

UMaine Today

CREATIVITY AND ACHIEVEMENT AT THE UNIVERSITY OF MAINE

MAY/JUNE 2005



My Life as a Taste Tester

YOU WANT ME TO EAT WHAT?

The Accidental Activists

Quarries of Black Gold

Purpose in Companionship



From the President

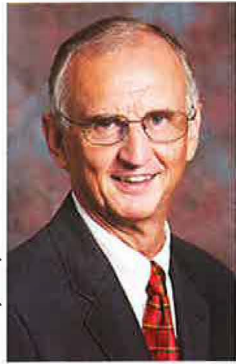


Photo by Kathy Rice

THE CAMPUS LANDSCAPE is one of the University of Maine's most important assets. From its natural beauty, we draw inspiration. Such a living laboratory provides a learning and research environment for students and other members of the university community, as well as the public. As part of UMaine's identity, the horticultural landscape ties parts of the campus together. It also links campus past and present, carrying forward echoes of UMaine's proud land-grant heritage and its roots in campus planning by Frederick Olmsted. The campus landscape reaffirms that, indeed, we're in a great place.

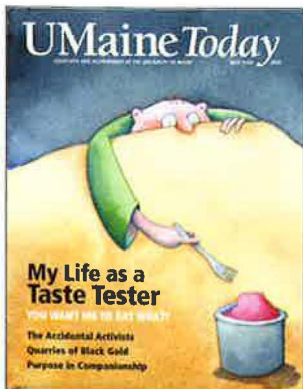
Two recent initiatives in our community are enhancing this natural resource. UMaine's Campus Arboretum and Beautification Committee is developing plans to manage our entire landscape as an arboretum. This exceptional group, led by Professor of Plant Systematics Christopher Campbell, has a vision for enriching the plant diversity and sustainability of UMaine's gardens and green spaces as part of the campus master plan. A goal is to create and enhance outdoor areas for the enjoyment of constituents on and off campus, further raising awareness of the intrinsic value of such a living laboratory.

The committee's work meshes with a concurrent effort, the UMaine Campus Heritage Project. Funded by a prestigious Getty Grant, this initiative incorporates into campus planning historic preservation efforts and research related to landscape design. The project, directed by Associate Professor of History Martha McNamara, also involves an educational component featuring a lecture series and on-campus displays related to this university's rich history. Through these efforts, UMaine will become a modern-day reflection of the important planning that went into creating and developing the campus.

I believe these efforts to focus attention on the landscape and on preserving our links to the past will serve the university and Maine well. UMaine's inherent beauty will become an even more valuable resource for students, employees and visitors.

I hope you will have the opportunity to visit our campus this summer, to enjoy the landscape as it exists and to consider for yourself how it will grow as a statewide treasure in the future.

Robert A. Kennedy
President



ON THE COVER: Despite all the gadgets and gizmos in our high-tech world, there's still no real substitute for the human palate in taste testing. When food scientists like those at the University of Maine want to know if consumers will like new products under development, they conduct sensory evaluations. That's where volunteer taste testers like Nick Houtman come in. Read about his experiences and the science behind new food product development in a story that begins on page 12.

Illustration by Eric Zelz

UMaine Today

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Graduate student Kurt Rademaker struck anthropological gold last summer. High in the Peruvian Andes, he discovered prehistoric quarries of obsidian, the volcanic glass used in toolmaking. His discovery could be the key to understanding how humans settled South America.



6 Thriving in Middle School

A progressive, student-centered philosophy is transforming the educational experience for young adolescents. Middle level education is characterized by students who learn how to learn, teachers who appreciate the particular needs of this age group, and schools that develop into democratic learning communities.



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Sociologist Amy Blackstone's 18-month study of volunteers in an affiliate of the Susan G. Komen Breast Cancer Foundation offers a revealing look at women shunning political, activist and feminist roles to work within society's mainstream ideals.



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Mild-mannered, ever-adventurous science writer Nick Houtman has been a taste tester for 15 years. He provides a first-person account of sensory evaluations — their scientific importance, the serious side of subjectivity, and the fact that there's no substitute for good taste.



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Cooperative Extension's Senior Companion Program offers in-home visits to the elderly so they can live as independently as possible. It also provides meaningful volunteer opportunities for caring individuals like Charlotte Fitzsimmons of Jonesport.

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High in the remote, arid mountains of southern Peru,

University of Maine graduate student Kurt Rademaker struck anthropological gold last summer. He went there hoping to locate large deposits of obsidian, a volcanic glass used for millennia to make weapons and tools. He not only found entire hillsides of obsidian, but also several prehistoric extraction pits — complete with the sticks used to pry obsidian out of the ground — and places he describes as workshop sites.

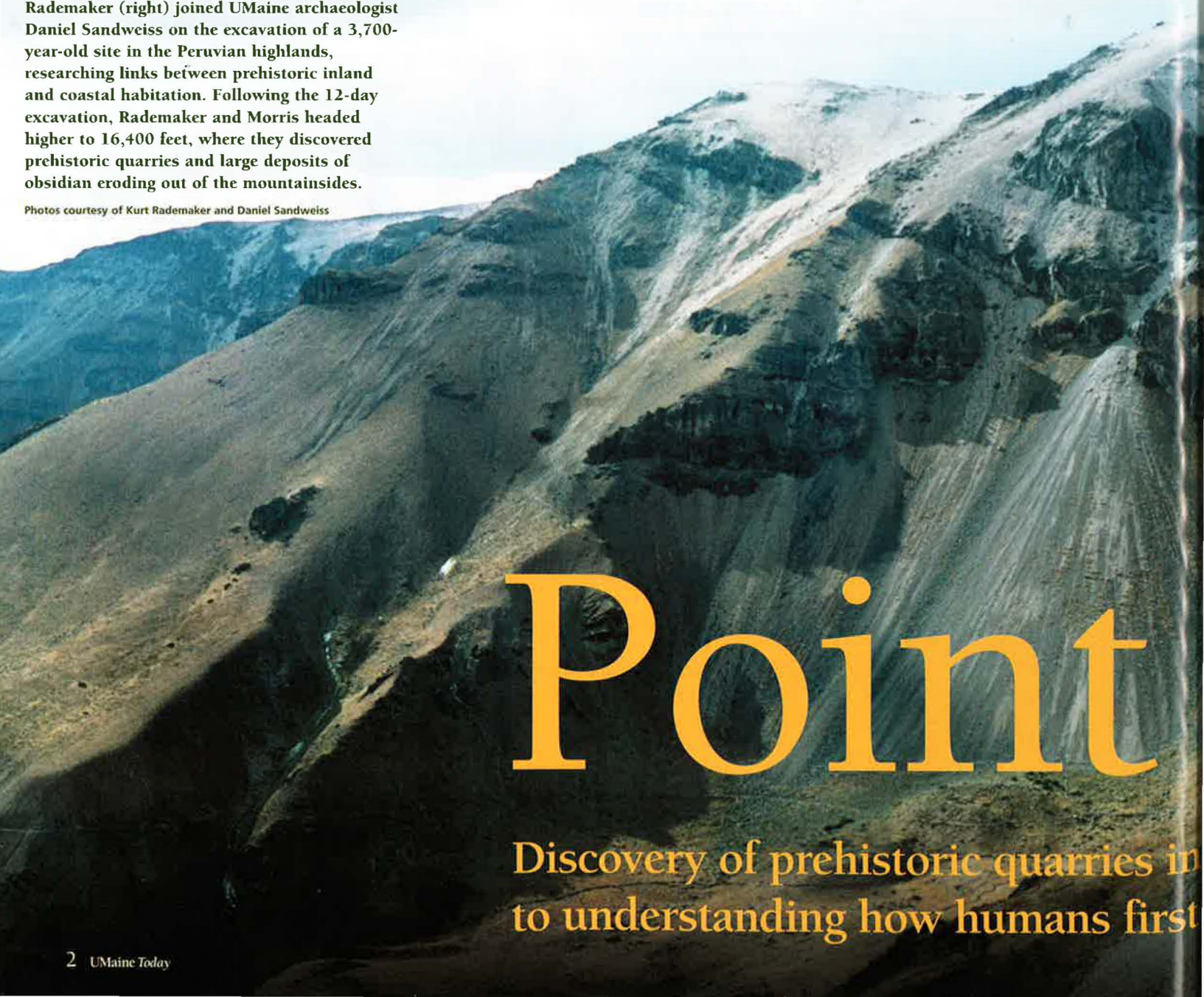
These discoveries could be quite signifi-

cant — in fact, they could be huge — if follow-up research helps to answer questions such as how the first inhabitants of South America got there, how they lived and how people in different parts of the continent interacted. Rademaker thinks important answers are to be found by following the obsidian.

Nearly a decade ago, UMaine Professor of Anthropology and Quaternary Studies Daniel Sandweiss found pieces of obsidian

Last summer, University of Maine undergraduates (left to right) Louis Fortin and Benjamin Morris, and graduate student Kurt Rademaker (right) joined UMaine archaeologist Daniel Sandweiss on the excavation of a 3,700-year-old site in the Peruvian highlands, researching links between prehistoric inland and coastal habitation. Following the 12-day excavation, Rademaker and Morris headed higher to 16,400 feet, where they discovered prehistoric quarries and large deposits of obsidian eroding out of the mountainsides.

Photos courtesy of Kurt Rademaker and Daniel Sandweiss



Point

Discovery of prehistoric quarries in
to understanding how humans first

among the artifacts at an ancient fishing site on the Peruvian coast. That site, Quebrada Jaguay (Jaguay Canyon), was discovered in the 1970s, but Sandweiss was the first to excavate it extensively. First settled around 13,000 years ago, it is the earliest confirmed fishing site in the New World.

Richard Burger of Yale University chemically traced the obsidian that Sandweiss discovered at Quebrada Jaguay to a highland valley about 100 miles inland. That finding raised questions about the relationship between the two areas and the people who inhabited them.

"To find out if there was a connection, we needed both the site at the coast and specific sites (not just a general area) from the same time period in the mountains," says Sandweiss, an international authority on maritime adaptation and the influence of climate on cultural development in South America. "The idea was to go to the highland area where the obsidian was known to come from and look for sites that might be of the same age."

That's what took him and several researchers, including Rademaker, to Peru last year. After helping Sandweiss and his

team excavate a site at about 12,000 feet, Rademaker and some of the others rented two horses and a burro, and went higher.

