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[Dead Day, Living Tradition](#)



Lecturer Irma Valeriano's altar celebrating Day of the Dead is on display on the fourth floor of Waterman through the end of the week. (Photo: Kevin Foley)

The fourth floor of Waterman, at least today, is an excellent place to be dead. The living are luring the deceased back with blandishments: an altar laden with fragrant flowers, bowls of peanuts, ripe fruit, a mole as dark as the fertile soil of Oaxaca. There are pictures of lost loved ones, brightly colored overlays, a bottle of mescal.

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[Interface](#) Richard Albertini calls it "the interface." It's the sometimes-uncomfortable place where medicine and theoretical science interact, where laboratory bench techniques extend to a patient's bedside. It's also the state of mind and approach that has defined Albertini's career.

[Fascinated By Fear](#)

William Falls, an associate professor of psychology who explores the neurobiology of fear and trauma, likes to joke that he didn't "discover the brain" until graduate school.

THE WEEK IN VIEW

Nov. 4, 3 p.m.
Lecture: "Biography and Sympathy: Gender, Race, and Class in the Work of Adam Smith," with Jack Russell Weinstein, University of North Dakota. Marsh Lounge, Billings. Information: 656-2263

Nov. 4, 5:15 p.m.
Lecture: "The War Against Terrorism, Violent Conflict and Poverty: The Case for Cooperation," with J. Brian Atwood, University of Minnesota. North Lounge, Billings. Information: [Atwood Lecture](#)

Nov. 5, 7:30 p.m.
Lane Series Concert: "Trio Mediaeval," a Norwegian/Swedish vocal ensemble. UVM Recital Hall. Tickets: \$25. Information: [Lane Series](#)

Nov. 7, 3:30 p.m.
Concert: "John Phillip Sousa's 150th Birthday Celebration," with the Vermont Wind Ensemble. Music Building Recital Hall, Redstone Campus." Information: 656-3040 or [Music Department](#)

Nov. 9, 12:30 p.m.
Lecture: "Women, Archaeology, and the Andes," with Deborah Blom, associate professor, anthropology. John Dewey Lounge, Old Mill. Information: 656-4282

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Business Tablet PC Requirement an Early Success

It looks like an ordinary college class circa 2004, with laptops on every desk — except that a third of the students have the computers closed and appear to be scrawling on their lids.

Welcome to Business Education 040, an intro class in the School of Business Administration, where administrators and faculty have placed themselves at the forefront of a national higher education trend by requiring entering first-year students to own convertible “tablet” PCs.

The convertible tablet functions both as an ordinary laptop and, if the screen is swiveled and closed on the keyboard, as a kind of souped-up digital notepad, with the lid becoming an illuminated writing screen. Students file their tablet-mode notes in folders, either in handwritten form or converted to text, where they have all the advantages of searchable digital files. The tablet will even record a lecture, synchronizing the audio to the notes. If a section of notes is incomplete or unintelligible, a student taps the text in question and the professor’s words boom forth.

About 180 first year business schools students are using the new technology.

Erin Schumaker, a first year student from Harvard, Ill., said she learned about the business school’s new policy through a letter she received over the summer. Open to new experiences, she figured that the tablet PC was just “one other new thing that college would entail.”

The tablet, which also provides a wireless Internet connection, has far exceeded her expectations.

“It can do everything you need,” she says, from functioning as an infinitely expanding notepad; to displaying the professor’s Powerpoint presentation, which she can write on; to letting her do research online in class or look at her online texts; to recording the lecture for later reference; to organizing a searchable database of her notes.

That panoply of functions — all in support of enhanced learning — is just what the School of Business Administration leaders envisioned.

While it’s too early to assess definitive results, the experiment looks promising. Faculty report good anecdotal feedback and see more students taking more notes in class. And, of course, the

‘English Patient’ Author’s Visit to UVM Much More Than a Reading

“Michael Ondaatje was at the absolute top of my list of English-language writers that I’ve wanted to meet,” says Paul Martin, who hosted the acclaimed author of *The English Patient* on campus all last week. “The chance to watch him in action as well as just hanging out with him was like winning the lottery,” adds the assistant English professor, admitting he is “exhausted but energized” by the experience.

