favorite writers. Thanks!

W. Richard Stark PhD'75
Tampa, Florida

The Origins of DARE

On Wisconsin is terrific! Regarding Professor [Frederic] Cassidy and the *Dictionary of American Regional English* ["DARE to Be Done," News and Notes, Summer 2009]: The article states correctly that DARE was the brainchild of Professor Cassidy, but incorrectly that it began in 1965. I was a student in Cassidy's English 190 course (phonetics) in 1949, and I can tell you that we spent a good deal of time discussing regional dialects in America during those class periods. We knew we were helping him do research for his project.

For example, I learned there that "potluck supper" is not the only way Americans refer

" 'Reflecting on Joyce Carol Oates' has been churning around in my imagination for a week now. … Many of her impressions (especially of the spooky weather) resonate with my memories."

to that sort of occasion. Some call it a "cover dish," others a "kivver dish." I can also tell you that Cassidy's classes were enormously interesting and informative and remained a positive influence for me during my entire life.

Landon Risteen '50
Chicago

Swim at Your Own Risk

The article and picture in the summer edition of *On Wisconsin* [Traditions] brought back memories of many afternoons on the lake. I had brought my cedar strip canoe with me from Canada while finishing my MBA in the summer of 1969. I would drive my car to the lake and put books, plus food and drink, into the canoe and go out on the lake. I would study, eat, and drink, and then go for a swim. I did, however, develop an ear infection and went to the student health clinic, where I was warned that swimming in the lake was not a good idea!

Patrick Edwards MBA'69
Toronto, Ontario, Canada

Choking on the Campaign Trail

Your Flashback photo in the Summer 2009 issue brought back a flood of memories.

I was a Mack House resident when I ran for Dorm Duke as "Hopalong Eichenbaum." It was either 1950 or 1951. The highlight of my campaign was being hanged from a tree in front of the dining hall. Fellow students went to Truax Airfield to fetch a parachute harness, which was concealed under my cowboy outfit, and the hangman's rope was threaded through the harness and out my shirt collar.

I was lifted onto the hood of a red convertible parked under a tree, motor running. Amid cheers and applause, the car slowly backed up and left me dangling. Regrettably, the noose got caught in the harness straps and began choking me. (My struggles were applauded as acting skill.) Luckily, I survived. The next day, after the votes were counted, my campaign managers tossed me into Lake Mendota. I had won.

Ken Eichenbaum '53
Milwaukee, Wisconsin

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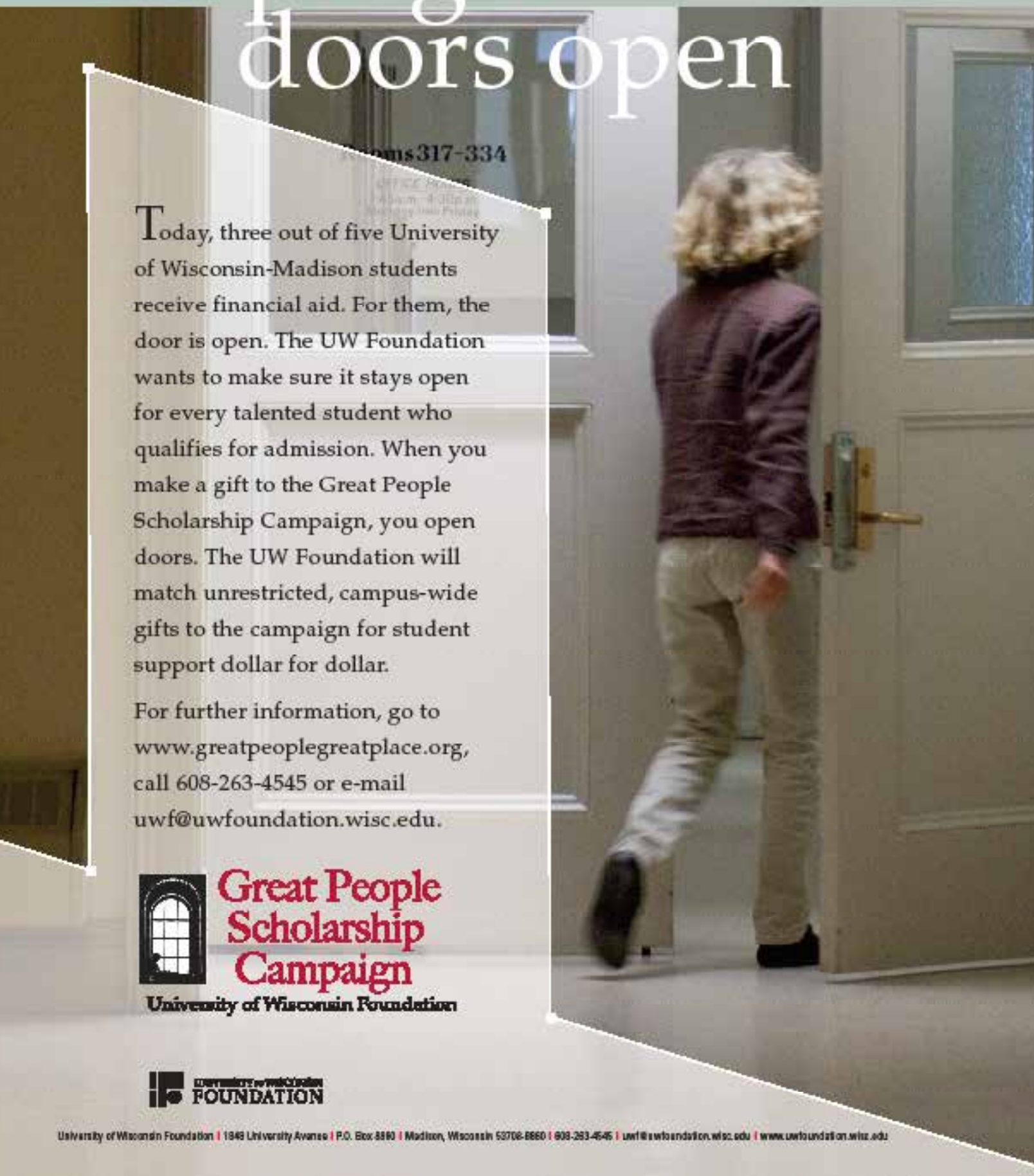
UW-Madison wants to stay in touch with you. To update your contact information, which is maintained by the UW Foundation, please visit www.uwfoundation.wisc.edu/survey. To log in, use the ID number above your name on the magazine label. This information is shared selectively with other campus units and the Wisconsin Alumni Association to ensure that alumni information is consistent and accurate. Thank you!

On Wisconsin Magazine welcomes letters related to magazine content, but reserves the right to edit them for length or clarity. You may e-mail your comments to onwisconsin@uwalumni.com; mail them to *On Wisconsin,* 650 North Lake Street, Madison, WI 53706; or fax them to (608) 265-8771. We regret that we don't have space to publish all the letters we receive, but we always appreciate hearing from you.

Keeping the doors open



Today, three out of five University of Wisconsin-Madison students receive financial aid. For them, the door is open. The UW Foundation wants to make sure it stays open for every talented student who qualifies for admission. When you make a gift to the Great People Scholarship Campaign, you open doors. The UW Foundation will match unrestricted, campus-wide gifts to the campaign for student support dollar for dollar.

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scene

Night Lights
The Union Terrace filled with shining faces on June 28 as a crowd gathered to watch Madison's annual Rhythm and Booms fireworks show across Lake Mendota. The Terrace is a popular spot for fireworks fans, as it affords wide open views of the pyrotechnics exploding above Warner Park on the city's north side. On October 16, a similar crowd will gather on a cooler evening for the Homecoming fireworks display, scheduled to take place right after the parade. Photo by Jeff Miller

Subtract Calories, Add Years?

Eat less — a whole lot less — and you could live a whole lot longer.

A twenty-year UW study of Rhesus macaque monkeys suggests a reduced-calorie diet not only slows the aging process, but also delays age-related health problems such as cancer, heart disease, and brain atrophy.

The study includes a group of monkeys that eat as much as they want and another group on a severely restricted regimen. Funded by the National Institute on Aging, the effort began in 1989, and since then, half of the animals on the all-you-can-eat plan are still living, compared with 80 percent of those on a diet.

The monkeys have an average life span of about twenty-seven years in captivity.

Richard Weindruch, a professor in the UW School of Medicine and Public Health leading the study, says the monkeys on restricted diets have shown no signs of diabetes, a common condition in the monkeys that have free rein when it comes to food.

Scientists have studied calorie restriction for decades, starting with research involving rodents in the 1930s. But the similarities between primates and people mean these findings could provide the most insight yet into calories and impact on human health.

Jenny Price '96

JEFF MILLER

Rhesus monkeys — Canto, 27, left, on a restricted diet, and Owen, 29, a control subject on an unrestricted diet — are pictured at the Wisconsin National Primate Research Center.

quick takes

The UW has a new provost. In June, Paul DeLuca, formerly vice dean at the School of Medicine and Public Health, was named UW-Madison's top academic officer: provost and vice chancellor for academic affairs.

Does the UW have its own aroma? If so, it might be the odor of compost. In May, the university announced a plan to curtail the amount of waste sent to landfills by composting discarded food from campus eateries. Organized by the campuswide We Conserve program, the composting plan aims to collect more than 400 tons of food waste annually.

A documentary highlights 12,000 years of Native American history in the campus area. First broadcast in July on Wisconsin Public Television's digital Wisconsin Channel, *UW Cultural Landscapes: First Nations* includes some of the thirty ancient archaeological sites on current or former campus land.

Watch out, Zeus — the UW is onto you and your thunderbolt-hurling ways. Researchers at the Cooperative Institute for Meteorological Satellite Studies have a new technique to accurately predict severe thunderstorms faster than ever. Using satellite observation of cloud temperatures, they can come up with predictions as much as forty-five minutes earlier than was possible using traditional radar alone.

Gov. Jim Doyle '67 signed Wisconsin's state budget bill this summer, giving health insurance benefits to domestic partners of state and university employees. The UW had been the only Big Ten school that did not offer domestic-partner benefits, and officials believe it harmed the university's ability to keep and attract top faculty and staff.

The H1N1 flu virus shares some frightening similarities to the 1918 virus that killed tens of millions at the close of World War I — including the ability to infect the lungs. But a new international study led by UW virologist Yoshihiro Kawaoka also offers good news: while H1N1 is more dangerous than previously thought, it appears that available antiviral drugs can slow its spread.

How important is a doctor's bedside manner? It may be worth a whole day, according to a study released by the the School of Medicine and Public Health. Researchers asked 350 patients who were suffering from a common cold to rate their doctors based on compassion. Those who gave the physicians a perfect score recovered from their colds a full day faster than those who gave their doctors lower scores.

Pioneering UW ethicist Alta Charo is joining President Obama's team to serve as a senior adviser for the U.S. Food and Drug Administration. Charo, a law professor and national expert in bioethics, is taking a leave of absence from the UW to help the federal agency understand how cutting-edge technologies could be used and how they may need to be regulated in the future.

Faulty Forensics

Wisconsin Innocence Project goes beyond DNA to ferret out bad courtroom science.

ISTOCKPHOTO

In our post-*CSI* world, where wise-cracking investigators in dark sunglasses solve a case in an hour using cutting-edge techniques, this front-page story was a bit of a shocker: forensic science in the real world is suspect, and its use has sometimes put innocent people behind bars.

A report from the National Academy of Sciences (NAS) revealed that not enough research has been conducted to determine the accuracy and reliability of forensic procedures such as hair analysis, bloodstain patterns, fiber comparison, and fingerprints.

The NAS also concluded that forensic labs are underfunded and understaffed, and technicians are often poorly trained and exaggerate the accuracy of their forensic methods when testifying in court.

The news surfaced just weeks after law students with the Wisconsin Innocence Project won Robert Lee Stinson's release from prison, after successfully arguing that his 1985 conviction for the murder of a Milwaukee woman was based largely on flawed bite-mark analysis. New analysis showed Stinson's teeth did not match bite marks on the victim's body — he was missing a tooth where there was a pronounced mark — and DNA testing of saliva on the victim's sweater also excluded him.

Lanny Glinberg '93, JD'07 worked on the case for three years as a UW law student, researching bite-mark evidence alongside his fellow students and reaching a conclusion similar to that from NAS.

"We didn't come to the Stinson case with a predetermined plan that we would attack this science. We weren't attacking the bite mark for the sake of attacking the bite mark. We actually spent a lot of time investigating its validity," says Glinberg, who was among those waiting outside the prison gates when Stinson was freed in January and now works as an assistant district attorney for Dane County.

Stinson's is one of a growing number of cases where non-DNA evidence is playing a key role in overturning wrongful convictions.

"We're seeing it in a lot of different kinds of forensic sciences — and even medical investigations — where the premises of the underlying prosecution, it turns out, are flat wrong at worst and disputable at best," says **Keith Findley**, co-director of the Wisconsin Innocence Project, which has freed twelve clients and will mark its tenth anniversary in October.

Findley says DNA is the "gold standard" for criminal evidence. But where DNA analysis emerged from the biological sciences, other forensic methods did not, and that's a major problem in an era of juries swayed by what's known as the "*CSI* effect." The NAS report acknowledges the phenomenon and notes that "jurors have come to expect the presentation of forensic evidence in every case, and they expect it to be conclusive," even if that's not possible with some types of evidence.

That problem became clear to **Shelley Fite JD'06** as she worked on Stinson's case and others as a law student. "There are immense opportunities for wrongful convictions where juries think that they're doing the right thing, because they think they're doing what science tells them is right," says Fite, who now works as an appellate criminal defense attorney with the state of Wisconsin public defender's office.

The vast majority of criminal cases don't have biological evidence that can be subjected to DNA analysis. But non-DNA cases are much tougher to pursue, Findley says, given the procedural barriers and substantive standards in place that make overturning a conviction difficult. "DNA can overcome all of that," he says.

Findley says it's not unusual for the Wisconsin Innocence Project to go to court with non-DNA evidence that establishes a strong claim of innocence and have prosecutors respond, " 'This isn't DNA. This isn't good enough' … as if there has to be DNA to prove innocence. But, of course, that's not the legal standard."

The Innocence Project will take a client's case if DNA evidence is available and if testing it can conclusively answer the question of guilt or innocence. Without DNA, a case needs to have enough other evidence that could lead to overturning a conviction.

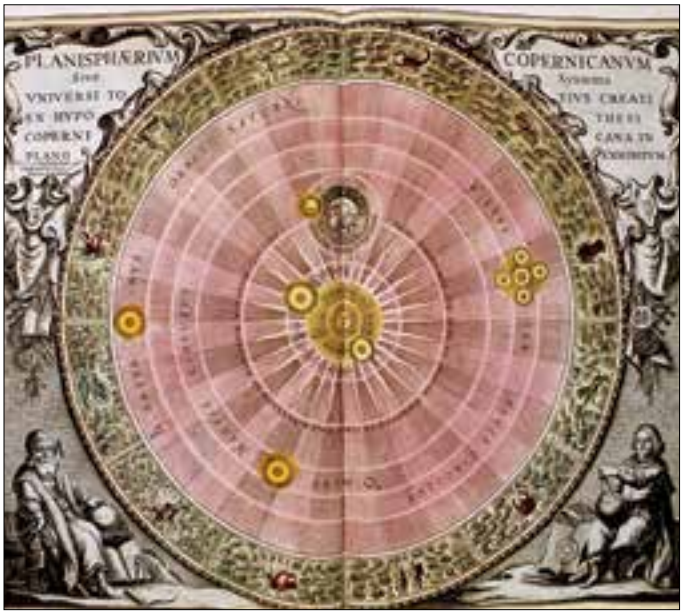
Due to the legwork involved with having students track down and interview witnesses and look for new evidence, the project won't take non-DNA cases from states that don't border Wisconsin.

"DNA cases you can work from a distance. A non-DNA case, you have to hit the street," Findley says. "That's just too hard for us to do from a long distance."

J.P

Celestial Chat

Copernicus's big idea may have sprouted from earlier talk among scholars.



SUPERSTOCK

No one, least of all UW-Madison's **Michael Shank,** disputes that Polish astronomer Nicolaus Copernicus was responsible for displacing Earth with the Sun as the center of the universe. In the early sixteenth century, Copernicus was the first to explain mathematically the apparent motions of celestial objects sans a rock-steady Earth at the center of it all.

But was Copernicus's big idea a singular inspiration, as most people believe, or the upshot of a longstanding scholarly conversation lost to the ages? Sages in ancient Greece, India, and the Muslim world had previously proposed and debated Earth's motion, but it was the work of Copernicus, a polymath Catholic cleric who also studied mathematics, medicine, the military arts, economics, and law, that is widely regarded as the catalyst that sparked the scientific revolution.

"The old story is that Copernicus's [heliocentric theory] is a bolt out of the blue," says Shank, a professor of history of science. But in a paper in the journal *Early Science and Medicine*, Shank suggests that Copernicus's monumental *De Revolutionibus* (On the Revolution of the Heavenly Spheres) may have been a response to commentaries then circulating in late-medieval European universities. In particular, Shank cites the work of Francesco Capuano, a Padua teacher of astronomy and the mathematical sciences, and a contemporary of Copernicus.

In the late fifteenth and early sixteenth centuries, Shank says, Capuano and others were attacking "proto-Copernican arguments" about possible motions of Earth before Copernicus made sense of things using mathematics. Shank notes that little is known about the university context of Copernicus's heliocentrism, adding, "The odd thing is no one's really looked carefully at these commentaries."

Shank explains that, in *De Revolutionibus*, Copernicus may well have been responding to Capuano's commentary detailing the arguments against a movable Earth.

Terry Devitt '78, MA'85

iBrain

Researchers use brain interface to post to Twitter.

In early April, **Adam Wilson MS'05, PhD'09** posted a status update on the social networking Web site Twitter — just by thinking about it.

Only twenty-three characters long, his message, "using EEG to send tweet," demonstrates a manageable way for "locked-in" patients to couple brain-computer interface technologies with modern communication tools.

Wilson is among a growing group of researchers worldwide who aim to perfect a communication system for users whose bodies do not work, but whose brains function normally — people, for instance, who have amyotrophic lateral sclerosis (ALS), brain-stem stroke, or high spinal-cord injury.

Some brain-computer interface systems employ an electrode-studded cap wired to a computer. The electrodes detect electrical signals in the brain — essentially, thoughts — and translate them into physical actions, such as moving a computer's cursor. "We started thinking that moving a cursor on a screen is a good scientific exercise," says assistant professor **Justin Williams,** Wilson's adviser. "But when we talk to people who have locked-in syndrome or a spinal-cord injury, their number-one concern is communication."

In collaboration with scientist Gerwin Schalk and colleagues at the Wadsworth Center in Albany, New York, Williams and Wilson began developing a simple, elegant communication interface based on brain activity related to changes in an object on screen.

The interface shows a keyboard displayed on a computer screen. "The way this works is that all the letters come up, and each one of them flashes individually," says Williams. "And what your brain does is — if you're looking at the *R* on the screen and all the other letters are flashing — nothing happens. But when the *R* flashes, your brain says, 'Hey, wait a minute. Something's different about what I was just paying attention to.' And you see a momentary change in brain activity."

Wilson, who used the interface to post the Twitter update, likens it to sending a text message on a cell phone. "You have to press a button four times to get the character you want," he says of texting. "So this is kind of a slow process at first."

However, use improves with practice. "I've seen people do up to eight characters per minute," says Wilson.

Williams hopes the Twitter application will nudge researchers to refine the in-home technology. "A lot of the things that we've been doing are more scientific exercises," he says. "This is one of the first examples where we've found something that would be immediately useful to a much larger community of people with neurological deficits."