"As we were walking up the river valley, we started seeing pieces of obsidian at our feet," Rademaker says. "The higher we went, the more incredible it became."

At 16,400 feet, they stopped and settled in for two weeks of geoarchaeological surveying. The obsidian source they discovered in Quebrada Pulhuay spans hundreds of acres.

"It's a world of obsidian up there, literally mountains of it," says Rademaker, a

aXAdY

of Origin

Peruvian highlands could be the key
settled South America

By Dick Broom

native of Kentucky who came to UMaine in 2003 to conduct research with Sandweiss. "For years, archaeologists had been desperately searching for the source of this material, and we came to a place where we were falling all over it. We knew we were in the right spot."

BASED ON BURGER'S chemical analysis of obsidian tools and other objects found throughout Peru from various periods, the researchers knew that a large obsidian quarry area must exist. But on the only two previous scientific expeditions, in the 1980s and '90s, archaeologists focusing their searches in more accessible, lower elevations found only small outcrops of obsidian, with little evidence of serious mining.

"Kurt went up higher and to a different area of the source, and really found the mother lode," Sandweiss says. "He found where the obsidian came from and all the evidence needed to show that people were

Early inhabitants of Peru sought out naturally occurring outcrops of obsidian in order to extract the volcanic glass for tools and weapons.



there working it. That is the exciting thing about what he has done. It explains why one of the two most important sources of obsidian throughout 13,000 years of Peruvian history had previously appeared to be a fairly minor source. Now we know exactly where to focus future investigations."

Obsidian was made into weapons, tools and jewelry. Most obsidian is black, but it also can be gray, red or nearly clear. When it is sliced, the surface is smooth and shiny; it is, after all, volcanic glass. Surgeons sometimes use obsidian scalpels because they are sharper than steel.

Rademaker says it was evident at several sites in the high mountains that obsidian had been extensively mined. "We found the actual digging sticks, pieces of wood that people had cut and used to pry out the rocks," he says.

Because these sites are well above the timberline, the wooden sticks had to have been brought there. Preserved by the cold, dry climate, they might have lain there for hundreds or thousands of years.

Also at the extraction pits, Rademaker and his team found hammer stones used to break the obsidian into smaller pieces so it could be carried away. Not far from the extraction pits were found thousands of obsidian chips, indicating where tools were made. The researchers also found tools, broken and intact.

The most common type of tool used by people in prehistory was the biface. Sharp on two edges, it

could be used as either a knife or projectile point. Rademaker calls it "the Swiss Army knife of prehistoric tools" because of its versatility. Also common were long, thin blades used for cutting.

Obsidian chips found scattered around the workshop sites in the mountains varied



Hammer stones used to break obsidian into small pieces, as well as wooden digging sticks for prying the volcanic glass out of the earth, were found at 15,800 feet above sea level in the remote Chumpullu Valley. Near the prehistoric extraction pits were thousands of tailings or chips, indicating where tools of obsidian had been made. Kurt Rademaker, undergraduate Benjamin Morris and two Peruvian colleagues mapped the boundaries of the obsidian source that spanned hundreds of acres. They also collected more than 100 rock samples for geochemical analysis.

"Do our two sites mean there were two groups of people, interior contact? Was it a highland group that made forays to the coast? Already, we know so much more than we did before last summer."

in size, up to 10 inches. Those found at the coastal Quebrada Jaguay site were mostly tiny slivers. Sandweiss theorizes that some tools might have been made in rough form in the mountains, then taken to the coast for final shaping and sharpening.

NOW THAT OBSIDIAN artifacts have been found in both places, the next step is to determine whether they are from the same period. Rademaker, who plans to pursue his doctoral degree at UMaine, is eager to return to Peru and continue his fieldwork.

"I want to do more thorough mapping and find out more about those sites, possibly through some excavations," he says. "If it turns out that we have found very old sites that are contemporary with Dan's site at the coast, then it would be worthwhile to do a complete highland-to-coast survey. We would try to trace a route between those two points to identify other sites that might fit into the early settlement system."

Excavation of the prehistoric site at nearly 12,000 feet above sea level was led by UMaine Professor Daniel Sandweiss near the town of Alca in the Cotahuasi Valley, one of the world's deepest canyons. Sandweiss and his team unearthed the entrance of a stone living structure, as well as artifacts of obsidian and datable organic remains — the first excavated evidence of preceramic habitation in the Cotahuasi Valley. Sandweiss is investigating the possible connections between the highlands site and Quebrada Jaguay, an ancient fishing village on the Pacific coast.



Such a survey could shed light on the seasonal migration patterns of the prehistoric people and what they were doing in different places at different times. It also could help settle the argument over when and how South America was settled.

"The traditional view is that the first people came down the interior, the spine of the Andes, hunting mammoths and other big animals," Sandweiss says. "Then, when the animals went extinct 11,000 or 12,000 years ago, people turned to other things like fish, small animals and plant foods.

"But this view has been falling apart over the last two decades," he says, "in part because it didn't make sense that they



Bifaces like this were "the Swiss Army knife of prehistoric tools," versatile as implements and weapons. Obsidian is still used today to make fine surgical scalpels.

would just go after big animals. Also, we have been finding sites where people were clearly doing something else, like Quebrada Jaguay, where they were fishing. It seems they were very adaptable, able to make a living in many environments."

Perhaps people were coming down the coast at the same time others were moving through the interior of the continent, or — turning traditional belief on its head — maybe coastal settlers came first and then moved inland. Sandweiss says it is too early to speculate because so few sites have been found and researched. However, evidence of an obsidian connection between the mountains and the coast might prove to be an important clue, bringing scientists a step closer to definitive answers. It certainly raises a lot of questions.

"Already, we know so much more than we did before last summer," Sandweiss says. "We have the first real evidence of a material link between coast and highlands at the very beginning of occupation. This has the potential to be a very exciting and significant piece of the big picture of New World archaeology." ■

**and coastal, who arrived at about the same time and were in
Was it coastal people who made forays into the highlands?
Daniel Sandweiss**

More information about archaeological research in Peru by Daniel Sandweiss and Kurt Rademaker is on the Web www.climatechange.umaine.edu/Research/Expeditions/peru.html

(Thriving) ~~Surviving~~ in middle

A progressive, student-centered philosophy transforms the educational experience for young adolescents

By Dick Broom

IN MARANACOOK COMMUNITY Middle School in Readfield, Maine, the halls and classrooms vibrate with what is best described as an “industrious hum.”

“Visitors tell us they can feel the difference when they come through the door,” says Maranacook Principal Mary Callan. “There isn’t the tightness or rigidity you might feel in a lot of junior high schools. Faculty aren’t looking to catch kids doing bad things. They are in the halls talking to kids because they want to be. Kids love it here, and so does the staff.”

It is much the same at Warsaw Middle School in Pittsfield, Maine, where Teresa Kane has taught for 17 years.



Illustrations by Tamara Jones, Design Intern and New Media Major

school

“A visitor to my class would see students really involved in their learning, taking pride in what they do,” Kane says. “When students are involved, they have an investment in what they’re doing.”

Warsaw and Maranacook are among a small percentage of schools — not just in Maine, but around the country — that have put into practice some of the key concepts that make a middle school different from a traditional junior high, as outlined by the National Middle School Association. The middle school philosophy, which dates to the 1960s, is “progressive and student centered,” according to Edward Brazee, a University of Maine professor of education and one of the nation’s leading experts on the student-centered model of middle level education. Among its hallmarks: students are involved in decisions about what and how they learn; interaction between students and teachers is relaxed, positive and respectful; multiple learning and teaching approaches respond to students’ diversity; and a team approach to teaching a challenging, integrative curriculum allows students to see how different subjects are connected to each other, to the real world and to their own

Successful schools recognize that young adolescents are capable of far more than adults often assume.

interests. Just as critical, today’s middle school philosophy recognizes that young adolescents have unique social, emotional and educational needs. Their teachers value this age group and are prepared to work with students ages 10–15.

“Most important, (students) are learning how to learn,” says Sharon Littlefield, another Warsaw teacher. “They’re not going to remember every bit of information I give them, but they’re going to remember how they learned and take that with them.”

MANY PEOPLE STILL perceive middle schools as being somehow anti-intellectual and non-challenging for students, a place where young adolescents are in an educational holding pattern, Brazee says. “They have gotten the idea that the middle school concept means we just pat kids on the back and make them feel good about themselves. But I have been in hundreds of middle schools in the past 30 years, and I have never seen that.”

Arnold Shorey, principal of Warsaw Middle School, says you won’t see it at his school, either.



“We’re all about maintaining high educational standards, but it’s done in a way that doesn’t sacrifice the student’s self-esteem. Self-esteem of middle level students is very important and very fragile.”

The public’s understanding of middle schools — especially how they connect with elementary and high schools — is clouded by the fact that a lot of middle schools aren’t very different from the junior highs from which they developed, says Brazee, who has studied, taught and written extensively about middle level education in the past 31 years, and is editor of professional publications for the National Middle School Association.

“Many schools changed the name over the door and adjusted the grade levels, but that’s about it,” he says. “They haven’t really followed through on the concept of what middle schools should be. They’ve never implemented many of the best practices.”

One of these practices is multi-age education — teaching students of different ages and grade levels in the same class. Maranacook Middle School has three single-grade teaching teams and three multi-age teams. Parents choose the model they want for their child.

“Some small, rural schools have had to combine classrooms because of budget cuts,” Callan says, “but we chose to have multi-age teams. We researched it, piloted it and liked the results.”

Brazee applauds that kind of experimentation and innovation, but he doesn’t expect to see very much of it in the near future. He says the flowering of the middle school concept has been set back by the current emphasis on high-stakes, standardized testing at the heart of federal No Child Left Behind (NCLB) mandates.

“That kind of testing is so limiting,” he says. “One thing we know about assessment and evaluation is that you can’t use just one

measure. And yet, NCLB has made schools focus on just those standardized test scores. Teachers have to spend so much time on testing and test preparation that it's squeezing the curriculum and some of the programs that have made a difference for Maine students."

Nevertheless, Brazee says there is cause for optimism; he's beginning to see signs that the pendulum is swinging back.

"Schools are starting to say, 'Wait a minute. We've gotten off track. We're not doing right by the kids. They're falling through the cracks even more.' The best schools are finding ways to respond to the federal and state mandates while also doing what we know is important for kids."

