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Poet and former MacArthur fellow Galway Kinnell visited campus to speak with students and read his work. *(Photo: Sally McCay)*

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Into the Center

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Stuck on Traffic

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THE WEEK IN VIEW

Sept. 18 **7:30 p.m. Presentation: "Recent Research on St. Lawrence Iroquoians in Vermont," James Peterson, anthropology. Memorial Lounge, Waterman. 656-4389**

Sept. 19 **5 p.m. Films: *True Colors* and *Not in Our Town*, issues of race and discrimination. Marsh Lounge, Billings. 656-7990**

Sept. 21 **1 p.m. Women's Tennis vs. Skidmore. Indoor Tennis Faciltiy, Patrick Gym.**

Sept. 24 **6 p.m. Community Medical School: "The Mad Cow Epidemic and its Relationship to Creutzfeldt Jakob Disease," Dr. William Pendlebury, pathology. Carpenter Auditorium, Given. 847-2886**

Sept.25 **12:15 .m. Lecture: "Portraits of UVM Alumni," Bill Lipke, art. Fleming Museum. Lunch available for purchase. 656-0750**

Sep. 25 **3:30 p.m. Lecture: "Moving to Systems Thinking," Thomas Patterson, Richard Schramm, community development and applied economics. 301 Williams Hall. 656-0095**

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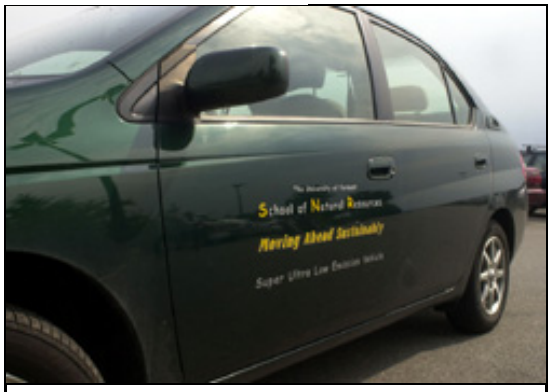
NEWS BRIEFS



SNR's New Car
When the School of Natural Resources was needed a replacement vehicle this year, it purchased a Toyota Prius super-ultra-low emission hybrid gas-electric car.

The vehicle is used for transportation to meetings and research at other UVM locations instead of the trucks and vans used previously. "Moving ahead sustainably" says the sticker on the door – and this car hustles forward at around 50 miles per gallon with negligible pollution. *(Photo: Bill DiLillo)*

UVM Cited as National Leader in Service

A new national initiative to call attention to universities with outstanding community service programs has chosen the University of Vermont as an exemplary institution. CampusCares, a network of higher education associations across the country, selected the University of Vermont based on its impressive diversity of community service ventures.

"This is not a surprise to me," Andrew Feldman, assistant director for community service, said. "Our students are engaged in so many different ways both here in Vermont and around the nation with service."

CampusCares selected UVM because it "offers service programs that are nationally recognized for their achievement. Their activities illustrate higher education's dedication to fostering among students, faculty and staff a commitment to community service and civic engagement."

Among UVM's many programs, CampusCares cited Community Service TREK, which involves new first-year students in a week of volunteering before classes begin; Alternative Weekends, a series of overnight community service projects; and Alternative Summer Break, a pilot service trip to Alabama and Georgia in May 2002 in which

Reviewing the Ranks

Higher ed communications types (whoops, that's us) find themselves walking a tightrope when the various rankings – *U.S. News and World Report*'s in particular – are published each year. If the numbers are in our favor, time to trumpet the glad tidings. If they fall the other way, let's discuss the dubious merit and methodology of the ratings game.

Three recent reports offer a mixed bag, but mostly good news for UVM. As always, though, it's news that should be taken with a grain of salt.

