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## [A Greener Path for Business](#)



Matt Wilson says that far too often business people and environmentalists only speak to each other in a court. He hopes his hybrid courses lay groundwork for more productive dialogue. *(Photo: Bill DiLillo)*

Matt Wilson, a faculty member whose expertise encompasses the economic and the ecological, is a harbinger of UVM's drive to create a series of courses that combine business and environmental concerns.

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Patrick Orr spurned touring with the likes of Placido Domingo ("wonderful, the sweetest man") to labor with UVM students in the fragrant, dusty world of an academic theatre woodshop.

[Thinking Pink](#) Maple syrup, newborn lambs, tiny white flowers called snowdrops, pink snow – these are the harbingers of early spring in cold climates.

## THE WEEK IN VIEW

**Feb. 27 11 a.m. Colloquium: "Very Cold But Very Floppy Molecules – Mixed van der Waals Atomic Clusters," Howard Mayne, University of New Hampshire. Angel B112. 656-2594**

**Feb. 27 12:30 p.m. Seminar: "The Beginning of the End of Conventional Economics," John Gowdy, RPI. Carpenter Auditorium, Given. 656-3269 or [SNR Seminar](#)**

**Feb. 27 4 p.m. Seminar: "Effect of Ovarian Hormone Deficiency on Risk for Cardiovascular Disease and Diabetes," Dr. Michael Toth, medicine. Given B-333. 656-2500**

**Feb. 27 6 p.m. Film: *Bamboozled*, directed by Spike Lee. Discussion follows on film and UVM "Kake Walk." Campus Center Theater, Billings. 656-8833**

**March 5 Noon Panel: "Mother's and Daughters: A Generation of Conversation," International Women's Day. Peggy O'Neill-Vivanco, 860-1704**

**March 5 12:30 p.m. Lecture: "China's New Leadership," Shiping Zheng, political science. John Dewey Lounge, Old Mill. 656-1096**

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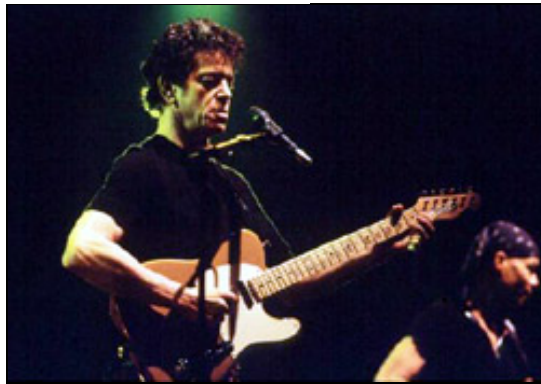
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Lou Reed, former Andy Warhol collaborator and leader of the Velvet Underground, is on campus March 12. For more, see [Reed story](#).

### UVM and State High-Tech Incubator Partnership Could Spur Economic Growth

Vermont has the resources, the brainpower and the community support needed for development of a statewide, high-technology incubator program. That's the word from a study UVM recently commissioned on the topic, and now the university and the Vermont Department of Economic Development are looking at how best to capitalize on this opportunity to foster entrepreneurship, technology transfer and commercialization around the state.

UVM is leading the effort to bring together community leaders from government, academia, industry and civic organizations to explore the development of the Vermont Center for Emerging Technologies, a high-technology business incubator. Plans call for the establishment of a working group to oversee development of a detailed business plan.

As part of a recent panel discussion sponsored by the Burlington Business Association, President Daniel Mark Fogel noted that faculty brought in nearly \$103 million in external grants last year, and expressed his enthusiasm for an incubation center that could capitalize on the intellectual property that comes from this research.

"The University of Vermont is excited to take the lead in helping to foster the commercialization of technology in Vermont," Fogel said. "We look forward to working with our partners to make this vision a reality."

Gov. James Douglas has stated that growing Vermont's economy is a priority for his

### Study Identifies New Treatment For Leg Blood Clots

Deep vein thrombosis, a potentially fatal condition that afflicts approximately 270,000 people annually in the United States, likely will be treated differently due to the dramatically positive results of a new study, in which UVM participated.