IN 1985, BRAZEE started a program at UMaine called the Middle Level Education Institute. Each summer, the institute brings together 200 principals, teachers, parents and school board members from around the country to talk about adolescent education and how to plan exemplary programs. This year, the institute director will be Gert Nesin, clinical instructor of education at UMaine. A UMaine alumna, she joined the faculty in 2003 after spending a number of years as a middle school teacher.

Nesin's main interest is integrative education that builds a democratic learning community. "That doesn't mean the kids vote, but we come to consensus on all the big decisions," she says. "We do it with curriculum, instruction, assessment and classroom management."

Nesin thinks this educational model should be implemented to some extent at all grade levels, K-college.

"It's especially critical for middle schools because that's when students are figuring out who they are and who they want to be," she says. "This shows them that school and life don't have to just be about jumping through hoops. It teaches them that they can do meaningful things and make a difference."

Another important function of middle schools is helping students build relationships among themselves, with teachers and with the community. In schools such as Maranacook, that is the primary objective of the advising program.

"Although advisers are involved in the academic lives of their students, that is not the focus," Callan says. "Their job is to really



pay attention to the social and emotional lives of the kids, helping them to learn about each other, respect diversity and build community."

Many small towns in Maine and elsewhere don't have separate middle level schools, but that doesn't mean the middle school concept can't be applied to the teaching of young adolescents, Brazee says.

"The grade configuration of a school doesn't really matter. What's important is the kind of program we have for our kids. It's implementing the practices that research and common sense tell us really make a difference."

A source of frustration for some Maine middle school teachers is the state's teacher certification system, which offers certification for elementary and high school teachers. Currently, no certification recognizes that middle level educators should have special preparation and competencies. Brazee and Nesin are working with teachers across the state to change that.

Their efforts are bolstered by a 2003 National Middle School Association report, *This We Believe: Successful Schools for Young Adolescents*, which describes 14 qualities of exemplary middle level education. Those qualities include an adult adviser/advocate for every student, organizational structures that support meaningful relationships and active learning by both adolescents and teachers, and high expectations for every member of the learning community.

"Successful schools recognize that young adolescents are capable of far more than adults often assume," the report says.

This summer, the association plans to release a DVD that shows how some schools have incorporated the 14 qualities of excellence. The DVD will feature six model schools around the country, including Warsaw and Maranacook.

A number of other Maine schools have done a good job of implementing integrative team teaching and other middle school concepts, Brazee says. Among them: Leonard Middle School, Old Town; Shapleigh Middle School, Kittery; and Freeport Middle School.

"Maine is ahead of most of the nation in middle school education. It's on the cutting edge," says Nesin, who, like Brazee, works closely with a number of middle school principals and teachers in Maine — a collaboration incorporating the latest research and classroom practice that is making a difference in the state. ■



Accidental Activists

UMaine sociologist studies the politics of volunteering in the breast cancer movement

By Margaret Nagle

EIGHTY-FIVE YEARS AGO, ratification of the 19th amendment to the Constitution brought to a close more than half a century of activism on behalf of women's suffrage that featured various strategies of protest and public discourse challenging a male-dominated political system, and threatening the social mores and domestic ideology.

"If you look at women's suffrage at the beginning of the 20th century, women used volunteerism to be political actors," says sociologist Amy Blackstone, whose research focuses on gender, social movements and civic participation. "Later, with the second-wave feminist movement beginning in the 1960s, women were reconceived as activists and very political. Then came the antifeminist

backlash in the 1980s and the rejection of the progress women made. In the kind of volunteer work that emerged, many women pulled themselves out of politics."

The tension between volunteerism and activism continues today in a movement that faces a male-dominated medical system. In her research on contemporary activism and the politics of volunteering, Blackstone found such depoliticizing in the breast cancer movement. She spent 18 months in an ethnographic study of an affiliate office of the Susan G. Komen Breast Cancer Foundation, an organization formed in 1982 at a time when the antifeminist backlash and self-help movements were gaining momentum.

Blackstone found that the popular Komen Foundation successfully mobilizes thousands of volunteers in nonpolitical activities to

In the suffrage movement at the beginning of the 20th century, women used volunteerism to be political actors. Later, with the second-wave feminist movement beginning in the 1960s, women were reconceived as activists and very political. Then came the antifeminist backlash in the 1980s.

Suffrage parade, New York City, May 6, 1912
Library of Congress Prints and Photographs Division,
"Votes for Women" Suffrage Pictures, 1850-1920



fulfill its mission — raising funds for breast cancer research, promoting awareness of the disease and addressing inequalities within the healthcare system. Volunteers and supporters take to the streets not to protest, but to raise money in the foundation's largest fundraisers held nationwide, the 5K Race for the Cure. Pink ribbons symbolize the foundation's fight to eradicate the life-threatening disease. Women facing issues related to breast cancer are individually empowered to self-advocate in a male-dominated medical community.

The group dedicates itself to a single cause — the eradication of breast cancer — and promotes change by working within mainstream institutions and ideologies, argues Blackstone, a University of Maine assistant professor of sociology. But while much of what the women volunteers do resembles activism, they don't understand themselves to be activists. Indeed, they adamantly shun the label of activist. Or feminist. The result, says Blackstone, is a degree of invisibility, both on the political agenda and in the social valuation of women's volunteer efforts.

According to Blackstone, a focus on empowering the individual is important, but can take away from participants' efforts to construct breast cancer as a social problem.

"Their rejection of the term 'activist' exemplifies their own statuses and life circumstances," says Blackstone, who published her findings in the journal *Gender & Society*. "At the same time, it imposes certain limits on their effectiveness. Without a conception of what they do as political, activists and volunteers think about their efforts as purely self-interested rather than contributing to the public good."

BY FOCUSING ON BREAST CANCER volunteerism, Blackstone studied a kind of "border activism" that has had little examination by scholars of social movements and politics. Blackstone analyzed the connections between activists' gender ideologies and the way they do their activism, as well as the way they and others think about their activism. The challenge is to clarify and reconsider existing definitions of activism — and feminism.

The bottom line, says Blackstone, is that traditional interpretations of women's volunteer work should be reconceived.

Women's roles in volunteerism and charity often are undervalued because they are in keeping with the idea of "women's work," Blackstone says. Their activism takes place within the confines of mainstream ideals, which indicate that it's OK for women to care, but inappropriate for women "to care in a way that might disrupt existing social institutions and social organizations." Trouble is, such ideals contribute to the marginalization and exclusion of women from public life.

"Avoiding politics is about gender because women in particular have historically been relegated to the realm of the private and the nonpolitical," Blackstone says.

The antifeminist backlash "convinced the public that women's 'liberation' was the true contemporary American scourge — the source of an endless laundry list of personal, social, and economic problems," wrote Pulitzer Prize-winning journalist Susan Faludi in her 1991 book *Backlash: The Undeclared War Against American Women*. The goal was to "try to push women back into their 'acceptable' roles."

Faludi cites one example after another: "Just when a 'gender gap' at the voting booth surfaced in 1980, and women in politics began to talk of capitalizing on it, the Republican party elevated Ronald Reagan and both political parties began to shunt women's rights off their platforms. Just when support for feminism and the Equal Rights Amendment reached a record high in 1981, the amendment was defeated the following year."

Hostility to female independence can be seen throughout American history, says Faludi, but in this case, "the antifeminist backlash has been set off not by women's achievement of full equality, but by the increased possibility that they might win it."

SINCE THE BACKLASH that made it unpopular to not fit the mold, and with reinforcement by popular culture, many women have shied away from politics and feminism, seeing both as too combative and not in keeping with the norm. One Komen volunteer told Blackstone that she is neither an activist nor a feminist because "I don't burn the flag or my bra or anything."

Blackstone found women in this segment of the breast cancer movement downplaying the significance of their work, describing their volunteerism as "fun," a great way to meet "so many neat



Photo by Bill Drake

women” and “have a good time.” They cite a desire to change the breast cancer climate for women in the U.S. as a central motivation for participation. The volunteers want change in a positive way, “transcending the dirty work of politics.”

“The point is that they resist being understood as activists and as feminists for the same basic reason — they do not question normative notions of gender,” Blackstone says. Such an interpretation of gender also “prevents them from establishing connections across a broader spectrum of breast cancer or women’s issues groups.”

By adopting a different view of their activity, Blackstone argues, “the Komen women might in fact strengthen feminism by making it more ideologically inclusive and strengthening the breast cancer movement by bringing together currently competing/opposing strands within the movement.”

Nevertheless, efforts by Komen volunteers succeed in securing funding for clinics, education of medical professionals and increased awareness of potential breast cancer patients. While their efforts may be undervalued, the upside, says Blackstone, is that by shirking political and feminist labels, this arm of the breast cancer movement is attracting women who might not otherwise be involved.

“The fact remains,” she says, “that Komen has managed to effect change by not rocking the boat. Being positive and proactive should not negate the possibility that these volunteers are activists or that they are engaged in feminist work.”

In sociological literature, the distinction between volunteerism and activism largely hinges on the extent to which the people engaged in the activity are considered to be outside the mainstream. It also has to do with politics and the extent to which the person is pushing for political change, Blackstone says.

“These women are doing important work that deserves some critique,” says Blackstone. “They’re involved because they care passionately and want to see breast cancer end. If they were able to conceive of themselves as political and with connections to the feminist movement, they would have a stronger voice on the political agenda. Without an understanding of gender that allows them to reconcile their image of the good woman with that of the political actor, these women are left with no choice but to conceive of their work as nonpolitical.”

The hope, says Blackstone, is that women and men ultimately gain an appreciation of the efforts of such volunteers. “Their work needs to be more visible and less taken for granted, and women need to reconsider what they’re doing and be honest about the contributions they’re making,” she says. ■

“Avoiding politics is about gender because women in particular have historically been relegated to the realm of the private and the nonpolitical.”

Amy Blackstone

My life as a taste

The sweet, sour, bitter, salty side of food science product development

By Nick Houtman

Illustrations by Eric Zelz

At my mother's dinner table, these were the rules: sit up straight, put your napkin on your lap, say "please" and don't talk with your mouth full. You got a second helping only after you cleaned your plate. And if you wanted dessert, it had to be really clean, not a pea or potato in sight.