First, *U.S. News and World Report*'s America's Best Colleges 2003 edition, in which UVM ranked again in the "Top 50 Public National Universities – Doctoral." We're tied at 45th with Ohio University, University of Alabama, and New England neighbors, the University of Massachusetts-Amherst and the University of New Hampshire. Last year, UVM was tied for 44th, but due to ties and the number of schools between us and 50, it's essentially the same spot. Read more about it at US News

Kiplinger's Personal Finance gave UVM some numbers to crow about with a 31-place jump from the magazine's last survey, in 2000. Kiplinger's places UVM number 64 in its 100 Best Public Colleges list, a group narrowed from a field of more than 500 U.S. public colleges and universities.

The *Kiplinger*'s list ranks public colleges and universities based on their value, a combination of quality and cost. Quality factors include four- and six-year graduation rates, faculty-student ratios and average SAT or ACT scores of entering first-year students. Cost factors include total cost, average cost after need-based aid is given and average debt of graduates. UVM moved up in the measure of four-year graduation rate, ranking in the top 20 with universities such as Michigan, Illinois and Virginia. Read more about it at: Kiplinger.

Finally, UVM quietly dropped off the *Princeton Review*'s "Party School" list. Some of the nation's finest universities are included annually in this club that no one wants to join. UVM Provost John Bramley could have been speaking for relieved university leaders across the nation when he said, "I think the whole review is questionable. Nevertheless, we are pleased not to be on that list."

Award Honors Sims, Supports Research

students and staff studied civil rights and diversity and volunteered with an anti-poverty organization.

CampusCares has posted its exemplary institutions and descriptions of their community service activities on its website: CampusCares

Information: Andrew Feldman, assistant director for community service, afeldman@zoo.uvm.edu or 656-2060.

Professor Emeritus of Medicine Ethan Sims earned a national reputation for his expertise on obesity and for coining the term "diabesity" to describe obesity-induced diabetes. Dr. Thomas Lahiri, assistant professor of pediatrics, has drawn attention for his promising work in cystic fibrosis. Both men were honored in a ceremony Sept. 13 at UVM's General Clinical Research Center.

In an acknowledgement of Sims's 50 years of contributions in his field, Dr. Richard Galbraith, director of the GCRC, announced the Ethan Sims Clinical Research Feasibility Fund Award – made possible through a new National Institutes of Health award program called CReFF (for Clinical Research Feasibility Funding). Lahiri became the first recipient of the award.

Lahiri will receive $20,000 to cover direct research expenses, plus the use of the GCRC's staff and facilities – services worth an estimated $154,000. The award will fund his study of glutathione – an anti-oxidant compound that protects the lungs from the type of cell injury that results from inflammation caused by infection – in cystic fibrosis and non-CF patients.

The great-great-great-grandson of Green Mountain Boys leader Ethan Allen, Sims also gained fame for challenging the Atkins Diet claim that a low-carbohydrate diet decreases appetite. His most recent publication, a Dec. 2001 article in the scientific journal *Metabolism*, gained attention from *The New York Times*, which featured Sims in the April 16, 2002 article, "Is Obesity a Disease or Just a Symptom?"

"Dr. Sims' commitment to research has inspired and continues to inspire clinical investigators across the country," Galbraith said. "This award was created to support the work of clinical scientists at UVM who share his passion and skill for uncovering answers to challenging health questions."

In accepting his award, Lahiri said, "I hope that this project can be used as a stepping stone toward understanding CF pathophysiology in both adults and even more importantly, kids, which is where early intervention can prevent disease. It will also serve as a first step in bridging our CF initiative in the basic sciences to the clinical realm."

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EVENTS

Pianist Michael Arnowitt will offer a musical introduction to modernism on Sept. 25. For details, see story below. *(Photo: Charley Freiberg)*

Michael Arnowitt to Perform 1911 Works at UVM

Pianist Michael Arnowitt will perform Sept. 25, in the UVM Recital Hall at 7 p.m. "1911: The Dawn of Modernism," features seven contrasting works by major composers, all written in the year 1911 – a crossroads time in music and world history. Composers will include Stravinsky, Ravel, Ives, Bartok and Rachmaninoff.

Arnowitt, who lives in Montpelier, has performed as guest soloist with the Boston Symphony Orchestra and Kiev Chamber Orchestra, among others. His life and work are the subjects of a documentary film in production by American filmmaker Susan Bettmann and Danish cinematographer Lasse Toft, who will film the concert at UVM.

