

# .com SURVIVORS

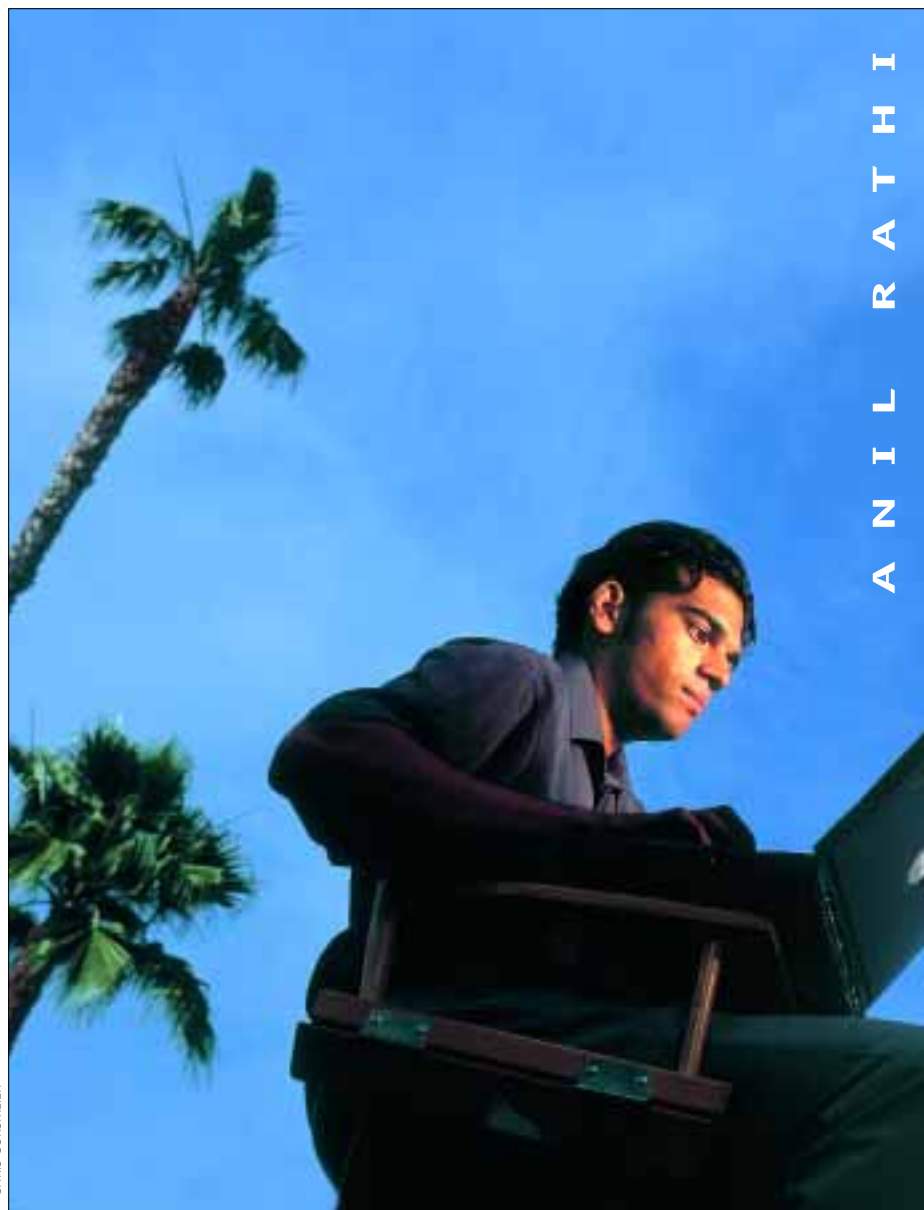
Battered by an Internet **boom** turned **bust**, these alumni entrepreneurs are still in the game... and they're **determined** to see their businesses survive.

by John Allen

It was only six in the morning when Anil Rathi '97 left the United Arab Emirates last October, but the mercury had already topped a hundred degrees. He was worn and exhausted, but not because of the time or the oven of a wool suit he was wearing or the stacks of slides and business plans he carried. Rather, it was what he didn't have that was weighing him down — the big check he'd come so far and fought so hard to gain.

Rathi and Pankaj Kumar, one of his partners in the software firm zSyndicate, had arrived in Dubai a week earlier to take part in the Internet City E-Biz Challenge, an online company's version of the TV reality show *Survivor*. And zSyndicate had, in the very last round, been voted off the island.

**A veteran of three start-ups at the age of twenty-six, Anil Rathi doesn't go anywhere without his laptop.**



CHRIS CORSMER

"I couldn't believe it," Rathí says. "I was shocked — so much hard work, and for nothing." Although meeting other entrepreneurs and investors helped broaden his experience, he felt that zSyndicate's product didn't get a fair shake. "We should have won. What our software could do — it was so much greater than what the others' could. Every business there could have benefited from using our product."

Rathí's company had entered into the E-Biz Challenge almost on a lark. He and his partners had heard of the contest only a few days before its deadline, and they'd never considered such an adventure in their corporate strategy. But the contest's organizers had offered to pay all expenses, so it seemed like a good way to get free advice. Also, the top three companies would each receive \$150,000; zSyndicate needed the money.

"We saw a chance to make a quick \$150,000, and we took it," says Rathí. "It's tough raising capital right now."

And so they sent off their application. They made the first round of cuts — from 1,385 applicants to twenty-three semifinalists — and Rathí and Kumar flew to Dubai, where a grueling schedule awaited. They had to pitch their business plan fifteen times in seven days, altering it after each presentation, even though that meant speeding back and forth through the hot, crowded streets to their hotel room on the far side of town. They slept less than four hours a night, surviving on caffeine and confidence.

"After the first day, zSyndicate was the buzzword among all the contestants and judges," says Rathí. "One of the organizers pulled us aside privately to tell us we'd done a good job, and potential investors were seeking us out to ask for follow-up meetings. I told Pankaj that I thought we were going to win."

But when the news came down two hours after the final presentation, Rathí learned that zSyndicate had received the dubious honor of fourth place: the best a company could do without actually taking home any money.

RATHÍ'S EXPERIENCE IN DUBAI symbolizes the perils of entrepreneurship in the New Economy. Though only twenty-six, he's already working for his third high-tech start-up. He epitomizes the spirit of the online entrepreneur, living for what he calls "the thrill and the chaos" of launching a company — the ambition, independence, and excitement of trying to create his own destiny.

Rathí learned this about himself, he says, when meeting with Sangam Pant, a former executive at Internet giant Lycos who currently works with a California incubator called eCompanies. The two were at the ZONE Club, a gathering for Los Angeles entrepreneurs, and, as Rathí

**"Once you've felt the excitement of a plan coming together, there's no other way to feed the hunger."**

recalls, "as we were drinking Scotch, Sangam asked me, 'Do you want to be a CEO or an entrepreneur?' It all just became clear to me."

A CEO, Rathí explains, is a manager, someone whose chief concern is solving the day-to-day problems of sustaining a business. "An entrepreneur is a visionary. That's me — I do start-ups for the love of creating and executing and seeing things come together. If zSyndicate takes off, that's great. I want it to be a lasting business. But that's not really why I'm in the game."

He isn't knocking success. But he claims he doesn't launch companies merely in the hopes of striking it rich. "Money isn't the true motivation. You can make money doing anything. It's that feeling, like one day you're on top of the world and the next you're questioning why you're an entrepreneur. But once you've felt the excitement of a plan coming together, there's no other way to feed the hunger."

Until a year ago, launching an Internet business was generally more thrill than chaos. The NASDAQ Composite Index, saturated with high-tech stocks,

tripled in value in eighteen months, driven largely by the success of start-up companies. In the first quarter of 2000 alone, more than one hundred companies offered public stock for the first time, and those stocks averaged a 55-percent gain in value in their first day of trading.

Rathí's first entrepreneurial ride came on this wave of optimism. In 1999, as the Internet boom was going strong, he attempted to launch an online retailer called India2U.com. In less than a year, he'd swept through the whole start-up process from the business's inception to its dissolution.

He started the company in Chicago with seven other people and about half a

million dollars in funding. They were B2C (business-to-consumer), Rathí says, and they planned to sell Indian goods — "food, rugs, beauty products, henna tattoos, and stuff like that" — online to the U.S. and upscale Indian market.

"We ran along for eight months," he continues. "The vision and execution were there, but just about when we were ready to go online, I realized we were never going to make any money. I was looking at my Excel spreadsheet, and I used the 'goal seek' function to see where we'd break even. It said we'd have to sell 13,000 boxes [of products] a month at an average of \$10 apiece for a year, and there was just no way we'd be able to do that."

Rathí decided to pull the plug on India2U.com, even though his partners were reluctant to give up. The decision cost him more than \$50,000 and left him without any tangible asset that he might use to leverage another start-up — except for his staff's desks. "They were valuable," he says, "and they were sold at an 80-percent discount." But it could have been worse.

"That's small compared to what I could have lost if we'd gone ahead," he

says, "if we'd spent the money from all those people who'd believed in us."

If India2U.com had continued to borrow and spend until it had gone bankrupt, Rathi believes, not only would he have lost even more money, he would have ruined his credibility with investors and

**"From the moment I was plopped on this planet, I was meant to be an entrepreneur. It gives a feeling of importance that I didn't even know of with anything else."**

shown himself to be a poor business risk. "I'd have been double-screwed," he says.

But this incident didn't stifle Rathi's entrepreneurial drive. He immediately began casting about for another start-up idea. Eager but skeptical about the economy, he decided that the next time he'd need a sound product — not just a Web site, but something unique that would sell well if the company took off and would leave him with a valuable asset if it didn't.

While he waited for such an opportunity to come along, he moved to southern California. Once there, he played the stock market, investing his savings, and took a job with another start-up, WebSalon.com.

"WebSalon also sold specialty products, particularly beauty products, online," he says. "I acted as a consultant for them — it was just a part-time thing. But it occurred to me that, in the market, I wouldn't invest in a dot-com. This was when the bubble was beginning to burst, and those companies were starting to go under. So I asked myself, what am I doing working for a dot-com if I wouldn't even put my own money into them?"