Ondaatje, a Canadian citizen, gave a public reading on Oct. 26 with campus and community fans nearly filling Ira Allen Chapel for the occasion. Much like his novels and poetry, Ondaatje’s reading flitted from theme to theme, character to character, setting to setting, as he read passages from several volumes and genres of his work — including a new collection of poetry titled *Handwriting*.

What made Ondaatje’s visit extraordinary was that, as this year’s Buckham Scholar, he stayed on for several days, attending dinners, sitting in on a faculty reading group, and visiting nine English classes to speak with nearly 300 students in all about his work, his process and his inspirations.

“The students in my senior seminar were through the roof that he was coming,” says Martin, who has the lively and enthusiastic class reading most of Ondaatje’s opus this semester, from poetry and memoir to the Booker Prize-winning novel of loss and the desert, *The English Patient*.

“Reading the work of a single author is a great experience,” says Alan Rubin, a research associate professor of medicine who is auditing the seminar. Learning about Ondaatje’s writing process firsthand, says Rubin, “made the books even more alive for me.” Rubin was struck, also, that Ondaatje refers to his books “like children he has raised.”

Rubin and Martin attest that Ondaatje was extremely generous with his time. “He gave thoughtful responses to students’ questions, as though he were being asked for the first time,” Martin says.

And what was the experience like for Ondaatje? “He really enjoyed himself,” according to Martin. “He said it’s not often he gets into a room with people who know so much of his work so well — and he thought our students were fantastic.”

Meetings Will Explain Flexible Spending, Medical Benefits Before November

tablet PC is affecting not just students but faculty who use the tool. "It's had a bigger impact on how I teach than anything else," says Jim Kraushaar, an associate professor and a specialist in the use of computers in business who has had a 35-year career.

Kraushaar makes notes on his Powerpoint presentation during class discussion, then posts the annotated file almost immediately on the class Web site. For the first time, he can also complete the digital loop with student assignments, emailing back papers adorned with digital comments, edits, and grades.

Dean Rocki-Lee DeWitt, who was attracted to UVM three years ago partly because of the business school's commitment to keeping up with information technology that supports student learning says students will benefit from their experience with the tablet PCs as they begin their careers.

"When you walk around different organizations, you see tablets," she says. "Healthcare centers are using them for data entry. Warehouse environments are using them to do comparisons of inventory with what's actually on the shelf. We don't want our students to be surprised the first time they walk into an organization and see this."

Cost was an issue as the tablet plan was being developed. But through tough negotiating with Gateway, the tablet provider, the business school managed to keep prices within a couple hundred dollars of standard laptops. And by requiring tablets, they become eligible for financial aid.

Deadlines

Open enrollment for flexible spending accounts for 2005 began Nov. 1 and will continue through Nov. 30. The accounts, which allow UVM employees to spend pre-tax dollars on certain health and dependent care expenses, can yield savings of 15 percent or far more, depending on an individual's particular tax situation.

To help employees plan their flexible-spending strategies, Human Resources has organized several benefits meetings over the next month. Hour-long workshops thoroughly introducing and explaining the program are set for Nov. 4 at 2 p. m. and Nov. 16 at 2 p.m. [Click here](#) for more information and registration.

To help employees estimate out-of-pocket health care costs in light of changes to the university's benefit plans, the department has also scheduled two information sessions before the flexible spending form deadline. A group meeting with Blue Cross/Blue Shield to go over changes to the plan is set for Nov. 8 at 9 a.m. in Memorial Lounge, Waterman Building. (Individual meetings follow from 11 a.m to 3 p.m. in 209 Waterman.) The information meeting for MVP will take place on Nov. 15 at 9 a.m. in Memorial Lounge. (Individual meetings follow from 11 a.m. to 1 p. m. in the Faculty Senate Conference Room and from 1 p.m. to 3 p.m. in 238 Waterman.)