Results of the study, which appeared this week in the electronic version of the *New England Journal of Medicine*, indicate that long-term, low-dosage use of warfarin, a blood thinner, provides an effective and safe treatment for deep vein thrombosis. The drug also is prescribed by the brand name Coumadin.

UVM was one of 52 international sites that participated in the Prevention of Recurrent Venous Thrombosis (PREVENT) study, a randomized, double blind, placebo-controlled project using 508 participants. Dr. Mary Cushman, associate professor of medicine and co-author of the report, led the study at the UVM/Fletcher Allen Health Care site, which had 27 participants, one of the highest patient enrollment rates.

Also known as phlebitis, deep-vein thrombosis is a blood clot that forms in the deep veins of the thigh or calf, resulting in pain and discomfort. The greater concern, however, is the 20 percent risk that a piece of one, a clot, will break off, travel through the veins and block blood flow to the lungs, causing breathing problems and possibly death.

Previous to this study's findings, patients who suffered a venous thrombosis episode – called a venous thromboembolism – were treated with a standard, anticoagulation therapy: a combination of several days of an intravenous or injected blood thinner followed by three to 12 months of full-dose warfarin. Once the treatment ended, however, blood clots recurred at a rate of 6 to 9 percent annually.

All the patients enrolled in the PREVENT trial had experienced deep vein thrombosis and had undergone the standard short-term, higher-dose treatment with warfarin. Patients then were randomized, with half receiving low-dose warfarin for between two and four years and half receiving a placebo over the same time period. The study terminated early when researchers found that the experimental therapy showed a 64 percent reduction in the recurrence of venous thromboembolism compared to the placebo group after roughly 2 years of follow-up.

Approximately 1,200 people in Vermont suffer

administration, and he has looked forward to business-development partnerships with the university.

"UVM has the requisite knowledge base and a track record for technological innovation," said Janice St. Onge, who helps develop technology businesses at the state department of economic development. "We're excited to see them taking a lead role in helping to foster technology commercialization in the state, and look forward to working together to realize the potential outlined in the assessment study."

Rainey & Associates, a Hanover, N.H.-based economic development consulting firm, carried out the initial feasibility study. More than 70 potential stakeholders and community leaders around the state were interviewed, including economic and technology development officials, higher education leaders, non-profit organizations, private sector entrepreneurs and business people. To see a copy of the study (note that it is a large PDF download), visit [ThinkVermont.com](http://ThinkVermont.com).

### **Funeral Arrangements Set for First-Year Student**

Ashlee D'Avignon, a first-year student in the College of Engineering and Mathematics, died on Feb. 22 after an automobile accident in Shelburne. She was 18.

"We're going to miss her," said Joan Jordan, the college's student services coordinator and D'Avignon's work-study supervisor. "She was a young, vivacious woman who quickly found her niche at UVM."

D'Avignon was born in Middlebury and grew up in Virginia Beach, Va., where she was an honor student and graduated 13th in her high school class of 483. She is survived by her parents, Ann and Allen D'Avignon; her brother, Andrew; and her extended family throughout Vermont.

Visiting hours for Ashlee's friends are on Feb. 26 from 5 to 8 p.m. at the Sanderson Funeral Home in Middlebury.

A mass celebrating her life will be held Feb. 27 at 11:30 a.m. in St. Mary's Catholic Church in Middlebury. The church has limited parking, and officials there recommend an early arrival. In lieu of flowers, the family asks for donations to the National Honor Society chapter at Salem High School in Virginia Beach, Va.

A full obituary appeared in the Feb. 26 edition of the *Burlington Free Press*.

from deep vein thrombosis annually. The condition most commonly occurs in individuals aged 60 years or older. Among those at risk for developing this condition are those with obesity, diabetes or cancer; people with inherited blood conditions; pregnant women; women who take oral contraceptives or hormone replacement therapy; and individuals who have had surgery or a bone fracture.

To read the full article on the study, see [New England Journal of Medicine](#).

