Interactive Architecture

New research facility is designed to get scientists talking.

Water-cooler conversations rarely do more than spread office gossip in a typical workplace. But for scientists, impromptu interactions spark ideas, shed light on problems, and cultivate research alliances.

That's the thinking behind the design of the Wisconsin Institutes for Discovery, a state-of-the-art UW research facility under construction on the 1300 block of University Avenue. In details large and small, the 300,000-square-foot building promotes interdisciplinary collaboration, allowing researchers to break down the barriers between fields and tackle science's most complex and important problems together.

The UW has a long tradition of interdisciplinary research, yet only recently have buildings begun to rise around the concept. In this facility, floors will be linked by "communicating" stairs that invite scientists to stop and talk. Labs will be arranged in neighborhoods surrounded by open, sun-drenched space, rather than along stark, linear corridors. Even the building's height — just four floors aboveground — increases the chances that people will walk around and bump into each other.

"There has been a very conscious architectural strategy to create spaces that people will want to be in," says **George Austin '74, MA'76, MS'76,** who is manager of the building project. "We want to draw people out of their offices and give them a chance to connect with one another in formal and informal ways."

Funded by the state, the Wisconsin Alumni Research Foundation, and alumni **John '55** and **Tashia '55 Morgridge,** the building will house two institutes: a university center known as the Wisconsin Institute for Discovery and a private, nonprofit medical research organization called the Morgridge Institute for Research. When the doors open in 2010, officials hope the facility will help the university compete for the most talented faculty, as well as produce new technologies, treatments for disease, and economic development.

Accomplishing those goals will be the first order of business. But the planning team also wants the institutes to be a "relationship incubator," where groups of scientists, business people, educators, scholars in the humanities, and the public forge connections they wouldn't otherwise make, says **Gwen Drury,** who is developing the facility's social interaction space as part of her doctoral studies in the School of Education.

"We're trying to create a space where research groups can build strong ties internally and build bridges to the community," she says.

The ground floor will house a bustling public space known as the town center. In addition to meeting places for workshops, lectures, and outreach events, it will include a winter garden, restaurant, and soda fountain — the last to commemorate the historic Rennebohm building and pharmacy that used to stand on the block.

Another key element is a café. "When we talked with people around campus about what should be part of this facility, we heard, 'Coffee. Good coffee,' " Austin says with a laugh.

One big question about the building remains: Who will work inside? With one notable exception — the recent appointment of stem-cell researcher **James Thomson** as one of the Morgridge Institute's scientific directors — that has yet to be answered. But this hasn't stopped hundreds of UW faculty and staff from offering their ideas for the new space.

"This is not happening idly, I can guarantee you that," says Austin. "The design process has been very integrated and involved many people. I think that speaks to the hopes and dreams for this building."

— Madeline Fisher PhD'98

COURTESY WISCONSIN INSTITUTES OF DISCOVERY

The Wisconsin Institutes for Discovery facility is designed to encourage informal meetings. It includes atria such as this and "communicating" stairs (background) where people can stop and chat.

Disarming a Deadly Virus

UW researchers subtract a gene, encourage study of Ebola.

In the gallery of dangerous pathogens, Ebola is king. With no effective treatments and a mortality rate between 50 and 90 percent, few agents are more lethal. That deadly quality inspires biomedical research, of course, but has also provided grist for Cold War weaponeers and seeded popular culture with a convenient microbial villain.

So far, the Ebola virus has emerged in lethal outbreaks only in remote parts of Africa. It is classified by the U.S. Centers for Disease Control as a Biosafety Level 4 (BSL 4) agent, a designation that confines Ebola research to a handful of highly specialized labs. But because such lab space is exceedingly rare, that categorization has hampered scientists' ability to conduct research and develop countermeasures.

Now, however, in a molecular gambit, a group led by UW-Madison virologist **Yoshihiro Kawaoka** has disarmed Ebola, making it safe to study in an ordinary biology lab. By removing a gene that makes a protein the virus needs to replicate, Kawaoka's team has rendered Ebola impotent, leaving it unable to infect all but a specialized type of cell engineered to make the protein it requires.

"We wanted to make biologically contained Ebola virus," explains Kawaoka, a professor of pathobiological sciences in the School of Veterinary Medicine. The idea, he says, is to have a system where Ebola can be studied safely without the constraints of the highest-level biosafety lab. Such space is scarce; members of Kawaoka's group must travel to Winnipeg, Manitoba, for access to a BSL 4–level lab. Because such labs are costly, they are typically small, without room for the kind of equipment necessary for drug screening. The new Wisconsin work promises to help resolve the issue.

An unaltered Ebola virus is capable of infecting any cell in the body with the exception of the immune system's T cells. "This altered virus does not grow in any normal cells," says Kawaoka, explaining that his group excised VP30, a gene that makes a protein the virus needs to make copies of its genome. Kawaoka's team next engineered monkey kidney cells to produce the missing protein, creating a new system in which the virus can be studied.

SPENCER WALTS

"The virus can grow in this [engineered] cell — but only in this cell, because the missing protein is provided," he says. In every other respect, the neutered virus is the same as the deadly versions that have killed more than a thousand people since 1976.

"This system can be used for drug screening and vaccine production," he says, noting that the technology could bring the virus into play in many more than the handful of labs that currently have the necessary biosafety infrastructure. Such access, Kawaoka argues, is our best hope to thwart this

Stem-Cell Patents Endure Legal Challenge

That loud cheer coming from the western edge of campus this spring? That was the legal team at the Wisconsin Alumni Research Foundation (WARF) rejoicing as the U.S. Patent and Trademark Office affirmed UW-Madison's role in the breakthrough discovery of human embryonic stem cells.

In two detailed rulings, the patent office upheld three patents on the cells held by WARF, the private, nonprofit patenting and licensing organization for the UW. The patents cover the early discoveries made by UW stem-cell pioneer **James Thomson,** the first scientist to isolate and culture human embryonic stem cells.

Nonprofit groups based in New York and California challenged the patents in 2006. Yet, says **Carl Gulbrandsen PhD'78, JD'81,** WARF's managing director, "WARF always believed Dr. Thomson's breakthroughs were patentable inventions and seized the opportunity to put to rest the erroneous suggestion that what he did was obvious and that anyone trained in the art could have done it."

WARF officials believe the drive to knock down the patents was rooted in the political and financial motivations of key opponents, not the righting of a patent wrong. Whatever the motivation, the patent office's thorough re-examination rejected the challengers' arguments — rendering the patents even stronger than before, officials say.

One of WARF's aims, they say, is supporting and expanding stem-cell research. Its affiliate WiCell Research Institute has provided more than nine hundred free academic licenses for stem cells, which have been shipped to more than 563 researchers in twenty-five countries and forty states. WARF also has finalized thirty commercial licensing agreements with industry partners who are hoping to bring stem-cell therapies and tools to market. WARF will use fees from these commercial licenses to support UW-Madison research.

— Staff

The Substance of Satire

Does comedy make people curious about more serious stuff?

The Daily Show on TV's Comedy Central might be good for more than laughs. **Michael Xenos,** a communication arts assistant professor, suspects it may push people to learn more about the issues that affect their lives. He's taking the show into the lab to test that theory.

SPENCER WALTS

"One of the things I'm dying to figure out with the new study is: does comedy get people talking?" Xenos says.

He is looking at two groups of college-age viewers: one that watches the comedic program and a real news source and a second that gets strictly hard news. Xenos expects viewers who are not well versed in politics will pick up information from *Daily Show* host Jon Stewart and his team of comic correspondents and then learn more from traditional media.

"Because it's laced with comedy, it's a little sugar that's put in with the story that gets people to be more attentive," Xenos says.

He shows students clips from either *The Daily Show* or a network news broadcast centering on one of two subjects: the economy or Roger Clemens's testimony about baseball doping. Students then watch a sample from PBS's *NewsHour with Jim Lehrer*, including stories on unrelated issues, before answering a series of questions.

"There's kind of a distinction between awareness and actual knowledge," Xenos says. "Jon Stewart's pretty good, but he's not including a lot of detailed information. … That's what's leading a lot of people to say, 'They can't possibly be learning all this stuff from Jon Stewart.' "

Xenos says his research is inspired by the idea that nontraditional information sources, including comedy, may have a stronger effect on young people.

He's also studied whether college students seek information from other sources after watching the program. In earlier research, he showed students a *Daily Show* segment about congressional debate over the troop surge in Iraq. He compared that group with others who either watched no clips, just hard news, or parts of both real and the fake news programs.

"It was really terrific, because both of the segments used a lot of the same footage, the same quotations," Xenos says. "They're covering the same event, but in different terms."

The second step was to show students a simulated news Web site. Among those who watched the comedy clip, viewers interested in politics searched for more information about the troop surge; those who said they weren't interested did not search as much.

— Jenny Price '96

Lining Up Votes

Tucked into a corner of Laundry 101 on West Gilman Street and gathered at tables in Starbucks on State Street, students have been brainstorming ways to mobilize their generation to participate in the presidential campaign.

UW-Madison's student organizations supporting Hillary Clinton, John McCain, and Barack Obama have been providing information, generating enthusiasm for their candidates, and — most importantly — getting their fellow students to the polling places.

"It's really nice to have someone your age who knows what you're going through and will say, 'Hey, this is what this candidate is all about,' and open people's eyes that people do care about our age group," says **Allison Nelson,** co-chair of Students for McCain.

Students also have held fund raisers, handed out signs and buttons, and helped with campaign visits. During spring semester, former President Bill Clinton, Chelsea Clinton, and Obama made stops on campus, drawing potential voters to the Stock Pavilion, Memorial Union, and the Kohl Center, respectively. **Meg Brown,** a member of Students for Hillary, says the group worked to increase visibility for the Clinton family visits.

"When the [Obama] campaign came through, we were working with elected officials and campaign members," says **Ami ElShareif,** chair of Students for Obama. "Now we know how a campaign is run in the field."

The student organizations could see the results of their hard work when the Wisconsin primary arrived on a frigid February day. Campus wards drew a 65 percent voter turnout, setting records at some wards and totaling six thousand more voters than in 2004.

— Vanessa de Bruijn '08

Greek Beat

Neighborhood watch brings security to Langdon Street.

A late-night stroll east of campus is now safer, thanks to some vigilant UW students. The brainchild of Madison Police Sergeant Tony Fiore, the Langdon Street Neighborhood Watch program was launched in fall 2006 after a rash of robberies and assaults hit the street that's home to many sororities and fraternities.

Safety is a perennial issue in the campus area, where the high rate of turnover among residents means that people seldom know their neighbors. This year's violent crimes included murder. Student **Brittany Sue Zimmermann x'09** was found dead in her apartment south of campus, in a neighborhood not covered by the watch Fiore led, and as of press time, police had not arrested a suspect.

Such dangers leave students feeling uneasy, making cooperative efforts between them and city police, such as the Langdon Street watch, vital for the community.

On Fridays and Saturdays from 11:00 p.m. to 3:00 a.m., volunteers from the Greek community patrol the area, armed with flashlights and cell phones and wearing reflective safety vests. They walk in groups and are instructed to be visible and be good witnesses without confrontation.

So far, those on the watch have found wallets, changed a flat tire, and called 911 when they discovered an unconscious woman, and they have good reason to believe they've prevented fights and property damage.

What's more, they've become more aware of their personal safety and have embraced the community service project with pride. On-duty patrols frequently receive thanks from fellow students, and the program has earned community praise.

"Most students move on an annual basis and connect more to the UW than to their neighborhood," Fiore says. "Sororities and fraternities have a unique sense of ownership because their house and organization will always be there."

Despite this connection, Fiore found the students a bit resistant at first. "Being responsible for your own safety is a learning process and a new responsibility for many students," he says.

Greek leaders, including **Alex Sheridan '08** of Alpha Epsilon Pi and **Drew Willert '08** of the Interfraternity Council, met with Fiore to develop the program and get buy-in from students. "It's an opportunity for them to get to know the MPD and deter crime," Fiore says.

Sheridan, Willert, and several other student coordinators who managed the program until their graduation this spring, are confident that it will continue.

The students honored Fiore at a reception in February, when he was promoted and passed the baton to a new Langdon neighborhood officer, **Rene Gonzalez MS'93.**

— Karen Roach '82

TOM KRUPENKIN

Liquid beads on a surface composed of silicon nanonails.

