

# UMaine Today

CREATIVITY AND ACHIEVEMENT AT THE UNIVERSITY OF MAINE

SEPTEMBER/OCTOBER 2002



**Monsters of popular culture**

**The politics of  
public opinion**

**Migratory birds  
on steroids**

\$4.00



## From the President

FROM ITS VERY BEGINNING more than 130 years ago, The University of Maine's reason for existence has been to address the state's most urgent problems. Over the years, we have turned our attention to finding better ways to feed a hungry population, bringing Maine into the industrial age, and developing products and technologies to make our economy more competitive.

Right now, we can identify no need more urgent than helping to bolster education in Maine — preschool through graduate school. Although for decades UMaine's College of Education and Human Development has done an outstanding job of educating teachers and providing outreach to schools, it is time for the entire University to become a more central and comprehensive player in support of education in Maine.



Photo courtesy of Bangor Daily News

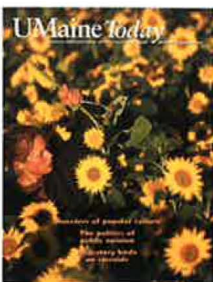
Our Board of Visitors asked me to commission a task force report on the best ways for us to support Maine schools. Based on this report, which surveyed teachers and principals across the state, we have developed a bold plan. Throughout the curricula of UMaine's five colleges, we will place more emphasis on preparing teachers and supporting schools. A University priority will be the recruitment of more prospective math and science teachers to meet a state and national shortage. We also will attempt to make master's degrees in academic subject areas available throughout Maine, providing educators with accessible opportunities for professional development.

I have appointed Dr. Sue Huseman, an established leader in higher education, to head the University-wide effort as Director of UMaine's Center for Teaching Excellence. We are focusing on three primary desired outcomes:

- Teachers in Maine will be more numerous, better prepared, and more effective.
- Maine will have a fully adequate supply of mathematics and science teachers to meet its needs (as well as teachers in other shortage areas, such as special education and languages).
- It will be far easier for teachers to complete advanced degrees, and professors at other University of Maine System campuses to find opportunities for professional renewal by participating in the teaching of master's programs.

Over time, the effect of all these improvements toward meeting Maine's Learning Results, toward increased college attendance and completion rates, and toward improving the state's economy will be remarkable. Success will result from a coalition of the University System, state government, teachers, and school administrators. Maine schools and teachers will always be the stars of this show. We are here in a supporting role. Partnering with Maine's schools, we intend to help them do their overwhelmingly important job.

Peter S. Hoff  
President



ON THE COVER: University of Maine student Maria Reynolds of South Solon, Maine, harvests sunflowers at Rogers Farm for the Black Bear Food Guild. The student-operated community-supported agriculture project of UMaine's Sustainable Agriculture Program distributes fresh flowers and organically grown vegetables to shareholders throughout the summer and fall. Reynolds, a senior majoring in studio art, is one of six UMaine students in the guild this season. See related story page 23. Photo by Michele Stapleton



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*UMaine Today* is produced six times a year by the Department of Public Affairs, The University of Maine, 5761 Howard A. Keyo Public Affairs Building, Orono, Maine 04469-5761, 207-581-3744.

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Printing and distribution of *UMaine Today* is underwritten by the University of Maine Foundation.

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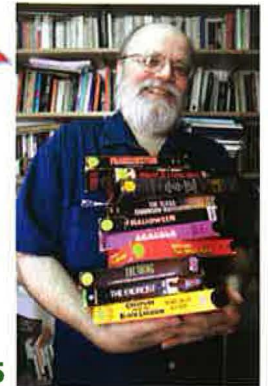


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School-age girls are fighting among themselves, using relational aggression to gain self-esteem and power. Research by UMaine's AAUW Scholar in Residence Lyn Mikel Brown examines that dark underside of girls' friendships, looking at both its effects and causes.

## 5 Lessons in Classic Horror Films

UMaine English Professor Welch Everman is changing the way people view horror movies. He urges students to "read" the popular culture artifacts as critically as they read a text, analyzing the ways such flicks challenge the status quo of the dominant culture.