### **UVM in the News**

Bernd Heinrich's new book, *Winter World*, was among several UVM stories that grabbed a bit of the national spotlight in January. Heinrich, professor of biology, was featured in the Science Times section of the Jan. 7 *New York Times* for his work on how critters survive winter. The article also appeared on Jan. 9 in the *International Herald Tribune*. The book was reviewed in *The New York Times Book Review*, *Pittsburgh Post-Gazette*, *San Diego Union-Tribune*, *New Scientist* and in *Outside* magazine's February issue. Heinrich also was interviewed on radio stations nationwide. Read the *New York Times* feature article at [Science Life](#) and its book review at [NYT Books](#).

Robert Costanza, professor of ecology and economics and director of the Gund Institute for Ecological Economics, discussed his approach to teaching in a Jan. 21 interview with the *Christian Science Monitor*. The interview also was carried that day on WAMC-FM90.3 (Albany, NY) and WNYC-AM820 (NY, NY). Read the interview at [Monitor](#).

Dr. David Fassler, clinical associate professor of psychiatry, was featured in a Jan. 14 front-page *Washington Post* article about children receiving psychiatric drugs. Prompted by a study published in the current issue of *Archives of Pediatrics and Adolescent Medicine*, the story also ran in the *Desert News* (Salt Lake City, Utah) and on the AP wire. In another drug-related story, Fassler discussed FDA approval of the antidepressant Prozac for the treatment of depression and obsessive compulsive disorder in children on *Reuters*, *Yahoo! Finance* and *Forbes.com* and in the *Economic Times* (New Delhi, India). Read the *Reuters* article at [Economic Times](#).

*Leaving Saturn*, the first collection of poetry by Major Jackson, assistant professor of English, was nominated for a National Book Critics Circle Award, as reported by the Associated Press on Jan. 13 and Jan. 14 in national newspapers from *The New York Times* and *Boston Globe* to the *Houston Chronicle*. Read the *Times* article at [NYT Books](#).

For a complete list of national and local media placements in January, see [UVM in the News](#)



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*King Cole*: UVM Theatre is presenting a celebration of the life and music of Cole Porter. The play runs Feb. 26 to March 9. Tickets and information at 656-2094 or [Royall Tyler Theatre](#). (Photo: Bill DiLillo)

**Lou Reed is Coming March 12**

Lou Reed, legendary soloist and former leader of the seminal rock band Velvet Underground, will walk on the wild side at Ira Allen Chapel on March 12 at 8 p.m.

The Fleming Museum and Borderline Irreverent Productions are producing Reed's appearance, which is an extension of the museum's public programming for its exhibition [Andy Warhol Work and Play](#).

Warhol collaborated with The Velvet Underground during the mid-1960s in a multimedia extravaganza billed as *The Exploding Plastic Inevitable*. This historical collaboration was the museum's impetus to invite Reed to campus. For more background on the exhibit, see [this story](#) from *the view's* archive.

Tickets are \$39 and \$49. The program will include material from Reed's musical adaptation of Edgar Allan Poe's "The Raven" and feature guests Fernando Saunders and Rob Wasserman. The Fleming Museum store, the Flynn box office and Pure Pop in Burlington are selling tickets for the event.

Information: 656-0750

**Master of the Indian Sarod to Play on Campus**

George Ruckert, a senior lecturer in music at the Massachusetts Institute of Technology, is giving a

**Actors Worldwide Unite to Read Against War**

Theatre and literary artists from across Vermont will gather at the Flynn Center for the Performing Arts on March 3 at 7:30 p.m. to protest the war in Iraq by reading Aristophanes' anti-war play, *Lysistrata*.

The reading, presented by the Vermont Stage Company and directed by Mark Nash, is part of a worldwide theatrical act of dissent initially conceived and organized by two actresses, including New York actor and Charlotte, Vt., resident Kathryn Blume. Four UVM faculty members are taking part: Sarah Carleton and Peter Jack Tkatch, from the Theatre Department, and David Huddle and Philip Baruth, from the English Department.