COOL TOOL

Getting a Bead on Nanonails

Any driver struggling to see the road through a veil of squashed bugs can appreciate the concept of a self-cleaning windshield. That's what could be possible using nanonails, a material developed by UW scientists **Tom Krupenkin** and **J. Ashley Taylor** with colleagues from Bell Laboratories.

Nanonails — etched from a wafer of silicon and shaped like tiny carpenter's nails — make up a surface that repels virtually all liquids, including water, solvents, detergents, and oils. Liquids bead on the surface, "almost like sitting on a layer of air," Krupenkin says, because their molecules can't slip between the nanonails.

The material could be used on the exterior of houses, windows, and airplane wings, and the ability to control drag could revolutionize underwater propulsion. We can't see the nanostructures scientists create, because they're thousands of times smaller than a human hair, but discoveries such as nanonails bring the possibilities of this rapidly changing field a little closer to home.

— J.P.

Tragedy struck the UW Hospital and Clinics staff in May when a **Med Flight helicopter crashed,** killing its crew. Clinical assistant professor Darren Bean, nurse Mark Coyne, and pilot Steve Lipperer all died in the accident.

Two UW alumni received **Pulitzer Prizes** in April. David Umhoefer '83, a reporter for the *Milwaukee Journal Sentinel,* and Walt Bogdanich '75 of the *New York Times* both served as editors of *The Daily Cardinal* while on campus.

Wisconsin will be the epicenter of all things stem cell as the **World Stem Cell Summit** (worldstemcellsummit.com) convenes at Madison's Alliant Energy Center September 22–23, providing expert speakers and networking opportunities for researchers, patient advocates, and the business community. To coincide, "Lab on the Lake," a free public event about stem cells, will be held September 21 at the Pyle Center on campus.

In a marriage of art and science, engineering professor Vadim Shapiro is using **Michelangelo's famed statue** to test a "scan and solve" technique for discovering where and how stress fractures will occur. The scan and solve method uses three-dimensional scanned or sampled data to determine where points of structural weakness lie.

An overnight fire severely **damaged the Sigma Phi Epsilon** fraternity house in early May. No students were injured in the conflagration, though three firefighters suffered minor injuries. The house, which is located at 237 Langdon Street, had about two dozen residents, who were all displaced during finals week.

At the Controllers

School of Ed explores the potential of video games.

Shree Durga MS'07, PhDx'09 darts among the desktop computers, trying to get all twelve networked at once. The students, meanwhile, are restless.

"Dude, if he's going to be China, you're going to want to play India," says Josh Orton, an eighth grader at Madison's Toki Middle School. A few minutes later, he's bickering good-naturedly with two girls at the neighboring monitors. "Hey, it's not my fault I have an empire to raise," he says.

The students have come, as they have most Monday afternoons, to the Wisconsin Youth Company, an organization that provides after-school programs for the Madison Metropolitan School District. They're here to attend CivCamp — or, more specifically, to play Sid Meier's Civilization III, a computer game that lets players simulate and control the development and expansion of history's greatest powers.

As it turns out, the upshot of these afternoon sessions extends well beyond the game. Before these students began attending CivCamp, they were getting Bs and Cs in geography and social studies. Now, many of them routinely score As.

To **Kurt Squire,** the UW assistant professor of education technology who founded CivCamp four years ago, this scenario echoes his own experiences as a youngster. It also demonstrates that playing computer and video games — an activity in which more than 72 percent of Americans now engage, according to market research firm NPD Group — has potential to transform the country's public education system.

BRYCE RICHTER

Shree Durga works with a Madison student during a game of Civilization III as part of CivCamp. Researchers observe the behavior of the elementary and middle-school children to see how video games teach history, geography, and international diplomacy.

Squire and his spouse, assistant professor **Constance Steinkuehler MS'00, PhD'05,** are key participants in the Games, Learning, and Society (GLS) group in the School of Education. Both GLS and the MacArthur Foundation grant that supports it were launched by James Gee, who left the UW last fall for a teaching position at Arizona State University. GLS has moved the discussion from whether video games have educational potential to what can be achieved with them.

"When we can show in an after-school program that kids are using something like Civilization III to [explore] college-level history and geography, then why is it that in schools, we say, 'Oh, if it's a game, you can't bring it to school?' " asks Squire. He is developing several educational games in partnership with the Academic Advanced Distributed Learning Co-Lab, an organization that brings together academia, government, and industry to explore learning technology. "That's part of what we're trying to address here," he says.

While Squire's CivCamp focuses on elementary and middle-school students, Steinkuehler is measuring the digital literacy skills gamers are using when they play and post comments in the forums of the mega-popular online role-playing game World of Warcraft. She's found that more than 86 percent of the posted comments use basic scientific reasoning — the same kind of thinking that students are asked to use in biology or physics classes.

"Do I think that sticking kids in World of Warcraft is going to get them to do science reasoning? No, I don't," says Steinkuehler. "Games are just like a textbook — it's good for some things, but it's not good

for everything. … You need to structure activities around it, and if you focus kids on rich problems, they'll do it naturally."

The key, as Steinkuehler notes, is translating these educational phenomena from the virtual world to the classroom — and that's where the Halversons of the GLS group come in. **Rich Halverson,** an assistant professor in educational leadership and policy analysis, is examining the ways teachers and administrators might use games to aid social and organizational change in schools. For instance, video games — which are particularly good at tracking performance data — could be used as a leadership tool for teachers.

"What we're talking about is using video-game design to inform professional learning," he says.

Meanwhile, his spouse, **Erica Halverson,** an assistant professor of educational psychology, approaches games from a mass-media perspective, exploring how kids use films and games to create identities. She has applied for a five-year grant from the U.S. Department of Education to create an in-school game space that might teach students science and social studies literacy.

"Basically, we're looking to formalize the informal connections Kurt has made in CivCamp," she says. "We're trying to translate in-game data into something teachers can measure."

At the UW, the study of Serious Games — lingo for video games with uses far beyond entertainment — runs deep, incorporating academic specialties such as computer science, psychology, sociology, film studies, and art. The School of Education researchers credit the UW's environment, in which maverick approaches are encouraged, as a key reason their work has flourished in a competitive market.

While other programs now offer PhDs in games studies, Wisconsin's niche is unique, says Squire. "When you come out with one of our degrees," he says, "people know what that means — looking at the intersections between games, how people learn, and how interactive technologies are transforming the world."

Squire and his colleagues hope to grow the program, which currently is a self-directed minor sporting fifteen graduate students.

"Five years ago, people told me, 'You're doing educational video games? You're insane! That's the dumbest idea!' It's like you're majoring in broccoli-flavored spinach or something," says Squire. "It was laughed at — and now it's a multimillion dollar industry."

— Aaron R. Conklin MA'93

Serious Games Central

- Madison is home to several major game-development studios that work with graduates from the UW's games studies program: Raven Software, Human Head Studios, Big Rooster, and Filament Games.
- **John Carmack** and **John Romero,** developers of the popular PC game Doom, spent several chilly months in Madison before making it big.
- Several leading academics in the field of gaming studied at UW-Madison, including **Henry Jenkins PhD'89,** of MIT and **Ted (Edward Bird) Castronova MS'88, PhD'91,** an economics professor at the University of Indiana who did the first major study of economic systems in multiplayer, online role-playing games.

The Interpreter

Although more than five thousand students received UW degrees in May, it's doubtful that many can top **Matt Beyer '08**'s last year.

Beyer juggled his classes with a full-time job as interpreter for Yi Jianlian, a promising Milwaukee Bucks rookie forward who also happens to be a superstar in the world's largest country. Beyer's language skills with Chinese and his journalism background landed him the position, which involved attending NBA games and practices with Yi and translating questions from American reporters. High points for Beyer included luxury air and hotel accommodations, courtside seats for most of the season, and the chance to meet and converse with Yao Ming, another of China's most well-known athletes. Beyer isn't sure if he'll return to the Bucks next year, but the experience should guarantee a promising China-related career.

"I hope Yi learns English as quickly as possible," Beyer says. "It's a tool for him to be able to relate to people. I'm happy to see myself as a piece in the puzzle."

— John Lucas

Typically, UW-Madison's Office of Admissions looks at the grades of prospective students. But it gets graded, too, and according to the Web site College Confidential, the Badgers are at the head of their class. In a survey of students at the nation's most popular fifty universities, the UW received top marks as the **best admissions office** for the college search process.

Okay, you've graduated and left campus — so what has UW-Madison done for you lately? The **Wisconsin Idea in Action** is a Web site that shows the outreach and public service activities of university faculty, staff, and students. Check it out at www.searchwisconsinidea.wisc.edu.

Engineering professor Peter Bosscher (who was featured on the cover of *On Wisconsin*'s Fall 2005 issue) passed away in November 2007, but his pet project, **Engineers without Borders,** lives on. After his death, Bosscher's family established a fund to aid the program that takes engineering students overseas to aid developing communities. With the assistance of the UW Foundation, the fund raised more than $50,000, helping to get the UW's chapter of Engineers without Borders out of debt.

The UW Libraries' archives have made the **journals of Aldo Leopold** available online. The famed conservationist kept detailed diaries of his service with the U.S. Forest Service, his hunting excursions, and life in his Portage, Wisconsin-area shack, spanning more than half a century. The handwritten journals had been kept in the archives, but researchers can now access them through the Internet. To see scans of each page, visit digicoll.library.wisc.edu/AldoLeopold/.

Green Couture

As a new course demonstrates, it's fashionable to be eco-friendly.

After seventeen years as a senior lecturer in the School of Human Ecology, **Jody Fossum '82** decided it was time to teach her students the three Rs: recycle, reuse, and reconstruct.

Through her new course, Design Studies 501: Globally Sustainable Textile and Apparel Design, Fossum helps students learn the skills they need to work in fashion. And she's challenging them to make a lasting impact in an industry where, as supermodel Heidi Klum bluntly puts it on TV's *Project Runway*, "One day you're in, and the next day you're out."

"The fashion industry promotes consumerism hugely, and we need to be really conscientious about it and what we teach our students," Fossum says.

Building sustainability into the work of these budding designers will not only benefit the planet, but also give them a leg up in the growing world of fashion and design, she says. There's evidence to support her reasoning: nearly 200 million Americans buy green products, according to market research firm Mintel Global, and retail giant Wal-Mart just launched a line of T-shirts made from recycled soda bottles.

For one class assignment, students scrutinize magazine ads and talk about how the featured items could be transformed into another product or made in a more sustainable way. At the sight of a glossy ad for expensive Prada shoes — which one student suggests making with hemp — Fossum says of the industry, "We're so bad; we promote something new every six weeks."

But Fossum is also pragmatic, reminding the class that consumers interested in green design don't just want to feel good about the products they buy — they want them to look good, too. The students' designs must not only adhere to the three Rs, but they also need to incorporate current trends. "In the end, you want to be able to sell your product," she says.

Early in the semester, she starts a class by passing around a bag made in part from recycled saris, providing some inspiration for the line of fifteen products each student eventually must design using reclaimed, recycled, organic, or long-lasting materials. As part of a final project, students will construct two prototypes from their sketches, as well as detail the technical specifications to manufacture their products. The raw materials they choose can include sweaters from thrift shops, recycled coats, hemp, linen, and cotton muslin left over from another design class project.

Sarah Gagnon x'08 studies prototypes she has made for a line of table linens, including an elegant runner made with fabric gathered using a technique called a broomstick pleat. The designs are for her brothers, who operate a Madison catering business specializing in organic and seasonal foods for small, boutique weddings. Gagnon says she chose linen because it is produced without pesticides, is long lasting, and any inevitable party stains can be removed without using chemicals.

"I did the research on how to clean them," she says. "After I make the first one, we'll pour a bottle of wine on it and see how it goes."

Lauren Regan x'10 seizes on the class project as a chance to use several squares of fabric remaining from her print-and-dye class. The cotton muslin has been dipped into an indigo vat, and various methods have been used to achieve different effects, including stripes, geometric shapes, and stitch marks.

JEFF MILLER (2)

Senior lecturer Jody Fossum (left) consults with Sarah Platner x'09 about her sketches for clothing and accessories using fleece made from a blend of hemp and organic cotton. The designs are her final project for Fossum's course.

"They're so pretty. I've always wanted to do something with them," Regan says.

The blue-and-white pieces are now the foundation of a handbag she is making for a line of summer clothing and accessories. Fossum advises Regan about some technical aspects of her design, including what kind of closure she could use, and says, "I'm excited. I hope you are, because it's very cool fabric."