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Leading Business

UMaine Today won a bronze 2002 Circle of Excellence Award from the Council for the Advancement and Support of Education.





# Fighting to Be Somebody

Research on Girls' Relational Aggression Shows the Need for Activism



**N**o more sugar and spice, and everything nice.

In the past year, the national spotlight has been shining hot on a seemingly new population of mean-spirited girls living largely unbeknownst to most people. They are school-age girls who, among themselves, wield forms of aggression — gossip, betrayal, teasing, competition and rejection — like invisible weapons in their struggle to gain self-esteem and power in a male-dominated culture.

Women's studies and education scholar Lyn Mikel Brown calls it girlfighting.



While popular books and the media are just now discovering this secret world, a handful of nationally recognized researchers such as Brown have been studying this phenomenon for years. Brown's research examines the dark underside of girls' friendships and peer relations — not only its effects but its causes.

Brown, an associate professor at Colby College, Waterville, Maine, is an American Association of University Women (AAUW) Educational Foundation Scholar in Residence at The University of Maine. For the past two years, she has conducted research in collaboration with UMaine's Women's Resource Center, studying the ways girls' subordination within the culture affects their relationships.

Brown is the author of two books: *Meeting at the Crossroads: Women's Psychology and Girls' Development* (written in 1992 with Carol Gilligan), and *Raising Their Voices: The Politics of Girls' Anger*, a study of Maine girls and their class-related expressions of anger and resistance to conventions of femininity. Her work as a visiting scholar at UMaine will be reflected in a third book, tentatively titled *Girlfighting: Betrayal, Teasing, and Rejection Among Girls*.

Drawing from her 15 years of research, as well as studies conducted at The Harvard Project on Women's Psychology and Girls' Development, Brown has analyzed interviews with hundreds of girls, ages 5-20, to fathom the complexity of girls' friendships and the societal context that leads us to believe simply that girls, by nature, are catty and cruel to one another.

As part of her two-year residency as an AAUW visiting scholar at UMaine, Brown has presented her research findings in the state and throughout the country. In a conference on campus Oct. 5, Brown will be joined by five other authors and scholars on girls' development. "Girls Will Be Girls? Aggression, Sexuality, and Body Image" will focus on "girls as allies" — a counter-culture look at how girls can be strong individuals, supportive of one another, ultimately breaking the destructive cycle of girlfighting.

The following Q&A segment highlights Brown's research on girlfighting.

## Why are girls' friendships so important?

**Brown:** Girls depend on close, intimate friendships to get them through life. The trust and support of these relationships provide girls with emotional and psychological safety nets. With their friends behind them, girls will do and say things that are remarkably creative and brave and "out of character." With their friends at their back, they will stand on principle, rebuke a school bully, report sexual harassment or abuse, develop a radically new idea to fight stereotypes. By understanding the nature of girls' friendships and incorporating this knowledge into our ongoing work, we can help girls learn to resist the pressures to conform to stereotypes and to brave ostracism from those they most want to impress.

## So if girls' friendships are so important, why are we seeing relational aggression?

**Brown:** Whether it's relational or physical, girls are fighting to be somebody. They want to be powerful, visible and respected. They struggle for voice, love, safety and legitimacy within a patriarchal culture that takes them less seriously and subordinates their needs and wants. Physical aggression has increased in girls' peer relationships in recent years, but girls are still much more likely to use relational strategies because they have been taught from day one that girls' power comes from pleasing others and managing their relationships. It is easier and safer and ultimately more profitable, in such a sexist climate, for girls to take out their fears and anxieties and anger on each other. Girlfighting is not a phase but a protective strategy learned and nurtured in early

childhood and perfected over time. So much of it is connected to survival. If being loved and accepted means always being a nice girl, then anger has to be hidden. This encourages girls to aggress in indirect and secret ways.