*Lysistrata* tells the story of a group of women from opposing city-states who unite in Athens to end the Peloponnesian War by withholding sex from their mates. Desperate for intimacy, the men finally agree to lay down their swords and find peace through diplomacy. Drue Robinson Hagan has prepared a new version of the 2500-year-old play, titled *Aristophanes' Lysistrata: A Woman's Translation*. The play contains adult themes and language; the producers caution that it is unsuitable for children.

The *Lysistrata* Project has spread to 739 cities in 42 countries and 50 states and Washington, D.C. Admission is free, but a \$5 donation is suggested. Proceeds go to the Peace and Justice Center.

Local information: Ruth Wallman, 598-5577; or Geri Amori, 238-5652. For information on the international project, see [Lysistrata Project](#).

**Mountaineering in Peru**

Outing Club students will present "Mountaineering in Peru" as part of the Green Mountain Club's James P. Taylor Winter Series on Feb. 28 at 7 p.m. in the Campus Center Theater, Billings.

Last June, 12 club students spent 16 days mountaineering in the Cordilleras Blanca region of Peru. Under the guidance of John Abbott, director of outdoor programs, these students have produced a riveting slideshow of this dramatic South American landscape and their experiences summiting some of the 6,000-meter peaks.

The Outing Club, founded in 1932, is run by students and provides four-season wilderness trips, technical skill instruction and backcountry rental equipment to the UVM community.

concert of North Indian classical music on March 1 at 7 p.m. in the Music Recital Hall, Redstone Campus.

Ruckert is an author and scholar and a master of the *sarod*, a fretless, four-stringed instrument that originated in the 16th century. He will be accompanied by percussionist Jerry Leake on the *tabla*. Their performance is sponsored by the Friends of Indian Music and Dance. Tickets are \$10 general admission, \$7 for members and \$5 for students.

More information at: [Friends of Indian Music and Dance](#).

Admission to the event is \$5 for GMC members and \$7 for nonmembers; no charge for children 12 and under. Information, 244-7037 or visit [Green Mountain Club](#).

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*Feb. 26 – March 4, 2003*

### Awards and Honors

**Kirk McCaskill**, a 1983 alumnus, was selected this week for the Baseball Hall of Fame. McCaskill, who played hockey and baseball at UVM, had a 12-season career in professional baseball, playing with California Angels and the Chicago White Sox. At UVM, he was an All-American hockey player, runner-up for the Hobey Baker Award – for the best college hockey player in the nation – and an outstanding hitter and pitcher on the baseball team. He was inducted into UVM's Athletic Hall of Fame in 1993.

**Robert Nash**, professor of education, was elected as an executive board member of the Society of Professors of Education. His term for the national position will be 2003-2005.

### Publications and Presentations

**Carolyn M. Bonifield**, assistant professor of business administration, presented a paper titled "Product Returns on the Internet: A Consumer Side Study," at the 2003 Society for Consumer Psychology Winter Conference, on Feb. 22, in New Orleans. Along with University of Iowa co-authors Catherine Cole and Randall Schultz, Bonifield examines how specific aspects of the Internet shopping environment affect the ways in which consumers interpret certain signals such as return policies.

*Feb. 19-Feb. 25*

### Awards and Honors

**George Pinder**, professor of civil and environmental engineering, received the 2003 American Society of Civil Engineering Julian Hinds Award for his pioneering, sustained and preeminent contributions to the science and practice of groundwater modeling and numerical solution methods and to the design of groundwater remediation strategies and groundwater quality management. Pinder's other honors include the American Geophysical Union's RCA Professor of Energy Resources Award and Horton Award and the Geological Society of America's O.E. Meinzer Award. In addition, he has been the recipient of the Eminent Scientists Award Medal and was named a University Scholar, in recognition of his contributions to research and scholarship.

**David Barlow**, 1969 doctoral alumnus, delivered the Lewis Distinguished Lecture at the Psi Chi/American Psychological Association National Convention last August. His lecture was titled "The Nature and Development of Anxiety and its Disorders: Triple Vulnerability Theory." Barlow, former professor of psychiatry at the University of Mississippi Medical Center and professor of psychiatry and psychology at Brown University, has published 20 books and more than 400 articles and chapters in the areas of anxiety disorders, sexual problems and clinical research methods. He received UVM's first Graduate Alumni Scholar Award and the 2000 APA Distinguished Scientific Award for the Applications of Psychology. He is editor of the journal *Clinical Psychology: Science and Practice* and is in private practice.