Other class prototypes include lamps made with recycled paper and laptop bags constructed from organic cotton canvas mixed with cast-off outerwear. **Penny Bierman '08** unravels a V-neck blue merino wool sweater she purchased at Goodwill and winds the resulting yarn around a reel. She will use the skeins to weave prototypes for a line of rugs she is designing.

"I was really intrigued by the idea of recycling [instead of] just using sustainable materials," she says. "However sustainable these new materials and crops might be, they're still using resources."

Students also learn from visiting speakers, including the owner of a furniture company that salvages birch doors from building demolitions, turning them into desks and conference tables. They also met with Rob Behnke, co-founder of Fair Indigo, a fair-trade clothing retailer founded in 2006. Fossum serves as the company's director of product development.

Fossum enlists the iconic item of American fashion, a cotton T-shirt, as part of her effort to get students to think differently about design. According to the Organic Trade Association, it takes about one-third of a pound of pesticides and fertilizers to grow enough cotton for just one T-shirt. Fossum's students break down every aspect of producing the shirt, considering the product's social, economic, and environmental aspects — from how cotton is grown and who grows it, to how the shirt is made and who ultimately buys and wears it.

That kind of thinking doesn't stop inside the classroom. Emphasizing the broader implications of her class, Fossum gives students one more assignment: do one thing for a week to make a difference in the world. They meet the task by changing behaviors — bringing their own bags to the grocery store, taking the bus to work instead of driving, or setting timers on their thermostats.

"This is not just about designing," she says.

— Jenny Price '96

Lauren Regan x'10 reuses cotton muslin, cutting pieces to make a summer handbag she designed for her final project.

CLASS NOTE

That Old-Time Religion

Religious Studies 352/Folklore 352: Shamanism

Tom DuBois is interested in traditional religion — *very* traditional. In his course on shamanism, he takes students on an odyssey through the religious practices of a wide variety of indigenous cultures around the globe.

DuBois, a professor of Scandinavian studies, is an expert on the folklore and folk life of the Sámi people of northern Finland. But his class stretches far beyond the Arctic to cover the peoples of North and South America, southeast Asia, and Siberia. Although these cultures are so disparate that some academics would argue that their religions should not be classed together, DuBois disagrees. "There's a core of [religious] elements that are very similar," he says. And chief among those is the cultures' reliance on a spiritual mediator.

"A shaman," says DuBois, "is a religious specialist who uses an altered state or trance to communicate with the spirit world to achieve ends for his or her community" — ends that typically include gathering information, divining the future, or manipulating luck. DuBois introduces different forms of shamanism through his own nearly-400-page textbook. Though it hasn't yet been published (it's forthcoming from Cambridge University Press), he makes the manuscript available to students for free online. He also shows modern films about shamans, including *Pathfinder,* about the Sámi, and *The Fast Runner* about the Inuit.

Interest in shamanism has been rising in recent years, for both spiritual and political reasons. The shaman, DuBois notes, makes a powerful symbol for members of indigenous societies who want to reclaim their traditional culture or values.

DuBois created his shamanism course four years ago, and it's proved popular with students. Taught typically one semester each year, the lecture class brings in between sixty and eighty students, and DuBois says he often has to turn students away. Like the cultures they study, those students come from a variety of backgrounds — not just anthropology majors, but from all across the university. And again like the cultures studied, they share at least one core element: "They're a very curious bunch," DuBois says.

— John Allen

TOM FOLEY

With a growing sense of foreboding,

Gabriel Kou Solomon '06 spent the early days of last October dodging phone calls from his cousin, Samuel Barr.

"Usually I don't pick up the phone for him that much," Solomon says, "because when we talk, we talk for a long time. But he called me three times in one day, and I had to wonder why."

Solomon, a graduate student at the University of Minnesota, had reason to be nervous, even in the relative comfort and safety of the Twin Cities. He's Sudanese, which means that, like the refrain to a particularly unhappy song, violence has dominated his life and his family with a periodic and shattering inevitability. Urgent calls from Barr, also a Sudanese expatriate, living in Houston, could not be good news.

And they weren't: Barr wanted to talk to Solomon because he'd heard from Solomon's family in Sudan. A few days earlier, on October 3, armed men had gone to Solomon's grandmother's home in the rural village of Liliir and demanded that she give them Solomon's nieces, Yar, age three, and Ajak, twenty months. Solomon's grandmother refused, and the men shot her dead. Solomon's stepmother intervened, and they shot her, too. The men then took the girls and disappeared.

Members of Solomon's family walked for three days to the city of Bor to report the incident. None had seen or heard from the little girls since.

Solomon was devastated. He'd met Yar and Ajak just once, a year earlier, during a six-month visit to Sudan, but he felt a deep connection to them nevertheless — and their abduction only deepened that connection. Solomon knows what it's like for children to be stolen from their home.

Kou (pronounced "koh") Solomon is one of Sudan's "Lost Boys." Abducted at age six, he lost his home, family, and childhood to that nation's civil war. He spent nearly a decade as a child soldier, forced laborer, and refugee before escaping to the United States. Now, with his nieces stolen in a new round of violence,

Song of Solomon

Again and again, violence has plagued the family of Sudanese Lost Boy Gabriel Kou Solomon '06. Yet he's chosen not to flee his homeland's horrors — *but to face them.*

By John Allen

he's decided to forgo his own career and ambitions — and possibly his own safety — to launch a campaign to save Yar and Ajak, and to fight the ongoing problem of child abduction in South Sudan.

School

SUDAN MAY BE a single country, but it's hardly a nation — not in the sense of having a unified ethnic structure. Rather, it's a patchwork of tribes, languages, cultures, and religions. The strongest division is between the country's Arab, Muslim north, which dominates the national government in Khartoum, and the black, largely Christian and animist south. Since before Sudan's independence in 1956, the two halves of the country have been at war with each other more often than not — the two Sudanese civil wars spanned nearly forty years.

The Second Sudanese Civil War began in 1983, after the Khartoum government took a strongly Islamist turn and attempted to enforce Sharia, or Islamic law, throughout the entire nation. In response, a group of southern Sudanese soldiers created the Sudanese People's Liberation Army (SPLA), announcing their aim to make Sudan a democratic and secular state. Drawing on aid from the Marxist government then in power in Ethiopia, the SPLA launched an insurgency campaign, and the resulting conflict lasted twenty-two years.

None of this was particularly important to Kou Solomon then. Born around 1980 — no one is sure exactly when — he was just a small boy living in a rural area of southern Jonglei state when the war broke out. But he couldn't avoid it. In late 1986, a group of SPLA men came to his village and assembled the community. "They took the children," he says, "specifically the boys, and told us that they wanted to send us away to school in Ethiopia. Our parents didn't have any choice."

Though he would have been too young even to join the Cub Scouts in the United States, Solomon then embarked on an epic hike. He and about fifty boys from his father's clan were told that they would have to walk the hundred miles or more to Ethiopia, escorted by a few soldiers from the SPLA. They had to face the wilderness

of the upper Nile region, crossing rivers, plains, and jungle. But they would not have to face the heat of the tropical sun; fearing attacks by the Khartoum government's air force, the SPLA forced the boys to walk only at night.

For weeks, as Solomon and his band traveled across southern Sudan, thousands of other boys were making the same journey. Ultimately, more than twenty-five thousand of them — including three of Solomon's brothers — would converge on refugee camps in southwestern Ethiopia, near the Sudanese border, only to find that the school they sought did not exist. Though the camps were nominally under the protection of the UN, Solomon says they were run by the Ethiopian government for the benefit of the SPLA.

"I remember when the UN would come, we were not allowed to be interviewed," Solomon says. "We were not in control of ourselves — the SPLA was — and we were all controlled and monitored. We did not have rights in Ethiopia. We did not even call each other by name, but had to call each other *comrade*."

The camps may not have been the promised schools, but they were meant to educate the boys — the SPLA wanted them trained for the war against the Sudanese government. At an age when American boys are learning to pitch a baseball, Solomon and his comrades were taught to lob hand grenades and to shoot and fieldstrip an AK-47 assault rifle.

"At night, the SPLA would come," he says. "They would take the boys out to a training camp. Every month or so, they would come and look through us to see who is tall, who is strong, and they would take these boys away to fight."

As one of the youngest boys taken by the SPLA, Solomon was too small then for combat duty. So he and the others left at the camp were used as forced labor instead — cooking, doing laundry, or cutting grass and trees to build quarters for their SPLA captors. And to keep them in line, the SPLA introduced occasional bouts of terror.

One night, Solomon says, "all the children were called out, and we were told that somebody important was coming, somebody big. And we were taken out in a line on the floor, on the ground, and then an SPLA commander came and spoke to us." The officer had brought along some soldiers he said the SPLA had captured. "Ten men were lined up in front of us, and their eyes were blindfolded," Solomon says. "They were shot. Killed."

KOU SOLOMON

Solomon snapped this photo of his niece Yar (left) when he met her for the first time in the summer of 2006. In the fall of 2007, a raiding party came to Yar's village and kidnapped her and her sister, Ajak, and shot her grandmother, Yar Riek (right).

For more than four years, Solomon survived terror and slavery while there was no end in sight to the war in Sudan. But in May 1991, the government of Ethiopia collapsed, and control in the camps evaporated. The boys who remained were forced to flee again on foot. Many of them, including Solomon's brothers, returned to Sudan, but Solomon ran to the south, entering Kenya, where once again he landed in a refugee camp. But this one, located near a town called Kakuma, was a genuine refugee center, and it became Solomon's home for the next four years.

In 1995, a humanitarian agency called the International Rescue Committee managed to transfer Solomon to the United States, making him one of about 3,800 Lost Boys brought to America. Uncertain of his age, they found him a home in Washington, D.C., and placed him in Bell Multicultural High School, which specializes in teaching refugee children. Half of Bell's students come from other countries, and the rest are drawn from Washington's inner city. Though it took a decade, Solomon had finally arrived at the school he'd been promised.

Family

THE INTERNATIONAL Rescue Committee brought Solomon to the United States believing a home and school here would give him two things: safety and stability. At first Bell Multicultural gave him neither. But it did offer Solomon one major benefit. It introduced him to Erin Heitkamp '95.

When Bell Multicultural's founders created the school, they assumed that ethnically diverse Washington would provide its international students with a sense of, if not belonging, then at least camouflage. Africans such as Solomon, for instance, would see many black faces in the hallways and city streets, and so they wouldn't stick out as much as they might in predominantly white middle America. However, Solomon was a rural boy at heart, and the massive crowds and social tensions of an urban environment were more bewildering than comforting. They only emphasized the ways he didn't fit in, and so Bell Multicultural was not a happy place.

Heitkamp tried to help him with this sense of dislocation. She'd graduated from the UW with a degree in political science and a deep desire to help people in distress. During her junior year, she'd gone to Kenya to study international development, and now she was a volunteer instructor at Bell Multicultural, where she taught a subject called peace studies.

"It was a pretty broad curriculum," she says. "We studied different ways to advocate for peace and to resolve conflict — the approaches of [Mahatma] Gandhi, things like that. It was complicated stuff, and actually, most of the kids in the school were pretty far behind their peers — many of them were refugees, and their schooling had been badly disrupted. They were much more interested in learning English and how to find a job and support a family."

After one term as an instructor, Heitkamp decided to take a different position, one that would help her relate to the students more easily — she became a track and field coach. It was in this role that she met Solomon, who was trying out for the team.

"He was a natural runner," Heitkamp says. But cultural dislocation came between Solomon and competing. On the day of his first meet, he showed up in street clothes, refusing to wear the running shorts that were the team's uniform. Told that he couldn't take part if he didn't suit up, Solomon decided to walk away.

"I guess wearing shorts is considered shameful for men in Sudan," says Heitkamp, "because he absolutely refused. He left the team on the day of the first meet and he never came back."

But though Solomon gave up on track and field, Heitkamp didn't give up on him. She became his mentor during his time at Bell Multicultural, and they compared memories of Kenya and discussed his sense of isolation. She told him about her hometown, Moorhead, Minnesota, a location that intrigued Solomon because a Sudanese acquaintance lived in nearby Fargo, North Dakota. Heitkamp then hatched a plan to take Solomon out of Washington and place him in Fargo. With the aid of her parents and Lutheran Social Services, she helped him find an apartment and a job so that he could transfer to Fargo's Oak Grove Lutheran High School.