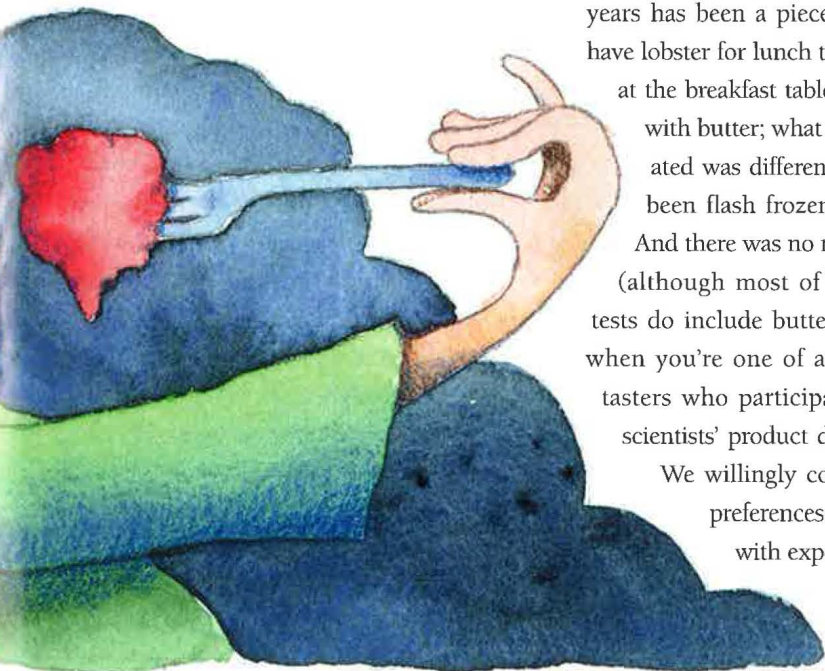
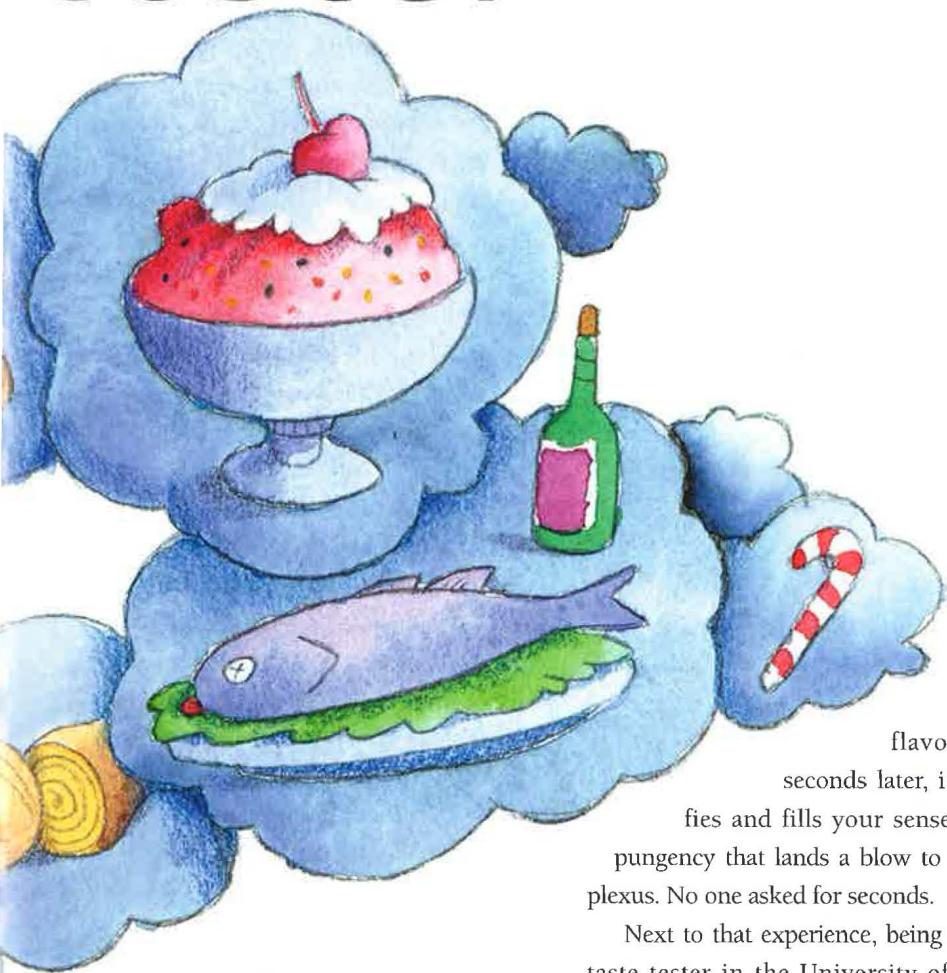
Doing my duty wasn't a problem when favorites were on the menu: cheese soufflé, fruit salad, corned beef hash with ketchup or (I love to watch my children's faces) beef tongue. On the "yuck" list were pea soup, mushrooms, olives and salmon. Imagine not liking pea soup.

As an adult, I've become less picky, more adventurous. After all, science writers like me should be fearless. I once had the chance to try koumiss, fermented mare's milk from central Asia. I am told that it's a specialty best sampled on hot afternoons at sidewalk cafes. Perhaps we didn't give it a fair chance. We held our koumiss tasting party on a cold fall evening in our Maine kitchen.

After I twisted a few arms, everyone eventually had a sip. At first, koumiss seems mild and slightly acidic with a smoky



tester



flavor. A few seconds later, it intensifies and fills your senses with a pungency that lands a blow to the solar plexus. No one asked for seconds.

Next to that experience, being a regular taste tester in the University of Maine's Consumer Testing Center for the past 15 years has been a piece of cake. "Going to have lobster for lunch today," I have boasted at the breakfast table. I prefer my lobster with butter; what I sampled and evaluated was different — lobster that had been flash frozen and then steamed. And there was no melted butter in sight (although most of the center's lobster tests do include butter). That's the reality when you're one of a dedicated cadre of tasters who participate in UMaine food scientists' product development process.

We willingly compromise our food preferences to provide scientists with experimental data.

The lobster test was a good exam-

ple of how product development works. The goal was to find out if the frozen product was as good as fresh. Turned out that it was close enough. Test results have helped to expand marketing opportunities for Maine's most famous product. Frozen lobsters from Maine are now served at international banquets and on cruise ships at locations halfway around the world.

Through the years, the foods I've taste tested have run the gamut from desserts to entrees: brownies and hamburgers made with blueberry puree, apples after several months of winter storage, new varieties of boiled potatoes, trout raised on experimental soybean meal, crab-flavored snack chips, chicken baked in various sauces and berry-flavored frozen soy dessert bars.

Other tasters have tried salmon sausage, which is today made commercially by a company in Waldoboro, Maine. A taste tester friend says she once tried milk from cows fed an alternative dairy feed — plants from the brassica family, such as broccoli, cabbage and kale. To my taste, the mere idea of broccoli-flavored milk is right up there with koumiss.

My life as a taste tester

Sensory testing, as the practice is known in food science, is no romantic candlelight dinner. The lights are bright, conversation is discouraged, and tasters never see the waiter's face. The purpose, after all, is to generate objective feedback, unencumbered by mood music or social graces. Sensory testing is all about science and business.

Take last December's trout test. The United States annually produces about 70 million pounds of farm-raised trout, 75 percent of that in Idaho, according to the

United States Trout Farmers Association. On their way to market, the fish eat a high-protein diet that consists primarily of fish meal. Soybeans might offer an alternative source of protein, but using soy in place of fish meal raises a concern. Would soy change the taste or appearance of the fish?

The job of finding out fell to UMaine graduate student Natasha D'Souza. With support from a United Soybean Board grant and the guidance of UMaine food scientist Denise Skonberg, D'Souza designed a sensory test to compare trout raised on traditional fish meal to those given one of several soy-based feeds. Such tests fall under UMaine's human subject research policies, which look out for the health and safety of participants in university

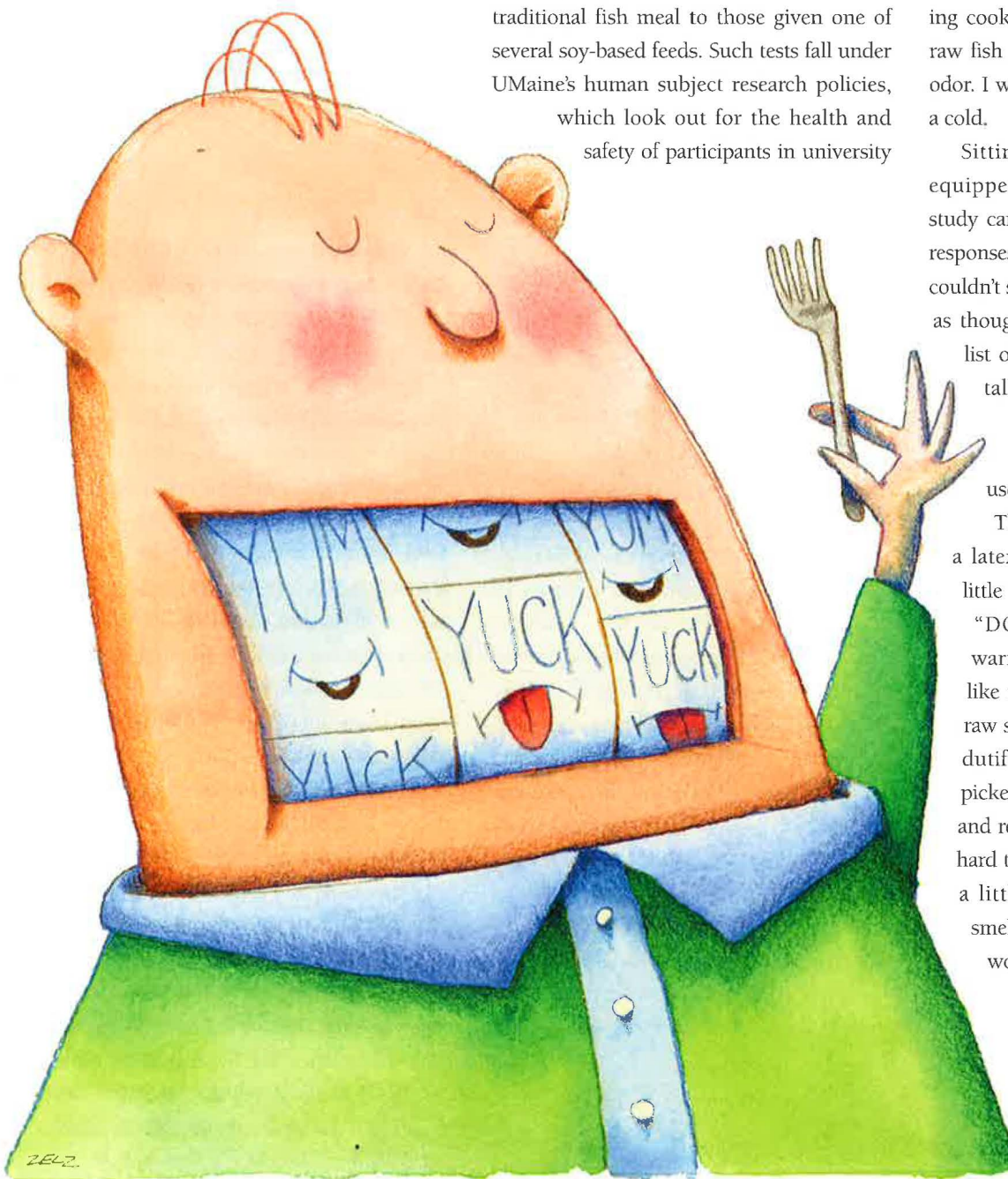
experiments. The regulations even cover participant compensation, which for taste testers are either 30-minute phone cards or points earned toward gift certificates.