For more information about the program, including downloadable enrollment forms, visit [2005 Flexible Spending](#).

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University Communications
86 South Williams Street
Burlington, Vermont
05401-3404

pho 802.656.2005
fax 802.656.3203

theview@uvm.edu

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Exhibit Depicts Casualties of War

"Casualty Count of the Iraq War" is the title of a new art installation created by faculty and students. The exhibit, located in the Francis Colburn Gallery in Williams Hall, is a graphic depiction of the number of casualties in the Iraq War, both coalition and Iraqi. Coalition casualties are represented by more than 1,250 small green plastic soldiers, which become the stars in a huge representation of an American flag. The Iraqis are represented by individual stampings of human figures directly on the wall.

"Seeing the number of casualties has a far greater effect than just hearing the number," says Beth Haggart, a lecturer of art. She conceived the idea with input from students, friends and others who are concerned about the human toll of war.

American and Iraqi casualties depicted on the 12 by 27-foot installation become blurred by sheer number and proximity on the huge field of the flag. The names, ages, cause of death and other details of coalition casualties are listed. Printouts of various sources give varying estimates of the death count among Iraqis.

The installation is a work in process, with a constantly updated count of casualties. "It's a tremendous amount of work," says Haggart. "Everyone is welcome to help us complete it."

An opening reception for the installation will be held Nov. 8 from 5 to 7 p.m. in the Colburn Gallery. The installation also is on view through Nov. 12 during gallery hours, which are weekdays from 9 a.m. to 5 p.m. Information: 660-2764

Sustainable Enterprise Is Theme of Upcoming Vermont Research Seminar

Semester's Last Presidential Lectures Will Explore Terrorism

Foreign policy expert Brian Atwood will discuss "The War Against Terrorism, Violent Conflict and Poverty: the Case for Cooperation" on Nov. 4 at 5:15 p.m. in Billings North Lounge. Georgetown Professor John Esposito will give a talk titled, "the United States, the Muslim World and the War on Global Terrorism," on Nov. 10 at 5:30 p.m. in Billings.

Both presentations are part of the President's Distinguished Lecture Series.

Atwood is a leading foreign policy expert who has served in two presidential administrations and is the founder of Citizens International, an organization that designs and manages public and private social development investments in developing nations. From 1993-1999 he served under President Clinton as administrator of the U. S. Agency for International Development, working on issues from global climate change and democratization to conflict prevention. He was also Clinton's humanitarian relief coordinator during the Kosovo crisis.

Atwood has been dean of the Hubert H. Humphrey Institute of Public Affairs at the University of Minnesota since 2002. Highlights of his many roles advising the government on foreign policy include serving on U.N. Secretary General Kofi Annan's panel on peace operations, which recommended major changes in the UN's peacekeeping and peacebuilding operations; serving on a Council on Foreign Relations task force that wrote the report, "Iraq: The Day After"; and working as assistant secretary of state for Congressional relations during the Carter administration.

Esposito is founder of Georgetown University's Center for Muslim-Christian Understanding and a professor of religion, international affairs and Islamic studies. His research concerns

Jacob Park, an assistant professor of business and public policy at Green Mountain College, will deliver a Center for Research on Vermont seminar on Nov. 10 at 7:30 p.m. in Memorial Lounge, Waterman Building. The title of his talk is, "Forging Community-Based Sustainable Enterprises: Perspective from the Green Mountain State."

The presentation will attempt to put the concept of a community-based "sustainable enterprise" (defined as a for-profit business with a socially and/or environmentally linked bottom-line goal) into the business/policy context of state. It will focus on how Vermont businesses are managing the innovative, financial, and organizational challenges of connecting business strategy with sustainable development that have local impacts and global implications.

Park specializes in teaching and researching global environment and business strategy, corporate social responsibility, business and society, and community-based entrepreneurship and innovation. He was recently named a McCloy Fellow in Environmental Affairs in Germany and has taught at the University of Hong Kong. He serves as a senior fellow of the Environmental Leadership Program and is a director of the Center for Environmental Citizenship in Washington, D.C.