Rathi, like others who had embraced the New Economy, was beginning to see its flaws. A month after he quit, WebSalon went under, just one more victim of the NASDAQ's steady decline after March 2000. Within a year, evidence of the Internet economy's bust was unavoidable. "Welcome to the Valley of the Damned.com," moaned *Fortune* Magazine in January 2001, as it listed 135

Internet companies that had gone bankrupt in the previous twelve months. And in February, the *Economist* asked, "Is There Life in E-Commerce?"

In Rathi's case, the answer was yes. During his time at WebSalon, he'd met Sandeep Walia and Dev Keshav, who, along with Kumar, were forming zSyndi-

cate. Not just a dot-com — a company whose main asset was its Web site — zSyndicate is a software company. Its asset is a product that aims to integrate the various software platforms of manufacturers, shippers, and retailers to streamline processes of distribution and inventory. Rathi jumped on board as director of business development, believing zSyndicate would have a big future, particularly in Asia and the Pacific Rim. "In the next few years," he says, "interconnection is going to be the key."

But finding financing for a start-up was much harder for Rathi — and other entrepreneurs — this time around. "A lot of funds have gone under water," says Laura Francis '88, a former Silicon Valley accountant who's now treasurer and chief financial officer of a Madison-based start-up called Hypercosm (see sidebar). Investors bought shares in start-ups at high prices, and those companies' valuations are now much lower. If they were to sell their shares now, "they'd lose their shirts. They aren't eager to take new risks."

So during the last year and a half, Rathi and his partners have kept on the run, meeting with representatives from more than seventy different venture capital funds. Not all the meetings are pleasant.

"The process is grueling," he says. "We've been doing presentations in Silicon Valley for second- and third-tier venture capitalists, and we've got to be skeptical of some of these guys. Some-

times when we meet with them, we'll find out that they've already got a company in their portfolio that's similar to ours." These potential investors are more like spies than allies. They show an interest in zSyndicate merely so they can examine its inner workings and pass along information to the competing companies they're already financing. "If you ask these guys about it, they get nervous," he notes. "But no one at a presentation is willing to sign a non-disclosure agreement, so there isn't much we can do."

Rathi is feeling more pressure now that he's on his second venture as a start-up founder. It's hard to get investors to look at a person who's failed more than once, he says. "One failure is okay — it means you might learn from your mistakes. Two means you repeat your mistakes," he says. To keep money coming in while they search for investors, he and his colleagues have decided to offer consulting services to other companies.

Among those who have sought Rathi's advice is Craig Markley '98, an entrepreneur who shares Rathi's affinity for start-ups. "From the moment I was plopped on this planet," Markley says, "I was meant to be an entrepreneur. It's about pioneering. It gives a feeling of importance that I didn't even know of with anything else."

Markley and his three partners, Nick Potocic '95, Greg Takoudes '96, and Ben Jensen '97, formed a company called Mr. Preview at the height of the dot-com boom in late 1999. Based in New York and Los Angeles, the company plans to blend Internet commerce with entertainment. They hope to find clients in the entertainment industry — movie studios, television networks, sports teams, and the like — and enhance their Web advertising material so that it's more interactive, informative, and effective. However, no one on the Mr. Preview team has had a lot of experience raising the kind of capital that will help them expand. Advice from someone with Rathi's background fills the gap.

Meanwhile, zSyndicate has also continued to court the investors they met in Dubayy. In the E-Biz Challenge, the

guys with the cash may have voted the software firm off the island, but in the real world, they might be convinced to give the company another chance.

Yet even as the zSyndicate team chases down funding, Rathi has one eye turned toward his next venture. This fall, he'll begin taking classes at Arizona's Thunderbird business school, where he'll seek a master's degree in international

management. "I am anxious to continue learning, taking the lessons of the past few years and building on them," he says, "so that I can understand the subtleties that I previously missed."

And though what he learns may help him as zSyndicate's head of business development — a position he'll retain even while in school — his ultimate goal is to keep his career on the entrepre-

neurial edge. After zSyndicate, he plans to launch other firms, always aiming to build "lasting companies that create value in society and change in the world."

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John Allen, associate editor of *On Wisconsin*, considers himself an expert on the Internet because he can both point and click.

# refusing to lose

These alumni are still chasing their **dream** of remaking the City of Dreams. Are they driven, **stubborn**, or just **crazy**?

**By Brian Mattmiller '86**

Barry Poltermann '86 surveys his office wall, zeroing in on a giant calendar plastered with hundreds of blaze orange Post-It notes. Each note marks a milepost on a frenzied road trip, a year in the life of an Internet start-up company. He glances at the first few months of 2001, which are decidedly less orange than 2000, and he tries to make sense of the feast-or-famine nature of the technology economy.

"As a lesson in surrealism, it's pretty amazing," he says. "People have gone from ridiculous optimism that didn't make any sense to ridiculous pessimism that doesn't make any sense. It's as though, after the demise of the Edsel, people refused to invest in bicycles because they also have wheels."

**Personal and professional connections keep the dream alive at Civilian Capital for, left to right, Steve Farr, Carrie Heckman, Wrye Martin, and Tony Biesack.**



CHRIS CORSMEIER

CIVILIAN CAPITAL



## The Silicon Valley Survival Strategy

When Madison's Hypercosm was six months old and looking to grow, its founders knew they needed outside financing. Their product, a three-dimensional graphics software package designed to enhance other companies' online customer service, wouldn't be ready to ship until the company was in its second year. In the meantime, they'd need cash to stay alive. So they brought in Laura Francis '88 as treasurer and chief financial officer.

Francis knows what it takes — and how *much* it takes — to get an e-business off the ground. Before coming to Hypercosm, she worked as an accountant in California's Silicon Valley, where her duties required her to advise and audit several start-ups. She found the entrepreneurial process exciting and decided she wanted to experience a company's launch firsthand. "It's a grueling process, and you sometimes work eighty-hour weeks," she says, "but it's lots of fun. I wanted to jump in."

While in Silicon Valley, she'd seen how high-tech companies could succeed by focusing on the future — on research and development and on sales — and not worrying about the present. But this attitude is only possible if there's plenty of financing coming in to keep the company going until it can convert research into revenue. Thus the Silicon Valley model is to seek money from investors to fund growth of the company, which it then uses to leverage into further rounds of investment, all based on the promise of an eventual, sizable return.

"Investing in a start-up is riskier than putting your money in a mutual fund," she says. "So investors want to see the opportunity for higher returns. The first thing they want to know is how they can get their money back out. We have to show the possibility of an exit event."

Such exit events, she explains, include acquisition by a larger company or going public with stock. Either could give early investors' shares a significant boost in value.

"Unfortunately," she says, "the market for public offerings is awful right now."

And so Francis and her colleagues face the challenge of convincing skittish investors that their company's product is "down-market-proof" — that it will thrive, even when other high-tech firms are starving.

"We've been fortunate," she says, noting that they've managed to establish good relationships with several investors. Though the financial community is fickle, "they're still willing to invest in software companies like ours." —J. A.

Start



Poltermann and a group of Midwestern colleagues, whose personal friendships and professional connections began at UW-Madison, are battling the current pessimism to launch a new venture called Civilian Capital. They're based in Hollywood Center Studios, an eclectic little gear in the city's dream machine.

Civilian's management team is driven by a heady sense that they are onto something *big* — a business dream with

almost boundless potential. Here's the elevator pitch: Using the Internet, Civilian will create a way for the general public to invest in emerging Hollywood film projects by listing films as public stock offerings. The Civilian Web site will operate like E\*Trade, but with an entertainment focus.

It's an idea that radiates with the attitude of the Internet, where power and control are dispersed among millions. Poltermann's dream is to bring an

equalizing force to a clubby establishment. The company's name itself is a play on what Hollywood insiders call those outside of movie-making society. "Civilians" don't matter, goes the notion, suggesting that those who merely *watch* movies aren't as important as those who *make* them.

But this company wants to crash the gates of the clubhouse.

Through much of 2000, Civilian was on an incredible roll. The company's founders partnered with seasoned investment, securities, and legal experts; they raised nearly \$1 million from private investors; they received regulatory approval to operate as an online brokerage firm; they convinced Oscar-winning actresses and acclaimed movie producers to join their board; and they got big-name film projects in the pipeline.

But while Civilian was speeding toward its dream, the technology market was careening off a cliff. By late 2000, the times caught up with Civilian. Investments dried up, forcing the company's "burn rate" — a dot-com term for operational expenditures — down to a flicker. Initial plans for their launch were put on ice.

Poltermann says some of the real angst for Civilian began when investors who were scheduled to cut checks in January and February simply didn't. "They all gave the same response," he says: " 'Are you watching television? Are you following the markets? Are you out of your freaking mind?' "

That avalanche of setbacks might have buried most companies. But the Civilian team's gritty resilience and willingness to adapt is still alive. Its business plan is now pure business, purged of naiveté and lean as a street fighter. The new launch date is on the orange wall. D-day is coming.

"WHY THE HELL NOT?" The question might as well be emblazoned on the business cards of Poltermann and Steve Farr '86. The two became friends in the mid-1980s while they were undergraduates majoring in film at UW-Madison.

They are pure entrepreneurs, fueled by a generously mixed highball of fearlessness, invention, and risk.

Not long after graduating in 1986 — after a brief, but failed, attempt to land jobs at a North Carolina filmmaking outfit that had scored a hit with David Lynch's *Blue Velvet* — the duo launched Purple Onion Productions from the basement of the Farr family home in Racine. During the first few years, the new venture barely broke even; it survived on periodic contracts for industrial training programs and wedding videos. In 1989, Poltermann and Farr took out a sizable loan and opened shop on Water Street in downtown Milwaukee's Third Ward.

Perseverance paid off. Purple Onion scored commercial campaigns for the Wisconsin lottery, health care providers, and grocery chains. They also garnered music-video airplay on MTV, thanks to referrals from rock producer Butch Vig '80 of Madison's Smart Studios. They were starting to lead exciting and enviable lives as twenty-something urbanites with a thriving business and the freedom to chart creative endeavors.

In 1992, along with college friend and current Civilian partner Wrye Martin '87, they raised \$80,000 and made *The Unearthing*, a Midwestern adaptation of a Filipino legend featuring a vampire with a thirty-foot tongue. It played at the Sundance Film Festival in Utah, got a critical buzz (some good, some bad), and for whatever reason, became a wild success in several eastern European countries.