Arnowitt's performance, which is free and open to the public, is sponsored by the Department of English through the Buckham Fund.

Information: Arnowitt

Conference Seeks to Stop War on Several Fronts

UVM will host a one-day conference, "Stop The War: Organizing for Global Justice, Peace and Democracy," Sept. 21, sponsored by the Burlington Anti-War Coalition. The conference, in the Campus Center Theatre, Billings, will run from 9:30 a.m. to 4:30 p.m. and is free, although donations will be welcome to defray speaker expenses.

Among the panels and workshops are:

- The War Abroad
- Iraq: A Decade of Sanctions and War
- Afghanistan: The First Phase of Terror
- The War on Palestine: A Struggle for Self Determination
- The War at Home
- Defending Our Civil Liberties
- The War Against Women

Information: 863-2345, ext. 5

NOTABLES

Sept. 18-Sept. 24

Awards and Honors

Steve Beville, in his fifth year as head coach of men's lacrosse, will be inducted into Washington College's Athletic Hall of Fame on Oct. 5, in Chestertown, Md. As an undergraduate there, Beville started every game for four years. He was a First Team All-American and National Defensive Player of the Year in Division III in 1984 and 1985. He also was co-MVP of the team in 1985 and was a two-time winner of the Joe Mclain Most Valuable Defensive Player Award. Washington College participated in three national championship games during his career.

Publications and Presentations

Catherine Donnelly, professor of nutrition and food sciences, was quoted in the Aug. 19-26 food issue of *The New Yorker*, in an article on raw milk cheese. The article cited a study that Donnelly conducted on raw milk cheese for the Cheese of Choice Coalition. Donnelly, a lover of aged, raw-milk cheeses, notes that they "have enjoyed a remarkable safety record," with illnesses associated only in cheeses contaminated *after* pasteurization. As an added bonus, Donnelly has since been contacted by colleagues and UVM alumni, from all over the country, who read the piece.

Robert Gordon, professor of anthropology, will present an invited paper on "'Dirty Words': The history of labeling African populations" at a workshop on "Origins of humanity and diffusion of human populations" at the Lanzerac Wine Estate in South Africa, Sept. 17-19. The workshop is organized and sponsored by the African Human Genome Initiative.

Michael Wilson, professor of mathematics, has published a paper, "Paraproducts and the exponential-square class," in the *Journal of Mathematical Analysis and Applications*. Two other papers of his recently were accepted for publication: "Weighted two-parameter Bergman space inequalities,", in *Publicacions Matemàtiques*; and "A semi-discrete Littlewood-Paley inequality," in *Studia Mathematica*.

Dana Hardy, a pre-veterinary senior in animal science recently presented her undergraduate research at the annual meeting of the Poultry Science Association held at the University of Delaware in Wilmington. The title of her presentation was "The Effects of Feeding Raw and Heated Velvet Beans (*Mucuna pruriens*) on the Histology of Selected Organs in Male Broilers." Her work was supported by UVM's SUGR/FaMe program and by the Rockefeller Foundation project, "Increasing Mucuna's Potential as a Food and Feed Crop." Dr. **Lyndon Carew** professor of animal science, is her academic advisor, and **Scott Mischler**, associate director of animal care management, and **Ela Zakrzewska**, visiting scholar in animal science, and Abel Gernat of the *Escuela Agricola Panamericana*, Zamorano, Honduras were co-authors. Her work was well received and as a result she has been invited to do an industrial internship in avian nutrition. Her work will be included in an invited symposium and workshop paper by Carew in Kenya, Africa, Sept. 23-26. Carew also recently presented his research, "Changes in Organ Size, and Plasma Levels of Thyroid Hormones and Insulin-like Growth Factors in Chicks Deficient in Dietary Arginine," at the meeting. Co-authors were **Fran Alster**, Zakrzewska and John McMurtry of the USDA, ARS, Growth Biology Lab, Beltsville, Md.