### Publications and Presentations

**Chyi-lyi (Kathleen) Liang**, associate professor of community development and applied economics, participated in the 2003 United States Association for Small Business and Entrepreneurship annual conference in Hilton Head Island, S.C., in January.

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## A Greener Path for Business

By Jeff Wakefield



Matt Wilson says that far too often business people and environmentalists only speak to each other in a court. He hopes his hybrid courses lay groundwork for more productive dialogue. (Photo: Bill DiLillo)

Matt Wilson is engaging in some decidedly tense banter with the students in his Environmental Research in Business class.

As the group sits patiently, Wilson, an assistant research professor with the Gund Institute for Ecological Economics who has a joint appointment in the business, is cracking jokes as he struggles with coaxing his laptop into disgorging a Powerpoint presentation that will form the basis

of tonight's lecture.

After the empty blue screen finally comes to life, it's easy to see why Wilson was frustrated. He is not only pumped about tonight's three-hour class, he's also prepared. The presentation is a cornucopia of complex graphs, citations, bullet points and graphics.

"He's very knowledgeable," says senior Kate Winzler, one of 12 undergraduate business and MBA students in the class. "His readings and lectures are taken from a lot of different sources. You could never get that in a textbook."

### Subhead here

Like the provocative data he ferrets out for his students, Wilson is himself a harbinger. Within the next two years, UVM will begin offering a formal sequence of hybrid courses that, like Wilson's scholarship, combine study of business and the environment.

"We're imaging a certificate program or a minor that would involve five or six courses any UVM student could take," says Don DeHayes, dean of natural resources, who is developing the curriculum in partnership with Rocki-Lee DeWitt, dean of the business school, and faculty members from both schools.

To get there, deans and faculty are asking the fundamental questions. "What is business literacy, what is environmental literacy?" DeWitt says. "Once we've determined the competencies, we'll be able to develop the courses."

### Butting heads

Wilson is all for this combo-style approach to curriculum development.

When the Institute for Ecological Economics was at the University of Maryland, Wilson regularly attended conferences and seminars on Capitol Hill. He found that business and environmental types "not only go to different schools, they also work in different offices. They never speak with each other except in a court of law, which is the last place to have a dialogue."

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### Master Builder

Patrick Orr spurned touring with the likes of Placido Domingo ("wonderful, the sweetest man") to labor with UVM students in the fragrant, dusty world of an academic theatre woodshop.

### Thinking Pink

Maple syrup, newborn lambs, tiny white flowers called snowdrops, pink snow – these are the harbingers of early spring in cold climates.

Environmental and business interests "have been butting heads for 25 years," says DeHayes, and that conflict is obvious on college campuses. "Students studying the environment tend to demonize for-profit companies, and business students demonize environmental protectionists. If we want to change the world," he says, "we need to find new ways to teach business and environmental studies together." The goal is to "create graduates who are comfortable in the ample middle ground between the extreme positions."

"I'm trying to give students a set of tools they can bring to their future employers, so they can apply the best available data and techniques to strategic decision making" that will get corporate chiefs past the impulse to "hire a team of lawyers and litigate," says Wilson.

According to Rick Bunch, director of business education at the Washington-based World Resource Institute, which conducts an annual survey of MBA programs for its Beyond Grey Pinstripes Web site, MBA administrators, at least, have gotten the message that combining study of business and the environment is desirable.

"We've seen the number of environmental electives increase 50 percent over the last two years at the top 25 MBA programs," he says. He's also observed that "six endowed professorships in environmental economics were created in the last year alone," compared with only "one in the previous three or four years."

UVM's niche may lie in extending this approach to undergraduates.

"The MBA faculty member's leading lament is that it's so hard to shape students in MBA programs," says DeWitt, who directed the MBA program at Penn State's Smeal College of Business Administration before coming to UVM. "Why not try to reach them earlier, when they're undergraduates? That would make us radically different from the rest of the world."