In the late 1990s, Purple Onion was routinely billing more than a million dollars a year, but Farr and Poltermann again rolled the dice. Aligned with a Chicago production house, they began directing national commercials for companies such as Coca-Cola, Allstate, McDonald's, and AT&T. In 1998, they made a leap to the West Coast. While continuing their commercial work, they also stoked the flames of their filmmaking dreams by producing *American Movie*, a hilarious, award-winning documentary

about the maniacal quest of a low-rent Milwaukee filmmaker.

Then the two took the boldest turn in their careers, deciding not just to produce a few good films, but to try to change an industry. They quit their lucrative day jobs, put two decades of professional equity on the line, and prepared to reinvent Hollywood.

"The culture in Los Angeles is where people make things up," says Poltermann. "It's built upon fiction; it's built upon dreaming. It's built upon the impulse, 'Hey, we can do this!'"

*Why the hell not?*

NOW POLTERMANN AND FARR, along with co-founders and Wisconsin natives Wrye Martin, Carrie Heckman '88, and Tony Biesack '87, spend their

**"The CEO told me the Internet was just a passing fad. I think he's working on a sheep farm in New Zealand now."**

days in a two-story stucco building at Hollywood Center Studios. The office overlooks a constant flow of young, tan, and staggeringly good-looking people who chatter on cell phones, zoom by on golf carts, and retreat into hangar-shaped sound studios. A few shingles down from Civilian's offices is Comedy Central's "The Man Show," a crass half-hour satire of the trappings of maleness. A little farther down is the studio for MTV's "Undressed," a soap opera for the young and the randy.

Hollywood Center was once home to classic 1960s sitcoms such as "The Beverly Hillbillies," "Green Acres," and "Petticoat Junction." In the 1970s, it led the TV detective wave with "The Rockford Files" and "Baretta." In the 1980s, Francis Ford Coppola purchased the center and created Zoetrope Studios, hoping to build a mecca for creative thinking. Zoetrope's curtain call was Coppola's film *One from the Heart*, a flop that led the way to eventual bankruptcy.

That history of big dreams is a supportive setting for Civilian, says Poltermann, the company's CEO. From the beginning, he bet that the movie-going public would welcome more creative and eccentric films.

A year ago, when venture capital was fast and loose, it wasn't hard to draw investors to Civilian. "People were writing business plans on cocktail napkins and getting funded," Farr recalls. "We thought, if we can do this and get through the regulations process unscathed, it would be an amazing accomplishment. We could put money in the hands of great filmmakers and projects worth funding, with no studio tampering."

At first, Civilian grew quickly. Actress and director Diane Keaton joined the company's board of advisers

in August 2000. They also recruited producer John Sloss, a leading light of independent filmmaking whose most recent credits include *Ulee's Gold* and *Boys Don't Cry*.

On the development side, things were also coming together famously. Although legally bound not to divulge IPO details before going public, the founders say they began working with acclaimed independent filmmaker Richard Linklater, director of *Slacker*, *Dazed and Confused*, and *Before Sunrise*. They also started developing a film project with Keith Gordon, a young director whose latest films — *A Midnight Clear*, *Mother Night*, and *Waking the Dead* — have received sterling reviews.

From the beginning, Poltermann says, directors have been almost giddy about Civilian, embracing the company as a way to appeal directly to fans and to pursue their dream projects without compromising their vision.

CIVILIAN WOULD STILL BE A PIPE DREAM without Tony Biesack, the company's only founder with a financial and investment background. Biesack was a trader on the Chicago Mercantile Exchange and had developed years of connections in Chicago business circles. He had recently experienced a harrowing reversal of fortune on the

**"I just feel like, if you have a group of hard-working, dedicated, intelligent people with a good idea that can change with the times and the market...it has zero percent chance of failing."**

exchange, having nearly lost his shirt over a relatively short time. He was ready for a change.

As the original advocate of this fantastical idea of listing movies as stock offerings, Biesack was also one of the first partners to join Civilian. Poltermann came pounding on his door at 2 a.m. the morning after Christmas 1999, with a bold proposal: "If you quit your job, I'll quit mine." He agreed.

Biesack shopped Civilian's concept around to numerous potential partners and investors in Chicago and struck gold with Peter McDonnell, who ran his own broker-dealer firm. McDonnell joined Civilian as head of its trading operations. Soon after, other major players with securities, financial, and legal expertise came on board. One-third of their initial funding support came from Jerry Holbus and David Nowicki, executives with i2 Technologies in Austin, Texas.

With a marriage of the financial and film worlds, Civilian now had greater credibility and a surge of self-confidence that would guide it through an astonishing feat from May to October 2000. By Halloween, the company had legal approval from the National Association of Securities Dealers (NASD) to be a broker-dealer, the critical regulatory step that made the entire arrangement possible.

In a parallel development, the partners had been negotiating with Datek, an online trading company, to have it serve as Civilian's "clearing firm," managing all investments and transactions. Datek representatives flew to Chicago and had cognac and cigars with McDonnell, toasting their impending partnership. At another dinner meeting

in an L.A. restaurant, the group discussed giving Datek customers — potentially one million investors — direct access to Civilian investments.

Then, on November 13, the NASDAQ dropped below the threshold of three thousand for the first time in more than a year. The next day, Civilian received an unexpected, three-sentence e-mail from Datek, explaining that they would not be doing business with the company.

"A form letter, after six months," Poltermann recalls.

It was the first setback, but not the last. None of their investments came through in December 2000, the same time they were racing toward a publicity blitzkrieg at the January 2001 Sundance Film Festival. Marketing expenses for the launch were running close to \$20,000 a month, and the bills for the company's extensive legal services were well into six figures.

While they managed to quickly find a new clearing firm, they acknowledged that they couldn't meet their original target of going public in January 2001.

"Leading up to Sundance, I was starting to get a little panicky because we were spending a lot of money with nothing coming in," Farr says. They scaled back the party plans at Sundance,

from the splashy Kimball Arts Center to a more low-key bar in Park City, signed up Vox vodka as a corporate sponsor, and brought in a DJ from Milwaukee.

The party generated considerable press, including coverage in *Variety*, *Salon*, *Fast Company*, *Wired*, and *Hollywood Reporter*. But they were still promoting what was little more than a cool concept. Their only Web presence was a splash page with some teaser details. (See their current site at [www.civilian-capital.com](http://www.civilian-capital.com).) And the money situation was getting frightful. January...no investors. February...no investors. Big bills were coming home to roost. The market was still punch drunk and reeling. They wondered, is this how it ends? Buried in debt, before even going live?

NOW, JUST A FEW MONTHS

after Civilian's promising debut at Sundance, Wrye Martin wakes up fixated on single words in his head. One day it's *security*. The next it's *complacency*. Other days it's *risk*. "It's *fear* sometimes, too," he says, "when you realize you're going through midair, waiting for the chute to open."

Martin and his spouse, Carrie Heckman, are integral parts of Civilian. They moved to Los Angeles from Minneapolis last November with their one-year-old son, Malcolm. Like the others in this venture, they left behind careers that were in full stride. Martin was also directing commercials, with more than one hundred national spots under his belt. Heckman was the vice president of operations for Manhattan Toy Company, where she managed a multi-million-dollar purchasing budget and supervised a staff of sixty-five people. They gave it all up for the potentially greater returns of creating something new under the sun.

"It was, for me, very liberating to cut the ties that I've had for all these years and just leap — take a total leap," says Heckman. "One of the things that appealed to me about this is the whole potential of ownership. It's that bottom-line freedom. When you're making those decisions, your heart and soul are in them."

## After the Fall — Creating Your Own Growth

Like other online entrepreneurs, Eric Erickson '88 launched his company with big dreams and a drive for independence. But the down market has forced Erickson to re-evaluate his business plan. Giving up the investment/rapid growth cycle popular in Silicon Valley, he's chosen to maintain his independence and focus instead on growing from within.

Erickson felt the desire to be his own boss while he was working in Singapore for the advertising firm Saatchi and Saatchi. His superiors, he felt, were misjudging the importance of the Internet, limiting both his and their opportunities for growth.

"The CEO told me the Internet was just a passing fad," he says. "I think he's working on a sheep farm in New Zealand now."

Erickson left Saatchi and Saatchi, and with his brother Jeffrey headed off to Spain, where he felt e-business was underdeveloped. There they joined with a third partner, Scott Emerti, and formed eTango Technology, an online customer-relations management company that hopes to repair what its owners see as Europe's tradition of poor customer service.

From the start, eTango Technology seemed to be taking off. In May 2000, they began meeting with venture capitalists, looking to fund a major expansion that would take the company into five European countries in three years. *Fortune* gave the company a favorable write-up in July 2000, calling it an "Internet dream" that had the potential to change "the way European companies deal with their customers." The Ericksons and Emerti were thinking big.

However, as the summer dragged on and the stock market slumped ever lower, Erickson saw that talks with investors were going nowhere.

"In September we rethought our strategy," he says. "We halted our search for venture capital, mostly because of the dismal state of the industry." eTango scaled back expansion plans and concentrated on its southern European core. "There just wasn't the money to grow as quickly as we wanted," he explains.

However, according to Erickson, dropping the hunt for venture capital is "the best decision we ever made.

"We're almost better off not getting the investment, because the lack of outside cash has refocused us on profitability. If you can't make money out of the gate without outside help, you're in trouble. But if you can get a company that doesn't need outside investment to be profitable, you'll have no problem being successful."

—J. A.

Start



Heckman serves as Civilian's marketing director, and Martin is chief operating officer. Since November, they've warily watched the tightening stock market, not to mention their personal account balances. They play a daily game of assigning new odds to the company's potential for success.

On the sun-drenched terrace of the Hollywood Canteen, Martin's take is upbeat: "I just feel like, if you have a

group of hard-working, dedicated, intelligent people with a good idea that can change with the times and the market...it has zero percent chance of failing."

There is a collective spirit in the air at Civilian, a kind of dot-communism that is born of necessity. None of the partners are drawing a salary, and only two employees are on the payroll. Fortunately, the film directors are weathering

the storm with them, and the only missing link is the money to launch. The company is opening up a commercial production arm of Civilian, tapping into its tried-and-true formula of making commercials to pay for making movies.

Civilian's fifty-page business plan has been retooled, with a renewed interest in the bottom line. The revolutionary aspects of the company are downplayed, and its revenue models are beefed up. And they're back in the investment hunt, with plans to meet with Chicago venture capitalists in May.

"The heady days of get-big-fast are over," Poltermann writes in his April newsletter to more than one hundred company associates. "Business fundamentals are back to stay."