Since I like trout, I signed up. Here's the routine: On entering UMaine's state-of-the-art sensory evaluation laboratory, I was informed about the purpose of the test and related risks, such as potential allergies to trout. Out of three samples — pieces of trout in small cups — I needed to select the one with the look, smell or taste that was different from the others. In addition to tasting cooked trout, I had to sniff samples of raw fish to determine if any had a different odor. I was glad that I had just gotten rid of a cold.

Sitting in a brightly lit testing room equipped with furniture that looks like study carrels in a library, I couldn't see the responses of the other guinea pigs, and they couldn't see mine. This is serious stuff. It felt as though we were taking a final exam. A list of rules on the wall warned against talking with neighbors, turning off lights or messing around with the computer in each cubicle that's used to record testers' answers.

The fish samples came on a tray that a latex-gloved hand pushed through a little window in the wall of my cubicle. "DO NOT EAT THE RAW FISH," warned the instruction form. Well, I like raw oysters and sushi topped with raw salmon and tuna, but never mind. I dutifully sniffed the fish in each cup, picked one that seemed a little different and recorded my choices. Frankly, it was hard to tell any difference at all. One was a little pinker than the others. They smelled mild, fresh, slightly fishy. Who would have guessed?

After finishing both sets of samples, I pushed my tray back through the window. The gloved hand replaced it with another, this one with samples of cooked fish, a glass of water



and a plastic fork wrapped in a paper napkin. The lights were hot, and a sip of water was welcome.

These uniformly round patties of cooked fish begged for sauces or cheese. When I think of eating trout, I picture fillets coming off the grill or a whole fish slowly broiled with butter and lemon, served with red potatoes and asparagus. I banished the thought and got to work. The first was a little dry and chewy, but not bad tasting. I breathed through my nose and tried to tease out extra flavors, as though trying a new wine. I spent a minute or two thinking about what I was experiencing, coming up with words to describe it: mild, smooth — well, trout-like.

I repeated this procedure with the other samples, rinsing my mouth with water between each one. It's important to

cleanse the palate completely so as not to let lingering flavors interfere with the new sample. This is so significant that UMaine food scientist Mary Ellen Camire discourages people from smoking or drinking coffee before taste testing. Even some medications can interfere with taste, she says, and tasters taking pills may need to keep their buds under wraps for a while.

Sometimes, taste is less important than appearance. Skonberg reports that the trout tests revealed differences in the color of soy- and fish meal-fed trout. The former had a lighter color. Differences in odor or taste were not significant.

Most tests require testers to answer general questions. Is the appearance pleasing? How is the texture? Does it taste good? On the computer screen, I give answers by clicking on a scale from 1 for "dislike extremely" to 9 for "like extremely."

I've never given a sample a rating of 1, and a 9 is rare. Testing new foods is not a matter of separating the awful from the

scrumptious. It's more a matter of subtleties. One might have a slightly more acceptable flavor or texture than another. However, I have had blueberry products that sing with great taste. I've tried new apple varieties that made me want to seek them out at the grocery store and boiled potatoes easily described as "creamy."

Camire says that what tasters bring to the task can be just as important as the food itself. For example, when scientists need to know how people feel about the color of a new apple variety, they weed out testers who are color-blind. And personal preferences make a difference. If you hate fish, your opinions about soy-fed trout probably wouldn't be useful. If you don't eat meat, you won't be asked to try the reheated hamburger mixed with flavor-preserving blueberry puree.

Food scientists have been doing sensory testing at UMaine since at least the 1930s, she says, and among other things, they have learned that testers are hardwired for taste. When it comes to bitterness, for example, about 25 percent of the Caucasian population has a high taste threshold. It takes a lot for these so-called "non-tasters" to register bitterness. On the other extreme are about 25 percent who are "supertasters," people who are far more sensitive to bitterness than the rest of us.

Getting around all this variation in taste is largely a matter of numbers. With enough people eating at the experimental trough, a general picture about consumer experience tends to emerge. It takes at least 50 people to generate reliable results with a given set of samples, says Camire.

I'm no supertaster, but I am committed to the cause. It's not that I'm looking for treats, hoping that lobster and brownies will come up more often than not, or that the compensation makes my day. I do have genuine respect for the product develop-

Sensory testing, as the practice is known in food science, is no romantic candle-light dinner. The lights are bright, conversation is discouraged, and tasters never see the waiter's face.



Photo by Bill Drake

Graduate student Ashlan Oberholtzer works on the development of new salmon products.

The science of food

UMAINE IS THE ONLY institution in New England and the Maritimes — and one of only 15 nationwide — that offers a formal sensory evaluation program. It is located in a new testing lab on campus, made possible by an R&D bond and Department of Agriculture funding.

With the sensory data compiled in each taste test, scientists then make further refinements in the development of a product. Or they completely go back to the drawing board.

The statistical data help industry make predictions about the validity of new products. Sensory tests to rate a product's flavor, aroma, texture and other characteristics also are instrumental when investigating the trade-offs consumers are willing to make in the name of better nutrition or to support value-added products.

ment process that takes years from conception to the appearance of a new item on store shelves. And I am pleased that there's no real substitute for the human palate. It's nice to know that in an age when robots make cars and you can go shopping without ever talking to a real person, human experience still counts. And I think mom would be proud. ■

Cooperative Extension
Senior Companions
help elders live
independently
in their communities

Organized neighborliness

By Margaret Nagle

The three women have been playing rounds of Skip-Bo for more than an hour, waiting for Bobby to pull in from Machias with lunch. Across the room, two others sit and converse over a card table strewn with jigsaw puzzle pieces.

Only five elders have ventured from their nearby homes this Friday to partake in what's on the menu: spaghetti, served with green beans, roll and dessert. But wait until Monday, assures Charlotte Fitzsimmons, when Meals for Me is serving meat loaf and the planned event is Beano. As many as a dozen folks may be here for lunch.

Today's small turnout doesn't disappoint Charlotte. In addition to serving five meals in the community room, there are 12 going out to shut-ins. She understands why some people aren't here: fear of falling on wet sidewalks, ill health that keeps them indoors, times when solitude is preferable to socializing.

As a Senior Companion, Charlotte has already made mental notes about those in her care and plans her day accordingly. She'll take Viola's lunch to her home in Jonesport, and, later, she'll drop by and see Iona, a neighbor in the housing complex who is home with a cold. Lena, who is helping to set up the lunch table and serve spaghetti, will join Charlotte and her 6-year-old great-granddaughter when they go shopping this afternoon.

"When I wake up in the morning, I have something to get up for," says Charlotte, 79, a volunteer in the University of Maine Cooperative Extension Senior Companion Program for the past eight years. "Sure, some days I think I'd like to lie there a while longer, but I know someone's waiting on me. Being a Senior Companion gives me a purpose in life."

Charlotte Fitzsimmons is one of 100 Extension Senior Companions working in 13 of Maine's 16 counties, serving 615 seniors who benefit from in-home visits and assistance with such tasks as grocery shopping, bill paying and transportation to medical appointments. Each of the volunteers, age 60 and older, living on limited incomes, spends up to 20 hours weekly with up to six seniors, helping them maximize, maintain or regain their independence.





Photos by Michael Mardosa

Charlotte Fitzsimmons (left) pays an afternoon visit to her neighbor Iona (pictured above).

Typically, the two talk over a cup of tea and a snack, discussing their families, church and "the conditions of the world." Iona's husband, Lloyd, had been a Senior Companion in Washington County for several years. "I never dreamed it would one day be something for me," she says. After her husband passed away, Iona was left living alone in her home of 52 years in Beals. "I never had company. I was alone," she says, until she moved last November into the subsidized housing complex where Charlotte lives. Charlotte encouraged her to come to the community room for Meals for Me and for socializing over cards or dominoes. "Charlotte is a very caring person," Iona says. "She helps so many people. I couldn't keep up with her and all she does."

Organized neighborliness



In Jonesport, the community room at the Gaelic Square housing complex is a Meals for Me site. Elders in the complex start gathering at 9 a.m. to play games of cards, dominoes or Beano. By 10:30, all eyes are on the door to catch the first glimpse of Bobby, delivering the Meals for Me. Charlotte helps with the food serving, including preparing carry-out meals to be delivered to shut-ins in the

community. Charlotte knows all the people who come for Meals for Me, including Lucille, Georgie and Grace (top photo, seated left to right), but she is a Senior Companion to Lena (lower right photo), who lives alone with her cat, Daisy Mae. "Lena has come a long way. I'm proud of her," says Charlotte. Lena says Charlotte "keeps track of me" and keeps her busy so "I don't have time to sit and think about myself."

Family members, or health and community service providers, often refer adults who are homebound or isolated to the program. There is no income eligibility, only the prospect that "friendly visiting" by a peer would make a difference in their lives.

The Senior Companion Program is federally funded through the Corporation

for National and Community Service, and supported locally by fundraising efforts. University of Maine Cooperative Extension administers the program in partnership with more than 20 community agencies across Maine. Last year, Extension's Senior Companion Program observed its 25th anniversary.

The program is characterized as "asset-based community development." The ever-increasing senior population is seen as an asset that can help communities deal with issues related to the dramatically shifting demographics.