Bret Golann, visiting assistant professor of business administration, presented a paper titled "Managing Growth and Responsiveness: Process Management and Responsiveness in Entrepreneurial Firms" at the UIC Research Symposium on Marketing and Entrepreneurship in San Diego, Aug. 1-3. He also was invited to

chair sessions on entrepreneurial growth strategies and expansion barriers.

James Sinkula, professor of business administration, published an article in *The Journal of Business and Industrial Marketing* titled "Market-based Success, Organizational Routines, and Unlearning."

September 11 – September 17

Awards and Honors

David Harrison, assistant professor of business administration, has been selected as the Nicole Maria Stata Professor for the coming year. He will lead the Stata Lecture Series and continue his research in the area of real estate finance. The lecture series will bring nationally recognized business experts to campus to share their insights with the university and business communities.

J. Tobey Clark, director of Instrumentation and Technical Services, received the Cliknical/Biomedical Enginering Achievment Award in June. Clark has been at UVM since 1976 and has been director of the department since 1993.

Alumnus **Jeffrey Augello** '95 has been selected for the prestigious Knauss Marine Policy Fellowship. supported by the Sea Grant College Program. He was nominated by the Lake Champlain Sea Grant program, which includes UVM and which will administer the grant. The fellowship was established to provide a unique educational experience to students who have an interest in ocean, coastal and Great Lakes resources and in the national policy decisions affecting those resources. Augello has a B.S. in environmental studies and received a master's degree and a J.D. from a joint program at Vermont Law School.

Publications and Presentations

Kurt E. Oughstun, professor of electrical engineering, computer science and mathematics, was invited to participate in a Quantum Optics workshop at the Kavli Institute of Theoretical Physics, University of California at Santa Barbara, this past July. The program brought together the quantum optics community in order to generate and discuss new ideas about slow light, stopped light and fast light. The first week of the workshop focused on metamaterials, which can be designed to possess a negative refractive index. The second week of the workshop was devoted to fast light and addressed the possibility that an ultrashort pulse could travel faster than the vacuum speed of light in dispersive materials and systems. Oughstun presented a seminar, "On the Myth of Superluminality in Dispersive Pulse Propagation."

Anthony Julianelle, lecturer in mathematics, served as chair of the local arrangements committee for Mathfest 2002, the major national summer meeting of the Mathematical Association of America. Held at UVM Aug. 1-4, this year's event was the largest Mathfest ever. Julianelle also co-chaired the General Paper Session with **Robert Wright**, professor of mathematics, and gave a talk on grading the AP calculus exam.

September 4-September 10

Publications and Presentations

Robert Manning, professor of natural resources, and **Steven Lawson**, a post-doctoral associate in the department, contributed the cover article for the August issue of *Environmental Management*. Their article, "Carrying Capacity as 'Informed Judgement' ", discusses the emerging "science of values" in park and wilderness management, and suggests theoretical and methodological approaches that could also apply to a much wider range of resource and environmental issues.

Jonathan Sands, professor of mathematics, served as one of four organizers for "Stark's Conjecture and Related Topics," a major international number theory conference held at Johns Hopkins University from Aug. 5-9, 2002. The 65 participants included many leading experts in number theory. Sands played a role in obtaining grants, inviting speakers, scheduling talks, and making a budget. He will also serve as an editor of the conference proceedings.

Poetic Visitation

By Lynda Majarian

Poet and former MacArthur fellow Galway Kinnell visited campus to speak with students and read his work. *(Photo: Sally McCay)*

A lonely young boy plucks a dusty volume off his parents' bookshelf. He reads Edgar Allan Poe's poem, "Annabel Lee," and falls in love with language. He begins writing poetry in the style of Poe, William Butler Yeats, Hart Crane and the Romantic poets he loves, only to have his work ridiculed by a college professor. But he perseveres, keeps writing, and goes on to collect a Pulitzer Prize, National Book Award and copious other honors, including a stint as Poet Laureate of Vermont.

Galway Kinnell, looking every bit the poet in a tweed jacket, longish graying hair and thick glasses, shared his personal passage into poetry, creative inspirations and writing techniques with UVM students on Sept. 17, as sunlight poured through the stained glass windows of John Dewey Lounge.