Shenandoah Shakespeare Express Visits Nov. 9

The Shenandoah Shakespeare Express will perform Shakespeare's "Measure for Measure" Nov. 9 at 7 p.m. in the Southwick Recital Hall on Redstone campus.

Dispensing with fussy accents and elaborate stage sets, the Shenandoah Shakespeare Express depends instead on the vibrancy of Shakespeare's language and the possibilities for audience interaction provided by their "lights on" approach to the plays. Tickets will be available beginning Nov. 1 at the English Department front desk, 400 Old Mill.

Information: 656-3056

contemporary conflicts inside the Islamic world as well as conflicts between the Islamic world and the West.

Discussing the fight against terrorism as a guest on the PBS program "NOW with Bill Moyers," Esposito said, "I think we ought to be able to fight terrorism without it being a worldwide class of cultures, but, that's going to require a good deal on everybody's part. It's going to mean that, for example, the United States pursue the war on terrorism in a very focused, proportionate way, in a way which is multilateral not unilateral."

Esposito has written many books on Islam, including *Unholy War: Terror in the Name of Islam*, *The Islamic Threat: Myth or Reality?* and *Voices of Resurgent Islam*. He is also editor-in-chief of *The Oxford Encyclopedia of the Modern Islamic World*. Atwood information: 656-4565, Esposito information: 656-3080

Vermont's First Physicists

A colloquium scheduled for Nov. 5 at 4 p.m. in 400m A442 of Cook Physical Science Building will explore "Physics at UVM in the Early Years," discussing the university's monumental 1807 purchase of scientific equipment.

Robert Arns, a professor emeritus of physics, and David Hammond, current physics instrumentation coordinator, will explain what the university purchased, how it was used, how UVM managed to afford the cost, and how the institution recovered after losing the apparatus in the Old Mill fire of 1824. Looking at these questions, Arns and Hammond suggest, provides clues to the nature of physics teaching of the time and to the university's early ambitions and chaotic history.

Information: [Physics Colloquium](#)

Fleming Museum Kids' Program Celebrates 20th Year on Saturday

The Fleming Museum will present its annual community family day on Nov. 6 from 11 a.m. to 4 p.m. The event, "Ravens, Trees & Bumblebees," builds on the museum's current exhibitions to explore the intersections of art and nature for children ages 4-8 and their families.

Participants will have the opportunity to interpret the natural world through an inviting mix of hands-on activities, artist demonstrations, and explorations in the galleries. Activities include creating nests, painting bird eggs, drawing detailed botanical pictures and experimenting with Chinese brush painting.

General admission is \$3. The event is free to Fleming members and to faculty, staff and students at UVM, Burlington College, Champlain College, Community College of Vermont and St. Michael's College. Information: 656-0750

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University Communications
86 South Williams Street
Burlington, Vermont
05401-3404

pho 802.656.2005
fax 802.656.3203

theview@uvm.edu

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Publications and Presentations

Mark Byrne, who recently received his degree in physics, and **Sanjeeva Murthy**, an associate professor of physics, published an article in collaboration with scientists from National Chemical Laboratory in Pune, India, in the journal *Polymer*. The article is titled, "Effect of Molecular Orientation on the Crystallization and Melting Behavior in Poly (ethylene terephthalate)"

David Jones, an assistant professor of business administration, presented two papers with colleagues to a NATO Task Force Group on Military Recruitment and Retention in Brussels, Belgium. One of the papers, which has been conditionally accepted for publication in the *Journal of Applied Psychology*, was a meta-analysis of the recruitment literature intended to identify the most effective practices for affecting applicant attraction to organizations and other relevant outcomes (e.g., application decisions, job offer acceptance). The second presentation, a theoretical paper Jones wrote with colleague, discussed the effectiveness of particular recruitment strategies within the context of the research literature on persuasion and attitude change.

Kenneth Rothwell, professor emeritus of English, recently published a second edition of *History of Shakespeare on Screen* with Cambridge University Press. Rothwell updated the book, first published in 1999, with revisions and an additional chapter updating the chronology to 2004. During the last year, Rothwell has spoken on Shakespeare in film for the New York City Shakespeare Society at the Kay Playhouse, at the University of Malaga in Spain, at the University of Rouen in France and at the City College of New York.