He notes that had Civilian had a flashy and expensive launch last year, it could have easily ended up on the dot-com extinction list. "The way we see it," he says, "Civilian is a small mammal hiding in the trees, watching below as the dot-com dinosaurs stumble through this ugly year."

Poltermann has now set July 1 as the company's new launch deadline. They will need a new promotional video, a how-to-invest PowerPoint presentation, formal arrangements with the strategic partners, design tweaks to the site, updated contracts with the content providers. "Let's claw our way toward going live," Poltermann says.

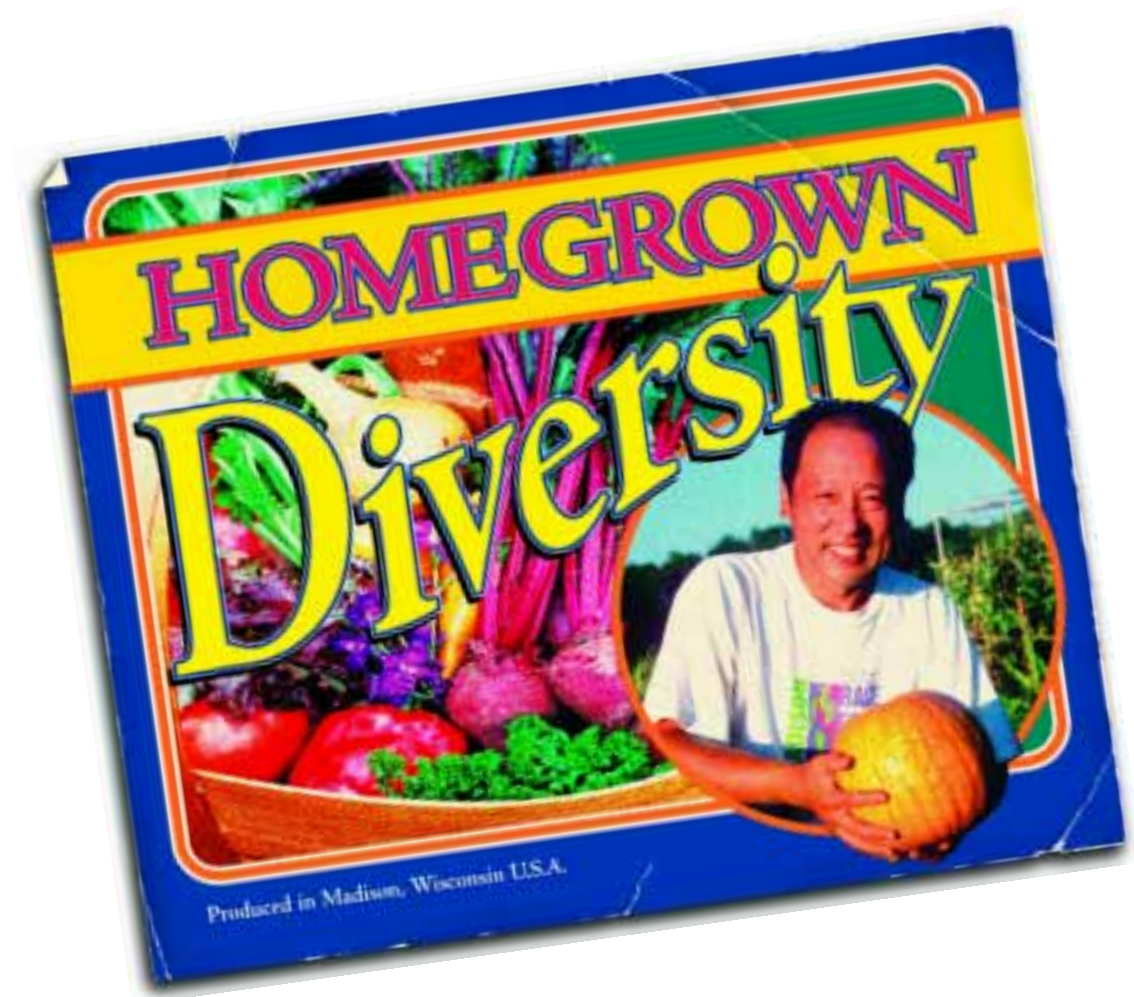
With one of the nation's most incredible boom-and-bust stories still in their rear-view mirror, Poltermann and company drive on. "It is fortunate for all of us," he writes in his newsletter sign-off, "that the collective stubbornness of our management team borders on lunacy.

"Thanks again. Keep the faith. And canned goods are appreciated." 🍪

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Brian Mattmiller '86 has followed the adventures of Barry Poltermann and Steve Farr ever since the three became friends and roommates while attending UW-Madison in the 1980s. They've kept in touch over the years during weekends organized around Packers and Brewers games — and now, over doughnuts in the sunny L.A. offices of Civilian Capital.





## Eagle Heights gardens cultivate a rich array of plants and personalities.

**W**hen Irwin Goldman PhD'91 wants students to understand the relationship between the world's many plants and the different kinds of people who grow them, he brings them to the Eagle Heights Community Gardens.

The gardens, located on campus's far western fringes near the Eagle Heights student residences, are a unique and sometimes overlooked feature of campus. The stretch of land is carved into more than four hundred individual plots, which anyone with the zeal to garden can rent. With so many different hands tending the land, the gardens are host to an extraordinary array of exotic plants and foods, which make them a perfect living laboratory for Goldman's lectures on biodiversity.

By Krishna  
Ramanujan MA'01  
Photos by Connie  
Haag '01



*Many of the people who garden at Eagle Heights live in the apartments across the street, an international community with students from more than sixty countries.*

Walking among the plots, the associate professor of horticulture can point out the curly-edged, dark-green kale leaves eaten in the northern United States. A few paces away, the kale's round-leafed southern counterpart, known as collard greens, grows in the garden of a Louisiana native. And, in a plot tended by a Chinese gardener, between rows of light green lettuces and staked, bushy tomato plants, Goldman finds mustard greens, which are a thinner, greener, Chinese equivalent of collard greens and kale.

But it's not just the variety of plants that Goldman wants his students to notice.

"To me, the most striking thing about [the gardens] is the diversity," he says. "At Eagle Heights, you have not only crop diversity, but human diversity."

Many of the people who garden at Eagle Heights live in the apartments across the street, an international community with students from more than sixty countries. Others are professors, staff members, or people from around Madison who love the land. The result is a rich mix of gardening styles and plants, representing ethnicities and tastes from around the world.

The eight-acre garden occupies one of the most beautiful natural areas on campus, lying on a rolling meadowland near the shore of Lake Mendota. One gets there by walking, biking, or driving west past Picnic Point along University Bay Drive, a route that passes by cattails and glistening views of the lake.

Each plot is about the length and width of a good-sized living room. The landscape of plots stretches out over a



**David and Daisy Shiffert enjoy a family moment with daughter Yasmine in their Eagle Heights garden plot. The Shifferts may be seasoned gardeners today, but when they started tending land at Eagle Heights, they couldn't tell a weed from a vegetable.**

hill in a mosaic of bright greens and rich browns, punctuated by tall corn and yellow and orange sunflowers. Some plots are bordered with fences made of branches pulled from the thick green woods that surround the garden.

When gardeners were asked in a recent survey what they enjoyed most about cultivating the soil at Eagle Heights, it's no wonder that the natural setting was named first. "There's nothing as beautiful as walking into those gardens," says Daisy Shiffert, who tends

plots with her spouse, David MS'01. "It's striking when you walk there and see all those beautiful colors under the sun. I think it enriches your life."

Not far behind the scenic beauty, though, are the connections and friendships that grow among the vines and branches.

"I've met so many gardeners now," says David Shiffert, who chairs the Eagle Heights garden committee. "You watch people from year to year just become more and more attached to their plots. The next year maybe they put up an umbrella for shade, or some structure, and really you watch it become part of them."

"There are literally thousands of former students out around the world who had their most satisfying experiences while at the UW in these gardens," says another gardener, Jim Guderyon '56, MS'59. "I see it as part of a continuing tradition."

In the next few pages, *On Wisconsin* introduces some of the people who share that tradition, exploring what they grow — and how they've grown — in their gardens.

## DAVID, DAISY, AND YASMINE SHIFFERT

**I**n 1997, the Shifferts couldn't tell a vegetable from a weed.

"We pulled out all the eggplants because we thought they were weeds," David laughs, remembering his first season as a gardener.

In four years, the family has evolved from novices to people committed to the





*“I consider the opportunity to garden here a luxury, an absolute luxury. I would like to keep this as part of our lives, to continue gardening.”*

cause of sustainable agriculture. David became chair of the garden committee in 1999, and he has grown passionate about passing on his own transforming experience with gardening.

“We became completely addicted to being out there, being outside in the sunshine, being out in nature, and just working out there,” Daisy says.

The Shifferts see social significance in what happens at the Eagle Heights gardens. They worry about the rapid loss of small farms and biodiversity, and they believe that urban gardens such as the one at Eagle Heights can teach future generations how to grow some of their own food in city environments. David has put a lot of effort into making the gardens educational and promoting a variety of gardening programs.

“We have an agro-ecology field station right here — it’s just undeveloped,”

he says. “Our hope is that some of these academic departments will take the lead in developing some of these programs in conjunction with the gardens.”

David has been trying to help launch an urban cooperative in Madison, a living space that would combine city-style housing with green areas for growing food.

“We’re at a point now where we know we’re not going to live anywhere where we can’t garden,” he says.

## CURT CASLAVKA

People who are used to seeing vegetables in the gardens often take notice of Curt Caslavka’s colorful prairie. They’re intrigued by the rows of magenta-flowered blazing star, sky blue and smooth asters, pale pink nodding

onions, and stiff, spiky-leaved compass plants with their tall yellow blooms. They ask about the different grasses, like little bluestem, with its fluffy, cotton-like seeds; the thick tufts of northern dropseed; and the aptly named bottlebrush grass.

For the last thirty-three years, Caslavka has worked as an academic staff member with UW-Madison’s Biocore program, an interdepartmental biology program for undergraduates. As part of the program, he uses two Eagle Heights plots as a nursery for prairie species. Some of the plants are transplanted directly into a small but diverse prairie demonstration area up the hill from the gardens. Also, plants grown in the plots provide seeds that are harvested, cleaned, and later spread onto a nearby Biocore prairie restoration site.