Renee Meiller '95

UW on the Air

Fire up your DVR, because there's more than football to watch on the Big Ten Network. UW-Madison has produced thirty hours of original programming, more than any other school in the conference, earning it a regular Monday time slot on the cable channel. What will you see when you tune in?

IMHO

Short for *In My Humble Opinion*, it's a lively, unscripted program with five student co-hosts tackling hot topics ranging from racial diversity on college campuses to balancing academic stress and a social life. Think of it as Bucky's answer to *The View*.

Office Hours

Get an insider's look at the latest and greatest work being done on campus. Political science professor **Ken Goldstein** hosts this talk show, which has featured UW experts on the economy, stem cells, and even brewing beer. Students from Goldstein's political communication class select guests and do research and writing for the program.

Wisconsin Reflections

Find out how much the UW means to notable alumni and campus personalities as they reflect on their career paths and college memories during in-depth interviews with host **John Roach '77.** These are back-stories you won't hear anywhere else from leaders such as UW athletic director **Barry Alvarez** and well-known Badgers, including radio host **Michael Feldman '70.**

J.P.

Ready, Set … Slow Down

Ideal pace helps runners expend less energy.

Want to go farther faster on your daily jog? It turns out that slowing down might be a better idea in the long run.

A study co-authored by UW zoology professor **Karen Steudel PhD'74** found humans have a speed at which they can cover the greatest distance with the least effort. For most people, it's at the slower end of their possible range, though going too slow is also not the most efficient. Researchers pinpointed this peak efficiency by measuring a small group of experienced runners' metabolic rates at various speeds on a treadmill.

For men in the study, it was 8.3 miles per hour — about a seven-minute mile; for women, it was 6.5 miles per hour — about a nine-minute mile. This work has another scientific aim, aside from finding an optimal pace: learning more about the mechanics of running may hold clues to how the modern human body form evolved from the stubbier frame of our ancestors.

Jenny Price '96

ISTOCKPHOTO

STUDENT WATCH

A pillow and a cell phone? Check. Lumber and tools to build a loft and a George Foreman grill to make burgers before football games? Not allowed.

The cargo stuffed into minivans and SUVs delivering new freshmen students and their belongings as they move into residence halls these days looks a bit different from what filled the station wagons and pickups that brought students to campus in past decades.

Typewriters and record players went the way of the dinosaurs years ago, replaced by personal computers and CD players. Now it's flash drives rather than floppy discs, and MP3 players and iPods rather than stereo systems. Landline telephone service is no longer provided (cells only, please) and loft components are now provided in every room, though students and their parents still have to figure out how to assemble them.

Some things haven't changed. University Housing provides vacuums to borrow, and each room still comes with a refrigerator, though it's up to students to clean it out from time to time. And you still have to bring size extra-long sheets to fit the mattresses.

Starting next year, students might have to call home for money if they need additional supplies as the semester wears on. A new federal law will bar anyone under twenty-one from getting a credit card without a parent co-signing the application.

***On Wisconsin* has one other practical tip for the incoming class of 2013: bring more than a pair of flip-flops for footwear. It's a big campus, and it also gets a bit cold here.**

J.P.

Big Red Book Club

A new common reading program puts campus on the same page.

The UW campus is about to be Pollan-ated. From the College of Agricultural and Life Sciences to Letters and Science, from a Kohl Center lecture to grad-school seminars, everyone will be talking about Michael Pollan and his book *In Defense of Food.*

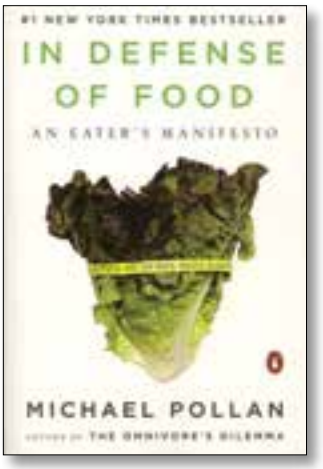
The award-winning volume is the centerpiece of Go Big Read, a new common reading program. The plan aims to get people all over campus and around Madison reading and talking about ideas prompted by the same book. Organized by the UW-Madison Libraries, Go Big Read hopes to engage the entire campus community both inside and outside the classroom in a vigorous, interdisciplinary intellectual discussion.

In Defense of Food is an examination of food and eating in modern America. According to **Sara Guyer,** director of the Center for the Humanities and a member of the Go Big Read steering committee, the book will find its way onto many class reading lists, from horticulture and consumer science to psychology and French 101.

"The book offers a critique of our everyday lives," she says. "It encourages students — all of us, really — to think about what we eat and how we live."

Guyer says that the program's keynote event will be a lecture by Pollan at the Kohl Center on September 24. But other events related to the book are scheduled throughout the year, including garden and vegetable tours and a resource-themed film festival.

The plan was initiated by Chancellor **Biddy Martin PhD'85** and is based on similar projects at other universities, including one at Cornell, where she was provost before coming to UW-Madison in 2008.



Although this is Go Big Read's first year, Guyer says that interest is strong across the university. "We received hundreds of suggestions," she says, "and Michael Pollan received more recommendations than anyone else."

John Allen

Real Cheap Real Estate?

COURTESY OF SOHE

Housing prices across the country may be falling, but it's hard to find a house as cheap as the one the UW's School of Human Ecology (SoHE) is selling. Priced at just $1, the building at 1430 Linden Drive is now for sale to anyone who is willing to move it to a different location.

"[The building is] past its useful life for the School of Human Ecology," says Angela Pakes Ahlman '96, project manager for SoHE's expansion plans. "And yet it's a very charming and solidly built home. It just doesn't give the school enough space, and we'd like to donate it to someone who is better suited to use it."

SoHE is planning to expand its main building starting in late winter 2010, at which time the house at 1430 Linden will be in the way.

Completed in 1941, the house began life as a lab for the home economics department and was called the Home Management Practice House. Seniors in home economics were required to live there for two weeks, to test their household skills. In the 1960s, it was converted to office space, though it still retains the look of a single-family dwelling.

"It's a well-built brick-and-stone colonial revival," says Pakes Ahlman, noting that the school would rather see the building kept in one piece. She estimates that it would cost $135,000 to move the building from its current location to another site. If no buyers are found, the university will deconstruct the house and salvage some of its architectural elements for future construction.

As of press time, no buyer had been identified, but the school had planned to accept offers until the end of August.

J.A.

Digging Deep

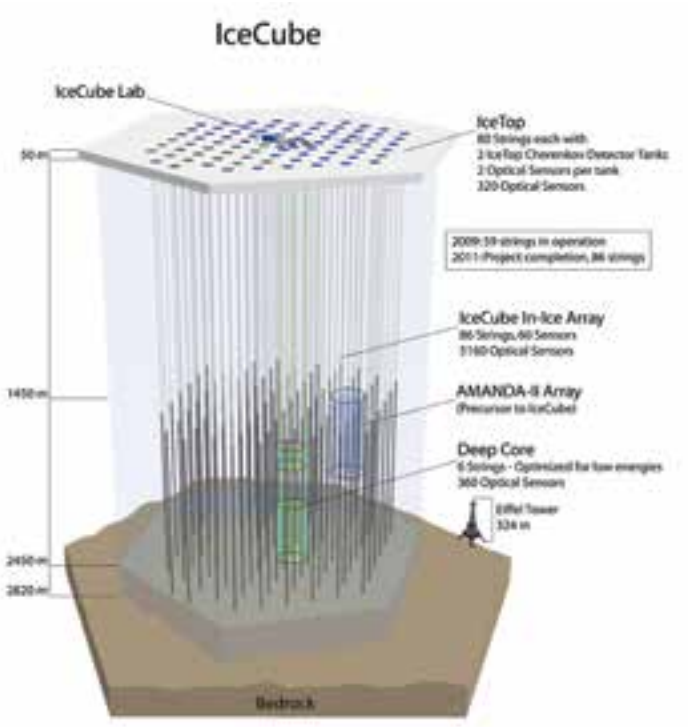
It takes a gigantic telescope to find some of the smallest particles in the universe.

UW scientists are leading an international team that's building the IceCube Neutrino Observatory, drilling holes one and a half miles deep into the Antarctic ice to make room for strings of optical sensors that make up the enormous telescope.

What is IceCube looking for? Evidence of elusive subatomic particles that reveal information about supernovas, dark matter, gamma ray bursts, and other mysteries. Why the South Pole? It's where scientists can find large amounts of the purest ice to get the most accurate measurements, filtering out low-energy particles and allowing them to focus on high-energy neutrinos, the particles with the scoop they seek.

When it's done, IceCube will have eighty-six holes and more than 5,000 basketball-sized sensors. Project construction, which is funded by the National Science Foundation, won't be done until 2011, but some sensors are already installed and sending data back to Madison for analysis.

Jenny Price '96



IceCube, deep in the Antarctic ice, makes the Eiffel Tower appear miniature by comparison. UW scientists are leading the team building IceCube, which incorporates a telescope UW researchers built in the 1990s (seen here as the blue cylinder) to find small particles.

Fast Change

Genetic evidence suggests human evolution is speeding up.

People change — not just individually, but as a species. And according to UW anthropology professor **John Hawks,** people appear to be changing faster than scientists previously imagined.

For decades, the standard biological line held that humans haven't evolved significantly during the last 50,000 years. But drawing on data gleaned from the human genome project, Hawks and other evolutionary scientists suspect that the standard line is completely wrong. The human species isn't only continuing to evolve — the pace of evolution may be speeding up.

"There's a disequilibrium," Hawks says. "When we look at variation in the human genome, we find that a lot of it has occurred recently."

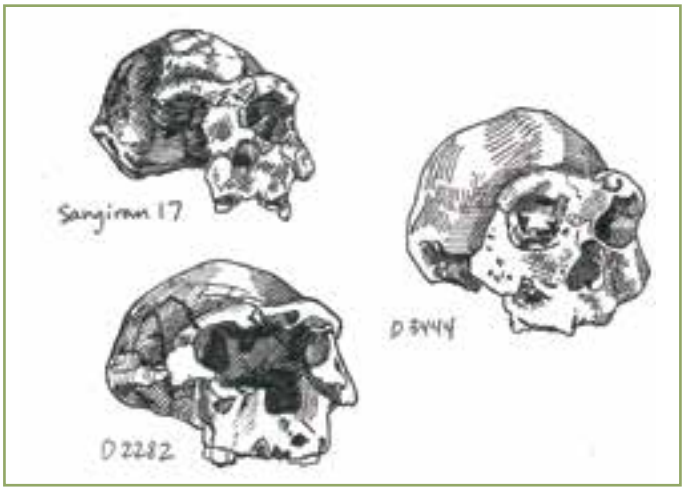
Hawks and his colleagues rely on a set of data called the International HapMap, a catalog of the genetic variations that occur in human beings. Looking at the HapMap, they counted the number of variations, then estimated how long in the past each occurred. They found a surge of variation in recent millennia.

"There are about a thousand changes that seem to appear in just the last ten thousand years," Hawks says. "In the previous 40,000, there are only about 800 changes."

Some of those changes are superficial characteristics, such as the lightening of skin that occurred in Europeans and Asians. Many others, however, seem to be the result of adaptations to disease. "More than two dozen genes seem to have evolved for resistance to malaria alone," Hawks says.

He suggests several reasons why genetic change may be speeding up. Population growth encourages more new mutations to appear, he notes, and improvements in transportation have increased contact among different populations, enabling DNA changes to spread farther afield.

J.A.



JOHN HAWKS

Three *Homo erectus* skulls show how the human head has evolved. A modern human skull is double the size of these fossils, which are more than a million years old. Yet over the last few millennia, skulls appear to be shrinking.

Designing Woman

An online exhibit highlights the costumes created in Edith Head's head.

AP/WORLD WIDE PHOTOS

In her nearly sixty years as a costume designer, Edith Head worked on more than one thousand films, dressing Hollywood's beautiful leading ladies (Ingrid Bergman, Sophia Loren, Grace Kelly, Elizabeth Taylor) and handsome men (Cary Grant, Paul Newman, Robert Redford). Along the way, she received thirty-five Academy Award nominations and took home the statue eight times — the most of each for any woman in any category.

The papers of this design legend reside at UW-Madison as just one of the 242 collections of film, theater, television, and radio history and memorabilia held by the Wisconsin Center for Film and Theater Research, in cooperation with the Wisconsin Historical Society. The compilation includes some of Head's personal papers, but is largely watercolor, pencil, and pen-and-ink sketches.

You needn't come to campus to ooh and aah over the fashions, though. The center has prepared an online exhibit that gives a taste of the Head papers, revealing the creative process of designing film costumes and the business behind the magic. To browse the Head exhibit and other fascinating featured collections, visit www.wcftr.commarts.wisc.edu.

Gwen Evans '79

WISCONSIN CENTER FOR FILM AND THEATER RESEARCH (2)

Above: Edith Head designed this elegant ball gown for Grace Kelly to wear in Alfred Hitchcock's *To Catch a Thief.*

Left: Kelly, wearing the final version of the dress, also wore Head's designs in the Hitchcock film *Rear Window.*

Far left: Head, wearing her signature glasses, also created looks for other Hollywood legends, including Bette Davis, Audrey Hepburn, and Sophia Loren.

Catalog of Horrors

Ghouls, demons, and giants — students trace the line between the human and the monstrous.

ISTOCKPHOTO

Somewhere in the heart of **Christopher Livanos,** there's an adolescent boy dying for a good scare. A one-eyed cannibalistic giant, maybe. Or a vengeful reanimated corpse. Or the gaping maw of hell. But where, on the campus of a modern research university, can one find a convenient collection of horrors? In the great works of literature, naturally.

An associate professor of comparative literature, Livanos has devoted most of his career to studying the classical and early modern texts of the Byzantine Empire. But he's always known there's more to life than medieval Greek religious poetry.

"Like many boys, I was always fascinated with monsters," he says. "Probably the first thing that drew me into Greek literature was the Cyclops."

From this fascination was born Comparative Literature 203: Scary Monsters. Throughout a semester, Livanos takes students on a tour of the inhuman creatures that inhabit the canon of Western literature, from ancient epics (such as *Gilgamesh,* the *Aeneid,* and the *Odyssey*) to medieval poetry (including *Beowulf* and Dante's *Inferno*). Some two hundred students enroll in the course each spring, attending Livanos's two lectures and one T.A.-led discussion section each week.

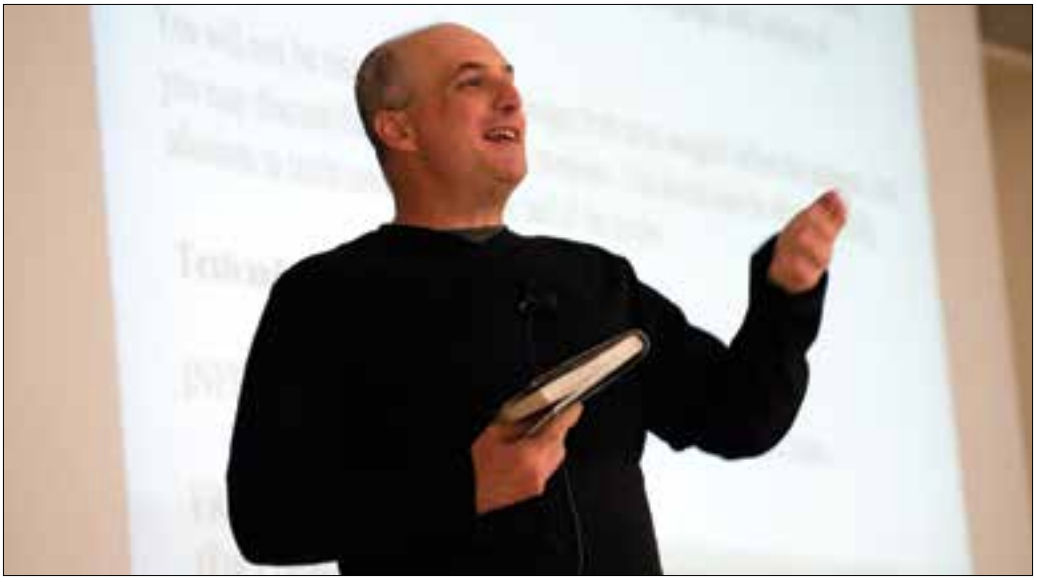
Livanos believes that the monsters in these stories tell readers where the cultures that created the tales drew the boundary lines between the civilized and the bestial. "They tell us what it means to be human by showing us the opposite," he says.

For instance, the Icelandic Volsungasaga shows the importance that Norse culture placed on family ties — the monsters are those who violate ties of kinship. In Homer's *Odyssey,* readers learn the sacred state of hospitality by comparison with the acts of the Cyclops, who eats his guests.

As the course develops, students move beyond the classics and into modern works to explore what today's society considers monstrous. H.P. Lovecraft's *Mountains of Madness* makes an appearance, as does J.R.R. Tolkein's *Children of Hurin,* published in 2007, long after the author's death. Past versions of the course have also included graphic novels, such as *The Watchmen.* Though the topic may seem like fun, the students are tasked with a ton of reading.

But then that's indicative of Livanos's love of monsters. "I like 'em all," he says. "And though a lot of the teaching is from the canon, I want to be sure that we've got good stories. I decide on what texts I want to teach first, then just focus on what's monstrous within them."

John Allen



JEFF MILLER

Christopher Livanos leads a discussion of the monsters found in J.R.R. Tolkien's *Children of Hurin,* a modern novel that draws inspiration from medieval English and Scandinavian literature.

TEAM PLAYER

John Clay

Whether he's carrying the ball to drive the Badger football team toward a win or helping troubled kids achieve a better life, **John Clay x'12** is always running toward a goal. The running back was heavily recruited out of high school. He won most-valuable-player honors three times for Racine, Wisconsin's Washington Park High School team, and major college coaches clamored for his services.

This "was a blessing not many people get the opportunity to experience," Clay recalls. "It made me feel good knowing I was doing things on the field people wanted to see."

He chose to attend Wisconsin, and Badger fans saw plenty to like during his freshman season in 2008. He was named the UW's Rookie of the Year after playing in all thirteen games, scoring nine touchdowns, and racking up 884 yards — seventh most in the Big Ten. That's not bad for someone who says he's still trying to catch up to the speed of the college game.