"What better place to do that than in Vermont?" DeHayes adds, where the landscape itself is the perfect example of how business interests like tourism intersect with environmental protection.

### **A growing demand**

If there's any doubt that the business world is looking for a new kind of employee, "just ask Union Carbide how much they think about environmental issues," says DeWitt, "or why BP now means 'Beyond Petroleum.' "

On the other side of the equation, regulatory agencies, too, may well be looking for natural resources graduates with an understanding of the corporate mindset.

"Staff in places like the EPA or the state natural resources agencies who know how to use market forces to achieve environmental ends," says Bunch, "are going to get things done more quickly and efficiently."

But the proof of the attractiveness of the business-environment proposition to students – and its potential as a recruitment device – may lie in Wilson's class.

"It's a joy," says Winzler. "I really look forward to going to class, even though it's three hours on a Wednesday night. I always leave feeling more enlightened and motivated."

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## The Master Builder and Friends

### The Theatre Department's Technical Director Pat Orr produces set magic and confident students.

By Lee Griffin



Pat Orr, technical director in theatre, works with theatre major Erika Foley on building the set for *Cole*. (Photo: Bill DiLillo)

Patrick Orr spurned touring with the likes of Placido Domingo (“wonderful, the sweetest man”) to labor with students in the fragrant, dusty world of an academic theatre woodshop.

Orr, the first and only technical director the Theatre Department has ever had, says the Domingo tour in the early ‘80s was his “first and only. We toured with 125 Spanish singers,

dancers and musicians to 10 cities across the country, from Madison Square Garden to Las Vegas. It convinced me I didn’t want to be a road carpenter.”

Orr, a 1977 graduate in theatre, returned to UVM in 1983 to take on the newly created position of technical director. Despite his self-effacing protestation that “a technical director is jack of all trades and master of none,” evidence abounds that the job demands multiple masteries – carpentry, design, teaching and mentoring, among them. Orr especially revels in the student aspect, and his standards are high.

“In the last 10 years, production values (at Royall Tyler Theatre) have tripled in expense; we have a more professional program,” he says. And it’s not just a show-must-go-on mentality behind it, he explains. “Our goal is to get our students jobs. Like Bill (Schenk, a professor of theatre) says, ‘It’s called show business, not show art.’”

#### Student shop

This semester, Orr’s doing his part in that goal, training 18 students in the lab portion of scenery classes, plus mentoring six work-study students. He trains the latter “to supervise people, because that’s important, and not everyone knows how to do it,” he says. Orr models winning techniques, “puts students in roles where they must assume authority” and gives them feedback. Judging by the devotion of students in one lab class, Fundamentals of Scenery, the lessons are rubbing off.

Catherine Dillon, a first-year, elementary education student from Amherst, Mass., stops in mid-pirouette to greet a visitor to the scene shop. “I’m doing this for a general ed. requirement,” she says, “but I love this class,” the love clearly punctuated in capitals. “Other students say ‘Oh, I have to go to *lab*,” she says, putting on a mock tragic mask. “I say, (face brightening) ‘Oh I have to go to LAB,” the huzzahs loud and clear. “Pat and Jeff (Modereger, department chair and scenic designer) are awesome. And Duke (Colin Duclos, a work study student) “is patient and amazing.”

Erika Foley, a junior from Williston and a first-year theatre major who transferred from Champlain College, is building a set for the first time, for the

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#### [A Greener Path for Business](#)

Matt Wilson, a faculty member whose expertise encompasses the economic and the ecological, is a harbinger of UVM’s drive to create a series of courses that combine business and environmental concerns.

#### [Thinking Pink](#)

Maple syrup, newborn lambs, tiny white flowers called snowdrops, pink snow – these are the harbingers of early spring in cold climates.

upcoming production of *Cole*, a musical review of Cole Porter's songs. There's pride in her voice as she ticks off her new repertoire: "radial saw, table saw, band saw."