Nationwide, the number of people 65 and older is growing three times faster than

the younger generation. U.S. Census figures show that, with its aging population, Maine is now the “oldest” state demographically, according to Lenard Kaye, director of the University of Maine Center on Aging. Almost 15 percent of the state’s population — 200,000 residents — is age 65 and older. By 2020, it is estimated that one in five Mainers will be 65 and older. The fastest growing segment is the “oldest old” — those 85 and older.

In Washington County, where Charlotte volunteers, the Senior Companion Program is sponsored in cooperation with the Maine Seacoast Mission’s outreach center, Weald Bethel, in Cherryfield. In 1973, Washington County, one of the poorest, most rural areas in New England, was chosen as one of the first national Senior Companion Program pilot sites; today, it hosts almost half of the state’s Companions and clients.

“Because of the geographic and demographic nature of Washington County, the Senior Companion Program is one of the most important things that happens for elderly in this area,” says Rev. Marty Shaw, pastor and program director of Weald Bethel. “Without the Senior Companion Program, the county would be missing ways to keep people from getting lost.”

Charlotte’s husband, James, a retired minister, was a Senior Companion for five years. When his health was failing, Charlotte took his place, making Senior Companion visits in the mornings, and spending the afternoons with James in the nursing home. When James passed away nearly three years ago, it was the Senior Companion Program that helped Charlotte stay active.

“Doing for others helps,” she says.

In her housing complex, Charlotte is a Senior Companion to three women. Three days a week following lunch in the community room, she spends the afternoon visiting with them in their apartments. Tuesdays and Thursdays, Charlotte is out and about in

Jonesport, visiting two elders in their homes, and stopping at the nursing home to see a client who recently moved to assisted living quarters.

Many days, Charlotte leaves home at 9 a.m. and doesn’t return until late afternoon.



“Because of the geographic and demographic nature of Washington County, the Senior Companion Program is one of the most important things that happens for elderly in this area. Without the Senior Companion Program, the county would be missing ways to keep people from getting lost.”

Rev. Marty Shaw

Since she started, Charlotte has been a Senior Companion to more than 35 people, logging nearly 7,300 volunteer hours. This year, she is one of four Senior Companions in Washington County nominated for the Governor’s Service Award.

“Charlotte has such compassion for people. All of her clients say that her visits are the highlight of their day,” says Extension Educator Deb Eckart, who oversees Washington County’s program. “She makes sure people have as much independence as

possible. She knows the importance of keeping seniors in their own homes as long as possible, giving them opportunities to make their own decisions and to have good quality of life.”

Charlotte talks of her clients as friends with whom she’s been on a lifelong journey. Some she has known since moving to Jonesport three years ago; others she’s just met. She appreciates their strengths and understands their needs.

“She keeps track of me. I call her or she calls me two or three times a day,” says Lena, who lives alone with her cat, Daisy Mae. “Just visiting is our favorite thing to do. Between Charlotte and church, I’m busy, which means I don’t have time to sit and think about myself.”

While Charlotte has known Lena since 2001, she has known Iona for many years. Iona came to live in the subsidized housing complex in November, leaving her home of 52 years in Beals where she was living alone after her husband died.

“I was alone, never had company,” Iona says. “It’s so much better to have friends around. Charlotte brings her paper over for me to read. Most of the time we talk about our families, church and the conditions of the world. The fellowship is the best part.”

When Charlotte was asked to start visiting an elderly man living alone, she broke the ice by “just talking about family. I asked about his and told him about mine.” At the nursing home where she visits a woman unable to speak, Charlotte reads to her. And sings her hymns.

“A lot of times what I do with the people I visit is just listen. It’s something I’ve learned that’s important to people,” Charlotte says.

Senior Companions receive monthly training from Extension on issues related to aging — nutrition and food safety, physical activity, Alzheimer’s, grief and loss, even the best pets for the homebound. In addition, they are advised on community services that

could help their clients, such as federal fuel assistance and Maine's FarmShare Program, which seasonally provides fresh produce.

"The educational training keeps Senior Companions and their clients connected with the world. They gain knowledge and information pertinent to their individual needs," says Eckart. "It makes them feel vital, that life is not passing them by."

The Senior Companions also receive stipends of \$2.65 an hour — roughly as much as \$100 every two weeks. For some of the volunteers, the stipend means the difference between paying and not paying all their bills at the end of the month, but that's not why they do what they do, says Carla

Ganiel, the statewide director of Cooperative Extension's Senior Companion Program for the past two years.

"Senior Companions volunteer because they get so much out of it. In Maine's rural areas, oftentimes people drive miles to get to clients, often transporting them to the doctor or grocery store and not even breaking even (on transportation costs).

"Senior Companions tell us they do it because it makes them feel good to help people and to contribute to society. Seniors often feel disenfranchised, but that changes when they see they can have a positive impact on someone else. These are decent, good people who care about helping others

and about making a contribution."

Because the program is federally funded, University of Maine Cooperative Extension is mandated to quantify its success — a requirement that isn't easy when the best evidence is anecdotal. UMaine Associate Professor of Social Work Sandy Butler has studied the Senior Companion Program in an effort to help administrators of this and other elder-helping-elder programs document their results. As a result of her research, she recommends two standardized measures assessing social networks and depression, coupled with a series of open-ended questions that allow Senior Companions and clients to express the meaning of the program in their lives.

Butler cites many of the elders she interviewed, among them an 83-year-old woman in failing health who said contact with her Senior Companion "has meant everything to me." A 77-year-old man said the best part about being a Senior Companion is "the way they (the elders) look at you when you come in."

For the 12 years she's been directing Washington County's Senior Companion Program, Eckart has heard the same sentiments. "I've had Senior Companions tell me that this gives them a reason to live. Clients have said, 'I can't die today because I'm expecting Charlotte.' They may have had a bad week, but they know their Senior Companion is coming on Thursday and they're going to play Scrabble and read the newspaper, so they can't let themselves go into the depths of depression."

Senior Companions like Charlotte recognize that the giving and rewards flow both ways.

"I'll stay as long as I can," Charlotte says. "I'm 79. I've still got 20 more years to give." ■



Senior Companions like Charlotte make in-home visits. This day, she delivers a meal to a homebound client. The volunteers and the elders spend time talking, reading, playing card or board games, or doing household chores. The elders are encouraged to get out of their homes as much as possible, with the understanding that mobility is a key to wellness. Often Senior Companions transport clients to medical appointments, the grocery store or a Meals for Me site. They also teach elders new skills, bring information to help them live independently in their homes and connect them with social services that meet their needs.

More information about the University of Maine Cooperative Extension Senior Companion Program is on the Web
www.umext.maine.edu/scp/

Sampling 143 lakes in 7 states, 8 weeks

GRABBING A LITTLE BIT of water from a lake can be a lot of work, especially if the waterway is hidden deep in the woods. Bad directions, wrong turns and outdated trail maps make just getting there a challenge. Then you've got to make your way through unmarked trails, bugs, swamps and flooded streams. Out on the lake, you have to hope that it's not too windy to paddle a canoe a few miles, or that your inflatable boat doesn't spring a leak.

University of Maine ecology and environmental sciences graduate student Catherine Rosfjord knows all about the logistics — and loves navigating them. As a scientist in the Senator George J. Mitchell Center for Environmental and Watershed Research, she visited 143 lakes in seven northeastern states last summer as part of her study of long-term water quality trends. The lakes were sampled by the U.S. Environ-

mental Protection Agency in 1984 as part of the Eastern Lake Survey (ELS). With funding from the Northeastern States Research Cooperative, Rosfjord's resampling will allow scientists to assess changes in water quality in the last 20 years.

It was the fieldwork that first attracted Rosfjord to the ELS project. Before coming to Maine to start her graduate work, she was an instructor with Outward Bound in Asheville, N.C., leading groups on backpacking trips in the southern Appalachians.

With Mitchell Center students and staff, Rosfjord accomplished what it took dozens of EPA employees with a helicopter to do 20 years ago. In less than eight weeks, Rosfjord and crew sampled 143 lakes in Maine, New Hampshire, Massachusetts, Rhode Island, Vermont, New York and Pennsylvania.

Data collected will help Rosfjord and other scientists detect changes in water quality. Since the first ELS in 1984, the Clean Air Act was amended to reduce emissions of sulfate, a precursor to acid rain. By measuring water chemistry, scientists can gauge the effectiveness of Clean Air policies.

"I think what we're going to find is that buffering (or acid neutralizing) capacity has decreased in sensitive lakes, so lakes are still acidic even though we have made considerable efforts to decrease acid rain," she says.

Photos courtesy of the Mitchell Center



Photo by Bill Drake

On Paper

KAYTI FROST'S STUDY of the chemistry involved in paper-making has taken her abroad and throughout the state.

This semester, her last as a University of Maine undergraduate, she's working in the lab of UMaine chemical engineer David Neivandt, where she is conducting research to determine how modifying precipitated calcium carbonate affects the physical properties of paper.

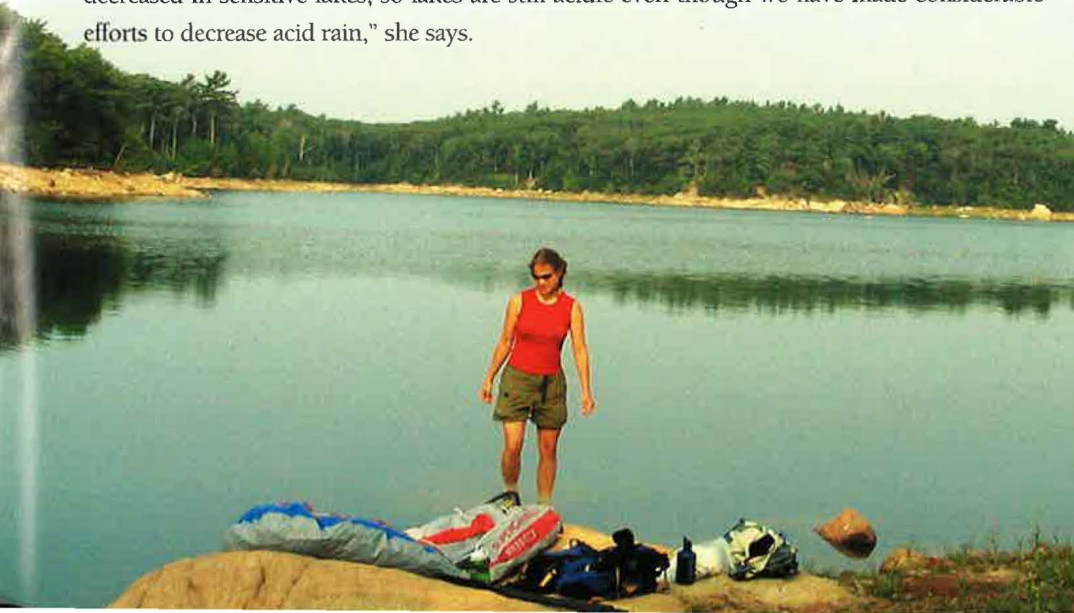
Precipitated calcium carbonate contributes to paper's brightness and opacity.