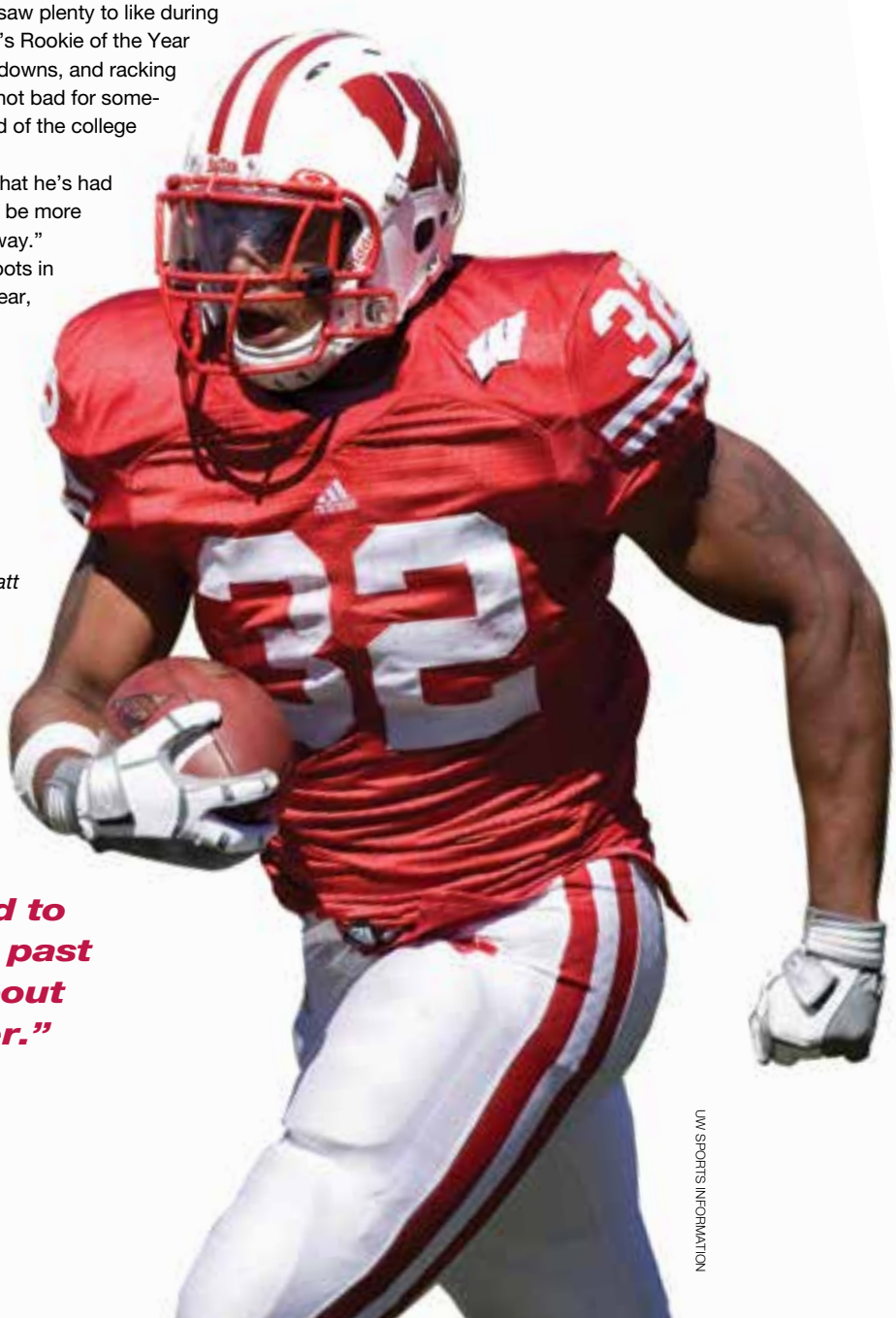
"Everything happens so fast," Clay says, noting that he's had to learn not to overreact to the pace of play. "I had to be more patient, instead of making something happen right away."

Overall, his performance was one of the bright spots in an otherwise difficult 2008 campaign. This is a new year, though, with new chances for Clay to lead the team. "I did what I needed to establish myself this past season," he emphasizes. "Now it's about going up the ladder instead of falling down."

When it's time to hang up the cleats for good, Clay's goals won't end. They'll just change, as he wants to improve the lives of urban children. "I'm looking to work with kids, and motivate them to stay off the streets and stay out of trouble," he says.

Brian Klatt

"I did what I needed to establish myself this past season. Now it's about going up the ladder."



UW SPORTS INFORMATION

Blue's Crews

Wisconsin rowers compete for a seat in Oxford's coveted Blue Boat.

GREG ANDERSON

Big Red goes Blue: Ed Newman rowed for the Badgers before his graduation; now he pulls for Oxford.

There must be something in the water: a steady stream of Wisconsin rowers have caught the bug to row for Oxford University, trading in their Badger reds for Oxford blues.

Since 2002, four Badger men's rowers have enrolled in England's University of Oxford as graduate students, and a fifth oarsman is heading across the pond this fall. "On the rowing side, it's fun for the athletes to be involved in a sport that has a tremendous attachment," says Badger men's head crew coach **Chris Clark.** "On the academic side, it's a boon for them to be part of a university system that's very different from here."

The rowing tradition runs deep at both universities. Rowing is Wisconsin's oldest sport, beginning as an intramural competition in 1874, and is the oldest intercollegiate event in Europe. Oxford's top athletes can earn a "Blue," a dark blue blazer, by competing against rival Cambridge in a few select sports, while top athletes from Cambridge can earn a light blue blazer.

Dating back to 1829, the storied Oxford and Cambridge Boat Race is now a major international sporting event, with some 250,000 spectators lining the banks of the River Thames and millions of television viewers from around the world tuning in to watch the seventeen-minute regatta. Cambridge narrowly leads the series, though the Dark Blues have won four times in the past five years, with help from their Badger teammates.

Clark is the likely source of this international fever — he rowed at Oxford himself in 1986. The young Badgers following in his wake include **Sam McLennan '02,** who rowed in Oxford boats that beat Cambridge in 2003 and 2004, and **Paul Daniels '04,** who rowed in the blue boat that defeated Cambridge in 2006. **Adam Barhamand '08** participated in Oxford's most recent victory in March 2009, and **Ed Newman '09,** who rowed in the 2008 national champion varsity eight for Wisconsin, will enroll at Oxford in fall 2009. Further, Badger rower **Mike Triebwasser '05** earned his Blue on wheels instead of water — he was on the Oxford cycling team in 2006.

Some 90 percent of the Americans who attend Oxford are from private schools, and "none of them are any more qualified or sharper than the kids we send," Clark says. "What I love about the public schools is that everything is available for you and it's highly competitive. If you survive and thrive at Wisconsin, which is what the best students do, you'll absolutely dominate when you go to a place like Oxford or Cambridge or any top private school, because it's so much easier. Kids appreciate their time at Wisconsin and they realize how well prepared they are academically. They shine when they get to these places."

Before his stint at Oxford, Clark spent a year at Stanford and earned three Pacific Coast Championships for the University of California. He was a member of the U.S. National Rowing team and went on to coach a number of American teams at the World Championships. And he likes a challenge: when Clark took over the reins at Wisconsin in 1996, he replaced legendary men's rowing coach **Randy Jablonic,** who had a twenty-eight-year tenure. Since Clark's arrival, the Badgers have consistently ranked among the nation's elite.

Karen Roach '82

BADGER SPORTS TICKER

Big red is rolling in green, according to Street and Smith. The business journal recently ranked UW-Madison's athletic department fifth in the nation at generating income. In 2007-08, athletic revenue was $93.5 million.

The Crazylegs Classic is going global. Through 2009, the annual April road race, which raises funds for the athletic department, has been known for clogging traffic merely in downtown Madison. But in 2010, the athletic department, the National W Club, and the Wisconsin Alumni Association will sponsor satellite events in cities around the world.

Men's basketball coach Bo Ryan led the USA men's world team to a bronze-medal finish at the World University Games in July. Ryan's team went 6-1 in the tournament, losing only to eventual silver medalist Russia. Serbia took gold, and Team USA defeated Israel for third.

Former and current Badgers put on a show in the men's 5,000 meter race at the U.S. national outdoor track and field championships in Oregon in June. Matt Tegenkamp '05 took first, followed by Chris Solinsky '07 and Evan Jager x'11.

The women's swim team picked up an academic honor. The College Swim Coaches Association of America named the aquatic Badgers a Scholar-Athlete Team due to their collective 3.16 grade point average.

for all the right seasons

In theory, it was a simple idea back in 1934: set aside a place to study how both natural and human forces shape the land. In practice, though, saving the UW Arboretum is an ongoing challenge.

By Madeline Fisher PhD'98
Photos by Bryce Richter

Whenever the pressures of daily life become too much, people come to the UW Arboretum. Whether in the golden warmth of autumn, the crystalline stillness of winter, or summer's hothouse profusion of plant life, they seek and find tranquillity here. A calm descends that is the singular gift of natural places, far away from humanity's dreams and cares.

This is what many of us cherish about the Arboretum: It seems a place apart. But it is not.

Rather, it has always been a center for two very human endeavors — teaching and research. Alarmed by the loss of Wisconsin's prairies, woods, and wetlands, university and civic leaders dedicated the Arboretum seventy-five years ago as a preserve for vanishing landscapes and a place to study how to bring them back. Following famed conservationist Aldo Leopold, the Arboretum's first research director, generations of UW scientists have since worked here, their tools and ideas eventually gelling into the science of restoration ecology. Beyond nature herself, we have them to thank for the vistas we so love.

But humanity's reach doesn't end there. As Madison's growth has squeezed the Arboretum from all sides over time, other human forces have come into play. Though lacking the intention of science, they are shaping the land all the same — and revealing how tied to nature we truly are.

SPRING Gardner Marsh

A fresh crop of cattail leaves emerging from last year's withered growth is one of the most emblematic sights of spring. And yet, these cattails are not natural denizens of Midwest wetlands at all, but instead an aggressive, invasive species and a sure sign of mankind's influence over Gardner Marsh.

In the two decades before the Arboretum's founding, developers drained, dredged, and filled the wetland for a new Madison suburb. Known today as the Lost City, the development ultimately failed, but its legacy lives on in the shrubs and trees that have invaded the higher, drier ground left behind. Water levels that are stabilized around the city to keep homes from flooding now flood sections of the marsh year round. This, combined with phosphorus-laden urban runoff, has allowed invasive cattail to consume nearly thirty acres of Gardner Marsh.

Today, only a tiny remnant of the original plant community — known as sedge meadow — remains, and Arboretum research director Joy Zedler MS'66, PhD'68 is bent on keeping it. Her former student, Steve Hall '05, MS'08, found that cutting cattail underwater along its border with sedge meadow smothers the plant, allowing the natural community to reclaim about a foot and a half of land each year. For now, Zedler thinks this is the best that can be done. Trying to restore a larger area all at once would be too laborious and expensive.

It's the same story throughout the Arboretum: beating back invasive plants has become the imperative. "Undertaking new restoration projects has gotten really difficult," says Zedler. "It's takes all of our field staff and volunteers just to hold the line."

UW DIGITAL COLLECTIONS

Few places in the Arboretum have suffered more disturbance than Gardner Marsh. Years before the preserve's founding, developers were ditching and draining the wetland (above) for a Madison suburb that never came to be. Today, urban development around the Arboretum has caused the opposite problem — flooding — allowing an aggressive, unnatural cattail (top and left) to take over much of the marsh.

SUMMER Greene Prairie

The solitude of sunrise over this land would have just suited Henry Greene. Beginning in the 1940s, the reclusive UW botanist spent countless hours at Greene Prairie, carefully examining the soil and moisture gradients, and placing prairie species such as white lady's slipper, downy phlox, and bottle gentian into their natural groupings and local habitats. In the end, he created one of the finest restored prairies anywhere in the world. And he did it almost single-handedly.

How amazed Greene would be, then, to see what's happening in his prairie today. Each September, a small army of UW ecology students has been helping with a restoration experiment aimed at saving his masterwork from another invasive plant, reed canary grass. Aided by stormwater runoff, the weed has devoured nearly ten acres of land, making the problem too immense for Arboretum researchers and managers to tackle alone.

Given the myriad challenges facing the entire preserve, Zedler would like to see many more undergraduates get involved. With hundreds — even only dozens — of helpers, she believes the Arboretum could make visible progress on a number of fronts, while also teaching generations of students about the loss of native habitats and just how difficult they are to bring back. The lesson is right here in Greene's prairie. Even if the area can be rescued from reed canary grass, his painstaking plantings in the ten affected acres likely are gone forever.

"That's the hard thing — I don't think we could ever get back the full range of diversity," says Zedler. "We can reestablish the most aggressive native species, the ones with the broadest range of tolerance. It's the rare species that we don't know how to recover."

UW DIGITAL COLLECTIONS

Greene Prairie (top) is one of the world's best examples of a restored prairie, but its diversity and beauty (left) are being lost to another invasive weed, called reed canary grass. In the tradition of the Civilian Conservation Corps, which worked and camped (above) in the Arboretum during the 1930s, small armies of UW students are now helping restore these lands once again.

FALL Curtis Prairie

The grasses in seventy-five-year-old Curtis Prairie still reach skyward every autumn, but they can't stretch tall enough to hide another worrisome trend. This grassland, the oldest restored prairie in the world, is slowly becoming a shrubland. A small mountain of willow now looms above the prairie's eastern end, while grey dogwood — a native, but aggressive shrub — has grown almost as abundant as the prairie icon, big bluestem.

It's a puzzling development for the Arboretum's managers. Nearly from the start, they've set regular fires to burn off shrubs and other unwelcome plants. Curtis Prairie is home, in fact, to some of the first experiments demonstrating the beneficial effects of fire. Seven decades later, however, fire doesn't seem to be working anymore.

Paul Zedler, a UW-Madison environmental studies professor, Arboretum scientist, and Joy Zedler's spouse, suspects that prescribed burns, which must be done for safety reasons during the cool, moist months of spring, don't burn hot enough to kill shrub roots. Flows of nutrient-rich stormwater, the site's legacy of farming — even global warming — could also be giving shrubs the edge. Or perhaps tall grass prairie always contained large patches of dogwood, sumac, and willow, Zedler muses, but settlers didn't notice them as much when grasslands extended for hundreds of square miles instead of tens of acres. Whatever the explanation, Curtis Prairie is proving that, unlike a renovated painting preserved behind glass in a museum, "restored" nature is not so easily kept.

Few know this better than Steve Glass, longtime Arboretum land care manager. "The shrub invasion, of course, concerns us," he says. "But in the face of climate change and the fact that ecosystems change anyway, we'll have to keep learning and adapting. It's how we advance restoration ecology."

UW DIGITAL COLLECTIONS

When Arboretum managers set Curtis Prairie ablaze each spring (left), they're following in the footsteps of UW researchers (above) who were among the first to demonstrate fire's beneficial effect on prairie. Despite this long history of prescribed burning, however, thickets of shrubs are crowding out the site's tall grasses (top). Arboretum scientists are now trying to understand this trend.

WINTER Leopold Pines

Climate change may eventually force adaptation of another kind. Aldo Leopold originally envisioned the Arboretum as a place to recreate ecosystems from all over Wisconsin — southern prairies to northern forests. But as the climate continues to warm, preserving Wisconsin's most northerly plant communities here may not be feasible.

Take the Leopold Pines. Donated to the Arboretum as seedlings, the northern white pines, red pines, and spruces were planted in 1934 and named in honor of Leopold in 1953. Today many of these trees buffer Curtis Prairie from traffic whizzing by on the nearby Beltline Highway, but what of their future? Should they be maintained in keeping with Leopold's vision? Or should that vision evolve in light of climate change and increasing urbanization?

As the Arboretum's keepers contemplate the future, these are but two of the questions they face. Meanwhile, they've reluctantly reached one decision: in an attempt to cope with the half billion gallons of urban runoff that course into the reserve each year, dozens of acres are being given up to new detention ponds and other stormwater structures — in the hope of halting some of the damage to places like the Curtis and Greene Prairies. The projects also raise many new research questions, ensuring there will be "plenty to do" during the next seventy-five years, says Joy Zedler.

Yet, while remaining committed to building restoration science as a whole, she admits the great needs of this one beloved place can dishearten her.

"But then," Zedler says, "I think, if there were ever a place where people care and where restoration is our *mission*, it's the Arboretum." ■

Madeline Fisher PhD'98, a Madison freelance writer, says her favorite spot in the UW Arboretum is Greene Prairie on a summer evening, lit by fireflies.

WISCONSIN HISTORICAL SOCIETY

Conservation visionary Aldo Leopold (above), a UW professor of wildlife ecology, originally saw the Arboretum as a place to restore and protect ecosystems from all over Wisconsin. But as the state's famously wintry weather (left) grows more temperate with climate change, the future is uncertain for the Arboretum's northern plant communities, including the pines (top) that bear Leopold's name.

JEFF MILLER

When You Say Wisconsin *In Song*

When we learned that an alumnus listens to songs for a living, we couldn't resist asking him to pick five that say UW-Madison and tell us why.

BY JENNY PRICE '96

While growing up in a small town in central Wisconsin, Stephen Thompson '94 spent Sundays parked in front of the radio, armed with a notebook to meticulously document the charts from Casey Kasem's *American Top 40*, followed by Rick Dees's *Weekly Top 40*.

"This is before I discovered girls," says Thompson, now the editor for National Public Radio's music Web site, www.npr.org/music.

Thompson's music obsession grew during his sophomore year at UW-Madison, when he became music director of the now-defunct student radio station WLHA in fall 1991. The station transmitted at just 1.5 watts and could only be heard in some lakeshore residence halls, but it was a transformative experience for Thompson.

"I had an opportunity to dive in head first, and just immerse myself in all this new music," he says, recalling that the first song he played on the air was Nirvana's "Smells Like Teen Spirit." Thompson's access to the station's music library also gave him the chance to discover bands and genres he had missed during the 1980s, when he was glued to the pop charts.

"It's part of what everyone treasures about college," he says. "You certainly had your eyes opened to new things."

His interest in music eventually turned into a full-time job at the *Onion*, where he started writing music reviews after a stint with the

Daily Cardinal. "There's sort of an inverse relationship between my professional development while in college and my interest in going to class," says Thompson, who graduated with degrees in history and journalism. He helped launch the *Onion*'s entertainment section — "The A.V. Club" — while still an undergraduate, and his role grew as the satirical newspaper did.

Thompson served as the section's editor until he left the *Onion* in 2004. He joined NPR's Digital Media team in 2006 after contributing pieces as a freelancer, including some for the music Web site's "Song of the Day," which features tunes by artists ranging from Death Cab for Cutie to Scott Joplin. Now, reviewers e-mail Thompson a digital file of the song they want to write about, and he decides whether it's worthy of being included on the site.

"My number one criterion that I tell writers is just love the song," he says. "And if you love the song, and you can write a passionate defense of the song … then if I don't despise it, it will make the cut for 'Song of the Day.' "

Thompson also appears as a music commentator on NPR's *All Songs Considered*, *Morning Edition*, and *Weekend All Things Considered*. One thing you won't hear him do is disparage a piece of music as a "guilty pleasure," even if the source is a former *American Idol* winner. An example is Kelly Clarkson's hit "Since U Been Gone," which Thompson has defended on air.

"There's no such thing [as a guilty pleasure]," he says. "You should not feel guilty about something that's awesome. If you think something is awesome, it's awesome. If a song is sort of catchy, and wonderful, and it makes you feel good, it's awesome." ■

Jenny Price '96 is a writer for On Wisconsin. She would add "Beer Barrel Polka" to the list of songs that say UW-Madison.

Stephen Thompson's Picks

I listen to songs for a living, and I never would have gotten to that point in my career if I hadn't gone to the UW. So it's no surprise that my thoughts of campus involve a heady mixture of gratitude, nostalgia, and anxiety about the fate of some Badger sports team or another — and more than a few songs. When *On Wisconsin* asked me to pick five that say UW-Madison, I had plenty to choose from. Here are the songs that ultimately made my list.

Bon Iver, "Wisconsin"

One of the most widely praised new bands of 2008, Bon Iver has Wisconsin etched into every strand of its DNA. Based in Eau Claire, singer Justin Vernon wrote and recorded Bon Iver's brilliant debut, "For Emma, Forever Ago," in a cabin in the state's north woods. He once appeared on *The Late Show with David Letterman* wearing a Bucky Badger T-shirt — the one thing Vernon could have done to make his music more appealing in my eyes. He recorded this wonderful song, "Wisconsin," complete with a mantra for everyone who's ever had to leave the state behind: "Every place I go, I take another place with me."

House of Pain, "Jump Around"

I was still in college when House of Pain's "Jump Around" came out, and I never viewed it as more than a hip-hop crossover novelty — culturally indistinguishable from, say, "Rump Shaker" by Wreckx-N-Effect. But ever since the Badger football team started using it to kick off the fourth quarter at home games, I've come to view "Jump Around" as an unimpeachable classic of not only hip-hop, but also motivation itself.