From then on, Solomon became, effectively, part of the Heitkamp family. "We consider him our adoptive brother," says Lisa Heitkamp Moreno '93, Erin's sister, "even though it isn't legal. He spends holidays with us, he attended our weddings — he's godfather to Erin's daughter and to one of my sons."

The Heitkamps also helped direct Solomon's academic career, steering him toward UW-Madison, where he majored in international studies and history, with a certificate in African studies. While at the UW, he grew increasingly interested in affairs in his homeland. He began dropping *Gabriel* and used *Kou,* a name that emphasized his African origins. He grew more connected with the Sudanese diaspora community, a loose network of Sudanese living around the world through which he managed to locate two brothers and a sister living in Australia, as well as Samuel Barr and other far-flung relations.

Further, Solomon began forging the connections that would enable him to pursue what he sees as his calling. "I knew I was looking for something in human rights internationally," he says. "I want to affect issues, specifically the issues that are important to Sudan."

Peace

AS SOLOMON BEGAN creating a life in the United States, Sudan's civil war ground on. In 1991, his mother was killed when one faction massacred residents of her village. In 1992, his brother Michael Dut — who had been big enough to attract the SPLA's attention — was killed in fighting around Juba, the southern region's capital.

But though the rebels in the SPLA were forced to depend on child soldiers, they were slowly turning the war in their favor, with assistance from America and other nations. Through the 1990s, the U.S. government grew more sympathetic to the cause of the South Sudanese, particularly after they severed relations with Ethiopian Marxists and as Khartoum became increasingly friendly with Al Qaeda.

In 2005, the Sudanese government found itself pressed by rebellions on all sides, with insurgencies growing in Darfur in the west and on the border with Eritrea in the east. To free itself to deal with these crises, Khartoum needed to make peace with the south, and under American pressure, Sudan and the SPLA signed the Naivasha Agreement, granting the southern provinces autonomy, with an option to vote for full independence in 2011. The new Government of South Sudan (GOSS) is dominated by former SPLA officers, including General Salva Kiir Mayardit, who is now the region's president.

At the same time, Solomon was advancing his own public career. While at the UW, he received U.S. citizenship, and he took on an internship with Tammy Baldwin JD'89, who represents the Madison area in Congress. After graduation, he arranged another internship, this time with a project run by the U.S. Agency for International Development (USAID) — a position that took him back to Sudan for the first time since his abduction. The work, he says, was rewarding but difficult.

And so, Solomon decided, he had to return to Sudan. In March, he departed for a three- to six-month journey to the country that had abandoned him, to see if there's anything he can do. "If I have a presence on the ground there, I can go to government offices and say, 'I'm not going to give up [on] my nieces. They are still captive — what are you going to do about it?' "

"They had me doing educational programs in Juba — particularly gender-equity programs," Solomon says. "And the students, specifically the boys, had a hard time understanding. They weren't mean or confrontational — they just didn't get it. They'd ask, 'Why would we want to send girls to school? Why would we want them to take jobs outside the home? This just makes our life harder.' "

When not teaching, Solomon traveled outside the capital and returned to Jonglei state. "I met my father for the first time in twenty years," he says. "It was like meeting a stranger." But he also met his grandmother and two new additions to the family — his sister Amer's daughters, Yar and Ajak. By the end of his six months in Sudan, he knew his life's calling.

"I wanted to go back to South Sudan to help rebuild the country," he says. "I wanted to be a human-rights advocate, to be a voice for the things that are being hidden. I know it's risky — most African governments don't want to talk about human-rights abuses. The things that happened to me — most Sudanese would say that talking about that is shameful. But I say why? It happened; it's wrong. I'm not afraid to be that voice."

When he returned to the United States, he enrolled in the University of Minnesota's graduate program, where he's studying human-rights advocacy. In St. Paul, he would be near the Heitkamp sisters, who had both moved to the Twin Cities, and he could devote himself to developing the skills and connections necessary to improve human rights in South Sudan.

But Solomon didn't realize how personal that work would be.

Children

SOUTH SUDAN MAY BE a nearly independent state, but like the country it was carved from, it isn't so much a nation as a conglomeration of different ethnic groups. The largest of these is the Dinka — Solomon is a member of the Dinka people, as is GOSS president Kiir and the founder of the SPLA, the late John Garang. But there are other groups, and one of these is the Murle. A pastoral people who exist on the fringes of Sudanese society, the Murle center their lives largely on their cattle. When they need anything from outsiders, they trade, or, when times are hard, raid their neighbors. The Dinka and Murle have an uneasy relationship.

It appeared to be a band of Murle gunmen who entered the village of Liliir in October 2007 and shot up Solomon's family. But this wasn't the first such attack. According to South Sudanese officials, as many as 450 children have been abducted in South Sudan since 2004, most of them by Murle raiders. Very few of the children have been recovered.

No one knows exactly why these abductions happen. It may be that the Murle have been stealing children to keep as slaves or to sell. One common theory holds that the abductions are motivated by a deeper need.

"[The Murle] have tremendous fertility problems," says Barbara Frey JD'82, director of the University of Minnesota's human-rights advocacy program. "Possibly due to sexually transmitted disease or to a genetic disorder, their women are experiencing widespread infertility. For the tribe to survive, it needs to extend its population." Historically, she says, the Murle had carried on a trade with their neighbors, offering cattle for unwanted children. But the social disintegration caused by the civil war disrupted that trade, leading the Murle to raiding.

Or maybe not — Murle leaders maintain that they're being made the scapegoats for general lawlessness in South Sudan, and that many different ethnic groups carry out child abductions.

Very little of this was important to Solomon, though, when he first heard the news about Yar and Ajak. The October call left him stunned — but not immobilized, according to Erin Heitkamp.

"He just felt that he had to do something," she says. "After all that had happened to him, he couldn't just sit by while these children were stolen."

What Solomon did, at first, was seek out Frey, who was one of his teachers that semester. The two had a long discussion about what to do, and she suggested that they enlist the help of the rest of their class.

"Every year, I have my students take on a project," Frey says. "Here was a real

case, involving one of themselves. I knew they'd want to help."

And she was right. When Solomon informed his classmates, they decided unanimously to make Yar and Ajak their cause. Within a few days, they'd organized a program — called the Save Yar Campaign — and a plan of action. They launched a Web site, www.save-yar.org, to collect and distribute information about the two girls and about South Sudan, and it includes online petitions to members of Congress and to GOSS officials.

In short order, Solomon began drawing his network of U.S. connections into the campaign's work. Heitkamp and Moreno have aided by hosting fundraising events; Tammy Baldwin is one of the members of Congress to whom the campaign has reached out; and various elements of the University of Minnesota community, from the local chapters of Amnesty International and the United Nations Student Association to the school's African studies department and its Institute for Global Studies, have lent support as well. Frey, the campaign's faculty adviser, even found university money to make Solomon and two other campaigners — chair Robyn Skrebes and coordinator Daniel Lynx Bernard — paid research assistants.

The campaign helped give Solomon's concern a more strategic structure. "This isn't a rescue operation," says Frey. "The students are researchers and advocates, not rescuers. But they want to make a stand for what they see as not just a one-time crime, but a problem that spans an entire region."

"We quickly realized that we could not tell the world that only these girls mattered," says Bernard. "We needed to advocate for all kids in such situations."

In November 2007, when the campaign members learned that GOSS president Kiir would be visiting the United States, they hastily organized a trip to Washington to meet with him — even though it would mean sitting face to face with one of the leaders of the movement that had taken Solomon years earlier.

"Kou was really nervous before meeting with Kiir," says Amanda Lyons, a campaign volunteer. "I felt like there was a lot going on between [him and the members of the South Sudanese delegation] — sort of an attitude. It's like they were implying, 'We know who you are.' "

Ultimately, the meeting produced mixed results. "[Kiir] was very receptive," says Skrebes, "though he didn't always tell us what we wanted to hear. He seemed very inclined to push for military action, and we oppose that. We want to find and address the root causes of this problem so that we can end child abduction altogether."

Still, Solomon knows that Kiir and his officials have limited means to help. "They're just a baby government," he says. "They're very new and not very strong. They don't want to do anything that will destabilize the country any further."

TOM FOLEY

Within weeks of Yar and Ajak's abduction, Solomon and his friends at the University of Minnesota organized the Save Yar campaign, drawing aid from volunteers such as Alisha Hilde, above, of Amnesty International. The campaign's Web site, www.save-yar.org, spreads information about the plight of children in Sudan.

Return

AND SO SOLOMON decided he had to return to Sudan. In March, he departed for a three- to six-month journey to the country that had abandoned him, to see if there's anything he can do.

"If I have a presence on the ground there," he says, "I can go to government offices and say, 'I'm not going to give up [on] my nieces. They are still captive — what are you going to do about it?' "

Initially, two students from the campaign, Skrebes and Kaitlin Doherty, accompanied him, but both could only stay for two weeks. They were also limited to staying in and around Juba, as the University of Minnesota considers South Sudan's backcountry too dangerous for student travel.

"There's still a lot of violence there, especially in the rural areas," says Skrebes. "Even Kou wouldn't be safe traveling out into the countryside."

Still, Frey maintains, even a limited stay should be helpful for the campaign. "There's only so much research you can do from here," she says.

But Solomon intends to stay as long as he can, and to travel at least as far as Bor, the capital of Jonglei state, where members of his family are staying. "I need to meet with them," he says. "I need to see, as far as I can, what's going on."

From there, he may accomplish little. But he feels driven to make the attempt — not only to save Yar and Ajak, but also to save his homeland.

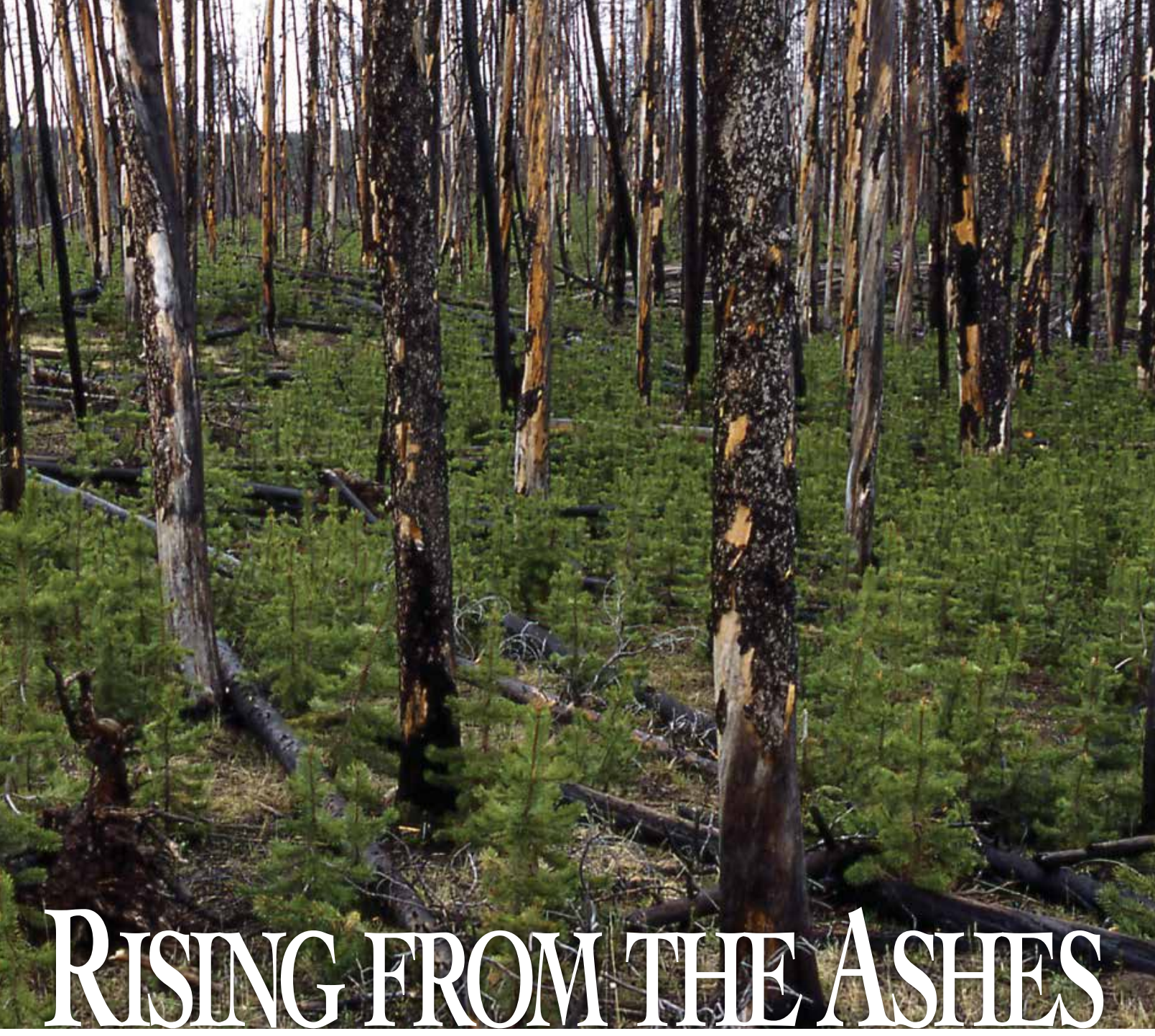
John Allen is senior editor of *On Wisconsin*.