October 27, 2004

Awards and Honors

Karen Plaut, professor and chair of animal science, received this year's John C. Finley award, named in honor of a former Vermont Commissioner of Agriculture, and presented to an individual "whose character, dedication to Vermont agriculture and education, and whose accomplishments most closely resemble those goals, ideals and achievements that were so important to John. This award is bestowed annually upon that individual held in the highest esteem by the Vermont Agriculture Community." The award was presented by John's daughter Kate and by Jackie Folsom, who nominated Plaut for the honor, at the recent annual meeting of the Vermont Dairy Industry Association.

Dr. **Mildred Reardon**, associate dean for primary care and clinical professor of medicine, won the "Founder's Award" at the annual meeting of the Vermont Medical Society on Oct. 23. Dr. **Jerold Lucey**, received the group's distinguished service award, the society's highest honor. Dr. **Joseph Haddock**, clinical associate professor of family medicine, received the physician of the year award. Dr. **Frederick Bagley**, clinical associate professor of surgery, was honored with the physician award for community service.

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Dead Day, Living Tradition

By Kevin Foley

Article published Nov 03, 2004



Lecturer Irma Valeriano's altar celebrating Day of the Dead is on display on the fourth floor of Waterman through the end of the week. (Photo: Kevin Foley)

The fourth floor of Waterman, at least today, is an excellent place to be dead. The living are luring the deceased back with blandishments: an altar laden with fragrant flowers, bowls of peanuts, ripe fruit, a mole as dark as the fertile soil of Oaxaca. There are pictures of lost loved ones, brightly colored overlays, a bottle of mescal.

It's Nov. 2, Day of the Dead, and Irma Valeriano, a lecturer of romance languages, is

putting the finishing touches on an altar celebrating a tradition that melds the Indian beliefs of Southern Mexico with aspects of western religion. The day is a celebration of heritage, family and the ongoing presence of dead in the lives of the living.

In a few hours, friends, relatives and community members will gather with Valeriano and her family for tamales, enchiladas, sweet breads and conversation. Scholars from Valeriano's department and Latin American Studies will discuss and analyze the meaning of the tradition. Students will taste the traditions they discuss in class. Valeriano tries to organize the celebration here every year — it's her way of sharing and maintaining a cultural holiday she has treasured since her childhood in Oaxaca, Mexico.

But recreating a Mexican celebration so far north isn't easy. "For the last week or so, with all the work on this, we've needed aspirin every night," she laughs.

Setting the tradition

After all, Vermont is no Oaxaca. The pastries so easily purchased from bakeries, here must be made laboriously by hand. The lava rock *molcajetes* necessary to grind spices and chiles into a deeply flavored base for a traditional mole sauce are nowhere to be found. And the sugarcane — well, don't ask. But it's a labor of joy. "You learn to love and appreciate your tradition more when you are away for a long time," Valeriano says. "That happened to me. I became more Mexican when I moved to Vermont."

Returning to the work of maintaining tradition, Valeriano can only shake her head.

"The flowers, which should really be marigolds, are a problem every year," she says, pointing to a wilted (if fragrant) garland around the rim of the altar. "We say we're going to keep them alive in pots, but it's hard. You need a greenhouse."

This is the fourth year of celebrating the Mexican folk tradition at UVM, and Valeriano, helped this year by her mother visiting from Mexico, has been working for four days, cooking, assembling altar decorations and organizing

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[Life an the Interface](#)

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[Fascinated By Fear](#)

William Falls, an associate professor of psychology who explores the neurobiology of fear and trauma, likes to joke that he didn't "discover the brain" until graduate school.

events. In a few hours family and community will gather to laugh, eat and honor their ancestors. While Day of the Dead is not a party, it's not a time for lamentation, either. Valeriano says the holiday reflects a fundamentally different view of death than is typical in western culture.