Kinnell, who divides his time between New York and Vermont, cited the title of Vermont State Poet as his greatest honor. He succeeded Robert Frost, who held the post both in life and posthumously.

"I practically had to dig him up to get it," Kinnell joked, noting that the post is now limited to a four-year term.

At an early age Kinnell said he discovered "a dimension to existence we never encounter in ordinary life," and an affinity for quiet reflection of the natural world.

"Humans are a lonely species," he told the students. "Our connection to the Earth is compromised by our separation from animals, but we are creatures of the Earth, too."

Many questions posed to Kinnell concerned his poem, "The Bear," a vivid description of a man who tracks and kills a bear, then crawls inside its body for warmth. Unlike most of his poems, he said, "The Bear" isn't rooted in personal experience but was inspired by a short story and a friend's recounting of Native American hunting techniques.

Later that afternoon, Kinnell read "The Bear" and several other poems, most of them autobiographic reflections full of sensual imagery of nature, animals, human emotion and what he calls "the realm of the ordinary." Staff, students and faculty crowded into Memorial Lounge for the reading, many finding seats on the floor. Among those in attendance were former Gov. Madeleine Kunin, UVM President Daniel Mark Fogel and his wife, Rachel Kahn-Fogel, and English Professor David Huddle, who invited Kinnell to campus as a guest of the department's Writers Workshop.

The Past Fast
Archaeologist John Crock spends his days racing into the past. His job is to uncover Vermont's past civilizations – before the backhoes turn an 8,000-year-old site into a modern housing development.

Into the Center
Day care, like childhood itself, is a mystery. We send our children every morning, but rarely ask the obvious question: What do they do all day?

Stuck on Traffic
"Building new roads is not the solution," says traffic expert Adel Sadek. The assistant professor of civil engineering, who recently won a NSF grant, instead advocates that we think our way out of congestion.

"Galway has been visiting UVM since I began teaching here in 1971," Huddle said. "He was then one of our foremost poets, and he still is." Huddle noted that Kinnell's poem, "When the Towers Fell," which was published in the Sept. 9 issue of *The New Yorker*, "has become one of the most discussed poems in the world."

An elegy to those who died in the Sept. 11 terrorist attacks, Kinnell said it took him a year to write the poem. "For the first six months, it was a rotten piece of writing," he said. Slowly the poem came together in a collage format that incorporates fragments of poetry by François Villon, Paul Celan and Walt Whitman.

Although he occasionally completes poems in one or two drafts, Kinnell said his creative process is usually slow and laborious.

"When do you know a poem is done?" a student asked.

"I think its done when I can put it away and not fiddle with it for a few months, then pick it up and have no impulse to change it," he said. If the poem remains interesting to read, with an ending that has "unexpected force," he is satisfied. But in some cases, such as with "When the Towers Fell," Kinnell said he has found half a dozen "little things to change" since the poem was published. "I hope to live long enough to fix the flaws until all my poems are perfect," he said. Kinnell advised budding poets to "make every word shine with all its details, until the poem is a living thing."

Kinnell said Crane, Whitman and Emily Dickinson were his best teachers. Whitman showed him that a great poem didn't need to rely on rhyme or meter, and Dickinson's ability to pack enormous meaning into a small surface helps him try to keep his poems short. "I wish I could keep all my poems small," he said, "but they tend to grow by accretion."

Modernism was in vogue when Kinnell began writing, and his initial attempts to share his more lyrical work in a college class met with criticism. "I wasn't too upset," he said. "I expected a long apprenticeship." Eventually he found a professor who encouraged him, but persistence may have been Kinnell's greatest mentor. "I couldn't change at the behest of someone else," he said. "I had to find my own way."

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The Past, Done Fast

By Kevin Foley

Bearing witness: Andrew Fletcher of the Consulting Archaeology Program excavates a 3,000-year-old site in Royalton. *(Photo courtesy of CAP.)*

Archaeologist John Crock spends his days racing into the distant past.