Stars of the Lid, "Even If You're Never Awake (Deuxieme)"

I'm a big believer in minimizing academics and using the college experience to explore work in the career of your choice. I spent far more time at WLHA, the *Daily Cardinal*, and the *Onion* than I ever spent studying — or, for that matter, attending classes. But when I did study, I often trotted out the trusty, head-clearing *Twin Peaks* score. Every time I put on this similarly hypnotic gem by Stars of the Lid — a perfect companion for editing, studying, or any other activity requiring concentration — I flash back to those dorm-room study sessions, and reflect on how glad I am that I no longer have to think for free.

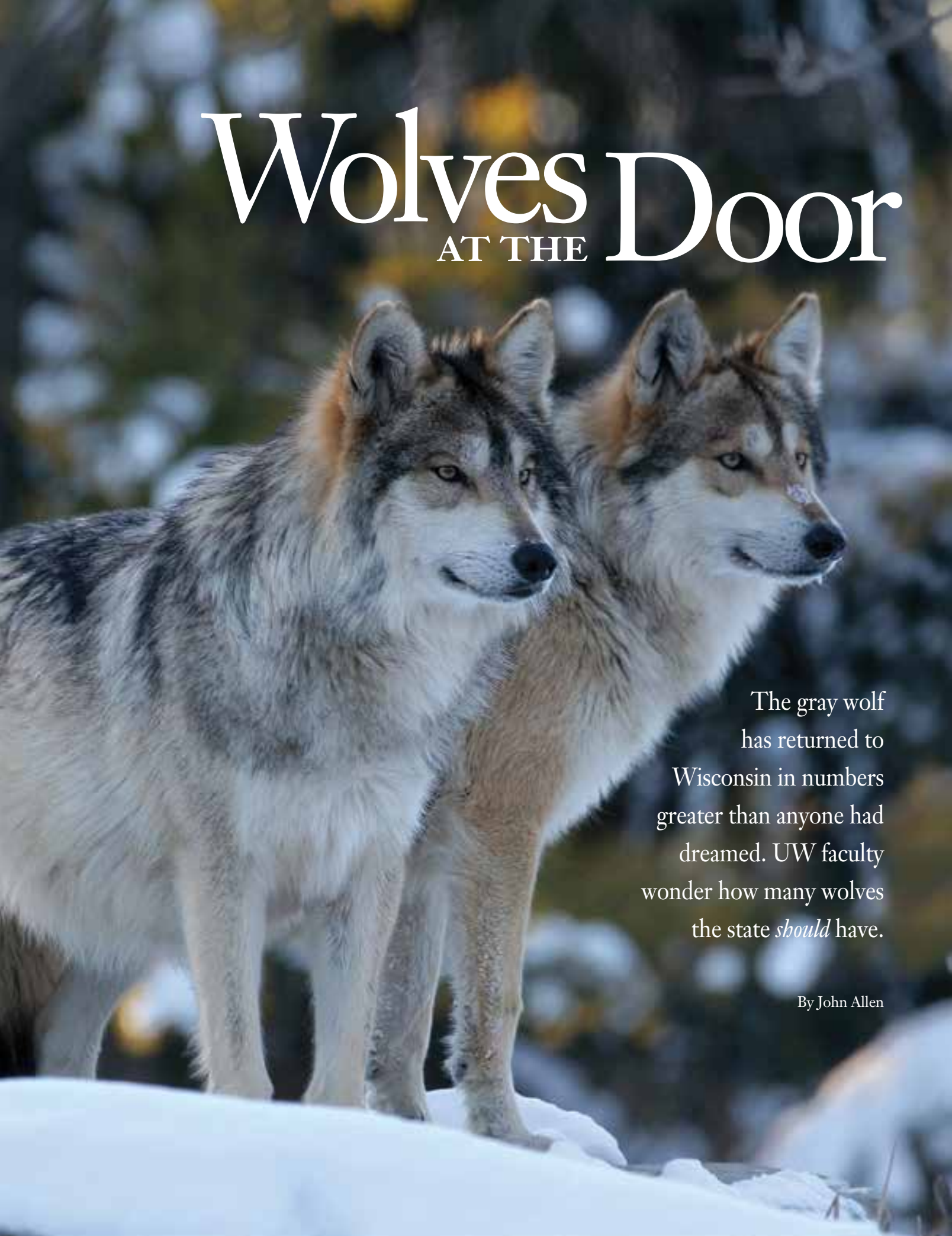
Badwolf, "Smooth Elevator"

This song won't mean much to all but a handful of local hard-rock fans. But few Madison bands meant more to me than Badwolf, a monumentally silly late-'90s hair-metal throwback that frequented the Badger Bowl long after its genre's gory demise. For all the great Madison bands to have been etched into local legend — Killdozer, The Tar Babies, Spooner, Pachinko, et al. — I prefer to celebrate Badwolf, and ponder what might have been had it come along, say, ten years earlier. If you can find its album *Sleeping Dogs Lie*, then you have found yourself a ludicrously entertaining pop-metal gem.

The University of Wisconsin Marching Band, "The Bud Song," a.k.a. "You've Said It All"

I had a tough time settling on a fifth song: Would I pick something to capture the spirit of activism that's defined campus life since long before I got there? The work of a beloved but defunct Madison band other than Badwolf? A track by one-time *American Idol* eighth-place finisher Bucky Covington — or, as I like to think of him, "Buckingham U. Covington"? Finally, I chose a brief but rousing instrumental, which concludes with eight of the greatest words in all of song: "When you say Wiiiiiiiiisconsin, you've said it all!"

Wolves AT THE Door



The gray wolf has returned to Wisconsin in numbers greater than anyone had dreamed. UW faculty wonder how many wolves the state *should* have.

By John Allen

ISTOCKPHOTO © STEVE GEER

Once upon a time in Wisconsin, the big, bad wolf was an endangered species. Then he wasn't. Then he was. Then he wasn't. Then he was. Then not. Now he is. Again. And all in the last five years.

It's dizzying.

In the last generation, the gray wolf — or timber wolf, or *Canis lupus*, if you're scientifically inclined — has made a remarkable comeback in Wisconsin. As recently as 1974, conventional wisdom held that our lupine population was zero. In 2009, the Wisconsin Department of Natural Resources (DNR) estimated the count to fall between 626 and 662 — more, it turns out, than the state knows what to do with. Back when the DNR was formulating a wolf recovery plan, it set a goal of 350 to qualify the wolf as recovered. We've now passed that goal by more than 78 percent.

When Wisconsin's wolf recovery is in the news these days, it's usually in reference to the animals' status with respect to the endangered species list. *C. lupus* has been included on that roll since the U.S. Fish and Wildlife Service distributed its first list in 1974, a year after Congress passed the Endangered Species Act. Since 2005, when the state's wolf population topped 350, the DNR has been encouraging the federal government to delist *C. lupus*, but it has repeatedly been overturned by legal action, led (at least in the latest round) by the Humane Society of the United States.

As the administrative and legal battle over wolves' status shows, Wisconsin is having a hard time figuring out what to think of its growing population of predators. While interest groups argue over what the state's optimal number of wolves should be — or even if there is one — UW faculty see the animals' return as an opportunity to study the interaction of a wild species in a modern environment.

How Many Is Enough?

"How fantastic to see a keystone predator return to Wisconsin," says UW-Madison geography professor Lisa Naughton '85, MS'87. The state, she notes, offers little actual wilderness. It's a "mixed-use landscape," she says, meaning that it's largely dominated by human activity: agriculture, and small towns, as well as a few forests and bogs, all intersected and connected by a loose network of roads.

"Most of the world increasingly resembles Wisconsin in terms of human-dominated landscape," she says. "That's what makes [the wolf recovery] so exciting, so interesting, and so important."

But, she knows, not everyone feels that way.

There is, for instance, Scott Meyer.

In 2001, Meyer was hunting bobcats near Pelican Lake, east of Rhinelander, with a redbone hound named Bonnie. Meyer had raised Bonnie for twelve years,

spending "hundreds and hundreds and hundreds of hours" training her, but that all came to naught when the two were separated by a river and Bonnie found not a bobcat but a wolf.

"This was a relocated problem wolf that had been killing deer on a deer farm," Meyer says. The DNR had moved it to the Pelican Lake area, but Meyer was unprepared to find it because, he says, officials didn't inform the county. "I've always had a contention about that."

By the time Meyer caught up with Bonnie, the hound was dead and partially eaten. "It was a horrific sight," he says.

Meyer is convinced that Wisconsin has more than enough wolves — more, even, than the DNR says it has, and he'd like to see the state take action to control and reduce its population.

Howard Goldman MA'71, however, fears government is too ready to reduce the number of wolves. Goldman is the Humane Society of the United States' state director for Minnesota, and he's convinced there aren't nearly enough wolves. That's why the Humane Society has gone to court repeatedly to keep the animals on the endangered species list.

"We've argued successfully before federal courts that the wolf is not, in fact, recovered," he says. "The Endangered Species Act states 'a species which is in danger of extinction throughout all or a significant portion of its range' is endangered. The [gray] wolf presently occupies only 5 percent of its historical range. Until the wolf is fully recovered, it should remain federally protected."

Naughton is familiar with stories like Meyer's and with opinions like Goldman's. She and her husband, assistant professor Adrian Treves of the UW's Gaylord Nelson Institute for Environmental Studies, formed the Living with Wolves project, an effort, she says, "to find a fair and ecologically sustainable approach to coexistence" with wolves. Part of that project's work is listening to the various arguments and gauging the state's public opinion about wolves.

> "Most citizens want at least some wolf presence in the state. But those who feel strongly drive the argument."

Their work touches on a concept called social carrying capacity. *Carrying capacity* is an ecological term for the number of a given species that an ecosystem can sustainably support. *Social carrying capacity*, however, refers to the number of a species that people feel is appropriate.

"One really looks at two questions," Treves says. "First, what's the carrying capacity, which we think is somewhere between five hundred and seven hundred [wolves]. But second, is that tolerable? Will people who live in areas where wolves are active put up with that many over the long term?"

Treves and Naughton have conducted surveys of Wisconsin citizens since 2001 to measure their feelings about the growing wolf presence. They've read reports and complaints from people who have suffered wolf depredation, and they've attended public meetings where people have aired grievances — and occasionally support — about DNR wolf policies.

While Naughton says that the public meetings tend to be dominated by those who feel there are too many wolves ("Even in Madison," she says, "where I was certain that wolf huggers would come out in force, the mood was solidly against them"), she says that overall, there's widespread support for the animals.

"Most Wisconsin citizens want at least some wolf presence in the state," she says. "But those who feel strongly, at either end of the spectrum, drive the argument."

This has left Treves and Naughton open to angry late-night calls from political partisans. Still, they say their work is coming closer to its goal of defining a "fair and ecologically sustainable" wolf policy — and one that is increasingly tolerant of wolves.

"When the DNR set that 350 level, it was kind of pulling a number out of a hat," Treves says. "No one had really done any research to see what the state's carrying capacity or public tolerance was. But they actually did a pretty good job. When we did our first surveys in 2001, we found that [about] 350 was the tolerance level. But our more recent surveys are showing a higher number — one that falls closer to 500."

But he warns that this tolerance might not be entirely sustainable. Much of Wisconsin's acceptance for wolves is based on the fact that the DNR reimburses those who have suffered wolf depredation, and the cost of those payments is rising. According to Adrian Wydeven, head of the DNR's wolf recovery program, the state sets aside about $35,000 a year for wolf compensation — 3 percent of the amount that Wisconsin citizens pay when they purchase endangered resources license plates for their cars. But the actual costs have run much higher — $101,000 in the 2008–09 fiscal year. Hunting hounds like Meyer's account for nearly half that total, some $48,250.

But while the reimbursements weigh down the DNR's budget, they provide little solace to those who've suffered from depredation.

"Compensation is the last of your worries," says Meyer, even if the loss is livestock. When it's a hound like Bonnie, "it's like losing a member of your family. They're confidants, companions, buddies."

Balancing the costs of wolves, however, are unexpected benefits. As wolves return to Wisconsin, they may be having a broad effect on the state's ecology. UW-Madison botany professor Don Waller and others have been studying plant life in areas where wolf packs are active, and he believes they're finding evidence that wolves' predatory presence may have beneficial effects on plant life. Landscapes with wolves seem to support more diverse plant communities than similar areas without wolves. They do this, he thinks, through their effect on the deer population, both in number and behavior.

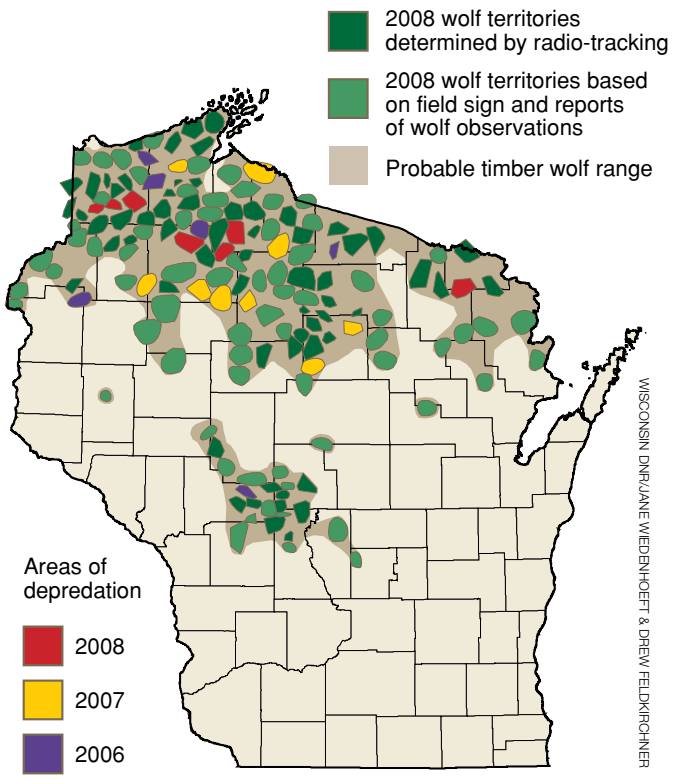
"Wolves have two kinds of effects," Waller says. "First, there's the numerical effect: wolves eat some deer, decreasing their density. But there's also a less direct effect: wolves create an ecology of fear among deer. When predators are present, deer don't just feed lazily. Instead, they get skittish, move more, and overgraze less."

For scientists like Waller, who feel that the state's large deer population has damaged diversity in general, wolves may be a biological boon. Waller notes that this agrees with the writings of Aldo Leopold, founder of the UW's department of wildlife ecology. In his seminal essay "Thinking Like a Mountain," Leopold wrote that, "while a buck pulled down by wolves can be replaced in two or three years, a range pulled down by too many deer may fail of replacement in as many decades." But hunters who prefer plentiful deer are less impressed.

Again, it leaves the question: are wolves protected enough, or are they too protected? The issue of whether wolves remain on the endangered species list, Naughton and Treves worry, has the potential to cut into and even reduce support for wolves around the state.

"There's a real and growing difference among people who feel strongly about having wolves in the state," says Naughton. "On the one hand, there are those who are interested in ecosystems and biodiversity, who would like to see decisions made for the good of the species as a whole. And on the other are animal rights groups, which would like to protect every individual wolf."

As that difference grows, the Living with Wolves project is working to bring the various parties to an understanding. "Wolves have recovered beyond our expectations," says Naughton. "But now comes the hard part — how do we live with them?"



Wolves are now established in northern and central Wisconsin, but as they've spread, so has conflict. The purple, yellow, and red areas mark reports of wolf attacks on domestic animals.

Numbers Game

Irrespective of whether Wisconsin's citizens feel the state has too many wolves or not enough, the more intriguing question to Tim Van Deelen, an assistant professor of wildlife ecology at UW-Madison, is finding out how fast wolves can reproduce and spread. To that end, he's been following the rising numbers reported by the DNR and trying to come up with mathematical models. But to make an educated guess about how many wolves there will be, it helps to have an accurate count of how many there are. And that number is surprisingly well documented.

Once upon a time, Wisconsin's social carrying capacity for wolves was zero.

In the nineteenth century, *C. lupus* was abundant in the Midwest, but it was looked upon at best as a nuisance and at worst as a public danger. In 1865, the state began to offer hunters a bounty — initially $5 — for each wolf carcass they brought in. That bounty wasn't repealed until 1957,

shortly before wolves were extirpated. Although the DNR received occasional reports of lone wolves in remote regions, official opinion held that none made a permanent home here. Only about seven hundred wild wolves remained in the entire Midwest — all in Minnesota, where the forests were more remote, or in Isle Royale National Park in Lake Superior.

But things began to change after the passage of the Endangered Species Act. Once freed from danger, the number of gray wolves began to grow, and the Minnesota population started — slowly — to expand into the animal's former territory, crossing into Wisconsin.

By 1980, the DNR estimated that there were between twenty-five and twenty-eight wolves in Wisconsin, most of them distributed among five packs in the northwest. And then the DNR did something very wise: it started a program of trapping wolves, attaching a radio collar to them, and monitoring their movements in the wild.

This program has continued over the last thirty years. Each spring, teams go out to trap wolves, attempting to catch and attach a radio collar to at least one adult animal in 15 to 20 percent of the state's packs. Hundreds have been collared over the years, enabling the DNR to track wolves from the air year-round. Every month, DNR pilots take off, armed with a radio telemetry receiver and a global positioning system (GPS) device to find and record the location of dozens of wolves. Though the animals are nearly invisible from the air in summer — when the trees are in full leaf and the animals' heather-colored coats blend into the landscape — pilots have a chance to spot and count wolves in the winter, or to direct DNR staff or volunteers on where to find them. The result has been a three-decade accounting of the wolf's progress across the state.

"It's an amazing data set," says David Mladenoff '73, MS'79, PhD'85, a UW-Madison professor of forest ecology. "Wisconsin was really smart to start [radio collaring] early on."

Those data show that wolf populations remained fairly constant throughout the 1980s, but began showing signs of growth in 1990. But what that growth meant was open to interpretation. The federal government's wolf recovery program set a goal of eighty animals for three consecutive years in Wisconsin and Michigan — meet that target and wolves would be upgraded from endangered to threatened. Get the number to a hundred, and wolves would be delisted altogether. In 1999, the DNR developed a state management plan with a goal of 250 wolves in Wisconsin before the animals would be removed from the state's list of threatened species, and a long-term management goal of 350.

"At the time, this was fairly academic," says Van Deelen. "In the 1990s, no one believed we'd ever see 350 wolves here."

But the numbers continued to grow. The wolf population reached eighty for the first time in 1995, and it topped a hundred the next year. By 2003, it surged past 350 and continued rising. Today's DNR estimate of between 626 and 662 is up 14 percent from last year's. There are some 162 packs spread out across the northern and central parts of the state, and as many as 200 cubs may be born this year. Though many of them will die, enough will likely survive to continue growth.

The data have also taught ecologists a lot about what wolf habitat looks like.

"We used to think that wolves needed real wilderness areas to survive," Mladenoff says. "But that's not true. All they needed was a place where there's enough prey (which in the Midwest would be white-tailed deer) and where people wouldn't kill them, either deliberately or accidentally. Then they can get by almost anywhere."

Still, wolves seem to like some geographic characteristics better than others, and Mladenoff has compiled those and mapped them in an effort to predict where wolf packs will become established. The single attribute that appears to attract wolves most is a lack of roads, which implies a lower level of human activity.

"Road density seems to be the key," he says. "Of course, it's not like wolves know this. They're figuring it out by trial and error. They survive in some places and don't in others, and they stay where they survive."