"It's not a sad day. The dead are in a good place. They are still among us," she says. "When we gather, we remember the good things. It's like having a dinner or lunch with them again. Of course, if you have someone in your family who died recently, it's bittersweet, but for the most part it's truly a celebration."

Next year, Valeriano hopes to enlist more people from UVM and Burlington in assembling the altar and celebrating the holiday. She says, "The more people we have, the better results we'll get. We're trying to really get this tradition set here."

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University Communications
86 South Williams Street
Burlington, Vermont
05401-3404

pho 802.656.2005
fax 802.656.3203

theview@uvm.edu

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Life on the Interface

By Kevin Foley

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"It's sometimes uncomfortable, because often you're working with extremely gifted people who don't totally get your take," says University Scholar and M.D.-Ph.D. Richard Albertini of his 'interface' approach. "Sometimes pure scientists, who are interested in mechanisms, think 'applied' is a bad word. On the other hand, with pure physicians, the lab is ivory tower and unrealistic."

Richard Albertini calls it "the interface." It's the sometimes-uncomfortable place where medicine and theoretical science interact, where laboratory bench techniques extend to patients' bedsides. It's also the mindset and approach that has defined Albertini's career.

Albertini, who retired in 2000 but continues at the university as an emeritus professor of medicine and microbiology and molecular genetics and a research professor of pathology, is a

University Scholar this academic year, one of UVM's highest honors for sustained excellence in research or scholarship. The title of his University Scholar Lecture, which he will deliver on Nov. 10 at 4 p.m. in Memorial Lounge, Waterman Building, is "Genetic Toxicology: Protecting the Genome."

The talk's title is representative of Albertini's outlook. The professor, who holds both medical and doctoral degrees, is driven by the idea of intervention. He and his team developed the world's most-used field test for monitoring environmental gene damage, and remains active in collecting a store of data on environmental mutations, but what excites him most now, and will be near the center of the talk, is the newer work he and many others are doing in exploring ways to fix genetic damage. Medical genetics, he says, has evolved from a specialty primarily giving advice to parents of children with genetic disorders, to a field developing ways to actually intervene and repair problems.

"Take the big threat now, a dirty bomb," Albertini says. "You get an explosion, and tens of thousands of people are going to be in absolute panic for 20 years with anxiety about radiation and cancer. But what if you had a pill you could take after there's an explosion? Obviously, you want to avoid exposure, and that was our work up to now, to find and avoid exposures. But now, it's becoming possible to directly intervene, and I find that hugely exciting as a physician because I think it is the next step in genetics as applied to humans."

From physician to Ph.D

Albertini's talk will discuss just how new and promising our understanding of human genetics really is. This is fitting for a man whose career has spanned much of the field's growth, from first beginning to understand what DNA does in the 1950's and 1960's, to taking that knowledge and translating it into medical treatments today.

"I started training as a surgeon," explains Albertini, who had a residency in neurosurgery. "I liked the surgical situation, the ability to intervene and do something reasonably decisive, but I didn't care to spend the hours cutting and sewing necessary to achieve that decisive end."

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Day of the Dead

The fourth floor of Waterman, at least today, is an excellent place to be dead. The living are luring the deceased back with blandishments: an altar laden with fragrant flowers, bowls of peanuts, ripe fruit, a mole as dark as the fertile soil of Oaxaca. There are pictures of lost loved ones, brightly colored overlays, a bottle of mescal.

Fascinated By Fear

William Falls, an associate professor of psychology who explores the neurobiology of fear and trauma, likes to joke that he didn't "discover the brain" until graduate school.

Albertini dropped surgery and became an internist focusing on organ transplantation, blood diseases and the surgical situation. When the time for his clinical fellowship came, Albertini decided to spend it in the University of Wisconsin's famed genetic laboratory, pursuing work related to tissue transplantation. As he took more courses, his interest grew, and he eventually began pursuing a doctorate. Then came the exchange that shaped his career.