So far, Caslavka has planted sixty-one species of plants in an area about the size of a large classroom. He says he plants something every square foot.

“You need a lot of plants,” he says. “Trying to restore a prairie is very labor intensive.” But, he adds, the work is important because there are so few natural prairies left.

This year, he hopes to expand the demonstration area to twice its original size. Eventually, plants will have placards to identify species for students and others who are walking by.

## JIM GUDERYON

When Jim Guderyon was five years old, he was already driving a team of horses on the Hartland, Wisconsin, dairy farm where he grew up. Now, with a resume of experiences that includes



**Amid all the neatly lined plots of edible bounty, Curt Caslavka’s prairie always gets noticed. A staff member with the university’s Biocore program, Caslavka uses his two Eagle Heights plots as a nursery for wildflowers, tall grasses, and other prairie species.**

# Luscious LAND

**G**ardening at Eagle Heights is a tradition that dates to 1960, when a group of students informally began working the soil and planting crops where an orchard once grew, and where apartments stand today. A few years later, when students faced the prospect of losing their gardens, they were willing to stage demonstrations to defend the land.

By 1962, the gardeners had organized a committee and were devoting a section of the Eagle Heights newsletter to the gardens. The group had even raised enough money to lay pipes for irrigation. So in 1966, when the university reclaimed the land to construct new buildings at Eagle Heights, “there was a lot of feeling that they were taking something away from us,” says Robert House MS’67, MD’68, then chair of the committee. For some, he recalls, losing the gardens meant losing a main source of food for the summer.

About half of the committee members were incensed and ready to lead sit-ins and protests. “These were the rip-roarin’ sixties,” says House, a doctor who currently runs a family practice in Ripon, Wisconsin. “And Madison was a hotbed. Gardeners were willing to do anything they had to do to keep gardening. That was the psyche of the world.”

Eventually, the gardeners sought to relocate the plots across the street, to land owned by the College of Agricultural and Life Sciences. CALS, which used the fields to grow hay for the university’s cows, initially declined to yield land to the gardeners, saying that it needed the land to meet its mission. House took the fight all the way to the university’s Board of Regents, appealing to its own mission of offering students unique learning environments. When the dust settled, not only did the regents ask CALS to grant the land, but they directed the college to plow it for the gardeners. The gardeners paid the college a small fee to compensate for the hay.

With the new land in hand, the gardeners pulled out the pipes from the previous site and re-rigged them in rows in the fields where they still work today.



**Surrounded by thick woods and near the shores of Lake Mendota, the Eagle Heights plots occupy a choice piece of campus land, populated by many birds, deer, foxes, and even a legendary coyote.**

“That,” House recalls of the current garden’s site, “was luscious land.”

The move turned out to be ideal, as the gardens now occupy a choice bit of land that, because of the nearby Frautschi and Picnic Points, is a prime spot for migrating birds. Bluebirds, hummingbirds, orioles, warblers, owls, and even red-tailed hawks make their homes around the gardens and have wowed its patrons.

There are deer and foxes, and even a coyote, which David Shiffert, former chair of the garden committee, says he once surprised in some tall grass. As one legend goes, a few years ago gardeners were angry to find their vegetables plucked each morning. They began accusing each other of stealing. The dispute was settled when someone realized the thief was actually the wily coyote.

While human and biological diversity continues to thrive in the plots, the current garden committee wants to enhance their educational value. The gardeners would like to see more professors use the plots as teaching tools, and they have plans to establish permaculture and biointensive demonstration plots, as well as those that are wheelchair accessible. Visitors can now find a children’s garden and an heirloom garden near the entrance to the plots. — *K.R.*





*“I see this as part of an intergenerational thing. I’ve already shared gardening experiences with my children, and now I can also do it with my grandchildren.”*



**As an international-aid worker, Jim Guderyon has helped farmers all over the world make a living by tending the land. Now, he’s back to his roots at Eagle Heights, growing onions, potatoes, beets, and other vegetables on four plots.**

living in Uganda, Tonga, Egypt, Lesotho, Swaziland, and the former Soviet Union, he’s back where he started — and still working the land.

After earning a degree in dairy science at UW-Madison and working for some twenty years selling feed, seed, and fertilizer, Guderyon and his spouse, Elaine, hit the road for Kenya in 1980. What started as a two-year stint with USAID turned into four years; then they ventured on to

Uganda, Tonga, and eventually Egypt. At each stop, he tried to help small farmers move out of subsistence farming and into commercial agriculture. The Eagle Heights gardens have brought Guderyon back to his roots, literally. On his four plots he grows produce, including onions, potatoes, beets, parsnips, and carrots.

“I just enjoy planting things and watching them grow. I consider it part of my agrarian background,” Guderyon says. Though he and Elaine store some of their crop in a root cellar for year-round use, they always share their excess food with family members.

“I see this as part of an intergenerational thing,” he says. “I’ve already shared gardening experiences with my children, and now I can also do it with my grandchildren.”

## TONG YAN ZHANG

**I**n China, Tong Yan Zhang had a heart problem. Here, his blood pressure is down, and he feels strong and healthy. Gardening, he says, has made the difference.

Tong Yan works and exercises in his garden from five-thirty to nine every morning. From Urumqi, a city of more than one million in

northwest China, he and his spouse, Yunkun Xu, came to Madison to stay with their daughter and son-in-law, who live at Eagle Heights.

“If there wasn’t a garden, they would feel alone,” says daughter Ying Zhang. “My husband and I don’t have kids yet. They would have gone back to China.”

Though Tong Yan doesn’t speak English, nor had he gardened before last summer, he took on four plots last year. With the help of Chinese students and others who gave him seeds and showed him planting methods, his



**Although Tong Yan Zhang does not speak English, he has found a way to communicate and share with people of different cultures through the food he grows at Eagle Heights.**



*“If there wasn’t a garden, they would feel alone. My husband and I don’t have kids yet. They would have gone back to China.”*

plots thrived. Like many foreigners who garden here, Tong Yan has been able to grow vegetables from his native country, such as Chinese beans, peppers, and gourds that are hard to find in local stores.

He says that even though he cannot converse with many people, he gets pleasure from giving his vegetables away to others.

“That’s a kind of communication between people, even if we can’t understand each other,” he says through his daughter’s translation.

She says last summer they were going to travel together around the United States, but her father said, “No, I will stay and take care of my garden.”

When her parents return to China this fall, Ying says, they will tell others about time spent in the garden. Tong Yan wants to show people in China the mulching techniques he learned here. He and Yunkun even bought a camcorder to show off the gardens to their friends and relatives back home.



**Ranjeet Tate and Isabel Echeverria considered their first year of gardening at Eagle Heights a grand adventure. “We had an attitude of whatever comes out, we’ll just make do with it,” Tate says. For a while, that meant making do with an overabundance of large squash.**

## ISABEL ECHEVERRIA AND RANJEET TATE

“All my life, I always wanted my own garden,” Isabel Echeverria says.

Last summer was her first full season of realizing that dream. In the early mornings as she biked to work, she often stopped to water the plants and sometimes ate a tomato or cut flowers for the office.

Both Echeverria and spouse Ranjeet Tate had secondhand experiences with gardens before coming to Eagle Heights. Echeverria grew up in Madrid, where

her grandfather had a garden with grapes, roses, lilacs, and tulips. Tate was raised in India, the son of a pilot in the Indian Air Force. The family moved frequently, living in military bungalows. Wherever they were, he recalls, his mother kept a vegetable garden.

When the couple moved to Madison to begin working as research associates in the physics department, it seemed natural to both that they take on their own plot.

Their first season had its share of surprises. When a package of squash seeds suggested spacing seeds a few feet apart, they thought there was no way that such little seeds would take up so much room, and so they planted them close together. Not long after, their gar-

den was overrun by large squash.

“We had an attitude of whatever comes out, we’ll just make do with it,” Tate says.

“I consider the opportunity to garden here a luxury, an absolute luxury,” Echeverria says. “I would like to keep this as part of our lives, to continue gardening.”

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Krishna Ramanujan, who received his master’s degree in May from the School of Journalism and Mass Communication, enjoys writing about science, nature, and the environment. Connie Haag ’01, who gardened at Eagle Heights during her UW-Madison career, took the photos for this article with the help of a Wisconsin Idea Fellowship, which supports student research projects.





# KEEPING THEIR eyes ON THE SKIES

For those who study the mysteries of the universe, every minute of telescope time translates into light-years of information.

BY TERRY DEVITT '78, MA'85

Perched on an Arizona mountaintop, the WIYN telescope, above, allows UW researchers to capture wondrous images of the heavens, such as this spiral galaxy, at right.

ON A CLEAR NIGHT, YOU CAN SEE FOREVER from Kitt Peak, a desert mountaintop in Arizona. But this October night isn't clear, and the man peering through one of the finest optical telescopes in the world struggles to see a measly few thousand light years.

Perched at a bank of computer terminals and video monitors, D.J. Pisano MS'98 and his compatriots sweat out the sole astronomical observation they will make tonight with a telescope that is a marvel of modern ground-based astronomy. Amid the rain, hail, lightning, and fog — when a hole finally appears in the hat of clouds over the mountain —





Pisano, graduate student Elizabeth Hedrick, and telescope operator Charles Corson together eke out a single spectrum, a rainbow of starlight that, when digitized, processed, and dissected, can hint at the secrets of the cosmos.

It is, they agree, slim astronomical pickings, but it's better than nothing.

"I don't know if there's ever been a time when I've come down here and gotten absolutely nothing," muses Pisano, a UW-Madison graduate student who, at twenty-six, has a dozen observing runs under his belt. But as he glances at a monitor that shows a real-time weather satellite image of the western United States, the only clouds in view are

directly over the seven-thousand-foot-high Kitt Peak, a once-remote mountaintop about forty miles west of Tucson that is home to one of the largest collections of telescopes in the world. Operated by the National Optical Astronomical Observatory (NOAO) on behalf of the National Science Foundation, Kitt Peak is cold, clear, and relatively free of light pollution. Despite encroaching civilization, it provides astronomers with some of the best observing conditions in North America.

To remain a player in the increasingly competitive universe of astronomy and astrophysics, it is essential to have direct access to big telescopes such as those housed on Kitt Peak. In short, telescope

time is the coin of the realm in the context of modern observational astronomy. Being without it is like being a chemist or biologist without a laboratory. Without your own window to the heavens, opportunities for discovery are greatly diminished, and attracting the best graduate students is next to impossible.