"The experience has helped in terms of confidence in applying concepts," says the senior from Hermon, Maine, talking about her internship, co-op and research opportunities as an undergraduate. "Working hands-on helps you get a deeper understanding about the application and how things work."

In 2003, Frost had a three-month internship in Belgium at Minerals Technologies Inc., one of the world's leading suppliers of precipitated calcium carbonate.

Last year, her co-op assignments were in Maine at Madison Paper Industries and Georgia Pacific.

When she graduates in August, Frost hopes to pursue an engineering career in the pulp and paper industry, or a Ph.D.





THE UMAINE COLLEGE OF Liberal Arts and Sciences has launched a series of "great conversations" in the community in an effort to share the timely and timeless expertise of its faculty.

Great Conversations kicked off last fall at Homecoming, giving alumni an opportunity to engage in small, roundtable discussions with the college's faculty on the subjects that they teach and research. Since

"Great Conversations is a wonderful opportunity for people to tap into the intellectual energy of the college."

Ann Leffler

then, more Great Conversations have been held with members of the Penobscot Valley Senior College and residents at Dirigo Pines retirement community.

Topics range from "Will my grandchild's best friend be a robot?" to "Why the criminal justice system can't work." Other roundtables focus on the creative economy, the tools of Maine's first occupants, Franco-American culture, term limits and the history of conservation. Discussion leaders come from the disciplines of computer science, English, sociology, history, anthropology, new media and Franco American studies.

"Great Conversations is a wonderful opportunity for people to tap into the intellectual energy of the college," says College of Liberal Arts and Sciences Dean Ann Leffler. "These informal conversations underline in an entertaining way the centrality of the liberal arts in our lives."



Treating Shyness

IMPROVING TREATMENT for children at risk for developing severe social anxiety as adults is the goal of University of Maine psychology researchers studying shyness in youngsters.

Psychology Professor Marie Hayes and Ph.D. student Bethany Sallinen are expanding the study of youngsters ages 8-12 that they began last year.

They are partnering with three Maine hospitals in Bangor, Waterville and Portland.

The research could break new ground in identifying how to treat extremely shy children. By examining the details of parent-child interactions that may promote social anxiety, researchers hope to provide insight into parenting strategies that could improve success rates in families working to overcome shyness issues.

Studies show that about 15 percent of children are shy; about 5 percent are extremely so. A National Comorbidity Survey revealed a lifetime prevalence of

social phobia of 13.3 percent, making it the third most prevalent psychiatric disorder. Extreme shyness can have severe effects on an individual's social life and professional development, according to the UMaine researchers.

Children who are extremely shy or "socially anxious" have difficulty in school: speaking in class, participating in gym and making friends, Sallinen says. "They're less likely to achieve if they are untreated."

Later in life, they look for jobs where they can avoid speaking or expressing themselves, she says. Over time, a lack of achievement and self-confidence can lead to depression because of loneliness and low self-esteem. Early recognition and counseling can turn a child's life around.

Future research will examine the genetic basis of personality traits like social anxiety, which may be present in the parents of shy children.

Extreme shyness can have severe effects on an individual's social life and professional development.



SENSING MILESTONES

A NEW MICROWAVE ACOUSTICS PATENT may lead to a sensor for detecting pathogens in liquids. The patent focuses on crystal orientations that enhance sensor sensitivity in a liquid environment.

A biosensor that detects the presence of proteins and other biomolecules such as DNA could have applications in medicine and public safety, says Mauricio



Summer in the Maine Woods

UNIVERSITY OF MAINE FORESTRY and wildlife students and faculty spend countless hours in the field each summer, taking classes and conducting research on subjects ranging from fungi and insects to white pine and pine marten. As a result, they have a unique perspective on the Maine woods that not all residents and tourists experience. According to UMaine forestry and wildlife experts, you know you've had a true Maine woods experience if:

you have smoked a cigar through a head net to keep the blackflies away.

blackflies and mosquitoes make up a majority of your daily protein between the months of May and August.

you have developed webbed feet.

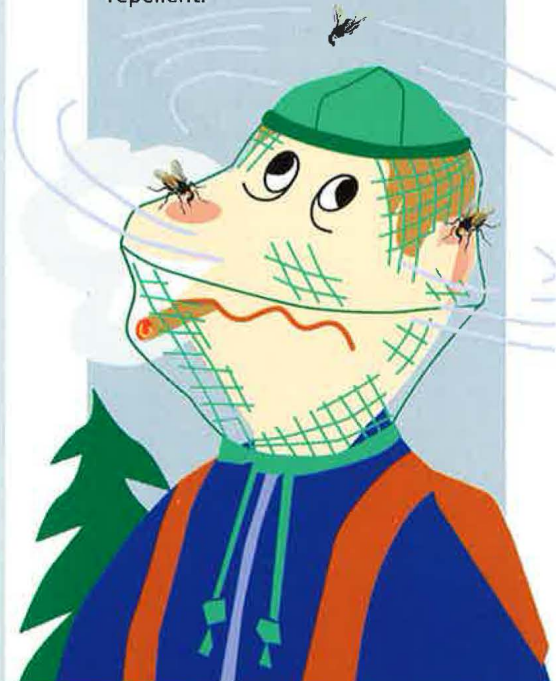
you have buried a truck up to its floorboards during mud season.

you describe "deep" soil as anything over 6 inches.

your truck has 100,000 miles on gravel roads and 10,000 on paved.

you use bug spray and bug nets, and don't shower.

you learn to appreciate all wildlife, including biting insects, by forsaking repellent.



Recycling pickup lines

UNIVERSITY OF MAINE ENGINEERS will work with Saltwater Marketing LLC, an affiliate of the Lobster Institute at UMaine, to develop recycling options for used lobster traplines. The project comes at a time when Maine lobstermen are considering replacing the commonly used ground lines that string traps together in an effort to protect endangered right whales.

The lines are designed to float and thus reduce the chances of snagging on rocks and other obstacles on the sea floor. However, as they hover over the ocean bottom, such lines can present a threat to right whales. Lobstermen are now looking at the possibility of using heavier rope that stays on the sea floor and, therefore, has a lower chance of entangling the whales.

The National Marine Fisheries Service estimates that 5 million pounds of float rope is currently used in Maine as ground line in the lobster industry.

Saltwater Marketing received a \$20,000 grant from the National Fish and Wildlife Foundation's National Whale Conservation Fund to support its Lobster Ground Line Buyback and Recycling (ME) Project. The Lobster Institute, UMaine's Advanced Engineered Wood Composites Center (AEWC) and the National Marine Fisheries Service, Protected Resource Division, will assist.

Saltwater Marketing has contracted with AEWC to develop processing techniques for reusing the rope. Researchers will explore techniques to clean and process the rope into a usable form, and will determine the workability of the material in conventional plastic processing equipment.



THE COLLEGE OF ENGINEERING'S

Advanced Manufacturing Center (AMC) has a new home in a 30,000-square-foot facility made possible by economic development bond funds approved by Maine voters in 2002. Directed by Professor of Engineering Technology Scott Dunning, AMC is an engineering support and service center dedicated to promoting economic development in Maine. With guidance from engineering faculty members and technicians, students design and build devices that meet manufacturers' new product specifications. In addition to prototyping, AMC engineers use their "design-build" approach to solve manufacturing problems and support research programs in the state.

Pereira da Cunha, assistant professor of electrical and computer engineering. Pereira da Cunha and Paul Millard, assistant professor of chemical engineering, lead research teams working together on biosensors. Key to the new sensor technology is the langasite family of crystals that are more sensitive in liquids and are more stable at high temperatures than other sensing platforms, like quartz crystals.

Last fall, master's student Eric Berkenpas achieved the first demonstration of a langasite sensor that detects proteins in liquid. Pereira da Cunha's team has shown successful and reliable operation of langasite-based devices up to 750 degrees Celsius for high-temperature gas sensing. Master's student Jeremy Thiele and Pereira da Cunha earned an Institute of Electrical and Electronics Engineers award for their work on a langasite-based sensor that can detect hydrogen gas and operate at 250 degrees Celsius. Detecting hydrogen is important to the efficient operation of fuel cells, jet engines and power plants.



EPA Fellowships

TWO UNIVERSITY OF MAINE graduate students — one researching a new method for analyzing mercury in sediments, another studying the cultivation and use of the seaweed *Porphyra* — have received fellowships from the U.S. Environmental Protection Agency to support their research.

Karen Merritt, a Ph.D. candidate in civil and environmental engineering, will receive \$105,000 over three years; Nicolas Blouin, a

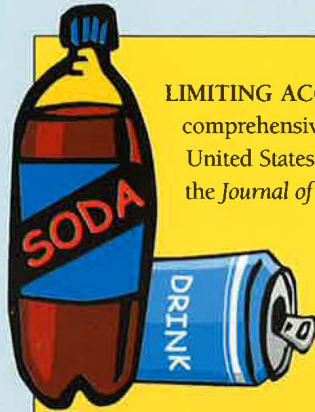
They are among 124 recipients of EPA fellowships recently awarded to students conducting environmental research nationwide.

master's candidate in marine biology, \$70,000 over two years.

Merritt works with engineer Aria Amirbahman on a mercury analysis system using a thin membrane made of chitosan, a material that comes from lobster and crab shells. Merritt's goals are to determine the best way to adsorb or hold mercury-bearing compounds. If successful for mercury detection, the chitosan system could improve the accuracy of mercury monitoring.