In the midst of "that horrible torture session called the prelim exam," one of Albertini's mentors, mindful of his training as a physician, challenged him. "He asked me, 'Could you test for mutations that happen in the body and could you use that to monitor populations for a bad environment?' I thought, 'Jeez, could you?'" Albertini remembers. "It was an intriguing question, and it pushed me through my whole career."

He spent the next several years working through the problem. After arriving in Vermont in 1972, Albertini and his colleagues found a way to test for mutations in white blood cells. These cells, T-lymphocytes, lead the body's immune response and can be damaged by ionizing radiation and certain chemicals and environmental factors. As the damaged cells reproduce themselves, passing corrupted genetic material to their progeny cells, and those cells, in turn, reproduce, the risk of cancer increases.

But, as Albertini points out, measuring mutations in the body requires precise selection — discarding millions of healthy cells to find the one damaged one. "The test at first was very imperfect, it made all kinds of mistakes, and was the wrong way to do it, and the reason I've had a lot of experience in consulting about making mistakes in this area is because I believe I've made them all," he says. "It took another 10 years to come up with the right test, but we were on the right track."

Albertini's successor to the first crude approach, the HPRT test (hypoxanthine guanine phosphoribosyl transferase test), is used throughout the world to measure mutations in people, and is a key component of the emerging field of genetic toxicology. Publications from Albertini's group range from population studies of genetic damage of workers in Czech chemical plants, to 1991 Gulf War veterans exposed to depleted uranium, to more work on organic mutations caused spontaneously when T-cells are reproducing themselves in an immune response. Albertini and his associates at BioMosaics, the Burlington-based private start-up firm where he serves as executive vice president of research, think their work analyzing these mutations may one day yield new approaches for treating autoimmune disease.

The test, and the approach behind it, assessing the condition of a particular "reporter gene" that affects T-lymphocytes, has been highly productive, but the scientist is quick to put it into context.

"There are 30,000 genes. We're looking at one. That's always been a problem. We have one gene and one cell type. We want to look at many genes and many cell types. There is a long way for younger people in this field to go," he says.

And older ones. Albertini and colleagues are working on developing a different assay looking for mutations in a different gene that relates to different cell types.

Back to the 'interface'

Albertini doesn't work quite as much as he used to, spending more time at his home office with his laptop or raising sheep at his Underhill farm, but he's still active in writing and research and advising graduate students. Beyond his passion for the work, he says he is motivated by a desire "to replicate people who will work on the interface," who can transform the endless questions raised by research into *answers* that work for doctors and patients.

"This is not to say I'm uninterested in people who are pure scientists or pure physicians — I'm interested in both. But I like the interface," he says, pointing out that both of his sons are physicians, one working in gene therapy and medical oncology, the other doing surgery. "I've passed on the tension," he continues. "The arguments my sons have with each other about what is relevant are the same arguments I had with myself 30 years ago."

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Fascinated By Fear

Professor is working to unlock the brain mechanisms of post-traumatic stress in hopes of finding ways to relieve it

By Jon Reidel

Article published Nov 03, 2004

Bill Falls, associate professor of psychology, studies mice to better understand the neural systems involved in the acquisition, expression and inhibition of conditioned fear. (Photo: Bill DiLillo)

William Falls, associate professor of psychology, likes to joke that he didn't "discover the brain" until graduate school. His fascination with learning and memory actually started a few years earlier as an undergraduate, but it wasn't until he started pursuing his doctorate at Yale that he began looking at learning in the context of how the brain works.

Since arriving at UVM in 1998, Falls has spent most of his time surrounded by mice, pursuing his research in

a lab on the 4th floor of Dewey Hall. He's focused his attention on the neurobiology of learning, memory and emotion using Pavlovian conditioning procedures in rats and mice to examine the neural systems involved in the acquisition, expression and inhibition of fear.

Much of his work in the lab involves administering stimuli such as light flashes to rats, followed by an unpleasant, although not painful, reinforcement mechanism. Through conditioning, mice eventually associate the light with the shock, similar to the way a person might associate a traumatic experience from their past with a related sight, sound or smell.