JIM PEACO/NATIONAL PARK SERVICE

When wildfires raged through more than a million acres of a beloved national park, the destruction seemed complete. But a UW researcher looked closer — and found hope growing among the remains.

By Jill Sakai PhD'06

JEFF HENRY/NATIONAL PARK SERVICE



Rising from the Ashes

Monica Turner was not sure what to expect as she boarded a helicopter in Yellowstone National Park. After months of planning, she had come to Wyoming with hopes of studying the ecology of the park's pristine wilderness. But that was before the fires. Now the park was ablaze, grappling with its largest fires ever, and her intended research subject was going up in smoke.

That 1988 "summer of fire" made Yellowstone history. Early blazes, sparked in June by a combination of lightning and human activities, burned for several weeks without raising much concern. As the summer got hotter and drier, though, the situation quickly turned. In July, "we had active fires spread, but nothing that we hadn't previously experienced," recalls Roy Renkin, a Yellowstone biologist. "But then, here came August. … Then things started to really pick up and go."

Fueled by drought conditions and raging winds that topped sixty miles per hour, the fires began to sweep through the park. As the flames blazed out of control, they consumed the beauty of this symbol of the rugged American West and threatened the iconic Old Faithful geyser. The extent and ferocity of the fires — surprising even to park managers and scientists — riveted the public. Fiery images dominated television sets and headlines across the nation with a horrifying message: the crown jewel of America's National Park System was in trouble.

Defying all attempts to curtail its spread, the inferno raged for months, forcing temporary park closures and launching the nation's single largest firefighting effort, which drew more than twenty-five thousand firefighters from across the country. A reporter for the *Washington Post* likened the sights and sounds

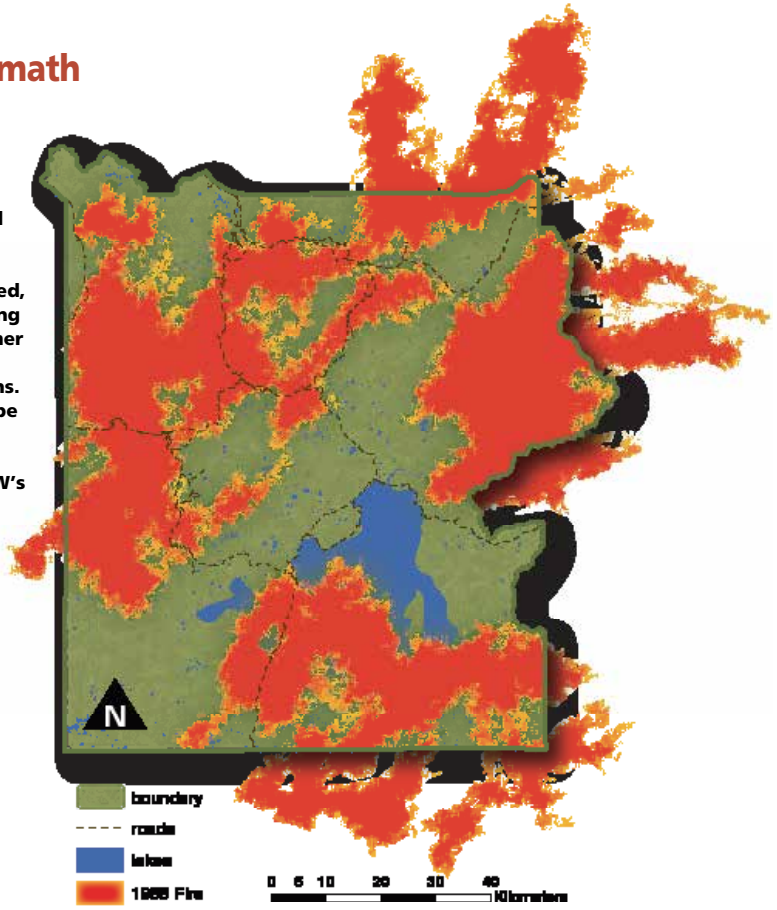
in the Yellowstone basin to a war zone in Vietnam. Before fizzling under a mid-September snowstorm, the record-breaking fires engulfed more than 1.2 million acres in the greater Yellowstone area, comprising more than one-third of the park. Lingering flames would smolder into November.

Arriving in Yellowstone in October 1988, Turner, today on the UW faculty, and her colleague Bill Romme, a forest ecologist now at Colorado State University, steeled themselves for their first look at the remains of the park. But as the copter lifted them over the charred landscape, they were immediately taken by the presence of lush, green islands dotting the sea of black. Even in the areas most severely affected by the flames, large chunks of the forest appeared virtually untouched.

That variegation of black and green, burned and unburned, was exactly what Turner was looking for. A pioneer in the burgeoning field of landscape ecology, she had spent several years studying the relationships between a region's physical features and its ecosystems — the workings of a forest on a ridge versus in a valley, for example, or the ecological impacts of being near a road or stream. The complex patterns of damage left by the vast 1988 burns offered an unprecedented opportunity to study how such variation might affect the landscape's recovery.

In the twenty years since these historic fires, research undertaken by Turner — now a zoology professor and the Eugene P. Odum Professor of Ecology — has grown and developed along with the recovering forest, each reshaped and redefined in unpredicted ways by the fires. Guided by her unflagging curiosity and a keen eye for the unexpected, she has provided the first insights into how a large ecosystem responds to such a major event and unearthed the answers to dozens of ecological questions — many of which no one else had even thought to ask.

The Aftermath



Nearly one-third of Yellowstone National Park, shown here in red, was ablaze during the 1988 "summer of fire," which raged for months. It left a landscape ripe for study by researchers, including the UW's Monica Turner.

A Bleak Beginning

In the early aftermath of the fires, the ground-level view of Yellowstone was of a black-and-white world. Many burned areas were stripped of every sign of life.

Turner and Romme began working in the park in summer of 1989 under challenging conditions. With no funding, they recruited volunteer labor. Friends, former students, and family members pitched in when they could. Even Turner's mother spent her two weeks of vacation in the park measuring burned trees. The forest was dusty and brutally hot, with the sun's heat radiating from the black ground and the black trees, and no shade in sight. "It was like being in an oven," Turner says. "You would come out of working in the field looking like a chimney sweep — just black, everywhere."

Despite the land's desolate appearance, they scoured it to see what — if anything — would grow back. Their persistence was rewarded as bits of green appeared among the ashes. Beneath the forest's blackened facade, the fire had penetrated less than an inch into the soil and left surviving roots, rhizomes, and seeds. Other plants reseeded from unburned forest patches. Initial sprouts emerged in 1989, followed by an incredible profusion of wildflowers in 1990. By 1991, seedlings of native plants had taken hold throughout the burn region.

"We didn't expect the ground vegetation [to return] as quickly as it did. I think we were as influenced by how it looked visually in 1988 as everybody else was," says Turner.

Just as quickly, however, they noticed that the growing plants were not appearing uniformly throughout the burned regions — especially the seedlings of lodgepole pine, the dominant tree species in the park. "We had areas where you could walk hundreds of meters trying to find a seedling of a tree, and other places where if you put your foot down, you squashed fifty of them," Turner remembers. "That's ecologically a huge range."

The researchers traced the differences to the prevalence of a trait called "cone

COURTESY OF MONICA TURNER

Monica Turner, now a UW zoology professor, began her twenty-year study of Yellowstone National Park when the park's 1988 fire left complex patterns of damage — and a rare chance to explore the ecological impact over time.

serotiny." Lodgepole pine trees produce one of two different cone types, one that opens to scatter seeds as soon as it matures and another — called serotinous — that is coated with a thick resin that seals seeds inside until melted open by the heat of a fire. Turner and her colleagues had just discovered that trees bearing serotinous cones were unevenly spread throughout the forest, which meant that regions that looked identical before the fires could regrow in very different ways. "It was a bit of serendipity," Turner says. "We had no idea that the presence of that trait would vary so much spatially across the landscape."

Turner and her colleagues had stumbled onto the first of what would become many ecological surprises in Yellowstone. They were beginning to realize just how much scientists had yet to learn about basic forest processes and their response to fire.

Reshaping the Land

The fires also acted as a creative force, reshaping the Yellowstone wilderness and setting the stage for nature's own rebirth and healing processes. As Turner watched this "natural experiment" at work, new research questions arose as quickly as the sprouting plants. Undaunted when these questions ranged into scientific fields beyond her expertise

> Turner's two-decade connection to the park has also given her team the perspective of time as it charts the forest's recovery.

— entomology, botany, soil chemistry — she has assembled an impressive array of collaborators from the UW and across the continent.

"She excels at getting the right team of people together to address complex questions about landscapes," says Phil Townsend, a UW-Madison associate professor of forest and wildlife ecology and Turner's colleague. "She's really the glue that holds them together."

This interdisciplinary approach has generated studies spanning all levels of the Yellowstone forest ecosystem, from tiny microbes in the soil to tree seedlings and from bark beetles to browsing elk. The researchers' identification of unfamiliar green shoots as aspen seedlings turned on its head the prevailing dogma that Rocky Mountain aspen reproduce only from existing roots. The thick carpets of pine seedlings guided studies on plant growth and nutrient cycling, helping them identify a critical role of soil bacteria in priming the ground for new trees.

Turner's two-decade connection to the park has also given her team the perspective of time as it charts the forest's recovery. One of her former graduate students, Dan Kashian PhD'02, was intrigued by the differences between regions of sparse and crowded young pine trees. "What's going to happen to these patches of seedlings as they grow up?" asks Kashian, now an assistant professor at Wayne State University. While conducting his dissertation research in the park, he reconstructed past examples of similar types of regional variation and found that fire-forged patterns have a lasting footprint.

With "a series of fires like the ones in 1988, obviously they shape the landscape today," he says. "But they'll probably leave their mark for at least two hundred years."

Let it Burn?

The 1988 burn nearly left a similar mark on the park's fire management policy, sparking an intense nationwide debate about the natural fire management plan implemented in Yellowstone in the early 1970s. Many critics blamed the severity and extent of the 1988 fires on this so-called "let it burn" policy, which dictated allowing most naturally started fires to run their course without intervention.

"That whole programmatic [let-it-be] approach could have been shut down from the highest levels of government," says park service biologist Renkin, who has been involved with Yellowstone's fire program for thirty years. "They could have reverted back to policies that were implemented early in the 1900s."

But they didn't. In fact, Turner says, fire is a natural and vital step in this forest lifecycle and fires like those in 1988 — though the largest to date in the park's 136-year history — are not unusual in the context of the ecosystem. "This type of

severe, large fire is the natural fire regime in Yellowstone," she says. "The forests have burned in this way since the Pleistocene — so for the past ten thousand years — in intervals of one hundred to four hundred years or so."

She also suggests that earlier suppression attempts in 1988 probably would not have changed the outcome. "There's a relatively narrow window where you can effectively suppress fires," she says. "This was well beyond that."

The work of people like Turner helped uphold the hands-off approach for the Greater Yellowstone area. "I think the educational component of the fires of '88 was a positive influence on society and really resulted in a lot of people's curiosity," Renkin says. "It really heightened their awareness and understanding of fire ecology."

In addition, Turner and her colleagues determined that the 1988 conflagration was a product of extreme climate conditions. "In 1988 it was so dry — it was the driest summer ever recorded there — winds of sixty miles an hour, and the fuels were burning so intensely, it didn't matter if there was a lot of fuel or a little fuel. It didn't matter if the forest was young or old, it didn't matter if there was a road in the way, it didn't matter if the Grand Canyon [of the Yellowstone] was in the way. The fires just blew across the canyon," she says. "They were really a weather, climate-driven phenomenon, and that's true for this type of system."