### **Hands-on**

The group carries power drills, screwdrivers and wood trim upstairs to the stage to work on the nascent set, where Orr maintains an easy rapport with his students. He has a healthy respect for "learning the hard way – it's the nature of education," he says. "You can't be afraid to fail." But not at the expense of safety, his first and top lesson. Above them, entwined in a stage-sized metal grid, like high-wire acrobats, are other theatre interns hanging heavy klieg lights. "It's their first time doing this," Orr says, so "heads up."

Orr shows his small group how to line up the trim against the Masonite platform leaving a "scrooch space at the top," he explains, so actors won't trip. He shows them how to countersink a screw, "but not too far or you'll split the molding." Then he takes a backseat, until the next mini-lesson. The buzzing power drill fights unmelodiously with the clanging kliegs as Dillon argues with Orr's placement of a trim piece. Orr smiles, counters gently and persists in his work until she sees the light.

### **Where the jobs are**

Orr decided early on that his theatre career would be pursued behind the scenes. "Tech in theatre is where the jobs are," he says. "There are very many actors and very few parts, but behind each actor are four or five people doing lights, costumes, marketing and sets." A Vermont native, Orr has worked for the Montpelier Theatre Guild, and he was a charter member of the Barre Players. He has worked on several motion pictures and continues to run his own business, consulting on everything from specialty rigging to special effects. He also designed lights for the Mozart Festival for 24 years. Orr, who helped start the Vermont chapter of the stagehands union, of which he is now president, speaks proudly of that group. "We have about 70 stagehands here in Vermont, with a great depth of experience and work ethic."

His work at RTT usually is planned out a year ahead, "especially when there are tough requirements," Orr says. "We're considering, for example, a play next year in which I'll have to flood the stage with 12 to 18 inches of water" Right now, Orr says, he's being an "armchair engineer," seeing if it's feasible. One of his biggest challenges to date, he says, "was having to make an actor disappear in the middle of the thrust stage, in *The Foreigner*." He did it using a high-speed pneumatic lift that lowered the actor into the scenery shop directly below.

Orr stole the spotlight just once in a I'd-rather-everyone-forgot faux pas. "Working five Mozart Festival shows in five days, during a quiet piece at the Burlington Square Mall, I fell asleep and fell into my open tool box," he says. "It couldn't have been louder."

### **On stage**

More than a week after the early set work, other students are onstage rehearsing *Cole* under the eye of guest director Bob Durkin, a choreographer and director in professional theatre. He is listening to three sweet-voiced young women, miming sophisticated cigarette-smoking poses, sing "It's All Right With Me" and "From this Moment On." The set has progressed from unfinished Masonite to a glossy, black-stepped platform, suggestive of an Astaire-worthy supperclub floor.

"The set is the house," Durkin says, and he proceeds to describe the details yet to come – much as he is reworking the actors' blocking and stage business in this early run-through. He likes working in academic theatre, he says, because "it puts me in touch with the teaching experience again." Durkin thinks UVM's faculty train their students well. "They instill a great sense of work ethic; they give them a sense of 'you're being counted on.' There's a wonderful open-mindedness here."

It always comes back to the students. "The most satisfying part of my profession," Orr says, "is seeing my students go on. He ticks off names of alumnae who are producing or stage-managing shows like *The Lion King* and an alumnus who's "one of the top road riggers in the country."

"Our students go through a metamorphosis," Orr says, "and walk out of here confident adults."

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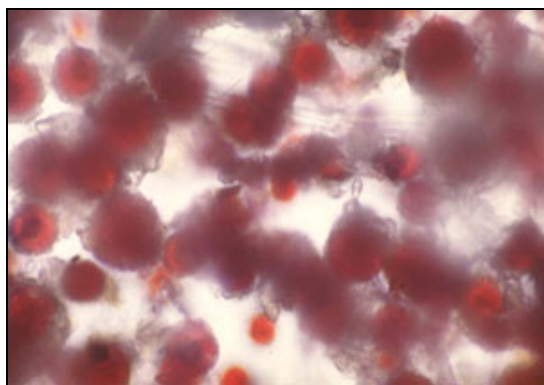
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UVM HOMEPAGE

## Thinking Pink

### Botanist Tom Vogelmann has spent four years studying a mysterious algae that may even play a role in regulating greenhouse gases

By Cheryl Dorschner



It's slushy, it's pink: The strange, hardy algae cells shown here give some spring snow a decidedly festive cast. (Photo courtesy of Tom Vogelmann)

Maple syrup, newborn lambs, tiny white flowers called snowdrops, pink snow – these are the harbingers of early spring in cold climates.