So how many wolves can the state support? Both Mladenoff and Van Deelen suspect that the days of rapid multiplication may be coming to an end. As the number of wolves and packs has grown in recent years, they've filled up all of the best — that is, least road-dense — lands.

"If you look at the habitat wolves currently occupy, it's not all good quality," says Mladenoff. And in the poorer-quality areas, the wolf population "probably isn't sustainable."

> "We used to think that wolves needed real wilderness areas to survive. But … all they needed was a place where there's enough prey and where people wouldn't kill them."

WOLFGANG HOFFMANN

On the hunt: DNR pilots follow radio signals to track wolves from the air. Though easy to spot against winter snow, the animals are virtually invisible in summer.

Van Deelen used Mladenoff's habitat research in his population models, and he concludes that the boom is near an end.

"If you look at the data, you see that there's almost no support for continued exponential growth," he says. Looking at wolf populations in the entire territory south of Lake Superior — Wisconsin and Michigan, primarily — he concludes that the carrying capacity for the entire region is only about 1,300 wolves, split roughly evenly between the two states.

That puts Wisconsin's wolf carrying capacity at about the current level — though Van Deelen admits his calculations are far from iron-clad. "The trouble is that there are relatively few data points at recent, high-level density," he says, meaning that it's difficult to generalize from a few years and a few hundred wolves.

Still, the data on wolf expansion offer some insight on the animal's ability to thrive. In fact, with so much available food — that is, with so many available deer — Van Deelen's calculations suggest that wolves could reproduce at such a rate that they could withstand a hunt that culled up to 30 percent a year.

But he doesn't recommend such action. Instead, he'd rather see the animals prove his calculations right or wrong. "I'd kind of like to see nature take its course," he says. "I'd like to see what [population] level they arrive at on their own."

Mladenoff is concerned, though, about how increasing wolf numbers might affect state politics. "I think, from a wolf standpoint, they're fine with continuing to expand," he says. "But there's definitely more conflict [between wolves and people] happening. There's been a lot of popular support for wolves over the last decade or so. But there's a danger of a backlash as we have more conflict."

Epilogue: Where Wolf?

I am, I suppose, part of the problem. All my opinions about wolves are based on either emotion (as Naughton says, "Wolves are laden with symbolism. There's something about them that stirs the passions — they're the quintessential wild animal") or personal experience. Since I've never seen a wild wolf in Wisconsin, I have a hard time thinking of them as anything but scarce. So I went to see Phil Miller.

Miller is a pilot with the DNR, and part of his job is to fly out, once a month or so, in a single-engine, four-seat Cessna airplane to find wolves. He cruises along at a thousand feet above the northwestern part of the state to plot the locations of collared animals.

On a muggy morning in mid-June, Miller took me up into the sky to hunt for wolves. He had a list of a dozen to check up on, and over the course of two and a half hours, we managed to track almost all of them down. But as it was summer, we didn't actually see a single Wisconsin wolf, though we spotted one of Miller's targets jogging alone down a red-clay road in Minnesota.

Otherwise, we had no visual evidence of wolves in Wisconsin — until the last animal we checked up on.

In a partially cleared pine wood southwest of Solon Springs, Miller saw a circle of sand with a hole at one end, and the beep was coming straight from the hole.

"I think we've got a den," Miller said. "It's definitely a den — and there's a pup standing in it."

We circled several times, dropping lower on each pass so that Miller could be certain of his sighting before heading away. We left with visual proof of another generation to add to Wisconsin's lupine population.

But what will become of that generation is still up in the air. ■

John Allen is senior editor of On Wisconsin.

GETTY IMAGES

Reinventing Wheels

Where did the American auto industry go wrong, and can UW-Madison help it get back on the road?

As American automakers work to get assembly lines up and running again, UW-Madison is taking the next steps — exploring alternative technologies, training engineers, and advising how companies must adapt to stay afloat.

By David J. Tenenbaum MA'86

For a year, Detroit's automakers have been sideswiped by downsizings, layoffs, and sell-offs.

The bumps in the road started more than a year ago, when $4-plus gallons of gasoline made consumers thirst for the high-mileage cars that United States firms have long loathed. In December 2008, thousands of union jobs disappeared as the last Chevy Tahoe rolled off the assembly line in Janesville, Wisconsin. In April 2009, Chrysler entered bankruptcy. And at the beginning of June 2009, General Motors — GM! once the lion of American business! — followed suit.

The blue smoke from the industry's tailpipe threatens to sweep over UW-Madison, whose relationship with the auto industry dates to the days when American Motors manufactured cars in Racine and Kenosha.

Just ten years ago, Detroit was a prized destination for UW engineering graduates, and even now, hundreds of engineering students participate in various car clubs and competitions. UW-Madison researchers are hard at work on developing better hybrid-drive systems. With an eye to reducing pollution and energy consumption, they are exploring exactly how fuel burns inside an engine, and investigating radical ideas such as mixing gasoline and diesel fuel to reduce pollution in diesel engines.

Yet the dead-serious game of bumper cars in Detroit lurches on.

Looking Under the Hood

The first component of an effective repair job is an accurate diagnosis: what went wrong in Detroit?

Former chancellor John D. Wiley MA'65, PhD'68, who once served as associate dean for research in the College of Engineering, thinks the industry ignored its customers for too long.

"They made really stupid decisions," says Wiley, a former employee at Bell Laboratories, where the transistor was invented, who today serves as interim director of the public arm of the Wisconsin Institutes for Discovery. "The auto industry told us they were giving us what we want — big, heavy, high-powered cars loaded with features." In reality, he says, the industry was creating demand through a sophisticated marketing campaign.

The ominous clanking had been heard in Detroit's engine compartment for years before its joy ride came to a shuddering halt last summer, when a $20 bill could not even buy a stingy five gallons of gas. But, Wiley says, Detroit is a serial offender in self-delusion. "They also said they were giving consumers what they wanted in the 1950s, when VW came out with the Beetle and ate their lunch. They were singing the same tune in the 1970s, when Toyota and Honda put out cars that people really wanted, and they were scratching their heads, wondering why their business was going down. In the 1990s, people wanted inexpensive, economical, practical vehicles — and they came out with the SUV. This is insanity," he says.

Rather than blaming American auto executives who run the companies, Bob Lorenz '69, MS'70, PhD'84, a UW professor of electrical and computer engineering who also holds an MBA, points a finger at the owners. "We, the equity holders, have given the companies extreme pressure for immediate returns, for higher stock valuations. One of the best ways to do this, on a short-term

basis, is to sell off the future — to not invest in the future. If you eliminate engineering expenses, you improve the bottom line in the short term," says Lorenz. When executives respond to the short-term incentives in this way, he says, "the result is bad behavior."

Research is expensive, and the great American industrial-research labs, pioneered by inventor Thomas Edison and adopted by flagship companies such as RCA and Kodak, have been declining since the 1960s.

But even as the auto industry and related manufacturers have cut back their in-house research efforts, they continue to see the wisdom of supporting research at UW-Madison.

Lorenz is co-director of the Wisconsin Electric Machine and Power Electronics Consortium, which for twenty-nine years has investigated devices that convert kinetic energy to electricity and vice versa — a core technology, for example, in hybrid vehicles and wind turbines.

These power electronics are the key to hybrids, and hybrids are central to Detroit's hopes, he adds. Despite success with the hybrid Prius, Lorenz thinks the technology is even better suited to heavy stop-and-go vehicles, such as delivery trucks and city buses. The consortium's seventy international sponsors include Ford, GM, Toyota, Nissan, and Honda. "We have competitors supporting us because our long-term, pre-competitive explorations will produce technologies that industry will need in a decade," he says.

A second industrial and governmental collaboration, the university's Engine Research Center (ERC), occupies two floors of the Engineering Research Building, with an additional two laboratories in the newly remodeled Mechanical Engineering Building. In the basement of Engineering Research, eighteen heavily instrumented test cells resemble a hybrid of their own — auto shop, chemistry class, and computer lab. In some of the cells, engines are running under the watchful eye of an engineering student. In others, the engine and test equipment are in various stages of disassembly.

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During braking, these devices store the vehicle's energy in the battery, and during acceleration, they reverse their role and recycle that same energy to supply driving force to the wheels. In conventional vehicles, brakes provide stopping power by converting the energy of motion into heat. But, Lorenz says, "it does not make sense to convert a lot of energy into heat."

The center focuses on cleanly, efficiently converting the energy stored in hydrocarbon fuels, such as gasoline and diesel, into kinetic energy, says director David Foster '73, MS'75, a UW-Madison professor of mechanical engineering.

"One thing that makes this area of study so incredibly fascinating is that the energy carriers we use, liquid hydrocarbon fuels, are one of our most precious resources. In terms of energy density, they are far superior to anything else, typically over one hundred times as energy-dense as a good battery. The ability to carry a lot of energy onboard — to give a lot of range and high power — is unique to hydrocarbon fuels."

The Secret Life of Cylinders

Although the price of oil has fallen from its peak last summer, most analysts think it will climb again as the economy recovers, and the Obama Administration has thrown down the gauntlet to auto manufacturers in the form of higher mileage standards. The key to meeting these standards, without raising tailpipe pollution, is hidden inside the cylinders of an internal-combustion engine, which inhale, compress, burn, and exhale a fuel-air combination several thousand times every minute.

The cylinder is an energetic, fast-changing realm, and dozens of parameters can be varied to affect pollution, performance, and efficiency. Metal engine walls are opaque, but in several engines at the ERC, researchers can shoot high-speed photos and perform laser diagnostics of an engine as it runs.

"Trying to understand and control the thermodynamics and combustion chemistry inside an engine is a huge challenge," says Foster. "We get into the fundamental aspects of everything that occurs in the cylinder — how to introduce the fuel, how the fuel spray breaks up, the chemical kinetics of the combustion and emission formation processes,

and fluid mechanics and heat transfer within the cylinder. As we continue to peel the onion, we get a better understanding of the technology of internal-combustion engines."

One productive way to peel that onion is through computer simulation, and the ERC's Rolf Reitz and Christopher Rutland, both UW professors of mechanical engineering, have spent years developing software that runs so-called "silicon engines." Because these computational models require serious computer horsepower, the ERC has networked more than two hundred computers where, Reitz says, "we and our students can run advanced fluid-dynamics simulations of the whole process."

These computers can support a process of continual improvement, he adds, and one computer study "can spend months exploring thousands of different combustion-chamber shapes and fuel-injection strategies. These are things you would never be able to do experimentally."

Much of the work at the ERC concerns diesel fuel, which, although popular in European autos, is largely restricted to trucks and heavy equipment in the United States. Although diesel is inherently 30 percent more efficient than gasoline, it is also more prone to releasing soot and nitrogen oxide, a precursor of smog.

Hit the Road Running

Even as the American auto industry gets a thorough tune-up, about two hundred UW-Madison students are engaged in various engine-related activities. One team re-engineered a hybrid-drive system for a 2009 Saturn Vue, to improve fuel economy and reduce emissions, without detracting from performance, safety, or buyer appeal, and entered it in the federally sponsored EcoCAR Challenge. A second team is building an all-terrain vehicle with a ten-horsepower engine, while a third is refining an all-electric snowmobile for use by researchers in Greenland and Alaska, where delicate environmental measurements would be confounded by engine exhaust.

All of these efforts take advantage of student fascination with self-propelled vehicles to provide hands-on training that any potential employer can appreciate.

"We are trying to supply the industry with engineers who have a good background working with auto projects," says Glenn Bower MS'89, PhD'92, an associate scientist at the ERC who guides these student groups. Because these competitions emulate the real world, "we can supply the companies with plug-and-play engineers; they don't have to train them for two years. These engineers have the skills ahead of time that allow them to become productive very quickly."

"We are trying to supply the industry with engineers who have a good background working with auto projects. We can supply the companies with plug-and-play engineers … [They] have the skills ahead of time that allow them to become productive very quickly."

Sustaining Sustainability

If deficiencies in engineering are just part of the American auto industry's dilemma, can UW-Madison help to improve management decision-making?

The skyrocketing price of gasoline, followed by the cliff-diving drop in auto sales triggered by the global recession, suggests that the industry has ignored the challenge of long-term survival, says Dan Anderson MBA'67, PhD'70, a professor of actuarial science, risk management, and insurance at the Wisconsin School of Business. He maintains that Detroit's focus on gas-guzzlers and hostility to improving gas mileage represented a failure to grasp that businesses, like societies, must learn to stay afloat, even as the operating environment changes.

"I think the U.S. auto industry totally ignored an important sustainability condition — namely, that there is a finite amount of oil on earth," says Anderson. "They never dealt with the question of what would happen if the price of gas went up substantially: Would people buy their cars, or should they be producing a more diverse lineup with the high-mileage cars that their customers would want?"

Anderson and others at the business school are teaching students to evaluate these questions during relatively new courses about environmental and social sustainability — training that can groom graduates for recently created positions as "chief sustainability officer" at many large corporations. Although cynics may dismiss the trend as window dressing, Standard & Poor's has established a sustainability index to rank companies' ability to thrive years into the future.

Continued on page 63

LAURA KATZ

Evolution Revolution

Four decades after being rejected by the scientific community, Lynn Margulis's insights into evolution have become standard textbook fare and established her as one of the most creative scientific thinkers of our day.

By Eric Goldscheider

Lynn Margulis MS'60 is one of those rare scientists whose research fundamentally altered the way we view the world — in this case, the way we view evolution. With blunt language, she batters humanity out of its self-image as the pinnacle of life.

"Man is the consummate egotist," Margulis has written. "It may come as a blow to our collective ego, but we are not masters of life perched on the top rung of an evolutionary ladder." Instead, she likes to say that "beneath our superficial differences, we are all of us walking communities of bacteria."

Margulis is a leading proponent of an evolutionary concept called symbiogenesis — a hypothesis that states that new adaptations do not arise primarily from random mutations, but from the merging of two separate organisms to form a single new organism.

Margulis, photographed while attending the World Summit on Evolution in Ecuador's Galapagos Islands in 2005, asserts that we have neglected the earliest stages of evolution that preceded animals — a period that represents seven-eighths of the history of life on Earth.

Symbiogenesis theory flies in the face of an accepted scientific dogma called neo-Darwinism, which holds that adaptations occur exclusively through random mutation, and that as genes mutate in unpredictable ways, their gradual accumulation sometimes results in useful attributes that give the organisms an advantage that eventually translates into evolutionary change.

What tipped Margulis off that new traits could arise in another way was the fact that DNA, thought to reside only in the nucleus, was found in other bodies of the same cell. This realization led to research showing not only how crucial symbiotic relationships can be to the immediate survival of organisms, but also that one of the most significant sources of innovation — indeed, even the origins of new species — occurs when, over time, symbiotic partners fuse to create new organisms.

In other words, complexity at the cell level is not the result of lethal competition from lucky mutants, but rather interactive chemistry that begins as symbiotic relationships between gene sets that together accomplish things that would otherwise have been impossible.

Margaret McFall-Ngai, who teaches medical microbiology and immunology in the UW-Madison School of Medicine and Public Health, counts Margulis as a personal and professional mentor and friend. She explains Margulis's concept of symbiogenesis as "a whole bunch of simple cells getting together to make one cell that's more complex." It was "an event in geological history that happened several billion years ago," setting a course toward the complexity that imbues the biosphere, says McFall-Ngai, "so this was a huge discovery about the nature of the cells of all animals and plants."

Margulis's observation that constituent parts of the same cell had different genetic histories was largely written off as crank science in 1964 when she started submitting her paper on the topic to academic journals. No one wanted it. After more than a dozen rejections, the *Journal of Theoretical Biology* published "On the Origin of Mitosing Cells" in 1967, and then something very interesting happened. Requests for reprints started pouring in, more than eight hundred in all. "Nothing like that had ever happened in the Boston University biology department," Margulis says. Although she was a part-time adjunct professor there at the time, she won a prize for faculty publication of the year. Eventually, a full-time position that lasted twenty-two years followed.

But in spite of, or maybe because of, this modicum of recognition, the scientific establishment viewed her skeptically, if not with outright hostility. Her grant proposals weren't funded. Margulis tells of being recruited for a distinguished professorship at Duke University, only to have it subverted at the last minute by a whispering campaign. Since 1988, she has taught at the University of Massachusetts in Amherst, where she holds the title of Distinguished University Professor in the Department of Geosciences.

Margulis is known for being outspoken — both in praise of controversial ideas she thinks have merit, and in criticizing what others view as accepted truth. Her sharpest barbs are reserved for those fellow scientists who she believes have sold out to the power structure of academia to the point where they persist in teaching discredited theories. Margulis has a reputation for being something of a misanthrope. But it's not that she's asocial or hostile; she simply believes we humans have an exalted view of our place in the world that is not only unjustified, but is also destructive.

She expresses obvious disdain for neo-Darwinists who, to her way of thinking, hijacked the field of evolutionary biology. She regards the acceptance of random mutation theory as one of the great wrong turns in the history of science. In her view, its advocates promoted themselves, and by extension bad science, by appealing to the spirit of the time in which they operated. Their thinking is "restricted, parochial — ignorant, basically," Margulis says in one of her characteristically acerbic, yet quiet rants. "It's just zoological and anthropocentric, taking human relations and pushing them on biology." She has written that "the neo-Darwinist population-genetics tradition is reminiscent of phrenology. ... It will look ridiculous in retrospect, because it is ridiculous."

Her direct way of stating her case has won Margulis her share of detractors as well as admirers. Not everything about Margulis's theories is generally accepted,

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but her basic insight has earned wide, if sometimes begrudging, respect for having fundamentally altered the lens through which we view a seminal event that happened more than two billion years ago.

The story of how Margulis changed a scientific paradigm runs squarely through the University of Wisconsin-Madison.

She grew up on Chicago's south side. A precocious student and voracious reader, Margulis was fourteen when she entered the University of Chicago, where, she says with both pride and gratitude, she was part of the last graduating class of Robert M. Hutchins's Great Books curriculum, which mandated a classical education. Thinking for oneself was valued far more than memorizing facts.

It was there that she met her first husband, the late astronomer Carl Sagan, whom she describes as a "big shot" upperclassman who glommed onto her when she was sixteen and he was twenty. They married three years later in what she describes as an ill-considered decision made in response to cultural pressures of the times. Margulis is as critical of the private Sagan as she is admiring of his public persona as a celebrity astronomer. "Have you ever lived with someone you can't stand?" she asks, calling him "unbelievably self-centered" to the point of abdicating his role as father to their two sons.

In 1957, she and Sagan moved to Madison, where she enrolled in graduate school in biology while also embarking on motherhood with the birth of their first son, Dorion, two years later. The couple chose Madison because it is only seventy miles from the Yerkes Observatory in Williams Bay, Wisconsin, where Sagan was getting his doctorate.

The move would prove momentous. "Madison was great. I learned my basic biology, including genetics, there," says Margulis. She enthusiastically recalls professors who helped set the course of her lifelong passions. "Hans Ris was a fine teacher — the best of my whole career," she says of the cytologist who taught her microscopy. "He was a scientist's scientist; he made no concessions at all." James F. Crow, who at ninety-three is still a presence on campus, is another UW-Madison professor she singles out as an inspiring mentor. "I adored Crow's general genetics course; it changed my life," Margulis wrote in her 1986 book *Symbiotic Planet: A New View of Evolution.*

"I learned to do and teach science at the University of Wisconsin," she says. Margulis earned a master's degree in zoology and genetics in 1960, the year her second son, Jeremy (now an inventor of the musical software program Metro), was born. The family then moved to Berkeley, following Sagan's career path.

It was there that she met her first husband, the late astronomer Carl Sagan, whom she describes as a "big shot" upperclassman who glommed onto her when she was sixteen and he was twenty.