"What I've been interested in for the last 10 years is the idea that once we've acquired these memories, what are the brain areas that are allowing us to learn not to be afraid any more — to alter that memory?" Falls says. "Re-learning is a hot topic. Clearly our ability to learn new things and re-learn and modulate what we've learned is a fundamental aspect of the way we learn and remember. We know it's not the case that you learn one thing and that's it."

Falls says various forms of therapy have been successful at mitigating the intensity of bad memories, but that relapse is not uncommon and not always explainable. He believes that determining which areas of the brain cause relapses and create feelings of fear and anxiety will pave the way for discovering ways for the brain to erase or re-learn these traumatic memories.

Lingering trauma

Some memories can last a lifetime and can be very difficult to erase or re-learn. Someone with a traumatic memory of a sexual assault, natural disaster, or war tends to produce memories associated with the stimuli that were around at the time of the event. In some cases, this can be debilitating enough that people will not venture outside, ride in a car again, or trust another man.

"What a lot of therapy does is to deal with those memories by re-exposing you

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[Day of the Dead](#)

The fourth floor of Waterman, at least today, is an excellent place to be dead. The living are luring the deceased back with blandishments: an altar laden with fragrant flowers, bowls of peanuts, ripe fruit, a mole as dark as the fertile soil of Oaxaca. There are pictures of lost loved ones, brightly colored overlays, a bottle of mescal.

[Life an the Interface](#)

Richard Albertini calls it "the interface." It's the sometimes-uncomfortable place where medicine and theoretical science interact, where laboratory bench techniques extend to a patient's bedside. It's also the state of mind and approach that has defined Albertini's career.

to those stimuli that have been associated with the traumatic event and allow for nothing bad to happen. With Vietnam veterans there were some researchers who would literally sit them down and make them view the movie 'Platoon.' Eventually, viewing these things over and over and over again tends to extinguish that fearful memory."

Falls says this type of therapy can make the traumatic memory go away, although he uses the phrase 'go away' cautiously. "The focus in the lab is how does that memory go away. How does it extinguish? Is there some area in the brain that's responsible for this and what it does?" he says.

Falls says his colleague Professor Mark Bouton is a leader in the field in identifying the process through which animals extinguish these kinds of memories. "What he has found is that if you train an animal with tone and stimulation and then present the tone over and over again, fear goes away. But if you do that in a particular environment... the fear memory stays specifically in that room. If you move the animal to another room, fear returns."

Therefore, Falls says that a person can get therapy that works well in the therapist's office, but doesn't translate very well out in the real world. "It turns out that the extinction learning tends to be very specific to the place where you learn it. Mark's work has definitively demonstrated that the original memory doesn't go away."

This is where Falls's research comes in. "I have colleagues tell me their patients deal with relapse all the time. If we could learn how that occurs and how to prevent it maybe from a behavioral standpoint there's something we can do, or from a pharmacological standpoint maybe we can do something as well."

The center of the situation

Based on previous research, Falls says the area of the brain that is important for at least the initial processing of a fearful stimulus is the amygdala. If the region is damaged in an animal, or a drug is administered to turn it off, the animal won't acquire the fear memory.

"By inference we say that that part of the brain must be mediating this learning," Falls says. "There's a lot of work in humans as well to show that your ability to recognize fearful facial expressions is dependent on activity on this area of the brain. That leaves us to ask: when fear becomes dysfunctional – when it becomes anxiety disorder, post-traumatic stress disorder – is that a dysfunction of the amygdala?"

In Falls' view, theories about fear really get down to brain mechanics. "If it really is erasure then we can go back to the learning theories and say they were right, it was erasure. If the brain really does it by inhibiting that original memory, then we go back to those theories. So there's a very basic science, theoretical drive that I have."

But ultimately, Falls hopes his research one day helps people directly.

"I have colleagues who are clinical psychologists who treat anxiety-related disorders and it would be wonderful to think I could inform therapeutic interventions or development of new drugs to treat these disorders. So that's always the motivation," he says.

theview

University Communications
86 South Williams Street
Burlington, Vermont
05401-3404

pho 802.656.2005
fax 802.656.3203

theview@uvm.edu

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