#### *Pink snow?*

In high altitudes on all continents except Africa, the heavy, wet snows of spring sometimes have large patches tinged bright pink. "In the United States, it's known as 'watermelon snow' or 'snow algae,' while Scandinavians call it

'blood snow,'" says Tom Vogelmann, professor and chair of botany, who has been studying the phenomenon for more than four years.

The source of the red tint is an unusual kind of spherical freshwater algae, *Chlamydomonas nivalis*. The microorganism has a fascinating and mysterious life cycle, and some scientists are even debating whether pink snow helps counter global warming by sucking carbon dioxide out of the air. Vogelmann doesn't place much stock in that theory, but he's found plenty in the algae to hold his interest.

"It appears magically each spring, and anywhere the snow pack persists longer. It grows well in slushy snow, which is why we don't find it throughout the winter. But we know little or nothing about what it does at other times of the year," Vogelmann says.

#### "A bizarre creature"

Researchers can't culture this particular algae in a lab, but they know the cells are more complicated than they might initially seem. The pink-snow effect might come from algae swimming up from below in the slushy water or blowing in on the wind.

Even more intriguing than how they arrive is how they survive at all.

"It's a bizarre creature," Vogelmann says. "It's hostile where they live. Most of the time it's near the freezing point and bathed in very high ultraviolet radiation. Photosynthesis in almost every green plant that I can think of would be near zero under these conditions. Somehow this creature not only grows but thrives – it has to have some interesting structures. Studying how it survives will give us ideas about cold hardiness."

One thing Vogelmann and colleagues do know through measurements is that pink algae takes up more carbon dioxide than would normally be expected – "high, from the standpoint that this is growing in ice slush," he clarifies.

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#### [A Greener Path for Business](#)

Matt Wilson, a faculty member whose expertise encompasses the economic and the ecological, is a harbinger of UVM's drive to create a series of courses that combine business and environmental concerns.

#### [Master Builder](#)

Patrick Orr spurned touring with the likes of Placido Domingo ("wonderful, the sweetest man") to labor with UVM students in the fragrant, dusty world of an academic theatre woodshop.

Vogelmann was among a team of researchers who spent four summers at 11,000 feet in the Rocky Mountains, 50 miles west of Laramie, Wyo. They measured how much carbon dioxide the algae soaked up in response to variable sunlight levels by placing a transparent plastic box fitted with gas sensors over patches of algae.

Their results, "Surface Gas-Exchange Processes of Snow Algae," were published Jan. 6 in the *Proceedings of the National Academy of Sciences* ([www.pnas.org](http://www.pnas.org)). The paper's authorship was shared by William Williams, Holly Gorton and Vogelmann. The results in the article found that snow microbes absorbed relatively high levels of carbon dioxide from both the soil and air in bright light.

The paper also speculated that "red algae may be acting as significant carbon sinks." After it was published, related articles quickly appeared, concluding, as one United Press International report phrased it, "that these microbes might help combat global warming by guzzling up greenhouse gases." Other scientists extrapolated that even if the amount of carbon dioxide uptake wasn't high, the large areas the algae cover might be a significant contributor.

**Some watermelon, please**

Vogelmann disagrees. "Personally, I am rather skeptical about the idea, but it shouldn't be all that hard to come up with an estimate of the total amount of global carbon that they may be fixing. Not my area of expertise though," he says.

This study is just the tip of the pink iceberg when it comes to understanding watermelon snow. Vogelmann says he'll be out looking for pink algae in the snows of Vermont's Mount Mansfield, probably in early April, so he can study it a bit closer to home.

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