The role of climate in this fire regime lends urgency to Yellowstone fire research. Other scientists have recently linked rising temperatures and earlier spring snowmelts to more frequent intense fires, suggesting that severe conflagrations may become more common as the world warms. Turner has already compared many of her findings from the 1988 fires against more recent, smaller Yellowstone burns.

"From what we learned in 1988, can we predict what happened in this burn in 2000?" she asks. "And how well does our knowledge transfer — what things are the same, what things are different, and why?"

Such work "contributes greatly to a fundamental understanding of how these systems work, and that is important because it helps feed into making management decisions," says Renkin. Not all ecosystems respond to fire in the same way, he emphasizes, and "what works or is prescribed in one area may not fit to be prescribed in another area."

Fire management remains an active issue. In 2006, Turner presented a summary of the role of fire in different forest ecosystems at a briefing on Capitol Hill. Renkin hopes that fire policy will continue to be guided by science. In resource management, he says, often "there's no ecological rationale for implementing a particular treatment, especially at the landscape level. ... [But] management activities can fit and dovetail with ecological considerations."

> "The fires of Yellowstone … provided opportunities to study things at scales that ecologists simply hadn't worked at before."

Seeing the Big Picture

Yellowstone's forests have provided a relatively simple ecosystem for tackling big questions, with only a few major trees and animals in the mix, but the past twenty years have shown that even relative simplicity can be unexpectedly complex. By establishing ways to approach landscape-level questions, Turner's studies have valuable applications far beyond forest fires.

"So many of the questions that we face in ecology and the environmental sciences are about phenomena that occur over a large area, whether it's changing land-use patterns or climate change," she says. Her approaches can be generalized to ask similar questions about ecosystem impacts and recovery following other large and infrequent disturbances, such as floods, hurricanes, or even volcanic eruptions. "The fires of Yellowstone … provided opportunities to study things at scales that ecologists simply hadn't worked at before," she says.

With her Yellowstone work, Turner has also established an impressive legacy in the field of landscape ecology, offering the first glimpse into how a major disturbance like fire shapes an ecosystem over space and time. In recognition of her tremendous contributions to a growing field, Turner was elected in 2004 to the National Academy of Sciences — one of the highest honors available to an American scientist.

With UW-Madison collaborators Phil Townsend and Ken Raffa, Turner is now studying the interplay of wildfires and the Yellowstone forest's other major natural disturbance: bark beetles. Trees damaged or killed by beetle outbreaks were long thought to be more susceptible to future fires. "For years, people just assumed that if you had a bark beetle outbreak, that meant a fire was almost certain to happen," says Raffa, an entomology professor and expert on the insect. "Monica's work and the work of her collaborators have shown that it's a lot more complicated than that — there's a lot more heterogeneity in the response due to the landscape, due to weather, due to a variety of factors."

The complexity of this interaction has called into question the common practice of salvage logging damaged trees. "After fire or after insects, the trees are killed, but the wood is still sound," Turner says. "It sometimes is argued that by harvesting the wood, you'll reduce the likelihood of a subsequent disturbance, but there are very few data on that."

She and her students are now exploring the management side of forestry and ecosystems, with ongoing projects investigating salvage logging in the national forest areas near Yellowstone's boundary.

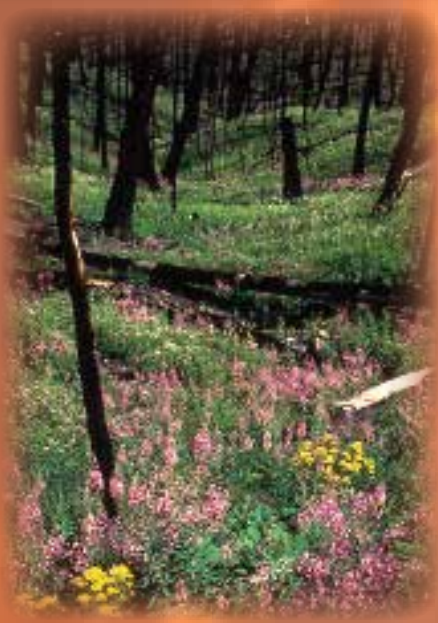
"There's a mismatch between public perception of these interactions and the evidence," explains Jake Griffin PhDx'09,

Nature's Rx for Recovery

Yellowstone National Park's 1988 "summer of fire" set in motion a natural cycle of regrowth and renewal that has kept Monica Turner busy for twenty years. Her studies of post-fire recovery have touched on all levels of the forest ecosystem, from the soil to the treetops. Here are a few of her notable discoveries.

Elk

Yellowstone's large animal populations, mostly unharmed by the fires, adjusted quickly to life in the recovering forest. Turner's group found that elk seem to frequent the young stands of trees springing up in burned areas, despite the dense growth and fallen logs that make maneuvering difficult. The researchers think that the thick vegetation and obstacles may provide protection from wolves.



Ground cover

The Yellowstone fires traveled quickly through the canopy of the forest, consuming pine needles and small branches but leaving trunks and larger branches merely scorched. Logs that were down prior to the fire were charred, but did not burn through, Turner says, having little impact on the flames' severity. The soil burned only shallowly, leaving many surviving roots and seeds.

Life returned quickly to the blackened forest, with green sprouts appearing among the ashes the next spring, followed by carpets of wildflowers. Despite worries that invasive species would infiltrate the forest, Turner and her colleagues found that native plant communities returned and out-competed the few invaders.

"We were really surprised that the system — without any intervention from us — recovered very quickly. It's much more resilient than anyone expected," Turner says.

Pine trees

As the fires swept through the park, they released the seeds of a new generation of lodgepole pines, the predominant tree in the Yellowstone forest. Some lodgepoles produce serotinous cones, which were sealed shut with resin until melted open by the intense heat of a fire. Turner and her collaborators found that trees bearing these fire-adapted cones are spread unevenly through the forest, varying with the frequency of past burns. In essence, she says, the trees have adapted based on historic patterns of forest fires. "I think the public expected we'd have to go into the park and plant trees or grow grass [after the 1988 fire]," Turner says. "But the fact is, we don't have to fix it."

JEFF HENRY (ELK), JIM PEACO (GROUND COVER), ANN DEUTCH (PINE TREES)/NATIONAL PARK SERVICE

one of Turner's graduate students. Working at a landscape level is critical to help resolve such differences, he says, because it allows researchers and resource managers to operate on similar scales. For policies, "from a management and conservation perspective, anything that crosses ecosystem boundaries has a better chance of being sustainable," agrees fellow graduate student Martin Simard PhDx'09.

The need to study landscapes as a whole emphasizes the value of Yellowstone and other protected wilderness areas as irreplaceable natural laboratories. "Most of Yellowstone is very wilderness-like in character and hasn't been very strongly affected by management," Turner says. "Those [properties] give us the opportunity to understand the baseline conditions of how our ecosystems are responding — even to big drivers like global climate change — in the absence of the much more intensive modifications that characterize so much of our landscapes.

"We learn a lot about the mechanisms of nature without our intervention. How does it work? How does it recover from events like this? How does that help us manage landscapes where we do have more of an impact? And what does that mean for the future?"

Twenty years is just a blink of an eye for a dynamic forest ecosystem, and rising global temperatures are likely to affect Yellowstone's recovery and future patterns in ways yet to be discovered. "Fire frequency is likely to increase, not only in Yellowstone, but throughout the West," Turner says. "Long-term studies like ours may help us understand what we can expect in the future."

Even after two decades of working in the park, Turner doesn't look like she'll be slowing down anytime soon. For every question she answers, another springs forth — like new life emerging from Yellowstone's ashes.

Jill Sakai reports on UW-Madison research as a writer for University Communications.

famous faces

Nostalgia is a mighty powerful emotion. Check out the special spots that immediately come to mind when these Badgers turn back the clock.

By Jenny Price '96

BRYCE RICHTER

favorite places

Every Badger has a favorite Madison place.

Who didn't love eating ice cream on the Memorial Union Terrace? Or experiencing Bascom Hill on a warm, sunny day when you could study on the grass or toss a Frisbee? Or jumping up and down in unison with thousands of other football fans until Camp Randall Stadium shook?

But oftentimes, nostalgia runs just as deep for places that aren't campus icons. You may remember a restaurant that served the perfect burger, where the jukebox played just the right song after a bad exam, or where a curious combination of Madisonians and students hung out together. You may find it hard to forget the site of your first date with your spouse-to-be — or with the one who got away. Or you may long for a regular haunt, where the meaning of life was habitually hashed out over cold beers, or an out-of-the-way study space where the sun came through the windowpane just so.

On Wisconsin asked a group of notable alumni to stroll down memory lane and share what they found with fellow Badgers. Their favorites demonstrate not only how intensely memory and place are intertwined, but also how time spent outside of class has helped to form the quintessential UW-Madison experience.

CRAIG SCHREINER, *WISCONSIN STATE JOURNAL*. REPRINTED WITH PERMISSION.

Only a hungry athlete could have a chance of finishing one, let alone two, of the ginormous pancakes (above) served at Mickey's Dairy Bar.

Mickey's (previous spread) retains its classic diner decor and wall menus, giving hungry customers — such as Al Toon — who crowd the entryway something to look at as they wait for a table or stool to open up on busy weekend mornings.

al toon

WHO: Self-employed real-estate investor

KNOWN FOR: All-American Badger track star and football player; first-round draft pick in 1985 and three-time Pro-Bowler with the New York Jets

FAVORITE PLACE: Mickey's Dairy Bar

WHY? Home-style cooking in the shadow of Camp Randall Stadium, where little has changed since the diner opened there in 1946, and eating one of the big-as-your-head pancakes is a rite of passage. Toon '95 first dined there with other athletes and now goes with his wife, Jane '85, and their four children, including eldest son, Nick x'11, a redshirt freshman on the Badger football team. "I was about twelve hundred miles from home [Newport News, Virginia], and anything that helped with reducing homesickness was a winner," Toon says. (For an interview with Toon on the Big Ten Network's *Wisconsin Reflections*, visit www.wisconsinreflections.wisc.edu.)

THE WASHINGTON POST

anthony shadid

WHO: Reporter, *The Washington Post*

KNOWN FOR: Pulitzer Prize-winning journalist who is now working on his third book, which is set in his family's ancestral village in south Lebanon.

FAVORITE PLACE: The Black Bear Lounge

WHY? Bikers and college students gathered for drinks and conversation, and members of *The Daily Cardinal* staff, including Shadid '90, calmed their nerves after weekly Friday meetings that usually involved shouting matches and ego slaying. Bob Dylan's "Tangled Up in Blue" was in heavy rotation on the jukebox. "It was kind of dingy; it was a little bit of a dive; there was that big black bear on the wall," he says. "There were conversations about everything from relationships to high politics … to who was with whom at the *Cardinal* compared to the week before. So it was just great, just so much fun, and so alive — everyone was just excited to be there. In some ways, that is a very college experience."

FOX NEWS

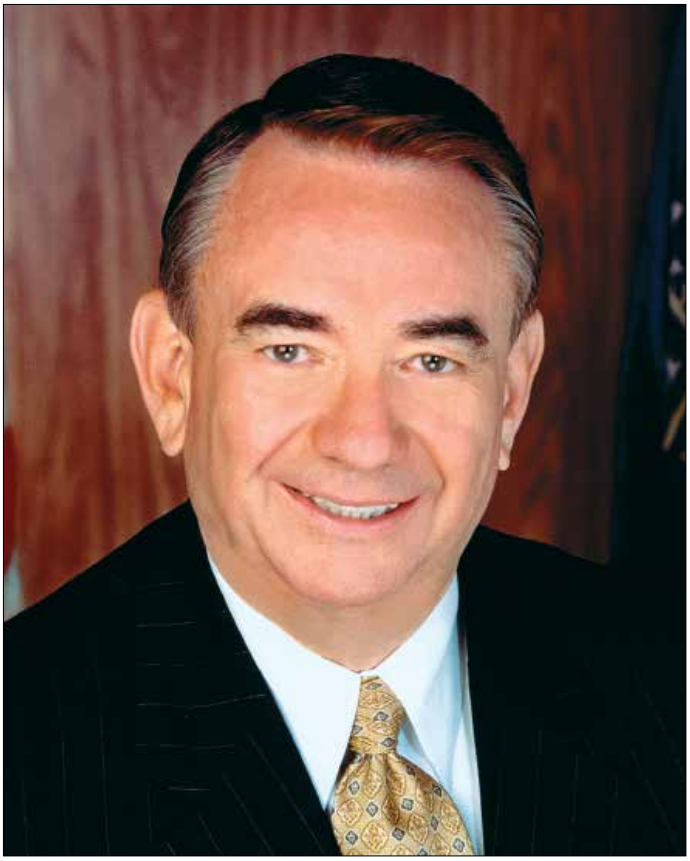
greta van susteren

WHO: Host, Fox News program *On the Record*

KNOWN FOR: No-nonsense legal analysis during CNN's coverage of the O.J. Simpson trial and the 2000 presidential election; being named one of the world's one hundred most powerful women by *Forbes* magazine.