As director of the Consulting Archaeology Program, his job is to uncover the physical traces of Vermont's past civilizations – before the bulldozers and backhoes turn a beautifully stratified 8,000-year-old site into a thoroughly modern housing development.

It's delicate work, done on a deadline. This applied brand of archaeology requires Crock and his six permanent colleagues to bridge the work of the academy – preserving and disseminating knowledge – with the demands of the market for construction projects completed on time and on budget. And then there's all the grant writing: Eighty-one proposals last year, with 67 of those funded.

But you won't catch Crock complaining about his work.

"Archaeology is a beautiful thing," he says. "You're outdoors, combining manual labor with an academic pursuit."

Digging for truth

CAP's work arises from provisions in federal and state law that mandate that building projects preserve important cultural heritage whenever possible. Before building, say, a highway bridge, the state might ask UVM archaeologists to survey the site, looking for evidence of past inhabitants. This is often as simple as walking around looking for spear points or pottery sherds.

If an initial survey turns up artifacts, archaeologists might dig a few small test pits and evaluate the findings. If the location appears to have archaeological significance, they might work with engineers at the building project to relocate construction to mitigate the impact. Or, if that's not possible, they might launch into full-fledged data recovery to salvage information and artifacts before they are lost forever.

"We are trying to preserve and protect significant cultural resources," Crock says. "The problem with archaeology is that we can't necessarily tell the significance of something before we find and evaluate it."

Crock's work, because it is prompted by impending development, often takes place at an uncomfortably rapid pace. A good example is a bridge approach in Missisquoi that cut through an unusually rich Native American site. State engineers couldn't redesign an approach, so Crock and his five full-time colleagues jumped in with a warp-speed dig to excavate as much and as well as they could.

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"Vermont facilitates this very well, far better than most states," he says.

Sharing the wealth
After the dig, the pace becomes more deliberate if no less busy. The team spends winters working in the lab, spending three days classifying and cleaning artifacts for every day they spent excavating them in the field. The findings are synthesized into reports and filed with the government; the team also puts the information to work with school and conference presentations.

The halls of the unit's University Heights offices are covered with white boards elaborating Vermont's 12,000 years of archaeology, and photos on the wall show classes of elementary schoolers peering quizzically into archaeological test pits. Some of the work is mandated by law (larger consulting archaeology projects must have a public education component), but much of it is motivated by the archaeologists' desire to share their expertise and enjoyment of their profession.

Though Crock has a Ph.D. from the University of Pittsburgh, several journal papers on Anguillan archaeology, and teaches university classes every chance he gets, his responsibilities as a director mean that those chances are few. So he embraces discussing the team's work with youngsters and historically minded members of the public. In fact, he views it as part of his mission as an archaeologist.

"We can't preserve the past if people don't understand and appreciate it," he says.

Archaeology Open House

CAP archaeologists will demonstrate field and laboratory methods on Sept. 26 from 4-6 p.m. at 112 University Heights. The group will offer guided tours and demonstrate techniques for making stone tools by hand.

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Inside the Campus Children's Center

By Kevin Foley

Supportive environment: Toddlers from the Campus Children's Center explore campus together. The center nurtures kids – and early childhood education research. *(Children's Center photo.)*

Day care, like childhood itself, is a mystery; it's a territory that most adults choose not to explore. We pack our children off in the morning, then pick them up, rarely fully engaging the obvious question: What do they actually do all day? And why do they do it?

A few minutes spent stooping over Dee Smith's light table starts to reveal answers. Smith, a head teacher in the Campus Childcare Center and a talented photographer, has thousands of images. They fill clear plastic slides, cascade out of a file cabinet and cover the bright white surface with miniature images of toddler joy. There's a small girl, extending a chubby finger to point a direction to a clueless passerby. Here's a tiny boy, surrounded by intent cohorts, laboriously extracting a ball from a Plexiglas tube. There's a shot of a tot trio staring at a metal grate as intently as if it were a kabalistic manuscript.

So one answer to the 'what they do all day' question: grates.

"Grates are big," says Smith. "They love to gather around them and check things out."