Blouin is working with marine biologist Susan Brawley to understand the reproductive mechanisms and potential uses of the common seaweed *Porphyra*, also known as nori and laver. At Schoodic Point, Blouin collects *Porphyra* samples and studies its distribution and abundance. At UMaine's Center for Cooperative Aquaculture Research in Franklin, Blouin is studying techniques for growing *Porphyra* in tanks, as well as its potential to grow alongside finfish aquaculture pens.

Last fall, Brawley and Blouin went to China to study *Porphyra* growing and harvesting.



LIMITING ACCESS TO SOFT DRINKS in schools should be part of a comprehensive approach to reducing obesity among children in the United States, according to a study by three nutritionists, published in the *Journal of Nutrition Education and Behavior*.

University of Maine Associate Professor of Food Science and Human Nutrition Adrienne White and her colleagues — Susan Nitzke of the University of Wisconsin-Madison and Karen Peterson of the Harvard School of Public Health — also emphasize that both exercise and nutrition must be part of obesity reduction efforts. While they note that no single food or beverage leads to obesity, they call on soft drink manufacturers to acknowledge the role that their products play in child health.

Weighing in on Soft Drinks

“Added sugars in foods commonly consumed by youth should be reduced” in order to lower calorie intake, according to the researchers. Water, milk and other nutritious beverages should be more accessible to students than sugared soft drinks.

For more than 20 years, White has studied child and young adult nutrition, focusing on food choices, behavior change and, most recently, obesity prevention.

Building a Better Catapult

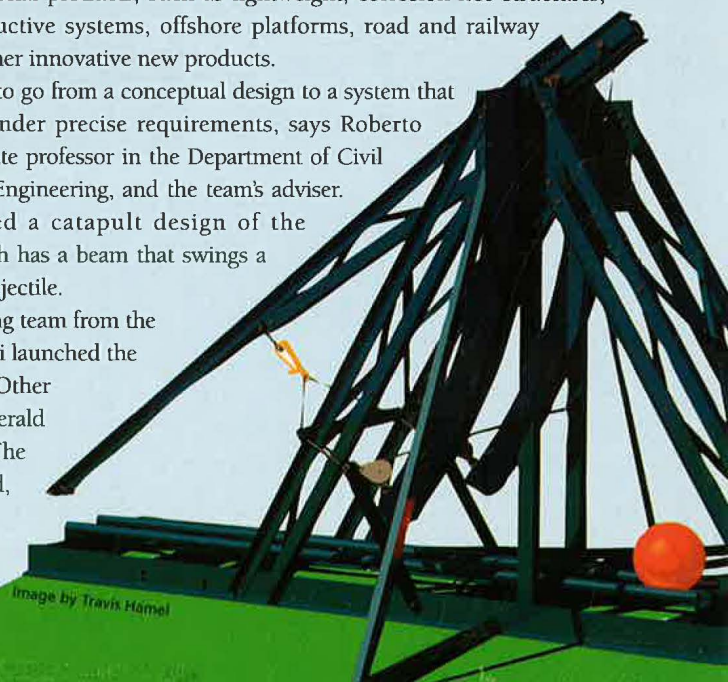
UNIVERSITY OF MAINE ENGINEERING students' understanding of composite material design and construction is launching them into international competition this summer.

They are participating in the Composite Catapult Competition, sponsored by the European Pultrusion Technology Association, July 6–8 in The Netherlands. The event requires them to study the characteristics of pultruded composite materials, and to design and build a machine that can catapult a 13-pound ball. In addition to demonstrating their device in tests of accuracy and distance, they must present their computer-aided design models to a panel of judges.

Pultrusion is an automated manufacturing process for the production of fiber-reinforced polymer composite materials known in industry as profiles. Pultrusion profiles are used for commercial products, such as lightweight, corrosion-free structures, electrical non-conductive systems, offshore platforms, road and railway trucks, and many other innovative new products.

The challenge is to go from a conceptual design to a system that can perform well under precise requirements, says Roberto Lopez-Anido, associate professor in the Department of Civil and Environmental Engineering, and the team's adviser. The team proposed a catapult design of the trebuchet type, which has a beam that swings a sling carrying the projectile.

Last year's winning team from the University of Helsinki launched the ball almost 656 feet. Other participating teams herald from universities in The Netherlands, England, Germany and the U.S.



LASTING IMPRESSION

IT WAS A CINDERELLA STORY, the likes of which college baseball had never seen.

In 1964, the University of Maine played in the College World Series in Omaha, Neb. It was UMaine's first trip to an NCAA championship tournament.

The team from the north was pitted against southern climate powerhouses Arizona State and the defending champs, University of Southern California. The UMaine squad, mostly sophomores and juniors, was led by a part-time coach. One of the team's star pitchers played with a cast on his wrist. Temperatures some days reached 97 degrees.

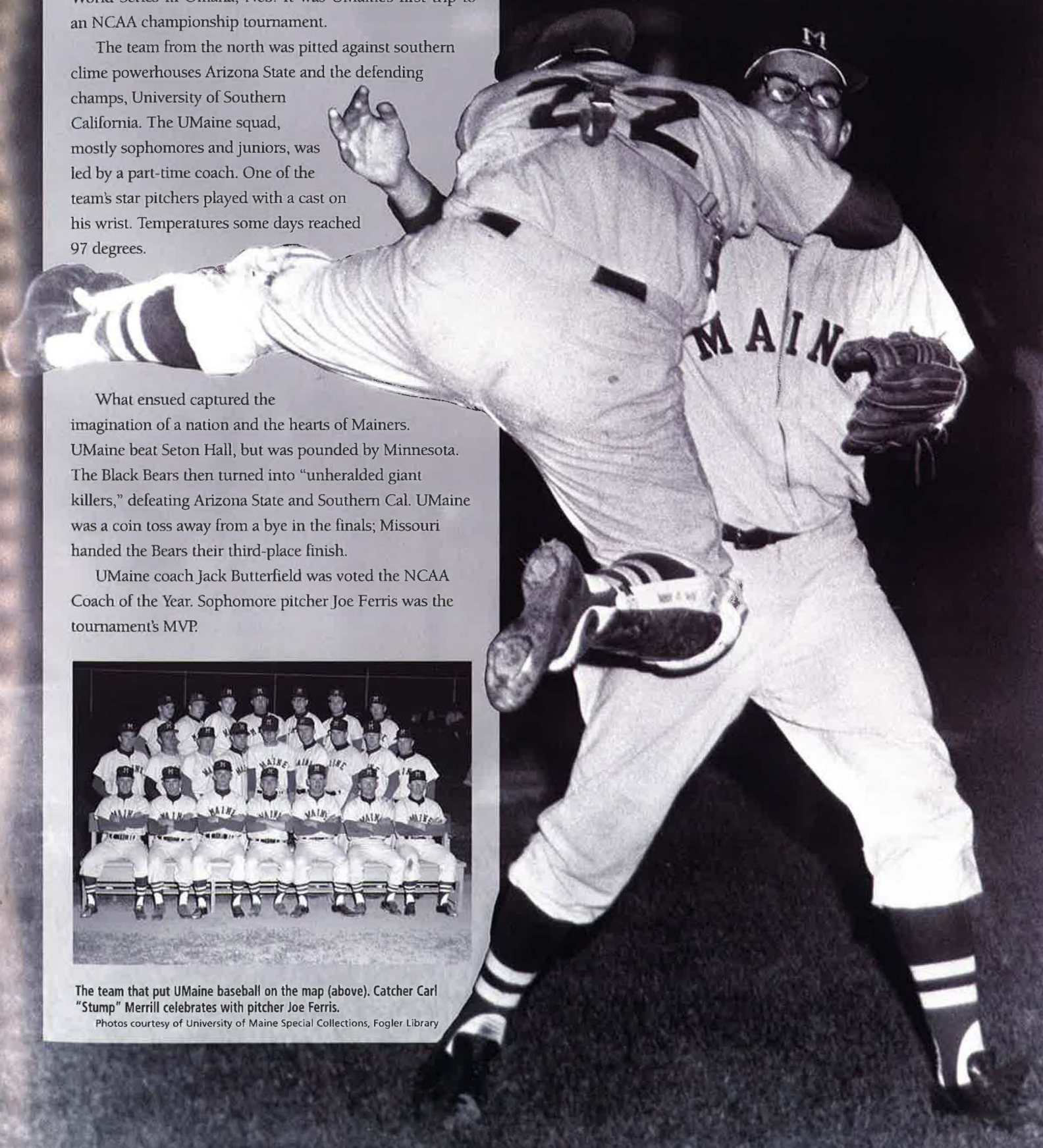
What ensued captured the imagination of a nation and the hearts of Mainers. UMaine beat Seton Hall, but was pounded by Minnesota. The Black Bears then turned into "unheralded giant killers," defeating Arizona State and Southern Cal. UMaine was a coin toss away from a bye in the finals; Missouri handed the Bears their third-place finish.

UMaine coach Jack Butterfield was voted the NCAA Coach of the Year. Sophomore pitcher Joe Ferris was the tournament's MVP.



The team that put UMaine baseball on the map (above). Catcher Carl "Stump" Merrill celebrates with pitcher Joe Ferris.

Photos courtesy of University of Maine Special Collections, Fogler Library



The Honors College

AT THE UNIVERSITY OF MAINE

“ The Honors College provides students with numerous opportunities, the most important of which is the understanding that even college professors can still learn. Learning is a never-ending process and is at the heart of the honors community. ”

Seth Robertson, third-year microbiology honors student

Photos by Bill Drake

SINCE 1937, the Honors Program at the University of Maine has educated and supported some of Maine's top graduates. Among those who graduated with honors and distinction from UMaine are doctors, lawyers, politicians, authors, creators and a Nobel Prize winner. Honors builds on its foundation as a small liberal arts community and classes fewer than 15 students within UMaine's large research institution.

Now in its third year as a college, Honors offers even more breadth to its first- and second-year students, and an in-depth disciplinary experience for those in their third and fourth years. All students in the Honors College complete a Cultural Odyssey, which exposes them to the arts in the greater Bangor area, an opportunity available to them through an endowed gift of generous benefactors.

More than 900 UMaine graduates have completed their degrees with honors. Each of them concluded their undergraduate careers with a year-long exploration, guided by a member of the faculty and culminating in their honors thesis. Most of those theses are bound and archived in the Robert B. Thomson Honors Center.

The Honors College provides students with a unique experience and endless possibilities. Supporting the University of Maine Foundation's Honors College Endowment Fund will ensure that future generations of UMaine students are able to participate in this nationally recognized institution.