FAVORITE PLACE: The "music room" upstairs at Memorial Union

WHY? The marble-columned and wood-paneled Main Lounge on the second floor, with its grand piano, was a familiar place to study or relax for Van Susteren '76, who was raised in a home filled with classical music. She first visited it at the suggestion of her father and brother, both UW alumni. "I went there almost daily while I was a student at Wisconsin," she says. "Most people never strayed above the first floor of the Union when I was in college, so it was a bit of a hidden spot. … If I went to the Union today, it would be my first stop."



GETTY IMAGES

tommy thompson

WHO: In-demand health care consultant; partner in a Washington, D.C., law firm

KNOWN FOR: Being Wisconsin's longest-serving governor; former secretary, U.S. Department of Health and Human Services; onetime 2008 presidential candidate

FAVORITE PLACE: The Varsity Bar

WHY? At this now-defunct State Street tavern, Thompson '63, JD'66 found work as a bouncer, bartender, and eventually manager as he worked his way through his undergraduate years and law school, back when he would jokingly introduce himself to strangers by putting out his right hand and saying, "I'm Tommy Thompson, and I appreciate your vote and support." He says,"I still have friends that used to come into the bar because I was a bartender there. I also had a chance to meet a lot of lovely young co-eds that I dated out of that bar."

COURTESY OF TAMMY BALDWIN

tammy baldwin

WHO: Member of Congress

KNOWN FOR: Representing Wisconsin in the U.S. House of Representatives since 1999

FAVORITE PLACE: The UW theater department's costume lab, formerly located in the basement of Memorial Union

WHY? Baldwin JD'89 was raised by her grandmother, Doris Green, who served as the lab's director, teaching theater students and making costumes — everything from suits of armor to hoop skirts. Baldwin spent many hours in the costume lab as a child; she recalls helping make fake pearl necklaces for a play set in the 1920s, using gumballs painted iridescent white. She also played a role in the children's chorus of a production of *Finian's Rainbow*. "My grandmother started bringing me to the costume lab before I even had memories," she says. "I was told that in the big cutting table, there's this large drawer — a really large drawer — that served as sort of a wonderful crib. … [My grandmother's] supervisor came in one day and saw little hands stick up and said, 'Oh my!' "

COURTESY OF TURBOTAP

KIPLING SWEHLA

matt younkle

WHO: President and chief technology officer, TurboTap in Chicago

KNOWN FOR: While an engineering student at the UW, Younkle '97 invented the prototype for a device that keeps tap beers from developing too much foam. It's now used in ballparks and stadiums around the country.

FAVORITE PLACE: Greenbush Bar

WHY? The low-ceilinged hangout in the basement of Madison's old Italian Workmen's Club might not be where one would expect to see college students. But it sticks out for Younkle because it was the first place where he tried craft and micro-brewed beers. It's also where he took his wife, Susan (Weber) Younkle '00, on their first date. "It was quiet and just kind of had a very laid-back atmosphere, and my roommate and I would wander over there and have a few beers together and just talk about life," he recalls. "We always thought we were kind of big shots, going there as students, having the fancy beers, so it was kind of our chance to be a little bit special."

charlie trotter

WHO: Renowned chef

KNOWN FOR: Owner of his eponymous Chicago restaurant

FAVORITE PLACE: Quivey's Grove Stone House

WHY? Trotter '82 worked one of his first restaurant jobs at The Monastery, where he dressed in monk garb as a bartender and waiter, but he enjoyed escaping downtown Madison with friends to experience Quivey's Grove, the historic restaurant twenty minutes from campus. Trotter hasn't visited it in years, but looks forward to taking his son there on his next visit to Madison. "This out-of-the-way spot, something we felt that we had 'discovered,' was a getaway from campus," he recalls. "It felt like being in another time period — to be a college student at a sophisticated farmhouse with such charm and history to it."

COURTESY OF CARLY PIPER

UW ATHLETICS

carly piper

WHO: Former Badger swimmer and Big Ten record holder in the 500-yard and 1650-yard freestyle

KNOWN FOR: Winning gold at the 2004 Summer Olympics as part of the U.S. 4-by-200-meter freestyle relay team, which also broke a seventeen-year-old world record; swimming the 100-, 200-, and 400-meter freestyle trials, hoping to make the U.S. team for the 2008 games in Beijing

FAVORITE PLACE: The Nitty Gritty on West Johnson Street, near the Kohl Center

WHY: The every-day-is-someone's-birthday atmosphere and the hospitality of owner Marsh Shapiro '63, who always welcomed the swimmers personally when they came to celebrate or entertain new recruits. Look closely on the back wall and you may see a group photo of Piper '06 celebrating her twenty-first birthday. "I remember first going [there] on my recruiting trip, and coming home and telling people about cheese curds and how good they were," she says. "One of my favorite things about my college experience was the friends I made and the places we went on campus just to sit and talk."

mike kelley

WHO: Vice president, Associate Engineering in Hustisford, Wisconsin; color analyst for ESPN regional broadcasts of college basketball; father of four

KNOWN FOR: Winning Big Ten defensive player of the year and helping the Badgers make the NCAA Final Four in 2000

FAVORITE PLACE: Glenway Golf Course

WHY? Nine holes and the par threes made Kelley '01 feel like a good golfer, and the unassuming city-run course just minutes west of campus made it easy for Kelley and some of his teammates to squeeze in a round. "I'd like to tell you I was the best, but Jon [Bryant '00] was probably the best," he says. "There would always be something on the line — never too much, because we didn't have a lot of money — but pride, always, and maybe a few nickels here and there."

Jenny Price '96 is a writer for *On Wisconsin*. Her favorite place in Madison as a student was the Wisconsin Historical Society library. Or was it Dotty Dumpling's Dowry, the site of many *Badger Herald* "staff meetings"?

A Model *Student*

A mild-mannered *magazine writer* walks a mile in a model's shoes.

BRANDY DE MARZO

By Paula Wagner Apfelbach '83

I rarely make promises, but I'll make this one: you will never mistake me for a model.

Even if I were thin enough and good-looking enough, isn't modeling kind of a "fluffy" profession, inhabited by narcissists? It's just part of the marketing machine that makes us feel so inadequate that we buy lots of stuff in order to salve our mediocrity, right? Yet if I truly believe that, then it's disturbing that I harbor a fantasy in which I don a gorgeous gown and a steely façade, and stride down a runway, certain that I am not only center stage, baby — I *own* the stage.

How strange, then, that I — steeped in this internal conflict — found myself recently in Florida, studying how to be a model.

Guess which is the model: Paula Apfelbach and her VocationVacation mentor, Robin Kay, share a laugh on the set of an infomercial being filmed in a Florida home.

[Kurth] devised the idea of helping others to plumb their souls and *explore new occupations* by "test-driving their dream jobs."

CHERYL JUETTEN

VocationVacations founder Brian Kurth is passionate about helping others to live what they love.

The *why* of this was complicated, but the *how* was not: I'd taken a VocationVacation — a career exploration and experiential vacation in one.

The company that offered it — VocationVacations (www.vocationvacations.com) — is the brainchild of Madison native Brian Kurth '88. While undergoing some soul searching about his career back in 1999, he devised the idea of helping others to plumb their souls and explore new occupations by "test-driving their dream jobs." He then left his management position with a *Fortune* 500 telecom firm in Chicago, joined a Chicago dot-com, was laid off, and set out on a six-month, cross-country road trip, finishing 2003 working in sales and marketing for a wine distributor in Portland, Oregon — and loving it.

In the meantime, Kurth had been slowly crafting a business plan, and it was time to act: he moved to Portland from Chicago and launched VocationVacations in January 2004. Its offerings work like this: "vocationers" choose a career path to explore and pay a fee (95 percent of the trips cost under $1,200; transportation and lodging are not included) to spend one to three days working alongside a well-established mentor who has undergone rigorous evaluation. Mentors show the good, the bad, and the ugly about what it's *really* like to be, for example, a golf pro, alpaca rancher, private investigator, park ranger, shoe designer, TV producer, meteorologist, perfumer, or boat captain.

About 75 percent of vocationers are earnestly considering career changes, and this is a low-risk baby step in discerning whether their dreams match reality. The rest are satisfying curiosities, indulging fantasies, or merely having a blast with an alternative kind of vacation. And Kurth welcomes them all. His vision that "happiness and passion can and should be an integral part of what you do" speaks powerfully to Americans who are experiencing occupation ennui, dissatisfaction, and burnout.

Building on its original group of ten Oregon-based mentors, VocationVacations now has more than three hundred mentors, offering more than one hundred fifty vocation types, in thirty-five states. But the vacations, while growing in number, are just the beginning. The company is expanding to include a university travel affinity program, a new Web site, telechats, podcasts, a DVD, blog, workshops, YouTube videos, and Kurth's book, *Test-Drive Your Dream Job: A Step-by-Step Guide to Finding and Creating the Work You Love*. Written with Robin Simons, it hit stores in January, and Kurth promoted it through a nationwide tour.

When I met Kurth at his Madison book event, I asked if he could have imagined all of this just a few years ago. He modestly admitted that a 2001 vision statement had included a book, a magazine, and a TV show. (The latter came to life in 2006, but the project has since ended.) "You put it on paper," Kurth said, "and it happens — with a *lot* of hard work."

Bliss

Just as Kurth found his calling in VocationVacations, he's delighted to tell stories of many other happy campers — and wedding planners and brewmasters and choreographers — who've faced their fears and followed their bliss. He derives great satisfaction from knowing that about 20 percent of the former vocationers he's heard from during the last two years are now in new jobs, in school to prepare for new careers, or otherwise in process.

David Ryan is one of them. He was an international banker who'd worked in numerous European and Asian countries, but in 2005, after seventeen years, he needed a change. He'd always loved dogs, but could he turn a passion into a viable career?

Ryan decided to explore the question through one VocationVacation with a dog-day-care owner, and another with a dog trainer. His mentors' openness in sharing the highs and lows of their businesses — as well as their network of contacts — helped Ryan to determine his preference for dog training, and he underwent intensive training himself.

When 2006 dawned, he was the owner of Beyond Dog Training in Rye, New Hampshire. "My experiences with VocationVacations let me dare to try out something I might never have tried otherwise," says Ryan. "Without a chance to walk for a few days in the shoes of people in pet-care businesses, I do not believe that I would have had the imagination or courage to actually make the leap I made."