In her characteristic directness, Margulis insists that the thoroughness of her education in Wisconsin meant that by the time she got to California, she knew more real biology than many narrow-disciplined faculty members. "I found I was often teaching my fellow students and instructors," she says. Comments like these, typical of her brash manner, can be offputting, and she readily admits that she utterly lacks the diplomatic skills to be an academic administrator. Her frank rudeness perhaps is indicative of the self-confidence that has enabled her to press on with maligned theories, some of which have gained acceptance. By now, she has authored or co-authored more than one hundred and fifty research articles and more than fifty books.

Crow says he formed a friendship with Margulis and Sagan in the late 1950s, and he has followed her career since then. "She's a maverick, and she made one very great contribution by really calling attention to the fact that many of the cellular organelles like mitochondria have an extra-cellular origin," says Crow. Not only did she see something new, he adds, but "maybe more important than just seeing, she was quite willing to say so and to report on it. ... Other people had taken a look at the idea and then tossed it off. She took it seriously and then brought a lot of evidence for it." Crow, who saw Margulis on his last visit to Amherst, says he admires what he calls her "freewheeling," "unrestricted," and even "somewhat undisciplined" imagination.

McFall-Ngai says Margulis is "somebody who can *look* — she has phenomenal powers of synthesis; she can put things together and see things that other people can't see." While scientific advancement has always relied on risk-taking visionaries, Margulis has been fortunate in that advances in microscopy and imaging have borne out some of her insights within her lifetime. "The fact of the matter is that everybody is waking up to [the importance of symbiogenesis], and it's only been going on for about the last ten years, so basically Lynn was way, way ahead of her time," says McFall-Ngai. "If you

pick up a biology textbook and you go to the index, she'll always be in there as the endosymbiosis theory person."

Margulis, seventy-one, is also a driven teacher, researcher, and writer whose daily routine includes bicycling the mile from her home to her lab. Sleep is one of those things that gets short shrift in her life, and by her own accounting, not a single day in decades has gone by that hasn't included work.

Her unrelenting dedication has paid off. The cinderblock walls of her UMass lab are bedecked with more than a dozen honorary degrees. The collection includes a certificate marking her election to the National Academy of Sciences in 1983, and the National Medal of Science that President Bill Clinton presented to her in a White House ceremony in 2000. That one is probably the sweetest, she says. "What's interesting is the NSF [National Science Foundation] — after rejecting all my proposals for years — it was NSF that put me forward." This year, she was among a handful of recipients of the Darwin-Wallace Medal, which was given out for the first time in fifty years by the Linnean Society of London. It is the highest honor for any naturalist.

TRACY POWELL

Margulis sees beauty in the object of many hours of study — a cylinder of laboratory mud teeming with microbial life. She is so passionate about her research that not a single day has gone by in decades that hasn't included work.

By the time Margulis moved to Amherst — where her small yard abuts the Emily Dickinson homestead and museum — in 1988, she and chemistry professor T.N. Margulis had already divorced ("I quit my job as wife twice," she says), and she had given birth to two more children (Zachary Margulis-Ohnuma, now a New York criminal lawyer, and Jennifer Margulis di Properzio, a writer). The split, an amicable one, occurred when she was offered a stint as a distinguished scholar at Scripps Institute of Oceanography, and her husband didn't want her to go and didn't want to follow her to southern California.

Her offspring, she says, quip that after the divorces, she kept the children and her exes kept the money. For the last quarter century, she has had a personal and research partnership with microbiologist Ricardo Guerrero, a professor at the University of Barcelona, to whom she refers as her "compañero."

But it is her collaboration with her son Dorion Sagan that has contributed the most to her public reputation. They have functioned as a writing team for more than two decades, with Dorion bringing philosophy and poetry to the prose they produce together. *Microcosmos*, the title of their first collaboration, mirrors *Cosmos*, the title of the wildly popular book and public television series, which was hosted by Dorion's late father and made Carl Sagan perhaps the most recognizable scientist of his day.

Dorion Sagan is himself the author of many books, mostly on science. Their collaboration has, in large measure, taken Margulis beyond the realm of turgid peer-reviewed scientific journals, where she still publishes prodigiously. Yet she chafes at the suggestion that she and Dorion write "popular science," retorting, "What we do is make real science accessible to readers."

One aspect of science that she'd like to make more accessible is the much-neglected primordial phase of evolution. In the early part of the last century, theories of evolution focused on how human beings, regarded uncritically as the summit of evolutionary achievement,

Continued on page 61

Giant Pumpkin Regatta

Can a pumpkin be aerodynamic — or even seaworthy?

UW-Madison horticulture professor Jim Nienhuis grows them that way, producing the "smooth sailing squash" needed for the Giant Pumpkin Regatta held in September for the past five years on Lake Mendota near Memorial Union.

Spectators travel from as far as Michigan and Illinois to witness the spectacle. The pre-race pageantry starts when Nienhuis arrives at the lakeshore with a large machete he uses to carve the 400- to 550-pound pumpkins to ready them for competition.

"Pumpkin pilots" have their choice of sitting in the squash like a recliner — the better to take advantage of the cup holder carved into it — or kneeling as you would inside a canoe or kayak.

Once lodged securely in tractor-tire inner tubes, the three-foot-wide pumpkins reach their full potential. Still, the regatta has no rules and offers no prizes, and the chances of tipping into the water seem greater than winning one of the loosely organized heats.

"It's spontaneous and fun," Nienhuis says. It's also a required lab for students enrolled in the class he teaches with fellow professor Irwin Goldman — Horticulture 370: World Vegetable Crops — but they don't seem to mind.

Five years ago, Goldman and Nienhuis were making one of their regular appearances as "the vegetable guys" on Wisconsin Public Radio when a caller from the northern part of the state reported seeing pumpkins floating down a river. The professors were intrigued enough to see what would happen if they put some pumpkins in the lake, but discovered that they flipped over too easily. With some nautical advice from members of the Hoofer Sailing Club and a donation from BF Goodrich Tires, they found that using large tires solved the problem.

"Steering is, of course, an issue," Nienhuis says. "With a little practice, [pilots] can move along at pretty good pumpkin speed."

Jenny Price '96

What's your favorite UW tradition?
Tell *On Wisconsin* about it at onwisconsin@uwalumni.com, and we'll find out if it's just a fond memory — or if it's still part of campus life today.

The regatta has no rules and offers no prizes, and the chances of tipping into the water seem greater than winning one of the loosely organized heats.

BRYCE RICHTER

JEFF MILLER

Drumming up Support

Band alumni are in step with a project to upgrade the practice field.

Five hundred and eighty-two knees couldn't be happier. Band members (to whom those knees belong) are stepping livelier on their new practice field these days, thanks to the University of Wisconsin Band Alumni Association (UWBAA).

Although it's hard to imagine, when Professor **Mike Leckrone** first took on the job of band director in 1968, he had to work hard to recruit members. Now, to honor Leckrone's forty years at the helm of "the best band in the land," the UWBAA has created Project Forty.

According to trombonist **Dean Teofilo '85,** president of the UWBAA, over the years more than five thousand students have endured grueling rehearsals to belong to this exclusive club. When they learned about Project Forty and the plan to upgrade the practice field, they stepped up again. The UWBAA started things off with an initial gift of $25,000. Then band alumni — many first-time donors — responded.

"There are hundreds of alumni with bad knees because of that field," says Teofilo. "It was two hours a day, four days a week, and the field was either rock hard or muddy. Plus, our athletic style of marching can really do a number on a field. When we contacted alumni, they realized here was something really worthwhile, and it will ensure Mike's legacy."

Located on campus just west of the Natatorium, the new practice field is constructed to withstand repeated use. With material similar to the turf in Camp Randall, it's expected to make marching easier on the body. Band alumni will try it out when they return for Alumni Band Day in September. Their knees will know for sure.

Merry Anderson

DAVID NEVALA

A new practice field honors UW Band director Mike Leckrone and gives band members a user-friendly surface for their intense rehearsals.

Great People

Faculty and staff lead by example with scholarship gifts.

When it comes to students who attend UW-Madison, "the best and brightest should be our only standard — not the best, brightest, and most able to afford," says **Dale Burke,** the UW's assistant chief of police and co-chair for the Great People Faculty Staff Scholarship Initiative.

"This initiative has a goal," he adds, "and that is that no one's dream of a quality education at UW-Madison goes unrealized for want of money."

The scholarship initiative augments the Madison Initiative for Undergraduates, which was approved last May by the board of regents and has as one of its main planks increased private support for financial aid. Gift funds will complement a percentage of revenue from increased tuition to assist students from lower financial brackets.

UW faculty and staff anticipated the call for such gifts, taking the lead to respond and hoping that alumni and friends will follow. The scholarship initiative began with a resolution from the Faculty Senate, followed by Academic Staff Assembly and classified staff approval. Now employees are making peer-to-peer appeals for gifts to support undergraduates. The UW Foundation is matching gifts for student support, providing a one-to-one match for campuswide, unrestricted scholarships, and one-to-two for endowment-level college or school scholarships.

So far, the effort has raised more than $1.9 million, including a three-month period at the end of 2008 during which the UW Credit Union matched its members' gifts.

Chris DuPré

For more information on how you can help UW-Madison, visit the UW Foundation Web site at www.uwfoundation.wisc.edu or call (608) 263-4545.

Badger connections

JEFF MILLER

U-Rah-Rah

Members of UW-Madison's Homecoming court line up to sing "Varsity" at midfield in Camp Randall Stadium after the 2005 game. That year, the Badgers beat Purdue, and in fact, the UW has won its Homecoming games for the last five years in a row. This year's contest will be against Iowa on October 17.

Badger Career Network Expands

New online career tools offer more jobs, new services.

Just when one monster of an online career site looks to swallow up the Internet, along comes a Badger. And this one's got real bite to it, too.

With uncertainty in the economy and the job market continuing to dominate the headlines, the Wisconsin Alumni Association's (WAA) newly revamped Badger Career Network couldn't have come at a better time.

The network was created in 2001 to allow UW alumni to interact with peers and offer career advice to students, but it has now expanded its services.

"The Badger Career Network really works for everybody now," says **Gina Evans '05,** WAA's career and corporate relations specialist. "It's a one-stop shop for Badgers and friends of the university to search for jobs, learn about career events, keep current on industry trends, and more. Employers can use it, too, to become more efficient in recruiting."

Using e-mails sent to alumni who meet certain criteria, the Badger Career Network Job Alerts system is a new feature that allows employers to more accurately target well-qualified candidates for open positions.

Starting with Wisconsin companies and expanding nationally by 2010, this system also gives active UW job seekers an edge and others a way to stay current on what's happening in specific career fields.

Registered Badger Career Network users can also search the exclusive BuckyNet job board, be the first to learn about career events, and receive a quarterly e-newsletter.

By integrating these tools, tips, and tactics, the new network is more prepared than ever to help alumni successfully navigate their career paths, and take full advantage of their UW connections and degree. Alumni can visit uwalumni.com/careers to register for free and get started with the network today.

— Brian Klatt

Celebrate a Century of Song

WAA introduces second edition of The Red Shirt

UW-Madison alumni, students, and fans can prepare to kick off the fall season in style and celebrate a century of song with The Red Shirt, Second Edition. The shirt is specially designed each year, and the 2009 design celebrates the hundredth anniversary of "On, Wisconsin," originally composed by William T. Purdy and written by Carl Beck.

In alignment with UW-Madison's priority to increase financial aid for students in need, a portion of the proceeds from Red Shirt sales will help fund need-based financial aid through the UW Foundation's Great People Scholarship Campaign, contributing to the more than $550,000 that WAA distributes every year through its scholarship programs.

To order your collectible edition of the shirt, which is priced at $15, visit uwalumni.com/TheRedShirt.

— Staff

Weathering the Storm

WAA helps seniors face tough job market.

Tearful good-byes, a final hike up Bascom Hill, and a whisper in Honest Abe's ear for postgraduation wishes are typical elements of a soon-to-be-graduate's final month on campus. But as the 2009 senior class approached the most challenging job market in a generation, WAA knew those students would need more than just congratulations.

In April, WAA and the University of Wisconsin Foundation (UWF) organized the first-ever Senior Week — a series of free events designed to help graduating seniors both celebrate their time on campus and acquire a host of career and financial skills.

The week kicked off with a Career and Internship Connection event, sponsored by the College of Letters and Science Career Services and the Business Career Center. Other programs included Career Boot Camp, sessions providing tips on financial planning and making the transition from college to corporate life, and a presentation by **Neil Willenson '92.** The 2009 WAA Forward Under 40 award winner spoke about his journey from young social activist to founder of One Heartland, a national nonprofit dedicated to improving the lives of children and youth affected by HIV/AIDS.

Through a new arrangement between WAA and UWF, students could participate in a special $50 offer that combined a membership in WAA and a senior class gift.

"This celebration offered the outgoing class some tools that I know are being put to good use," says **Paula Bonner MS'78,** WAA president and CEO. "We were extremely proud to honor our seniors and welcome this class into the Badger alumni family."

ANDY MANIS

Grass is a growing industry, as participants at a Made in Wisconsin learning event heard from assistant professor of soil science Doug Soldat '01, MS'03 at the O.J. Noer Turfgrass Research and Education Facility in Verona, Wisconsin. Nearly 140 attendees at the free May event were invited to take samples from their lawns to the Turfgrass Diagnostic Lab, to try their hand at boccie ball and croquet, and to explore the latest in turf equipment and products.

In the spirit of celebration, students were also invited on a Badger Tradition Tour to revisit (or finally visit) popular campus landmarks. And in traditional Badger fashion, Senior Week wrapped up with a Senior Class Party in the Memorial Union, where students kicked back and relaxed with an afternoon of free food, prizes, and entertainment.

"Attending Senior Week was the most fulfilling way to spend my last days as a student at Wisconsin," says **Jaime Moran '09.** "I was with great friends participating in traditions only Badgers celebrate. This special send-off proves that UW is not only an awesome institution I am proud to forever be a part of, but also a comforting support system that cares for its members every step of the way."

— Ben Wischnewski '05

Christianson Moves to Top Spot

Entering his tenth year of service on the WAA national board of directors, **Peter Christianson '71, JD'77** assumed the role of board chair on July 1.

Christianson is a fourth-generation graduate of the university and the parent of three fifth-generation Badgers.

An attorney at DeWitt, Ross & Stevens S.C., in Madison, Christianson's work focuses primarily on government relations and administrative law, representing corporations and trade and professional associations before state administrative agencies, the Office of the Governor, and the Wisconsin legislature.

Christianson is also in demand as a public speaker. He frequently discusses topics such as Wisconsin's election, campaign finance, and lobby laws. He succeeds **Reed Hall '70** as WAA's board chair.

Pete Christianson

In other board news, several new members will begin three-year terms, including **John Baumann '82,** president of The Swiss Colony, Monroe, Wisconsin; **Kenneth Ciriacks '58,** retired vice president of technology, Amoco Corporation, Tucson, Arizona, and Chicago; **Tom Emmrich '83, MBA'84,** president of Dassault Systemes Americas Corporation, Charlotte, North Carolina; **Georgia Herrera '82, JD'85,** attorney and court commissioner, Racine, Wisconsin; **Christopher Kozina '92,** chief of staff, MillerCoors, Hartland, Wisconsin; and **Martha Vukelich-Austin '81,** president, Foundation for Madison's Public Schools, Madison.

— Staff

Tell Us What's New

We'd appreciate receiving the (brief, please) details of your recent accomplishments, transitions, and other significant life events. Send them by e-mail to papfelbach@waastaff.com; by mail to Alumni News, Wisconsin Alumni Association, 650 North Lake Street, Madison, WI 53706-1476; or by fax to (608) 265-8771. Our "good problem" is that submissions far exceed our publishing space, but we love to hear from you anyway.

Please e-mail death notices and all address, name, telephone, and e-mail updates to alumnichanges@uwalumni.com; mail them to Alumni Changes, Wisconsin Alumni Association, 650 North Lake Street, Madison, WI 53706-1476; fax them to (608) 262-3332; or call them in to (608) 262-9648 or toll free to (888) 947-2586.

Most obituary listings of WAA members and friends appear in the Badger Insider, *WAA's member publication.*

x-planation: *An x preceding a degree year indicates that the individual did not complete, or has not yet completed, the degree at UW-Madison.*

'40s–'50s

The American Bar Association's Section of Labor and Employment Law has honored Madisonian **Arvid Anderson '46, LLB'48** by naming the Arvid Anderson Public Sector Labor and Employment Attorney of the Year Award after him. The group expects to fête its first recipient in November.

When UW-Platteville's new, $25 million engineering facility opened for the spring 2009 semester, **Edward Busby '50, MS'62, PhD'71** of Madison must have been very proud — one of the wings is named for him. Busby was a professor of civil engineering and dean of the school's College of Engineering from 1966 until he retired as dean emeritus in 1988.

Both the American Biographical Institute and the International Biographical Centre in Cambridge, England, think the world of **Albert Hayden PhD'59,** judging by the impressive collection of honors that they've bestowed upon him. Hayden specialized in British history as a professor at Wittenberg University in Springfield, Ohio, from 1959 until his 1994 retirement.

'60s

The American Dietetic Association Foundation has established the Grace Ostenso Nutrition and Public Policy Fellowship to encourage those with nutrition expertise to apply their knowledge to the public-policy arena. It honors **Grace Laudon Ostenso MS'60, PhD'63** of Bethesda, Maryland, who retired in 1995 as the staff director of the U.S. House of Representatives' Subcommittee on Science.

For **Franklynn (Franklin) Peterson '60,** twin passions for civil-rights activism and a career in photography were blazing even before he had finished college or gone to New York City, where he worked on documentary films and became a journalist and author as well. Back in Madison since 1977, Peterson has now digitized fifty years' worth of his photos.

Conchita Poncini-Jimenez MS'64 is in her second term as president of the CONGO (Conference of NGOs, in consultative relationship with the United Nations) Committee on the Status of Women, and played a crucial part in the International Women's Day celebration held in March in her home city of Geneva, Switzerland. Poncini-Jimenez works to promote gender equality worldwide, and earned a 2001 WAA Distinguished Alumni Award. She notes that **Richard Newfarmer MA'72, MA'74, PhD'77** is the World Bank's Geneva-based special representative to the UN and the World Trade Organization.

"Upon retiring in 2004, I've been volunteering to help feed the hungry."
— Rick Cohen '68, MBA'69

The financial magazine *Barron's* has recognized **Judith Jensen Skornicka Schwartzbaum '64** as one of its Top 1,000 Advisers. She's a senior VP of wealth management and a member of the Chairman's Council at Smith Barney in Sarasota, Florida.

Mel Barbera '66 of Liberty Township, Ohio, is the proud holder of U.S. patent number 7,505,784: Safety Features for Portable Electronic Device. It blocks text messaging on cell phones while the user is driving, and prevents voice communication while the user is driving unless hands-free attachments are employed.

After forty years of teaching Renaissance literature at the University of Massachusetts in Lowell, plus a concurrent career as a writer, reviewer, columnist, and lecturer, **Mary Duhamel Kramer '66** has retired.

David Koch '67 has been working his dream job — helping to design and build the spacecraft for NASA's Kepler Mission at the Ames Research Center near San Jose, California. As Kepler's deputy principal investigator, Koch has been involved since 1992, and he was no doubt thrilled with the mission's successful launch in March to begin searching our region of the Milky Way for other habitable, Earth-size planets.

New to the American Philosophical Society are **Alejandro Portes MA'67, PhD'70,** a professor of sociology at Princeton [New Jersey] University; and former UW chancellor **Donna Shalala,** a professor of political science and president of the University of Miami [Florida]. They've been elected to the nation's oldest learned society, founded by Benjamin Franklin in 1743.