Answering the second part of the question, the why, isn't hard either, at least not here: The children do what they do because they themselves choose to do it.

That's a simple notion, but a subversive one in American day care. The economics of the profession are tough here – teachers are poorly paid, and programs are expensive and crowded – and those demands sometimes mean regimented, impersonal programs geared toward the needs of parents and profits.

"American day care is generally dreadful," says Dale Goldhaber, associate professor of integrated professional studies and the center's director. "It's too often mediocre at best, downright harmful at worst."

The UVM center, then, is both a service to the community – a full-time, full-year program that provides nurturing care for children from six weeks to five years as their parents work – and a demonstration project arguing for a better way of educating our young.

Goldhaber and his colleagues host 150 to 200 professional visitors a year, and a list of "major" papers and presentations on early childhood education has 48 entries. In large part because of the center's impetus, the number of early

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childhood education majors at UVM has more than doubled in just eight years. As those students intern and work-study with professional teachers at the center, then graduate and start their own professional careers, Goldhaber hopes their skills and values will help spread more much-needed quality care.

Babies without borders

Goldhaber and his colleagues draw inspiration from the state-run child care centers of Reggio-Emilia, Italy, a place where early childhood education is taken as seriously as primary and secondary education and children are placed in stimulating, safe environments to learn things for themselves. Over the years, the UVM centers have had many exchanges with their Italian colleagues, starting an internationalist tradition that has subsequently blossomed into another exchange program with the University of Stockholm.

Italian day care, and the UVM program, start from the basic proposition that children are competent, Goldhaber says.

"What they do isn't unique," he says. "What is unique is that they do it fully."

In this model, children have agency, and ingenious ideas about how the world works. Their behavior, no matter how superficially frivolous, has meaning that a skilled teacher can divine, extend and channel. "We see the glass as half full," he explains. "That turns our teachers into observers. Every moment, they watch the children and think of how they can further what they are doing."

If this conjures a modified *Lord of the Flies* scenario with children running wild and their adult caretakers placidly standing by, fear not. "The kids can't do anything they want," Goldhaber says. But an observer who spends some time around the center will see few discipline problems; the kids want to play, read and explore. A group of three-year-olds present a slightly misshapen art project with the aplomb and enthusiasm of graduate students seeking funding. With help from a teacher, two two-year-olds put on headphones that dwarf their ears and start dancing to Frank Sinatra.

Getting wired

The movement, the music, the art projects: They are fun, but they are also intended to help children develop. The inspiration is an expanding body of neurological research that describes the crucial role of experience in early childhood.

"The research says that a variety of experiences helps the brain develop," Goldhaber says. "You are not born with a fixed and pre-wired brain. The brain needs to figure out what's going on in the world to put itself together properly."

So center kids are constantly offered new experiences and opportunities to interact with objects and each other. In addition to those beguiling heating grates, there are regular tours of campus, and chances for even tiny babies to play with clay and paint. Center organizers have also made a concerted effort to make every cinder-blocked inch of the facility as beguiling and colorful as possible. A mirror-bedecked diaper-changing table, to name just one example, may not seem like much – but to Goldhaber it is symbolic of an entire approach.

"What this is," he says, "is a place for children to grow."

How to Choose a Daycare

The tarnished flip-side of UVM's sterling day care center is the long waiting list and uncertain chance of admission. If that forces you to look at other options, Dale Goldhaber recommends using the following criteria to pick a great place for your child to develop.

- **Look for a national accreditation.**
- **Trust your instincts.** "Are these people you'd like to leave you kids with? Does the approach reflect what you want?" Goldhaber says.

Answer the questions by visiting prospective centers more than once and spending some time there.

- **Trust your child.** If he or she is persistently unhappy, you have a problem. Many kids have trouble with a new place or with separating in the morning – but if the misery continues over time, there may be a problem.
- **Remember, it's not summer camp.** The goal isn't necessarily to keep kids *busy*, it's to keep them *learning* how to make sense of themselves, their world and their experiences.