On this mountain, one particular telescope is considered special. Called WIYN to acknowledge Wisconsin, Indiana University, Yale, and NOAO — the consortium that built it — it is the newest, most advanced research observatory in the neighborhood. Completed in 1994, it has capabilities that, like a finely crafted sports car, enable its drivers to





**Access to telescope time is priceless to those who study the universe. Astronomy professor Eric Wilcots, left, and graduate student D.J. Pisano, right, stand beneath the dome of the Washburn Observatory, which, when it was built in 1878, represented the UW's first venture into its now highly sophisticated astronomy program.**

leave the competition in the proverbial dust. In an age when astronomical telescopes are swelling in size, this compact version, with its 3.5-meter primary mirror, is considered by many to be the finest optical telescope in the U.S. outside of Hawaii, where 10-meter megatelescopes rule the night sky.

As with most major observatories, building WIYN required a partnership to make it affordable. Participating in this consortium was an important step along the path UW-Madison has taken to ensure telescope time for its researchers and graduate students. The very first venture into an astronomy program was

miles west of Madison at Pine Bluff — have added state-of-the-art equipment to view stars, galaxies, and other cosmological wonders. And the next acquisition, which involves a global partnership among institutions from South Africa, Germany, Poland, New Zealand, and the United States, promises to be just as stellar. (See sidebar, page 38.)

While the wind whistles outside the WIYN control room, Corson, Pisano, and Hedrick busy themselves with the controls of the telescope and its instruments. Even without a clear sky, there is work to be done. The telescope must be ready at a moment's notice, its instru-

ments calibrated, mirrors focused, and the observing plan continually updated as the sky changes over a spinning Earth. Every minute is precious, and if the sky clears, the telescope's operators must be good to go.

Washburn Observatory, built in 1878 with a gift from former Governor Cadwalader Washburn. Originally surrounded by orchards and a vineyard, the observatory is now flanked by a childcare center, Agricultural Hall, and Observatory Drive.

The observatory has seen its share of major accomplishments, including pioneering photoelectric astronomy, a measurement of our galaxy that was widely accepted for five decades.

Two newer observatories — WIYN and one fifteen

ments calibrated, mirrors focused, and the observing plan continually updated as the sky changes over a spinning Earth. Every minute is precious, and if the sky clears, the telescope's operators must be good to go.

One object of interest tonight is IC 1613, a “dwarf irregular galaxy” in the lingo of astronomy. As its name implies, it is a smallish, lopsided galaxy with a few odd features that could help unravel some of the mystery of how galaxies evolve, make new stars, and interact with the space around them. For astronomers, comprehending galaxies and how they work is a part of understanding the big picture of the universe and where we all fit in.

Three days earlier, in a conference room in UW-Madison's Sterling Hall, astronomy professor Eric Wilcots, the architect of the project and Pisano's graduate adviser, laid out tonight's observing plan. Wilcots wants the fifth-year graduate student to use WIYN to get a look at some of IC 1613's oddities — a supernova remnant and some young, extremely hot stars — through a series of five pointings. Given the weather, that will not happen, but even a short glimpse of this nearby galaxy can yield a spectrum that might be worth a thousand pictures.

“It sure looks like this Wolf-Rayet star is blowing a big bubble of ionized gas,” Wilcots says as he glances over radio telescope data from the galaxy. “There's a supernova remnant there.” The hope, he explains, is to look at the kinematics of the place, to see what effects these stars have on the filaments of ionized gas that are the remains of a star that, sometime in the distant past, flared and exploded, creating a telltale stellar corpse.

Weather notwithstanding, Wilcots predicts that the observations will be tricky because the galaxy is a not-so-distant neighbor of the Milky Way. “I've got this problem where I like nearby galaxies,” he says, “which are big when you're observing from this vantage point. And

this galaxy is effectively in our back yard.”

Another problem is Earth’s location inside the Milky Way. It’s like being in the city, says Wilcots, with lights everywhere, and trying to look beyond to see a light in a house in the middle of west Texas. “Being inside a galaxy makes this kind of observation hard to do,” he says.

The first observations of the galaxy are to be made with DensePak, one of three instruments on the back end of WIYN to which starlight can be routed from the big telescope mirror. DensePak, a spectrometer, processes starlight that has been bounced from the telescope’s mirrors through a tightly packed bundle of fiber-optic cables. The light that passes through each of the cables is routed to a grating that parses it into its constituent wavelengths with more efficiency than the finest prism. The resulting spectra are packed with information, and can tell astronomers more about a star, a galaxy or, in this case, a cloud of glowing gas, than the prettiest, most detailed pictures snapped by the Hubble Space Telescope.

Galaxies tend to clump together and, often, careen into one another, creating

*Telescope time is the coin of the realm in the context of modern observational astronomy. Being without it is like being a chemist or biologist without a laboratory.*

what astronomers label, in typical understated fashion, “interacting galaxies.” Part of this study, says Wilcots, is designed to sift through that galactic wreckage for clues to how galaxies live, grow, and evolve.

“You can think of a galaxy as a machine, and the purpose of that machine is to make stars,” explains Wilcots.



**WIYN’s primary mirror, at right, features complex control systems that press the mirror into its optimal shape. Among other feats, the telescope can look back 14 billion light-years and zero in on stars, nebulae, or the edge-on view of a spiral galaxy, above.**



“Galaxies that are interacting make more stars. They have a mechanism for collecting gas for star formation. When gas collides, you get star formation.”

Sitting at his computer terminal in the WIYN control room, Pisano is thinking about galaxies, too. “I’m studying galaxy formation,” he says. He joined the UW-Madison astronomy department five years ago after completing his undergraduate work at Yale. “We don’t know much, for instance, about how galaxies evolve when they’re in isolated environments.” Where, for example, do they get the raw material — gas and dust, mostly — to make new stars? How do these enormous star-making machines develop out of nothing more than amorphous pockets of hot gas?

The answers to these questions and many more can be retrieved only with the help of telescopes like WIYN. As a newer, technologically advanced instrument, it has some notable advantages. At its heart is the 3.5-meter primary mirror.

Created at the University of Arizona by legendary mirror maker Roger Angel, it was forged in a special rotating furnace, which forced molten glass into a deep parabolic shape, giving WIYN an extraordinarily wide field of view. The technique produces mirror blanks that are not only almost perfectly shaped, but that are far lighter than those of conventional manufacture. With this relatively light mirror — weighing in at 4,350 pounds — forged into a deeper parabola, the entire observatory can be smaller and more versatile, and the telescope itself becomes far less costly than comparable telescopes of conventional design.

WIYN, for example, is routinely compared to a 4-meter telescope on the other side of the mountain, which is housed in a 10-story dome and has a primary mirror that weighs nearly seven times that of WIYN. In fact, four telescopes the size of WIYN could nest comfortably within its massive walls, and the 4-meter telescope itself is longer than the

3-story WIYN Observatory is high. Yet WIYN's state-of-the-art mirror and its modern instrumentation give it a significant performance edge. Its thin, lightweight mirror is equipped with "active optics" — sixty-six small, computer-controlled actuators that continuously press the mirror into its optimal shape, effectively erasing the irregularities caused by temperature gradients and the movement of the telescope.

On a dark night, when the "seeing" is good, WIYN can zero in on objects that are 10 million times fainter than what can be seen with the unaided human eye. It can look back 14 billion light-years, nearly to the edge of our 15-billion-year-old universe. But at those great cosmological

distances, the telescope is pushing the limits of its capabilities. Its realm of effectiveness as a scientific instrument is more in the 7-billion-year range and closer.

"We do more detailed studies of things nearby," says Pisano. "It's much easier to observe things at greater distances with a bigger telescope."

The relationship between the WIYN Observatory and UW-Madison astronomy is founded on a mandate to explore the universe. But it confers another commodity beyond understanding the subtleties of binary star systems, stellar nurseries, and galactic accidents: opportunities for UW-Madison students to get their hands on one of the best optical telescopes in the world. In a field in which

only one in four graduate students lands a tenure-track job, direct access to a telescope, and perhaps even a night or two of your own observation time in any given year, is a distinct competitive advantage.

"It helps us attract superb graduate students," says Robert Mathieu, a UW-Madison professor of astronomy and president of the WIYN board of directors. "And it makes them better astronomers. Having our own telescope means they can do projects that they couldn't do otherwise."

WIYN provides a hands-on experience that is rare for graduate students anywhere, says Pisano. "The problem with modern telescopes is you're often

## Scoping out the Southern Sky

While UW-Madison astronomers enjoy the view of the northern sky through the deft eye of WIYN, a new megatelescope with a Wisconsin touch is rising on the edge of the Kalahari Desert in South Africa.

In August, UW-Madison astronomers announced that they had joined an international partnership to build SALT, the South African Large Telescope. When completed in 2005, the \$35 million telescope will be the largest optical telescope in the Southern Hemisphere and among the largest in the world.

"In certain ways, this telescope will have unique and superior capabilities" to the growing number of megatelescopes cropping up on mountaintops worldwide, says Matthew Bershady, a professor of astronomy and team leader for the UW-Madison astronomers involved in SALT's development.

"Access to state-of-the-art laboratory facilities is crucial to participating in the forefront of research," he says. "In astronomy, that means access to the new generation of large-aperture optical telescopes like SALT. It will be a cornerstone of our research program for the next fifteen years."

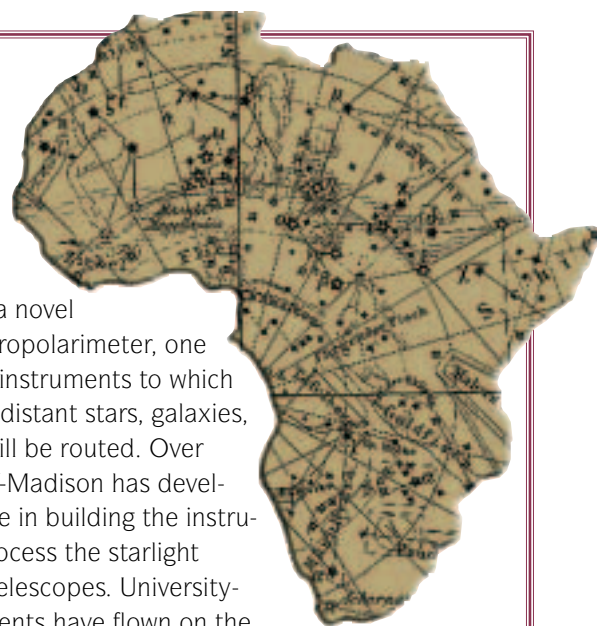
SALT will permit astronomers and their students to conduct a versatile research program, including studies of how matter assembled into galaxies after the Big Bang, the nature and chemistry of interstellar and intergalactic matter, and star and stellar system formation.