"Upon retiring in 2004," writes **Rick Cohen '68, MBA'69,** "I've been volunteering to help feed the hungry. I chaired the committee to create Breedlove Dehydrated Foods as an independent nonprofit in order to expand its partnership with USAID and others in shipping millions of lifesaving meals throughout the world each year." He lives in Ransom Canyon, Texas.

The UW's School of Social Work presented its first annual Distinguished Alumni Award this spring to **Nancy Naze Feldman '69, MSW'74,** who in turn pre-

sented a campus lecture on health care reform. She's the CEO and president of UCare Minnesota, a Minneapolis nonprofit with a focus on health care for low-income, elderly, and chronically ill patients.

To quote a May *New York Times* article, **(Fredric) Rocco Landesman '69,** "the colorful theatrical producer and racetrack aficionado who brought hits like *Big River*, *Angels in America*, and *The Producers* to Broadway," has been named chair of the National Endowment for the Arts, "… the nation's largest and most important arts organization." Landesman is the owner and president of Jujamcyn Theaters, which owns five Broadway houses, and he holds a doctorate in dramatic literature from Yale.

Which UW grad co-founded and serves as the president and COO of Phoenix Pictures? It's **Arnold Messer '69** of Beverly Hills, California, who's also worked for Columbia Pictures Television, Viacom International, Tri-Star Pictures, and Sony Pictures Entertainment. We thank **Tim Roesler '68, MBA'69** of Tulsa, Oklahoma, for telling us.

The new provost of San Francisco [California] State University is **Sue Vilhauer Rosser '69, MS'71, PhD'73.** Formerly the first female academic dean of the Georgia Institute of Technology's College of Liberal Arts, she's the principal investigator for a $900,000 INTEL: Interactive Toolkit for Engineering Learning grant from the National Science Foundation.

'70s

The national board of AAA now boasts a Badger as its chair: **Chris Bauer '70.** The owner of Bauer Advisors and a senior strategist for Milwaukee's Growth Design Corporation, he was previously the chair and CEO of Firstar Bank Milwaukee and the founder of First Business Bank Milwaukee. AAA is North America's largest membership organization.

Mary Kay Baum '70, JD'74 of Dodgeville, Wisconsin, is committed to raising awareness about early-onset memory challenges. She and her sister have founded a group called forMemory (formemory.org) to provide support, education, outreach, and advocacy; established a summer camp for teens who are connected to someone with dementia; and edited *Traveling with Hope: Sharing Our Experiences with Memory Challenges* (Elemental Basic Publishing).

Ralph Janvey '72 is taking part in two of the most difficult receivership jobs to date: unwinding Bernard Madoff's investment advisory firm and recovering the assets of billionaire R. Allen Stanford's Antigua-based bank. A former assistant director of securities for the U.S. Comptroller of the Currency, he's now a partner with the law firm of Krage & Janvey in Dallas.

Sandra Polanski MA'72, an advocate of setting higher labor standards in developing countries with which the U.S. trades, is the new deputy undersecretary for international affairs at the U.S. Department of Labor's Bureau of International Labor Affairs. She was most recently with the Carnegie Endowment for International Peace.

The new director of animal operations and AAALAC compliance (that's the international Association for Assessment and Accreditation of Laboratory Animal Care) for the UW's College of Agricultural and Life Sciences (CALS) is **Richard Straub '72, MS'75, PhD'80.** He's a professor and chair of biological systems engineering. AAALAC accreditation places CALS in the top tier among its peers with respect to animal-care standards.

Carol Haertlein Sells '73 of Random Lake, Wisconsin, was commissioned as an army captain in March. A professor in UW-Milwaukee's Department of Occupational Therapy, Sells made a two-year military commitment in order to oversee a new doctoral program at Brooke Army Medical Center. Her son is also on his second deployment to Iraq.

Duane Kirking '74 is "reaching the high point of nearly twenty years of volunteer work" with the not-for-profit U.S. Pharmacopeial (USP) Convention as the new chair of its board of trustees. The USP is a standards-setting organization that helps to ensure the quality and safety of the nation's medicines and foods. Kirking is a University of Michigan professor emeritus, research scientist emeritus, and co-founder of the Michigan pharmacy college's Center for Medication Use, Policy, and Economics.

Among the seventy-two scientists worldwide who've become new fellows of the American Academy of Microbiology is **Ann Palmenberg PhD'75,** a virologist and UW professor of biochemistry.

Applause for **Janice Lincoln Rice MA'75**! She's UW-Madison's recipient of the fourteenth annual UW System Outstanding Women of Color in Education Award. A member of the Ho-Chunk Nation, Rice is a senior academic librarian in College Library and the immediate past president of the American Indian Library Association.

WAA board member **Ted Beck MBA'76** was part of the delegation that celebrated Financial Literacy Month by ringing the closing bell on the New York Stock Exchange on April 27. Beck, of Denver, is a member of the President's Advisory Council on Financial Literacy.

Nicolet College in Rhinelander, Wisconsin, has rolled out the red carpet for its new president, **Elizabeth Schantz Burmaster '76, MS'84.** She's been the state's superintendent of public instruction since 2001.

If you've ever wondered what it takes to be Bucky Badger, don't miss the aptly named documentary *Being Bucky*. It follows the seven UW students who wear his suit from the grueling tryouts through their year as our beloved mascot. The work of producer **John Fromstein '78** of Chicago's Fulton Market Films, *Being Bucky* won the Audience Award for Best Documentary at the 2009 Wisconsin Film Festival.

Guggenheim Fellowships provide scholars in a wide array of fields with the luxuries of funds, time, and creative freedom. One 2009 fellow is **Theodore Lewis '78, MA'79,** a professor and chair of the Department of Near Eastern Studies at Baltimore's Johns Hopkins University. With his fellowship, he's writing a volume on ancient Israelite religion for the Anchor Yale Bible Reference Library series.

Stephens College in Columbia, Missouri, was delighted to name **Dianne Lynch '79, MA'86** as its new president. She was most recently dean of the Park School of Communications at Ithaca [New York] College, and is the founding executive director of the Online News Association.

Felicitations to **Frederic Robinson '79, MS'86,** a Milwaukee-based senior U.S. probation officer and mental-health specialist. He's earned the Gahl Line Officer of the Year Award for the Great Lakes Region, as well as the Doyle Award, both from

the Federal Probation and Pretrial Services Officers Association.

'80s

Who is Jon Leibowitz? That was the question posed on the AllGov.com Web site in May. The answer? **Jon Leibowitz '80** is President Obama's choice to serve as chair of the Federal Trade Commission. According to the site, he's expected to move the regulatory agency in "new directions that could mean tougher times for drug manufacturers, marketers, and Internet advertisers."

The winner of the 2009 Outstanding Research Award in Cotton Physiology was announced this spring: it's **Philip Bauer '81, MS'85.** He's the lead scientist on the cotton production and genetics research project at the Coastal Plains Soil, Water, and Plant Research Center in Florence, South Carolina — part of the USDA's Agricultural Research Service.

New to the board of DuPont Air Products NanoMaterials is **Matthew Koenings '81** of Elkton, Maryland. His twenty-eight years in technology, operations, and business positions at DuPont are helping him to guide this joint venture between DuPont iTechnologies and Air Products.

In March, *NBC Nightly News with Brian Williams* broadcast "We the People," a week-long series about issues facing Hispanic Americans. Waukesha County [Wisconsin] Circuit Judge **Ralph Ramirez '81, JD'84;** his mother, Margarita; and his daughter **Alicia Ramirez '08** were interviewed extensively for one of the segments. His spouse, **Renee Huehns Ramirez '83,** will become WAA's national board chair in 2010, and their daughter **Maria** and son, **Joe,** are both studying at the UW.

The Atlanta-based Fund for Theological Education has named **Kim Kohlbeck Smith Hearn '83** to the post of Southeast regional director for its Calling Congregations — a national, ecumenical effort that aims to equip faith organizations to play a leading role in vocational discernment.

Carey Lundin '84 is the director and executive producer of Viva Lundin Productions in Chicago. Together with **Chris Peppey x'86,** she executive-produces the Web series Citizen Kate, "an outsider's view of inside politics." They also documented President Obama's entire campaign and filmed inauguration

Shane Welch: Heady Accomplishments

A successful company's first "office" is often the result of big dreams and little money. Apple began in a garage. Whole Foods began partly in an apartment storage area. And Sixpoint Craft Ales, the fast-growing and widely heralded brewery founded by **Shane Welch '01,** began in the basement of his former Vilas Avenue apartment.

MICHAEL HARLAN TURKELL

Business is hoppin' for Shane Welch and Sixpoint Craft Ales brewery.

There, Welch created many of the fifty-five varieties of beer that, at one point or another, have been brewed and distributed at his Brooklyn, New York-based brewery over the past five years. The names are often as inventive as the beer, including Otis (oatmeal stout), Sweet Action (American blonde ale), and a one-time specialty named Hop Obama.

"I'm the closest thing you're going to get to someone who makes their own special beer by hand in their basement," Welch says. "We haven't amended the original recipes from when I was home-brewing beer in the basement in Madison … [we] just converted them to full-scale microbrew productions."

Like many students, Welch knew when he got to Madison that he wanted to be in college, but not necessarily what he wanted to do — until he started brewing his own beer. His fondness for the craft was so strong that he dropped out of school to get into the business full time, but his hiatus was short lived. He re-enrolled in classes after just one semester, in addition to beginning an apprenticeship at the Angelic Brewery under brewmaster Dean Coffey.

"Education was always very important to me," says Welch, "and I realized I would regret the decision to get that close to a degree and not finish."

After graduation, Welch continued to experiment and home-brew along with working at the Monroe Street Wine and Hop Shop. After much persistence, he was able to land a full-time job at the Angelic Brewery under the mentorship of Coffey, who eventually urged Welch to take his skill to the next level. In 2004, Welch opened Sixpoint Craft Ales in Brooklyn, partly for the incomparable cultural scene and partly because he was confident that the densely populated area could support a new brewery.

His instincts were right. Business has more than doubled each year since he opened the business, and the company now employs nine people. Sixpoint expects to produce eight thousand barrels of beer in 2009 and more than ten thousand in 2010.

Welch distributes exclusively in New York City to more than five hundred bars and restaurants, including Gramercy Tavern, Lombardi's Pizza, the South Street Seaport area, and Whole Foods, where customers can pour their own half-gallon growler jugs.

While the company has expanded faster than Welch could have imagined, his philosophy and inspiration for getting into the business have not changed.

"It's like the first time I sat down with some friends and poured them [some of my] beer," he says. "I'm seeing the positive impact of my actions. I'm getting to share a creative product, and at the same time I'm feeling the connection in what I do and how I can help make other people happy."

Ben Wischnewski '05

"video postcards" for Shepard Fairey's Be the Change Web site.

The Tyler Prize for Environmental Achievement — the premier award in the field — has gone this year to **Richard Alley PhD'87,** a Penn State University professor of geosciences. He's sharing the award's $200,000 and gold medallion with Veerabhadran Ramanathan of the University of California-San Diego. Alley's studies of ice cores from Greenland and West Antarctica are widely credited with showing that Earth has experienced abrupt climate change in the past, and likely will again.

Check *this* out, fashionistas: **Tara Barber-Poseley '88** of Pasadena, California, is the new president of Bebe Sport. The former president of Disney Stores North America, she's also been CEO and president of Design Within Reach, and has held many positions with Gap.

'90s

The new president and CEO of the Western Golf Association (WGA) and the Evans Scholars Foundation is **John Kaczkowski '90.** The WGA runs golf tournaments, while the foundation administers the nation's largest privately funded college scholarship program, which benefits caddies. The joint operations are based in — yes — Golf, Illinois.

Cara Sodos '90 has made a move from the University of Miami to Georgetown University in Washington, D.C., where she's the new director of foundation relations in its Office of Advancement. Sodos notes that **J. (John) Stephen Morrison MA'80, PhD'87** — senior VP and director of the Global Health Policy Center at the Center for Strategic & International Studies in Washington — spoke during a February event at Georgetown.

Did you happen to catch a story on NPR's *All Things Considered* in May about covert marijuana farming in Yosemite National Park? The National Park Service special agent interviewed for the piece was **Steve Yu '90,** whose job it is to nab the culprits. Thanks to Steve's father, **Hyuk Yu,** a UW chemistry professor emeritus, for tipping us off.

Martin Dooley '91 says that it's "an amazing time to be working in the epicenter of the U.S. sustainability movement" in his role as IT manager at the Center for Resource Solutions, a renewable-energy think tank within San Francisco's Thoreau Center for Sustainability. Dooley also teaches English to refugees and translates for Greenpeace.

Ballet San Jose has welcomed **Stephanie Ziesel '91** as a new executive director, sharing leadership with its current executive director and managing operations and fund raising. Ziesel was previously the associate director of development for the San Francisco Ballet, where she played a key role in its $45 million endowment campaign.

The Society of Hospital Medicine's 2009 Award for Clinical Excellence has gone to **Jerome Siy '93.** He's the chief of hospital medicine and the division head of primary care at Regions Hospital in St. Paul, Minnesota, as well as the director of fellowship in hospital medicine for HealthPartners Medical Group, and an adjunct instructor for the University of Minnesota Medical School.

Jenna (Jennifer) Barnet '94 says that she fell in love with Italy and fashion while on a UW junior-year-abroad program. Today she's based in London as the new VP of communications and PR for Europe for the Polo Ralph Lauren Corporation. She also guides company activities in Russia and the Arab Emirates. Previously, Barnet worked for Giorgio Armani and Gucci.

Paula Frye Shal '94 has always been an achiever. Her stellar high school record earned her a Young American Award in 1989, and she's climbed the career ladder at American Girl in Middleton, Wisconsin — all while battling cystinosis, a rare genetic disorder that has led to three kidney transplants since 1987. While awaiting a fourth, she's hard at work as VP of education and awareness for the Cystinosis Research Network and co-chair of its 2009 family conference.

Caroline Clarin '96, an agricultural engineer with the USDA's Natural Resources Conservation Service in Jefferson, Wisconsin, has volunteered for a one-year deployment to Afghanistan to serve as an agricultural adviser to a USDA Provincial Reconstruction Team.

With his background at frog design, Apple, Intel, and Palm, **Mahin Samadani '96** is enlightening clients as VP of new media at the Loomis Group, a San Francisco-based global marketing firm. He's also awaiting a patent on the mobile handset interface that he's co-invented.

Best wishes to **Chris Tuttle '96** as he joins the Council on Foreign Relations as deputy director of its Washington [D.C.] program. He was previously director of the Office of Strategic Communications and Planning at the U.S. Department of State.

Along with Badgers heading up the National Endowment for the Arts and the Federal Trade Commission (see the '60s and '80s sections, respectively) a Badger has been named chair of the U.S. Nuclear Regulatory Commission: it's **Gregory Jaczko PhD'99.** Already a member of the five-person group, he's now the ultimate authority of the agency that regulates civilian nuclear-power plants and the handling of nuclear materials.

Becci (Rebecca) Menghini MS'99 is tapping into her broad experiences at WAA; as the executive director of the University of North Carolina-Greensboro Alumni Association; and as the senior development officer for the UW's Morgridge Institute for Research to shine as the new chief of staff for UW Chancellor **Carolyn "Biddy" Martin PhD'85.** (Menghini is also probably the only person ever authorized to drive both the Wienermobile and Bucky Wagon.)

2000s

Remember *This Is Spinal Tap*? **Ethan De Seife MA'00, PhD'05** was quoted in *Newsweek* in April about the influence that its "mockumentary" format has had. De Seife, a professor of film studies at Hofstra University in Hempstead, New York, is the author of *This Is Spinal Tap* (Wallflower Press), a critical assessment of the film.

The associate director of Chicago's Kartemquin Films — **Justine Nagan '00** — has taken the reins as its new executive director. The not-for-profit firm is a "home for independent filmmakers developing documentary as a vehicle to deepen our understanding of society through everyday human drama" and is best known for *Hoop Dreams* and *The New Americans*.

The Oncology Nursing Society's 2009 Excellence in Patient/Public Education Award has gone to **Tiffany Richards '01, MS'04,** an advanced practice nurse who specializes in myeloma at the M.D. Anderson

Cancer Center at the University of Texas in Houston.

"I am the only full-time, licensed mental-health counselor providing culturally and linguistically accessible services to the deaf and hard-of-hearing communities in Wisconsin," writes **Lee Pease Skupniewitz MSW'02.** She's been with Transitional Living Services in Milwaukee since 2001.

Speechwriter for Joe Biden, vice president of the United States, is nice work if you can get it, and **Matt Teper JD'02** of Washington, D.C., has got it. Most recently the speechwriter at Independent Sector, a leadership forum and advocacy group, Teper was also the freelance managing editor of Rock the Vote's blog during the 2004 election.

Tim Angle '03 immediately came to the mind of **Amy Schultz '05** when she read our Spring 2009 sidebar on sailor **John Ruf JD'93,** a bronze-medal winner at the 2008 Paralympic Games in Beijing. Angle, of Winthrop, Massachusetts, competed in those games as well, with his crew placing eighth in the Sonar sailing class. "Tim is an inspiration and great friend to me and other alumni of the UW Sailing Team," says Schultz.

"I would love to … inspire other alumni to think outside the box, follow their passions, and not lose sight of their childhood dreams," writes Chicagoan **Brian Kachinsky '04,** who's certainly heeding his own advice. As a UW student, he was — and still is — a professional BMX bike rider who's traveled the globe, been featured on TV, serves on the governing board of BMX Freestyle, and works with product design and marketing initiatives for the brands he represents.

David Lazarus '04 has served as the agriculture legislative assistant to Senator Richard Durban (D-IL), as the rural-vote deputy director for the Obama campaign, as part of the Obama transition team … and he keeps going! Lazarus is now a senior adviser to U.S. Department of Agriculture Secretary Tom Vilsack.

There it is on page three of the Gallery of Metal Canvases at landfillart.org: a painting titled *Simple Grasses*. It's the contribution of Madisonian **Debra Bushy '05** to LandfillArt.org, an international reclamation project that, so far, encompasses more than one thousand artists who have created works of fine art on hubcaps.

Kyle "El Guante" Myhre '05 has earned his way to national slam-poetry competitions three times with his very atypical approach, and in recent years, has taken the Twin Cities' slam-poetry scene by storm. Myhre put out three albums last year, performed at the Republican National Convention, is developing a one-person show, and has his feet firmly planted in the hip-hop world as an emcee as well.

Siavash Sarlati '06, a third-year medical student in the UW's School of Medicine and Public Health, writes that he was invited by President Obama to participate in the White House Forum on Health Reform in March — the kickoff to Obama's plan for national health care reform.

As the volunteer mobilization communication specialist for Habitat for Humanity International in Americus, Georgia, **Shelly Whittet '06** notes that she's continually impressed by the "outstanding passion and work" of the UW's award-winning Habitat chapter, and encourages all Badgers to look into Habitat's Global Village program.

Class Notes compiler Paula Wagner Apfelbach '83 is contrary to popular belief.

Calendar

September

26 Power of Priority Forum
Learn about the current state of the university and advocate for its future at this annual Alumni for Wisconsin forum. uwalumni.com

October

8 Whys and Wows in Eau Claire
Attend this free public program in Eau Claire, Wisconsin, designed to engage kids and adults through quick, hands-on activities led by expert UW-Madison faculty at various discovery stations. uwalumni.com/uwforyou

9–17 Homecoming
Come back to campus for Homecoming 2009. Festivities for this year's theme, Bucky's Game Show Challenge, include the annual 5K Charity Run/Walk, golf outing, parade, and All-Alumni Reception. Get details and register for events at uwalumni.com/homecoming.