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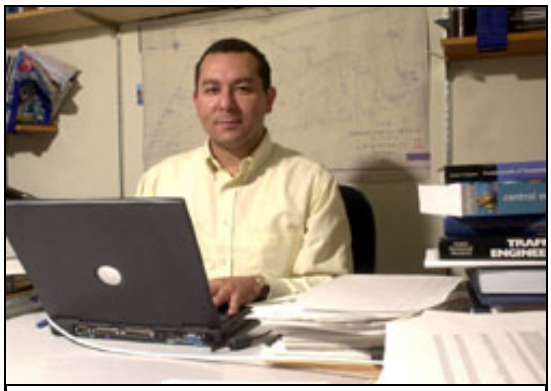
Stuck on Traffic

By Kevin Foley



Adel Sadek, assistant professor of civil engineering, is exploring how computer intelligence can fight traffic congestion. *(Photo: Bill DiLillo)*

One of the many strange things about highway congestion is that more highways usually means more congestion.

Adel Sadek, a genial engineer with closely cropped hair, shakes his head at a mental image of six lanes of intractable gridlock. "People recognize now that building new roads is not the solution," he says. "You can't build your way out."

The assistant professor of civil and environmental engineering and traffic expert, who recently won a five-year, $400,000 grant from the National Science Foundation, instead advocates that we think our way out of the problem.

Using the same computational intelligence tools that help credit card companies aggregate millions of data points to detect fraud, or drive those uncanny Amazon.com book recommendations, Sadek is trying to unlock thorny questions. What land-use patterns complement existing roads and bridges? How can we unify and rationalize the fractured management of those assets?

The "neural networks" he uses (so named because they emulate the machinations of the human brain, even though Sadek says "they don't, really") to address these problems can mine data to determine how highways, bridges and other transportation assets interlock. This, in turn, may support more efficient management decisions that better anticipate the perverse and complex ways that decisions play out on real roads.

Another application of computational intelligence (systems that are occasionally, and only somewhat accurately, called "artificial intelligence") that interests him is in land-use planning. Classic traffic engineering anticipated development, then predicted the traffic associated with that growth and finally designed appropriate roads and bridges. Sadek is working on using neural networks to reverse that model – he seeks tools that can examine an area's infrastructure, *then* determine what kind of land use is appropriate. Growth could then be limited in discrete areas where it might cause traffic problems, and permitted elsewhere.

"We need to learn how to use what we have better, because of the problems associated with trying to build more roads," he says.

Two ironies

That's a slightly unusual thing for a civil engineer to say – after all, a large part of the profession relates to building things – but Sadek loves taking on the "soft" questions of intelligent traffic design. As a graduate student at the University of Virginia, after finishing a "hard" master's thesis, he decided that instead of building physical infrastructure, he would explore how to manage it.

Poetic Visitation
Galway Kinnell spoke to students and read his poetry on Sept. 17. His stint as Vermont State Poet succeeded that of Robert Frost, who held the post both in life and posthumously. "I practically had to dig him up to get it," Kinnell said.

The Past Fast
Archaeologist John Crock spends his days racing into the past. His job is to uncover Vermont's past civilizations – before the backhoes turn an 8,000-year-old site into a modern housing development.

Into the Center
Day care, like childhood itself, is a mystery. We send our children every morning, but rarely ask the obvious question: What do they do all day?

The multi-disciplinary nature of traffic engineering drew him in. The field draws economics, politics, decision theory, management information systems and computer science. It's complex, and intriguingly ambiguous. "It's not an engineering problem with a system that you can control," Sadek says. "You're dealing with individual choices that you can't and shouldn't control."

Sadek says his interest in bringing computational intelligence to traffic engineering, which is related to a movement called intelligent traffic systems, is "catching on" in the field, which is changing rapidly as building millions of miles of roads becomes increasingly impractical and palatable. Much of the energy in the field is concentrated in places with, well, bad traffic – Florida, Boston, Northern California, Virginia. "It's demand-related," Sadek says.

And yet he pursues his research in placid Vermont, where a 20-minute Route 2 tie-up is about as bad as it gets.

"We're lucky and fortunate here in Vermont to not have a huge congestion problem," Sadek says. "It's a great place."

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