UW-Madison's key contribution to the new telescope will be a novel imaging spectropolarimeter, one of three SALT instruments to which the light from distant stars, galaxies, and planets will be routed. Over the years, UW-Madison has developed expertise in building the instruments that process the starlight collected by telescopes. University-made instruments have flown on the space shuttle, been perched on the Hubble Space Telescope, and been built into ground-based observatories like WIYN.

For developing South Africa, the new telescope is a "declaration that we are a scientific nation," says Khotoso Mokhele, president of the South African National Research Council.

— T.D.

*For more information about SALT, contact astronomy professor Matthew Bershady at (608) 265-3392, or visit <http://www.astro.wisc.edu/>.*





disconnected from getting your data,” he explains. “We’re becoming remote from the process. Many observatories now have automated data collection. You put in a request (for an observation), and you get a tape with your data on it. WIYN is unique in that you have the ability to do both. It’s a fantastic training ground for a graduate student.”

Pisano’s colleague on this trip is Elizabeth Hedrick. This is her first visit, her get-acquainted experience with both the telescope and Kitt Peak. There are many new things to soak in about the complicated machinations and the routine of a state-of-the-art observatory. On a corner shelf in the control room is a small air horn. Its ostensible purpose is to scare off the occasional mountain lion. Its true purpose, more likely, is to raise the comfort level of astronomers who must walk from building to building in total darkness when mountain lions are known to be in the neighborhood. Other native hazards include scorpions, rattlesnakes, skunks, and poisonous centipedes, all of which sometimes share the observatory with the humans who work there.

Telescope operator and site engineer Charles Corson calls the shots in the observatory. His job is to find the guide star, point the telescope, and usher objects of interest into its cross hairs. It is also his job to look after the welfare of the \$14 million observatory. His is the deciding voice if conditions of lightning, wind, or humidity threaten the telescope or its instruments.

Corson has been working on the mountain since 1994. He is clearly fond of WIYN and has made the control room, with its small kitchen and superb stereo system, a comfortable mountain-top aerie from which to direct the operations of the telescope. When he’s not at the controls, he’s fussing over the delicate instruments at the receiving end of the starlight captured by the telescope, or tending any of the myriad mechanical and computer systems that make the observatory work.

WIYN and the 4-meter, he notes, are the biggest optical research telescopes on Kitt Peak. But the mountain’s many



WIYN CONSORTIUM

**Why study the stars? Understanding galaxies, which are large groupings of millions to hundreds of billions of stars, helps astronomy researchers to form a big picture of the universe and where we fit in. Here WIYN has captured a planetary nebula — a cloud of interstellar gas or dust that is illuminated in some manner, usually by the energy of nearby stars.**

*Although WIYN’s current configuration gives astronomers and their students an unprecedented view of the stars from one of the best perches in the continental U.S., the telescope must continually evolve to remain a front-line tool of science.*

smaller domes, and its pioneering solar telescope, remain active. One of Kitt Peak’s workhorse telescopes, the 0.9-meter located next door to the WIYN Observatory, was recently taken over by the WIYN consortium. It promises increased access to the sky for UW-Madison astronomers and their colleagues at three UW System schools: UW-Oshkosh, UW-Stevens Point, and UW-Whitewater.

Although WIYN’s current configuration gives astronomers and their students an unprecedented view of the stars from one of the best perches in the continental U.S., the telescope must continually evolve to remain a front-line tool of science. Toward that end, instruments and cameras must be upgraded and new tools added. Planning for an elegant new camera known as the One Degree Imager is under way, according to George Jacoby, director of the WIYN Observatory. Jacoby, partnering with University of

Hawaii Professor John Tonry, will apply new light-detection technology to help the telescope compensate for the apparent jitter of stars as their light passes through the turbulent atmosphere. Such a radical new camera promises to help astronomers overcome the distortion of light by our atmosphere, a problem previously addressed by lofting telescopes into space.

But with WIYN today, the universe is still remarkably accessible from this small mountain in the middle of the Arizona desert. The secrets of the stars come tumbling down, and the next generation of astronomers still has the chance to climb the mountain that leads to the heavens. 🏔️

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*Terry Devitt '78, MA'85 is research communications director for University Communications. He has been writing about Wisconsin science for twenty years, despite having been scared in utero by someone in a lab coat.*



**THE CHILDCARE**

# SQUEEZE

PASKUS STUDIO (6)



# *As it becomes clear that a lack of campus infant care options can affect faculty recruitment, UW-Madison is beginning to address the situation.*



**BY KATALIN WOLFF**

You could have forgiven a visitor for doing a double take when peering into Professor Hazel Holden's office a few years ago. A baby gate spanned the doorway. Toys were scattered over the floor. In one corner, a child's mobile hung above a crib. Soothing music played on the stereo, and a high-tech computer graphics system doubled as an improvised changing table. Next door, in the office of Professor Ivan Rayment, Holden's spouse, there stood another crib.

This may be an unconventional way to furnish biochemistry faculty offices, but it probably isn't unique. On college campuses across the country, professional couples are having to make do because of a shortage of spaces for their infants at campus childcare centers. The situation is also critical at UW-Madison, even though the university is doing better than its peers in this area.

"UW-Madison is a leader in the Big Ten with respect to childcare facilities," says Lynn Edlefson, UW-Madison's childcare coordinator. Still, the number of campus day care spaces falls far short of the needs of those who work and study here. There are only 376 spaces, counting 20 for infant care and 26 for after-school care, to serve the entire uni-

**Left: Shannon Davis, director of the UW Infant and Toddler Center, holds four-and-a-half-month-old Gavin Plemon. The center can accommodate only eight full-time slots for babies between the ages of six weeks and thirty months.**

versity population of 60,083 students, faculty, and staff.

"I had no idea how bad the situation was," Holden says of the couple's fruitless search for suitable care after their first child was born seven years ago. They had hoped to find a childcare center near campus because they felt it would afford them more reliable staffing and longer hours than home-based care if they had to work late. Unable to find an adequate arrangement, they ended up taking their baby to work with them for the first year. Later, they did the same thing with their second child.

"Hazel and I split childcare fifty-fifty," explains Rayment.

"We have adjoining offices, so it was workable, but I wouldn't recommend it," says Holden. "It got pretty difficult toward the end. But we got things done. We published just as much as we had before."

As parents who have been juggling the demands of career and family, Holden and Rayment have developed strong opinions on the subject of day care. What's more, as senior faculty members, they've come to appreciate how it affects the campus as a whole.

Long considered a "women's" issue, childcare is increasingly seen as a cause for concern at the nation's universities. Administrators are acknowledging that it's a factor in the retention, recruitment, and productivity of faculty, staff, and graduate students. It has also been pro-

posed as a tool to promote diversity on college campuses. Not surprisingly, men are among its strongest proponents.

"In reality, childcare affects men just as much as women," says Rayment.

"You can't think if you're worried about your children." In academics, he adds, career advancement depends on the abil-



ity to get grants and publish scholarly articles, and the work is very time consuming. "Without good childcare," he says, "it's difficult for faculty members to consider having children. There's a

feeling that if you're serious about your work, you can't have kids — which is a completely miserable attitude."

Holden and Rayment, like many parents, have learned that infant care is the hardest to find. "Once your child is toilet trained," says Holden, "there are plenty of good places." Today, their daughter, now seven, is enrolled in an after-school program, and their son, who is four, attends a private day care center near campus. They never did get a spot in one of the university centers, but they are satisfied with their son's facility.

"It gives us peace of mind to have him nearby," says Holden. "We can run across the street during the day just to say 'hi.'" Rayment adds that it also enables them to spend more time with their kids, since they can commute and have lunch together.

Ironically, they're still dealing with the shortage of infant care.



Holden recently interviewed a woman for a post-grad position, and one of the candidate's primary concerns was the availability of childcare on campus. Rayment's assistant is expecting, and he says that it would be much easier if she had childcare near campus. "Otherwise, a doctor's appointment could take her an entire morning," he says. "With our son so close during the day, it only takes me about an hour."

Edlefson has both good news and bad news for parents who seek childcare near campus. The good news is that infant care is now available, and there are more spaces for preschool and school-age children than ever before. Parents can choose from among seven university-affiliated settings — all but one on campus.

The bad news is that the total number of the university's childcare spaces is still far from adequate.

Just ask Mike Kraus. The UW System financial administrator and his spouse, who also works, recently received a shock when their babysitter decided to quit day care, sending the couple scrambling for a place for their sixteen-month-old son. "It's difficult when you get caught off guard like this," Kraus says. "We've called over a dozen places, and there are long waiting lists everywhere." Their top choice would be the UW Infant and Toddler Center on University Avenue, which has only six full-time and four part-time slots — and a waiting list of more than one hundred families.

Campus childcare, if you're lucky enough to acquire a spot, is expensive. A recent article in the *Wisconsin State Journal* noted that childcare center fees in the Madison area jumped 7 percent last year, well ahead of the nationwide average of 5.6 percent, and about twice the rate of

inflation. Families here pay an average of \$5,500 per academic year for a preschooler and \$9,360 for an infant at campus centers. Most of the expense — about 92 percent — goes to cover personnel costs. Even so, the average annual salary for a teacher with a four-year degree is only \$24,000.

In order to keep costs down, the centers look to private donors for help in paying teacher salaries and funding such things as playgrounds, equipment, specialized training for staff, and scholarships for the children of needy students.

Considering that the campus did not even have infant care until 1999, Edlefson feels that UW-Madison is slowly making progress. She hopes that the Infant and Toddler Center can eventually be expanded. There is also a move afoot to train and provide incentive grants to students who live in Eagle Heights to provide home-based care for other students in need of childcare. And University Hospital recently announced that it will set up an infant care center for its employees this fall.