Through October 18
Mezzotints, Prints of Darkness
Follow the technical developments that gave rise to the mezzotint printmaking technique and trace its use from the seventeenth century to the present day at this Chazen Museum of Art exhibition. www.chazen.wisc.edu

26 CareerLinks
Volunteer as a CareerLinks mentor for UW students of color at this annual campus event, where you'll interact with students and offer professional and academic advice. uwalumni.com/careerlinks

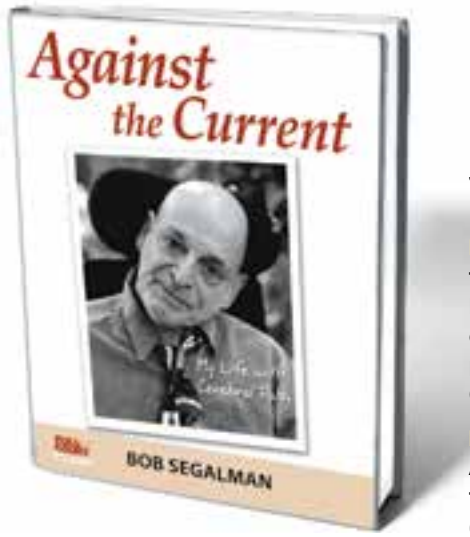
November

13–15 First-Year Parents' Weekend
Parents of first-year students can attend Friday classes, meet campus officials, and cheer for the Badgers at Camp Randall. uwalumni.com/fpw

BADGER HUDDLE® Tailgates
Why wait until the game to start cheering? Attend the BADGER HUDDLE® pre-game tailgate sponsored by Budweiser at all away football games and select home games, where you'll enjoy a Wisconsin-style tailgate buffet and celebrate with Bucky Badger and the UW Spirit Squad. uwalumni.com/huddles

On Wisconsin! Off to Hawaii!
Say aloha to two great Hawaiian vacations featuring the Badger men's basketball team (November 21–27) and football team (November 29–December 6). uwalumni.com/hawaii09

For more information: (888) WIS-ALUM or visit uwalumni.com.



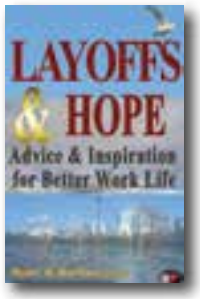
Against the Current: My Life with Cerebral Palsy (Full Court Press) is a "wry and savvy enlightenment about living with significant disabilities" by Bob Segalman PhD'72, the only American with cerebral palsy known to hold two doctorates (both from the UW). As the president of Speech Communications Assistance by Telephone in Sacramento, California, Segalman is the nation's chief advocate for speech-to-speech phone services.

Past Imperfect: Misadventures of a Small (Wisconsin) Town Youth and Subsequent Successful Ventures in Later Life (BookSurge Publishing) proves that early missteps don't prevent later triumphs — author John Tolford Harycki MA'67 of Arlington, Texas, attended ten grad schools, earned three degrees, and was a professor of three languages.

***Ichi, Ni, San*: Adventures with Japanese Numbers** (ChemTec Publications) comes from R. (Robert) Byron Bird PhD'50, a UW professor emeritus of chemical engineering, and Reiji Mezaki MS'61, PhD'63, the first grad student from Japan to enroll in Bird's department after World War II. Their book offers a gateway to a much larger understanding of Japanese language and culture.

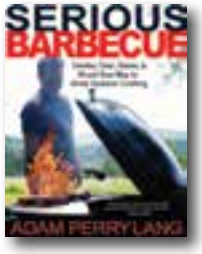
Hey Mr. Green: *Sierra* Magazine's Answer Guy Tackles Your Toughest Green Living Questions (Sierra Club/Counterpoint) is full of irreverent, funny, but pragmatic answers distilled from the popular *Sierra* magazine column "Hey Mr. Green," by Bob Schildgen '65 of Berkeley, California.

Too Close for Comfort? Questioning the Intimacy of Today's New Mother-Daughter Relationship (Berkley Books) is co-authored by Linda Perlman Gordon '69, a psychotherapist in private practice in Chevy Chase, Maryland.



Layoffs & Hope: Advice & Inspiration for Better Work Life (BookSurge Publishing) comprises the wisdom gained by a Silicon Valley senior management and technology consultant over thirty-two years. Author (Behrouz) Bruce Razban '71, MS'72 is a veteran of many layoffs.

A Time of Our Own: In Celebration of Women over Sixty (Fulcrum Publishing) explores and celebrates the lives of women who are reinventing the "third third" of their lives. Co-author Elinor Miller Greenberg MA'54 is the president and CEO of EMG and Associates in Littleton, Colorado, and says, "Always celebrate the age you become, notice the alternative, and be grateful for life!"



Serious Barbecue: Smoke, Char, Baste, & Brush Your Way to Great Outdoor Cooking (Hyperion) shows that Adam Perry Lang '91 — a classically trained chef turned national-barbecue-circuit competitor — sure has a way with a grill. He also owns Daisy May's BBQ U.S.A. in New York City.

Shining Moments: Finding Hope in Facing Death (Reflections Press) by Georgia Lang Weithe '69 provides insights, comfort, and direction in accepting death's presence in life. The Lone Rock, Wisconsin, author is an educational consultant and motivational speaker.

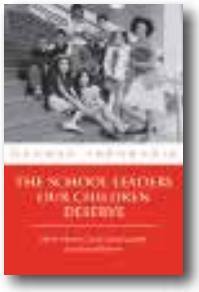
An Anthology of Great U.S. Women Poets, 1850-1990: Temples and Palaces (Mosaic Foundation) contains 477 poems by eighteen poets and is enriched by biographical/critical essays on each. Editor Glenn Ruihley PhD'69 of Ann Arbor, Michigan, is a professor emeritus of English at Eastern Michigan University.

Our Voices: First-Person Accounts of Schizophrenia (iUniverse) speaks candidly about living with a mental illness and navigating the mental-health system. Manisha Kapil '82 of Raleigh, North Carolina, is one of five co-editors who add their own voices to those of twenty other writers.

Frugal Cool: How to Get Rich — Without Making Very Much Money (Corby Books) proposes improving the abysmal U.S. savings rate through a Walden-esque mix of philosophy and personal finance. Author John Gaski MS'79, PhD'82 is an associate professor of marketing at the University of Notre Dame in South Bend, Indiana.

Ophelia Joined the Group Maidens Who Don't Float: Classic Lit Signs on to Facebook (Plume) is a hilarious (trust us — you'll LOL) spoof of Facebook and fifty-plus literary greats by journalist and humor writer Sarah Schmelling '93 of Rockville, Maryland.

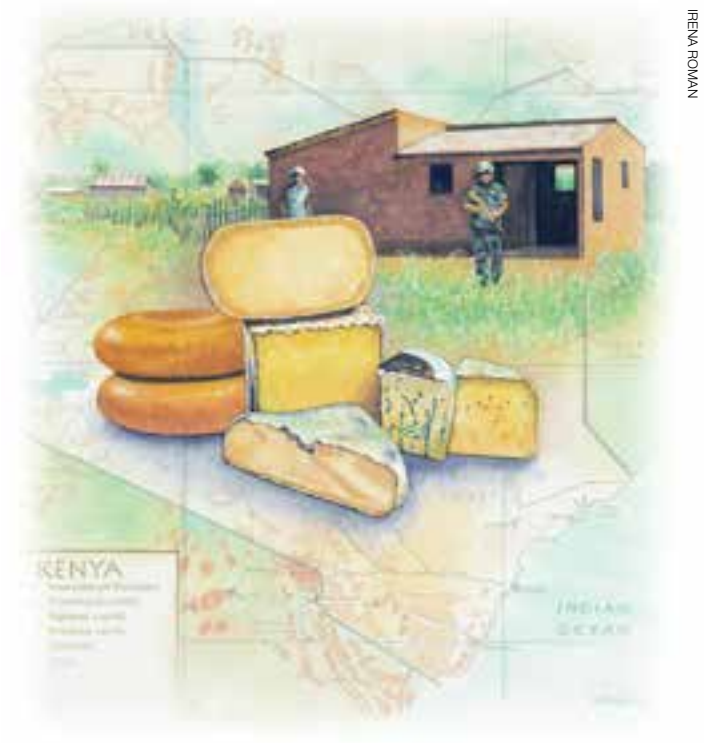
A Gentleman's Guide to Graceful Living (W.W. Norton), by New Yorker Michael Dahlie MA'95, recently won the 2009 Hemingway Foundation/PEN Award for a distinguished first book of fiction.



The School Leaders Our Children Deserve: Seven Keys to Equity, Social Justice, and School Reform (Teachers College Press) blends theory and practical strategies. Author George Theoharis MS'98, PhD'04, an assistant professor in the Teaching and Leadership Department at Syracuse [New York] University, has recently been named an Emerging Scholar by the American Educational Research Association.

A Worldly Taste for Cheese

By Laura-Claire Corson '07



IRENA ROMAN

I love cheese. It's been my number-one food group for years, so as a student I loved working at Babcock Hall, where I was, at any given time, fewer than twenty feet from at least ten types of cheese.

When I moved to Kenya, and then to northern Uganda, I knew my lifestyle would change. No sit-down toilets where I lived? Whatever. No steady electricity? Child's play. No easy access to cheese? Now, that was genuinely difficult. During my six months in Uganda, I ate cheese a total of six times. I usually consumed six ounces by 10 a.m. back in the States.

So when I stopped in at the Dorino Lessos Creameries Cheese Factory in Eldoret in western Kenya, on my way to Nairobi, I was in heaven. The factory is tucked away on the outskirts of town, behind trucks in a construction yard and next to a car wash, which consisted of buckets of water and soap. Once I arrived at the factory, an unassuming building with a green-and-white painted sign, I thought it was glorious.

For the residents I talked with, the factory is a welcome constant. Eldoret, a bustling town of 200,000 nestled in the jagged and beautiful Rift Valley, is known for its talented runners. It's also the birthplace of Kenya's second president and was terrorized following disputed elections held in 2007. By late January 2008, more than 1,500 people had been killed during post-election violence, and Eldoret had been the epicenter of much of it. The town, locals told me, was dead, in every sense of the word.

Yet Dorino Lessos hired a local security team and remained open, explained Nixon Kebeya, the factory's manager, who told me that he'd heard of Wisconsin's famous cheese curds. He said it was essential that the factory stay open, providing a friendly culture and a sense of familiarity — not unlike the Babcock Hall Dairy Store, where regular customers line up for ice cream.

My visit to Dorino Lessos put my yearning for cheese in perspective. And I made a friend. After my tour of the actual factory — a room about the size of the Memorial Union's Rathskeller with machines from 1965 that still get the job done — I went over to the register to do some taste-testing. There I met Grace Arita, who was buying milk and cheese. I asked her what she thought of the factory.

"It's the best," she said, as we high-fived to celebrate our mutual adoration of Cheddar.

Minutes later, as I was concluding my tour of the factory, which receives twenty thousand liters of milk from local Kenyan and European farmers each day, I approached Arita again and asked what else I could do in Eldoret.

"You come home with me," she answered, and that's how I spent the rest of my day. I sat in the back of a sedan as Grace and her husband, Charles, took me to their home seven kilometers outside of Eldoret. As we drove, they talked about the "Gateway to Violence," the road to their house on the outskirts of town that had been blocked by rioters. They showed me charred, black buildings adorning a hilly, green backdrop. Across from their house stood a field where groups had congregated with arrows and machetes. That's when they fled, they said, spending three weeks with a family friend. They returned, but had to leave again seven days later when a political figure was killed and the violence flared up again.

"You see it in newspapers, but when it happens to you, it's different. You're shocked," Charles said.

I, too, was shocked. Although six months had passed since violence overtook Eldoret, clear evidence — both physical and emotional — remained. Yet Kenyans are resilient; as we arrived home, the Aritas and one of their three sons assured me that Eldoret was back to normal. For one of the first times since I'd been in East Africa, I experienced a typical family environment. I watched *The Little Mermaid* with their son, took a welcome shower (my hotel didn't have running water), ate fresh avocado, and drank Kenya's typical tea, which was mixed with the milk Grace Arita had bought a few hours earlier. We bonded, and now I have great friends in Eldoret, all thanks to my visit to Dorino Lessos.

For an area people commonly associate with earlier violence, my memories are of a neighborly culture, warm people, and cheese.

Thumbs up to Eldoret and its people. And, hey — a big high-five for cheese.

During 2007 and 2008, Laura-Claire Corson '07, former managing editor of the Daily Cardinal, *volunteered with an HIV-positive orphanage in Kenya and for a non-governmental organization in northern Uganda that tests for and counsels people about HIV.*

If you're a UW-Madison alumna or alumnus and you'd like the editors to consider an essay of this length for publication in *On Wisconsin,* please send it to onwisconsin@uwalumni.com.

Margulis
Continued from page 47

came to be the way they are over a period of hundreds of millions of years since animals crawled out of the sea. What went on before that, especially in the vast and ancient arena of microscopic life forms, received scant attention.

"Life on Earth is such a good story you can't afford to miss the beginning," Margulis says. "Do historians begin their study of civilization with the founding of Los Angeles? This is what studying natural history is like if we ignore the microcosm."

Among myriad tangible examples of symbiosis is our dependence on specific bacteria within our intestines and colons that produce the vitamins that allow us to live. The mutual dependence that has evolved between us and these bacteria means that as a matter of survival, we have acquired some of each other's genomes and in a way fused into a single individual. More than a thousand such healthy organisms reside permanently in all our bodies. Many of them have already passed some genes into our chromosomes, Margulis explains.

"Molecular biology has shown that this process is going on, and we've received many genes from bacteria and viruses. We are expected to receive more and lose more," she says. Margulis has done prodigious research on termites, which have bacteria and other wood-digesting beings known as protoctists in their hindguts. Without these microbes, the insects' survival on a diet composed of wood and water, which they convert into usable sugars and proteins, would be impossible.

The extent to which symbiogenesis can explain the emergence of new species is debated, but Margulis's indefatigable fieldwork, lab research, dogged teaching, and writing have put the "random-mutation-is-enough" theorists on the defensive. Still, she experiences her share of rejection. She is now advancing evidence that ancient symbiogenesis led to the origin of cilia (short, hairlike, waving structures on cells that produce locomotion). She thinks that cilia, involved in taste and smell, originated as bacteria. And again, she is meeting with resistance.

"I just laugh," she says when asked how she responds to criticism. "I don't take it personally — I just collect more and more and more evidence." Quizzed on where she summoned the confidence to persist in the face of financial rejection, public ridicule, and sustained attempts by the scientific establishment to dismiss her ideas, her response is as spontaneously direct as it is paradoxical. "It wasn't confidence; I just know I'm right — I mean, I really *do* know I'm right." ■

Eric Goldscheider, a freelance writer based in Massachusetts, is working on a book about a criminal case involving a botched DNA test.

Wheels
continued from page 43

Anderson says the index is one indication that the concept of sustainability may itself be sustainable.

Had the American automakers acceded to tighter fuel-efficiency standards, they might be selling high-mileage cars to buyers who fear a renewed rise in gas prices, Anderson continues, noting, "The government was ahead of them, and they were stuck in their old ways." Unlike Toyota, whose Prius has been a success story, "[Detroit] did not have any kind of strategy for what would happen if the price of gas went up, and people quit buying their heavy cars," he says. "And when that happened, they got clobbered."

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Becoming Nimble

As the economy shut down last fall, automakers were saddled with a staggering load of unsold inventory, partly because of the momentum built into its production process. Traditionally, many auto suppliers start making parts several weeks before they are needed on the assembly line, says Franklin Rath '73, MS'84, a program director for engineering professional development. When a sudden recession or a soaring fuel price — or both — crushes demand, he says, "your pipeline is full of parts and materials for cars, and you are going to keep making cars until you can shut off the pipeline."

In the 1990s, the Center for Quick Response Manufacturing, where Rath was then associate director, helped tractor-maker John Deere overcome a similar problem at its plant in Horicon, Wisconsin. In a wet spring, the company was burdened with tractors they couldn't sell. In a good spring, the company ran short of tractors, yet slow delivery of parts prevented it from making replacements quickly enough to sell before summer weather shut down demand. Deere, with input from Rath and his colleagues at UW-Madison, began working with suppliers, helping them to produce parts in two weeks. This build-to-demand strategy helped the company eliminate millions of dollars of inventory and offers a lesson for auto companies, Rath says.

Yet, faster is not always better in the auto business, as Lorenz learned from studying Toyota's introduction of the Prius. "This was a classic case of doing it right, of leading the market without threatening to sink the company," he says. Instead of trying to sell 100,000 Priuses the first year, the company produced only 10,000 cars annually for three years, giving it time to make sure customers were happy. Had a fatal flaw been exposed in the car's radical hybrid technology, "Toyota could have bought them all back if necessary," says Lorenz.

Although the strategy decreased the short-term profit, Toyota made it work, and last year Prius sales helped it displace GM as the largest auto manufacturer in the world.

Calling All Engineers

A simple change in tempo will probably not be enough to save Detroit, and the College of Engineering's Bower says students are keenly aware of the upheaval in the heart of the American industry.

"Even the students working on the hybrid project have talked to me, worrying that even if they can get a job, they will be laid off," he says. "There is a lot of concern from new engineers about what industry they should work in. I don't think the auto industry is going away, but it is going to change dramatically."

Reassuringly, the engineering skills used to build cars can be adapted to manufacture vehicles for agriculture, construction, and the military. And ironically, the tighter pollution and fuel-economy standards that are pinching the auto industry represent good news for engineers.

"In the end, we are getting away from one-fix-all technology," says Bower, adding that the advent of all-electric cars and the rise of hybrids are only part of a rapid transportation transformation. "We will not settle on one solution to mobility," he says. "The shell of the automobile will look the same, but in the end, we will need more power-transfer engineering. The engines will become more and more sophisticated, with more sensors and more electronic controls.

"In the end, we'll need more engineering, not less." ■

David Tenenbaum MA'86 is a Madison freelance writer and feature writer for The Why Files*, an online magazine that explores the science behind the news at whyfiles.org.*

flashback

UW-MADISON ARCHIVES

All Hail John Muir!

Judge Milton Griswold 1863, MA1866 raises his hand in salute to the bust of his old friend and protégé, John Muir x1863, at the dedication of Muir Knoll in 1918.

Muir was one of the first great alumni never to graduate from the UW. After dropping out, he became a famous naturalist and is known as the father of the U.S. National Park System. But his first lesson in botany came on this hill, by a locust tree and under Griswold's instruction. In his autobiography, *The Story of My Boyhood and Youth,* Muir describes the scene in which Griswold opened Muir's eyes to the great variety and surprising connections found in nature.

Though Muir died in 1914, the UW chose to honor him by renaming that same tree the Muir Locust, and the hill on which it stood became Muir Knoll. (A *knoll* is a hill with a rounded crown; it shouldn't be confused with a *gnoll,* which is a monster in Dungeons and Dragons.) Previously, it was called Story-Tellers Hill and was the site of an outdoor theater.

As far as the editors of *On Wisconsin* can tell, this is the only knoll (*not* gnoll) in the world dedicated to John Muir, and it's seen considerable change in the last ninety-one years. The bust of Muir was removed and now resides in Birge Hall, and the Muir Locust was cut down in 1953 — in part because it was beginning to decay, and in part to make room for a realignment of Observatory Drive. Between 1919 and 1957, the hill hosted the university's ski slide and jump.

Today, things are coming full circle, so to speak, as the knoll regains a role in public oratory. UW-Madison plans to replace concrete benches on the brow of the hill with what's being called the Robert E. Gard Storyteller's Circle.

John Allen

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