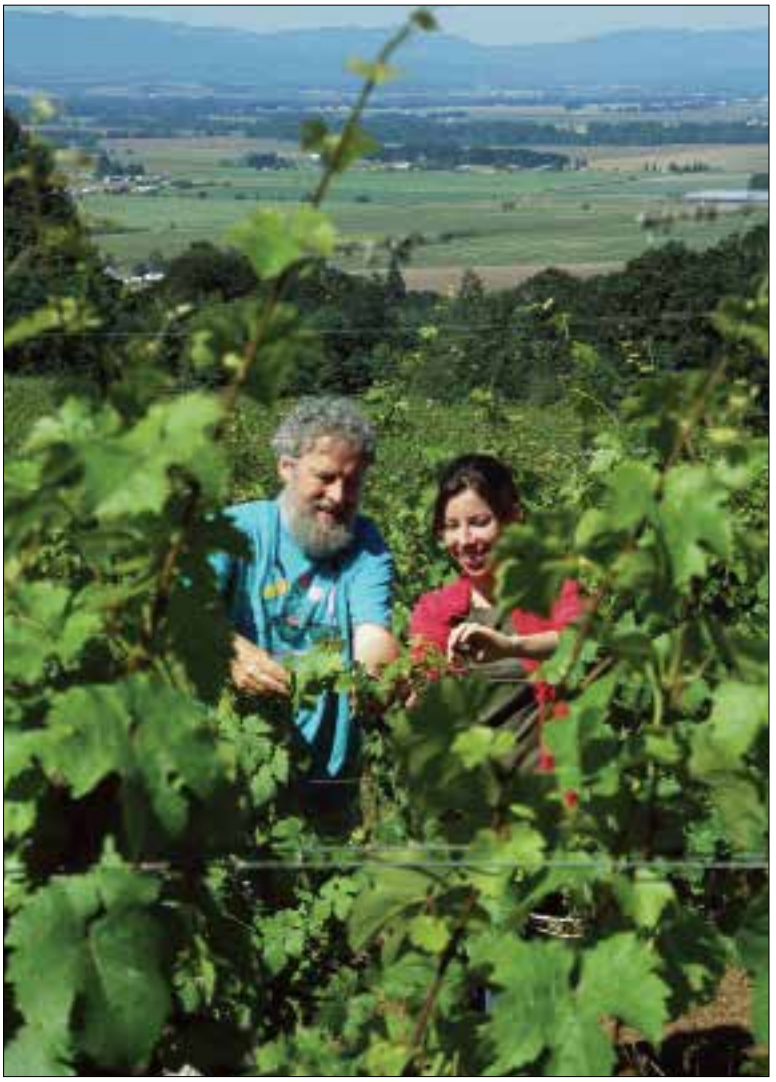
Not long after Ryan opened his business, Jessica Caulfield took a retail-fashion-buyer VocationVacation in New York City. Her firsthand experiences meshed so well with her dream of such a career that she decided to open her own shop. During the next few months, Caulfield used the networking contacts and skills that she'd obtained to purchase inventory and open a women's clothing store, called Jessie James, in Hoboken, New Jersey. The shop was so successful that before it was even a year old, Caulfield opened a second location in Manhattan.

Not everyone who goes on a VocationVacation ends up in a new career, of course, but finding out what you *don't* want to do — the easy way — can prevent you from spending a lot of time, money, and effort learning that lesson the hard way.

Kathy Scopin Setter of Truckee, California, had observed so many "signs" throughout her adulthood pointing toward a career in the wine industry that when she considered a career change after twenty-five years in health care, owning a wine bar seemed obvious. During her VocationVacation, Scopin Setter had a "fabulous experience that imparted reality to her fantasy," but she determined that it just wasn't the right fit, and she's continuing to explore her passion, all the wiser for the experience.

As one of those vocationers who had mainly wished to indulge a fantasy, I emerged with a much greater understanding and respect for the modeling profession — as well as a wild ride on the self-esteem roller coaster.

FOLLOW YOUR BLISS



MR. JĀNIS MIGLAVS

Modeling is just one of 150 vacations offered by Kurth's company. Above, Gretchen Heilshorn learns about wine-making with VocationVacations mentor Myron Redford at Amity Vineyards in Amity, Orgeon. Redford was one of the original group of ten Oregon mentors who signed on when the Portland-based company was founded four years ago. The company now has more than 300 mentors.

It

My VocationVacation experience began by completing the Myers-Briggs Type Indicator and a work-preferences

inventory (in which I chose virtually all of the wrong responses for being a model). Then I had a fascinating phone consultation with Dunwoody, Georgia-based life coach Leah Henderson, who was uncannily adept at getting to the heart of my internal conflict and soothing my self-doubt. I told her I'm no warthog, but I'm certainly no model either.

For starters, five-foot-three is too short, and forty-six is too old. I think unkind thoughts about my nose. I have bags under my eyes from three-plus decades of doing other things when I should have been sleeping, and despite my many post-childbirth years of slavish devotion to exercise, I still possess a "mother gut." On the plus side, though, I have dimples, naturally straight teeth, and sort of quirky, gray-blue eyes.

But insecure or not, ultimately it came time to leave. I armed myself with Henderson's reassuring advice to just relax and be present, packed my emotional baggage, and went to St. Petersburg, Florida, to spend two days with my mentor, Robin Kay.

When you find out that Kay is both a national-champion baton twirler *and* a veteran of Miss America competitions who paid her way through college entirely with pageant scholarships, you're right to assume that she's beautiful. Blonde and very thin, with a broad, winning smile and captivating, baby-blue eyes, she's just what you'd expect of a woman who honest-to-goodness makes her living as a model.

Is it any wonder that not since my wedding day had I been so concerned with my makeup as I was on that first morning? But I needn't have worried: when we met at a Starbucks, Kay gave me a big smile and a hug instead of a handshake. Over her creamy beverage (doesn't that have *calories* in it?!), my decaf, and the next several hours, she built a foundation for me to learn about the modeling profession.

As it turns out, it's not entirely about one's looks, but rather, about *a* look — which means that just about anyone can be a model. (Really!) One route is to skip modeling school and go to a photographer who creates composite (or "comp") cards. As a model's indispensable marketing tool, these full-color, half-sheet-sized cards include various shots that demonstrate the versatility of your look, along with your contact information and measurements.

As it turns out, *it's not entirely about one's looks*, but rather, about *a* look — which means that just about anyone can be a model.

Kay emphasized understanding which modeling niche is right for you based on your look. Women who are at least five-foot-eight, rail thin, and killer gorgeous — the fashion-model stereotype, in other words — may indeed be destined for haute-couture work and runway shows. But there's a surprisingly wide range of other jobs that fall under the modeling umbrella: actors in commercials, emcees, spokespeople, TV hosts, movie extras, voice-over talent, in-person product promoters, fake medical patients, parts models, trade-show product specialists and narrators, and perfectly proportioned "fit models."

One last category caught my ear in particular: there are no special weight, height, or beauty requirements for lifestyle (or commercial) models, who appear in print and broadcast ads as everyday people. *(Aha!)* They're just smiley folks who look as though they could live next door, which Kay proved by sharing lots of magazine ads that featured some mighty ordinary-looking people. After all, we concluded, *someone* has to play the distended abdomen in ads for bloat reducers, and the balding head in spots for hair-growth products.

After our coffee talk, Kay and I logged the first of many miles on the road — a slice of reality, as she does a lot of traveling to modeling agencies, casting calls, and bookings. Our destination was a home in a residential neighborhood, where we watched a two-minute infomercial being filmed. The star of the show was a Sonic Mop.

Even though no model was shown *using* the mop, the scene illustrated what goes into such a thing. There was a very large truck outside, with lights, cameras, props, technical equipment, and myriad cables strewn about the driveway and the dining room inside. Plus, about twelve (no lie) production professionals, all with their own expertise and roles to play, were on hand to capture this mop on film. And this, apparently, was a *small* shoot.

a Mall

We had lunch at a mall, and I figured Kay would order a salad, but instead, I ordered the clichéd salad, and she had a veggie burger and fries. As we ate, I learned much more about the business of modeling, which I hadn't expected to be so, well, businessy. But Kay explained that it takes a lot of hard work and professionalism to market yourself, and a lot of savvy and assertiveness to make that hard work profitable.

The mall gave us access to essential modeling tools: clothing and makeup. While browsing the racks at Sears, Kay pointed out what, and what not, to choose for casting calls, when models always wear their own clothes. (So much for the notion that there are free fashions to be had; they often provide their own outfits for bookings, as well.)

You're often on your own with makeup, too, which is why Kay took me to Dillard's (with men doing double-takes at her as we passed) to visit the M•A•C Cosmetics department — the home of "high-pigment" makeup that's often used in modeling and the theater. There I received a mini-makeover from a cosmetic artist named Todd, who seemed so wise and nonjudgmental that I poured my heart out to him about my facial flaws.

MR. JĀNIS MIGLAVS

A firsthand experience of a day in the life of a horse trainer includes exercising the horses, training, riding, feeding, grooming, and, of course, cleaning the stalls. Animal-related vacations, which also include dog daycare owner, animal therapist, and alpaca rancher, appeal to many who think they would prefer working with four-legged clients.

The very early wake-up call on my second day was painful, but not uncommon. It was time for my photo shoot — a start on shots for my comp card and a simulation of a print shoot — and we wanted to "capture the morning light." Kay and her colleague Beth Ball — a model (as Sigret Ball), makeup artist, and former new-talent coordinator for a local modeling agency — arrived at my hotel door, looking fresh and beautiful, to do my hair and makeup and to choose my clothing. I arrived at the door looking bleary-eyed.

Ball was at work on my hair — straightening and puffing it, and brushing my bangs in a direction they've not voluntarily moved since seventh grade — when photographer Brandy De Marzo arrived. She specializes in comp cards, was a model as a teen, and has a seven-year-old son who's already earned a hefty portion of his college fund by modeling.

Next Ball applied my makeup, using an understated lip color, but accentuating my eyes with dark gray liner above and below. Now, dark eyeliner is a foreign substance to me, so I felt like Alice Cooper (minus the blood), but I had to trust. Kay reassured me that this is common: you don't always understand why you're made up the way you are —it's just what the client wants.

Glamour

First stop: the alcove of a bank building, where a speckled wall provided a nice contrast to my all-black outfit. The wind whipped around the space, uncoifing my hair at every opportunity, and each time, Ball leaped to fix it. My face itched, too, but no touching! I was to call "Makeup!" and Ball would blot.

In that alcove I discovered that I don't know how to smile correctly. I'd read that crinkly eyes convey earnestness when smiling, and I didn't understand De Marzo's requests to "brighten" them instead. Finally I figured it out: she

Continued on page 60

A Model Student
Continued from page 39

wanted a big, genuine smile, but without squinting, crinkling my eyes, or raising my eyebrows. It's harder than it sounds.

The next stop was a lush, lovely garden behind a flamingo-colored hotel. But first, De Marzo stood guard outside the car window while I made a quick change from the black top to a periwinkle top while crouching down inside the front seat of the car. Apparently this is another common modeling scenario — not exactly the glamorous working conditions I was picturing.

Achieving De Marzo's photographic vision in the garden required standing in a bed of plants, contorting my shoulders, and engaging in odd arm folding, but once again, I trusted. Between continual adjustments to my hair, Kay and Ball brainstormed that, with my look, I could portray such roles as doctor, pharmacist, soccer mom, barista, golfer, or gardener. I am none of these, but as Kay said, modeling is all about acting.

Next we visited a modeling agency, where Kay dropped off her latest comp cards, and Ball shared her portfolio. The office was far from the ultra-posh space I was expecting, but I enjoyed the dozens of comp cards arrayed on the wall. That's where agency staff and clients can "walk the wall" to choose faces that fit their needs, and then contact them for casting calls.

Kay explained that because these casting calls are more like cattle calls sometimes, they can be taxing. Then one or more callbacks may be needed as clients narrow the field, which can mean lots of travel that leads nowhere. Once you get a booking, the working conditions can be taxing as well: long stints in heat or cold, long hours on your feet, long periods of tedium, and long weeks away from home.

Over lunch, I studied Kay's portfolio and simply listened as she, Ball, and De Marzo networked, swapped stories, and dished about the local modeling scene. (Hey, models are just like the rest of us!) They also divulged some uses for duct tape that are just too painful to repeat.

Parting as we had met — at a Starbucks — Kay used what she considers to be her de facto office to check messages on her PDA. She shared the pros and cons of the job opportunities that had come in and emphasized the importance of mobile technology in snaring work — the first person to buzz in often gets the casting call.

Then Kay gave me a CD, tied in a yellow ribbon, that she'd produced with a male colleague to answer the many inquiries they receive about how to break into the profession. But that was not her last gift, as I had one final request. I asked her to do that familiar runway walk that high-fashion models do — and she did, right there at the Starbucks. Out in the parking lot, I asked her to do it once more, just for grins.

Back home days later, I concluded my experience with a post-vacation coaching call with Leah Henderson, who was eager to know whether I was going to try modeling. I told her that I'd left my catty biases behind, and I'd learned that just about anyone can be a model, but it's often hard and unglamorous work.

But, she persisted, was I going to try it? Well, while you'll never mistake me for a model … never say never, either. The more satisfying outcome of my VocationVacation, I think, was completing my ride on the self-esteem roller coaster with the realization that I like myself pretty much just as I am. It's hard to ask for a better ending than that.

FOLLOW YOUR BLISS

CHERYL JUETTEN

An aspiring baker, left, consults with a mentor on how to turn out perfect loaves of bread. Culinary-related vacations are among the top twenty most popular choices for "vocationers." The early and long hours kept by a baker provide a valuable reality check for anyone considering this career.

On Wisconsin Alumni News editor Paula Wagner Apfelbach '83 has also been a professional organizer for three years, but thought about becoming one for the preceding twenty. At that rate, you can do the math on when she'll become a model.