Another promising initiative involves plans to build a new Child and Family Studies Center in the School of Human Ecology, although the project is not scheduled for completion until 2007 due to the dearth of funding. The new building will house a state-of-the-art childcare facility specially designed to facilitate research and teacher training. Not incidentally, it will also provide desperately needed childcare slots for the campus community.

That, says Rayment, should be good news for everyone. "There's always going to be stress associated with raising children. Anything that can be done to lessen that stress for those who work and study here is bound to benefit the entire university." ■

Katalin Wolff is a Madison freelance writer who covered day care research in the January/February 1998 issue of *On Wisconsin Magazine*.



LAURA VANDERPIEGE



Hazel Holden's children, Harrison, four, and Kelsey, seven, are familiar with the biochemistry building. They spent their infant years in the offices of Holden and her spouse, Ivan Rayment. Both parents are professors of biochemistry.



# PAPER OR PLASTIC?

For college students, credit cards can be a safety net — or a tempting path to serious debt. Campus leaders are looking for ways to help students make informed choices when card companies come calling.

**BY MICHAEL PENN  
MA'97**



ROB COLVIN

JOSH LELAH X'02 KNOWS THAT HE CAN'T AFFORD the five-thousand-dollar projection-screen television that he really covets for his apartment. But he's also aware — dangerously aware — that he could own it in a second, if he so desired. All he'd need to do is call upon some of the \$8,500 in credit afforded to him by his Visa card.

Lelah, a junior majoring in personal finance, is smart enough not to do it. "I know I don't have the income right now," he says. But the temptation is real, and, for university leaders, so is the worry.

During the past few years, universities across the country have witnessed a plastic invasion on their campuses, as credit cards have grown as popular among students as backpacks and bicycles. And while many students seem to like and appreciate the convenience that credit cards give them, for some, the bills are adding up. Earlier this year, Nellie Mae, one of the largest providers of student loans in the country, analyzed the credit records of college students who applied for its loans during 2000, finding that nearly four of five held at least one credit card. The average balance among student accounts was \$2,748 — a 46 percent rise from a 1998 study. Nearly one student in ten showed a debt of more than \$7,000.

Even for those like Lelah, who pay off their debts reliably, the oh-so-generous credit limits with which they're rewarded put them just one swipe away from financial jeopardy. It's enough to convince many university officials that something needs to change in the relationship that credit card companies have with students.

"I think it's a dangerous trend, because it's so unrealistic," says Casey Nagy MA'89, special assistant to the chancellor. "Students are very busy, and they're just getting acclimated to being on their own. All of a sudden, here comes this thing that allows them to get what they want and need and get it when they want it.

"Sooner or later, there is going to be a reckoning," he says.

The fear among many is that the reckoning will take the form of a head-on wreck when students graduate and all their bills — including student-loan payments — come due. In recent years, about half of UW-Madison undergraduates have left college with student-loan debt, with the average debtor owing close to \$16,000. That doesn't account for credit card bills, which the university currently doesn't tabulate. With card debt adding on to the already losing mathematics of being a student, it's becoming more difficult for financial-aid advisers to feel secure that students aren't taking on more debt than they can manage.

"I used to feel confident that if I had a good handle on how much students were borrowing in the form of student loans, I would know how much students owed," says Steve Van Ess '74, director of student financial services. "What we're finding out is that there is this whole other world of debt that is very hard for us to measure."

Identifying the problem may be easier than solving it. Administrators, conscious of the danger of patronizing students by dictating their spending habits, are hesitant to interfere with what is basically a private business relationship between card issuers and students. And it's not as if the university

can credibly warn against going into debt. "We realize that we can't tell students not to borrow," says Van Ess, "because most of them couldn't come to school if they didn't."

In any case, the university would be sending a mixed message, given that there are two cards marketed to students that bear the UW name and logos. These sorts of arrangements are becoming common among universities. Typically, the school agrees to add its name to a credit card, and the issuer pays for the rights to exclusively market the card. Often, the university gets a small portion of each purchase made with the card. The deals can be lucrative. The University of Oklahoma, for example, recently signed a deal with First USA that will guarantee the school at least \$13 million.

Although UW-Madison itself doesn't have a formal deal with a credit card company, two of its affiliates — the Wisconsin Alumni Association (WAA) and the National W Club — do. (WAA's MasterCard, offered through MBNA, supports the programs and services of the alumni association, which include this magazine. The National W Club, a sports booster club, has a program through First USA that supports Badger athletics.) Although targeted to alumni and fans, both cards also solicit student accounts, which at least implies that the university supports students having credit cards.

In some instances, that's true. Paula Bonner MS'78, WAA's president and CEO, says that the alumni association's MasterCard program is primarily designed to help students with emergency expenses. And the numbers do show that many UW-Madison students avoid the kind of trouble indicated in the Nellie Mae study. Currently, more than 5,500 students have accounts with the card, making up about 12 percent of its total enrollment. But nearly 40 percent of the students who apply for the card are rejected, Bonner notes, and more than half of the student accounts currently show no balance. Among the rest, the average debt is slightly more than \$1,000.

"We have always run our student part of the card with pretty tight restrictions," Bonner says. What concerns her and other administrators is when students are enticed by savvy marketing to spend more than they can afford.

For some, the most glaring example of hard-sell tactics occurs each fall, when credit card marketers stage an Omaha Beach-like landing on Library Mall during the first few weeks of the fall semester. Representatives from several credit card companies set up tables on the mall and offer carefully planned sales pitches to get students to fill out applications.

"It's like holding candy out on the street," says Nagy. "There isn't any educational or financial management component to [what they do] at all."

The U.S. Public Interest Research Group (PIRG), a national alliance of student activists, has called those tactics "reckless and deceptive." The group recently studied one hundred credit card offers made to students, finding that most of the deals had ballooning interest rates or hidden fees that don't typically get discussed at the marketing tables. PIRG has compiled a Web site ([www.truthaboutcredit.org](http://www.truthaboutcredit.org)) to expose what they consider tricks that credit card companies use to lure students into a spiral of accumulating debt. Among the other tactics PIRG cites are granting credit limits well beyond what students can afford and lowering minimum payments so that students stay in debt longer.

University officials would like nothing more than to expel the credit card marketers that use such predatory practices. But they're left with limited options. The tables are set up on city-owned terraces, where the university has no authority to remove them. And even without the tables, there's nothing to stem the tide of phone and mail solicitations to students. Student addresses and phone numbers are considered public records, and unless a student specifically requests privacy, they must be published. Vendors need not even ask the university for the records; they can simply buy the

publicly available student phone book and use computer software to scan the information. "We're powerless to resist them," says Ben Griffiths JD'92, associate university legal counsel.

About all the university can rely on is its core mission: to educate. The Office of Student Financial Services offers several educational programs to warn students about the dangers of credit, including pamphlets on responsible use of credit cards, periodic seminars on debt management, and one-on-one counseling. But some students say those programs are too low profile. "As far as what students are actually aware of, it's almost nothing," says Megan Fitzgerald x'03, a campaign coordinator with WisPIRG, the UW's student chapter of the national PIRG. "The university can do a lot more in terms of education."

Fitzgerald says the university needs to match the zeal of credit card marketers by having its own tables set up during the beginning of the school year. The university has run how-to budgeting classes during Welcome Week in the past, notes Van Ess, but they were ultimately dropped due to poor attendance.

Michael Gutter, a professor of consumer science who teaches a course in personal finance, agrees that more efforts are needed to correct what amounts to a glaring deficiency in financial savvy among students nationwide. At the beginning of the spring semester, Gutter asked his students to assess their overall debt and was stunned to find that only a few had any idea. "You can see how it can easily become a problem," he says. "If you have no idea, it's easy to say, 'Why not take on a little more?'"

Some studies have shown that students coming into college aren't even prepared to handle relatively simple tasks, such as drafting a budget. Gutter emphasizes the need to reinforce financial curricula in K-12 schools and to urge parents to teach their children about financial responsibility before they're living on their own. Some help may come from Wisconsin state legislators, who

recently passed a bill advocating financial literacy classes in state schools.

Another valuable piece of insight could come from a study Gutter has proposed. He is seeking funding for a survey that would analyze students' credit card bills, as well as car payments, bank loans, and other forms of debt. The study may

**"Students are very busy, and they're just getting acclimated to being on their own. All of a sudden, here comes this thing that allows them to get what they want and need and get it when they want it. Sooner or later there is going to be a reckoning."**

offer some clues to how and why students get into debt trouble, and the results may help the university to target its educational efforts around those findings.

"Many of our students are looking to us for that kind of help," Gutter says. "I would like to think that, as faculty and administrators, we truly are looking out for their best interests."

While there may not be much the university can do to change companies' practices, there has been a recent effort to scrutinize and improve the credit card deals that carry the UW's name. WAA's Bonner recently formed a group of advisers to help design a new credit card program that she hopes will address some of the concerns. "We can't keep credit cards out of students' hands. They have freedoms," she says. "But we can certainly say that the card that is part of campus is going to be set up with very strong terms and regulations."

The tentative plan is to replace the two existing cards with one new pro-

gram, which would be managed by WAA. Bonner says that she sees an opportunity to use the allure of the combined customer pool as leverage to exact more favorable terms for cardholders, especially students. She and campus advisers have come up with a list of terms that would be included as part of the new deal for students — including requiring lower credit limits, limiting the amount and type of marketing, and insisting on educational programs.

"As well as we could up to this point, we've taken our stewardship role pretty seriously — and we can continue to do even better," Bonner says. WAA has hosted financial management seminars for students in the past, but both Bonner and Nagy agree that there's plenty of room for improvement.

"We expect to see a more refined strategy," says Nagy.

Of some encouragement to the university is the knowledge that, while debt may be expensive for students, it rarely appears to be catastrophic. The default rate among UW-Madison graduates for federally funded Perkins loans, for example, is about 1 percent — the lowest university average in the country. And, although Student Financial Services counsels many students who are having temporary money problems, it's still rare that the university needs to get students outside debt management help.

In most instances, students seem to be waging a bet that they'll soon be earning enough to pay their way out of the debt that they've accumulated. Van Ess says it's hard to fault the confidence students have about their future earnings. "There's this optimism that says, 'Someday I will be making a lot of money,'" he notes. "And I like that optimism."

But with the price of optimism rising, he, like others on campus, thinks it's time for students to check the urge to charge. 📱

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Michael Penn MA'97 is senior editor of *On Wisconsin Magazine*.