## What are the most common girlfighting strategies?

**Brown:** For girls, the ultimate threat is not being yelled at or hit by another girl, but being excluded, which is the preferred strategy for expressing anger with other girls. It is an acceptably quiet, stereotypically feminine way to exert your strong feelings and also to keep other girls in line. It doesn't attract attention or the ire of adults that physical fighting does. Girls can be extremely tough on other girls. They aggress by talking behind each other's backs; they tease one another, police each other's clothing and body size, and fight over real or imagined relationships with boys. They promote a strict conformity to group norms and rules, reinforce gender and racial stereotypes, and ultimately hold each other back through threats of exclusion and rejection.

## What's the harm in girlfighting?

**Brown:** Girlfighting is a powerful force that mirrors and contributes to wider social divisiveness. Girls take in the messages about being a "good" girl, the kind of girl adults seem to want. They don't see any other way to maintain such an image of perfection unless others are imperfect. Constant surveillance of others' flaws and knowing others are judging yours produces anxiety that separates girls and supports their subordination. The intensity



with which girls gossip is connected to their own shame of not measuring up to a false but pervasive ideal of the perfect girl. Girls express their hate or disdain for popular girls but they're also envious of them; popular girls use niceness to get to the pedestal, and then often use meanness to stay there. Exclusive cliques and in-groups start in the early grades and can evolve into emotionally violent bullying by adolescent girls, especially in the middle school years. In addition, in the face of betrayal and the relational treachery it fosters, many girls turn to boys as friends. With boys, girls claim that "what you see is what you get." Expressing anger is more acceptable for boys; their fights are open, brief and life goes on. The problem is when girls give up on girls, they lose the transformative power of girls as allies.

## How does popular culture reinforce this behavior?

**Brown:** In lots of ways. A cover story in *The New York Times Magazine* recently announced that "girls just want to be mean." Advertisements in girls' magazines sell products by appealing to girls' fears of being judged or talked about by other girls. Talk shows, soap operas, sitcoms and feature films have consistently showcased women and girls who fight over boys or most-popular girl status. Reality shows like *Who Wants to Marry a Multimillionaire* and *The Bachelor* have as their premise competition among women for the ideal man. Books that depict girls as nasty, catty and mean are so provocative because they relay something both disturbing and familiar. But such caricature is dangerous because fundamentally it conforms to all the old stereotypes we have of girls and women as deceitful, complaining, manipulative, jealous. It's familiar because it's an old story about the essential nature of femininity; girls will be girls, naturally and indirectly mean. Or it's a phase girls go through; this too shall pass.\* It trivializes

girls' aggression. In the past 15 years, I've listened to hundreds of girls talk about their thoughts and feelings, a complex story of growing up in a social and political world without their well-being foremost in mind.

## What's the reality?

**Brown:** Despite the relentless, simplistic public story of "real" boys and "good" girls, both boys' and girls' own lives and experiences are more complicated and nuanced. The problem is, it's this uncomplicated public story that's repeated and supported by the culture, media, storybooks and even well-intentioned parents. From a young age, girls begin an intense competition for their place in the social world. They're quick to learn about power — who has it and how to get it — by watching those who have it naturally conferred on them. Research suggests girls 3 and 4 already know they need to speak and fight differently if they want to please others. Girls are balancing their strong feelings and the pressure to be nice, good and cooperative. And they practice ways to get under adults' radar, developing relational aggression — gossiping, spreading rumors, using controlling behavior — in such a way that it looks unintentional. Adults, including teachers, who do see such behavior too often don't take it seriously. But for girls it's very serious and can have long-lasting effects. We underappreciate the power of the seductive and pleasurable rewards open to all girls who conform to sexist expectations, and we grossly underestimate the subtle ways adults produce and perpetuate this culture.

## What can be done to work against negative forms of girlfighting?

**Brown:** Adults need to lead by example. Speak out against injustices girls and women incur in society. Use your power to empower girls. We need to encourage girls to be more discriminating in relationships, ridding ourselves of the fiction that girls should be friends with everyone and must win over or change those who are mean to them. It's also not enough to expect girls to work out their problems among themselves. Girls need active guidance in how to stay clear and centered in their anger and disagreement, and they need to be encouraged to bring their strong feelings into public life in constructive ways. They need support for not giving up their convictions to maintain a false harmony. This demands that we as adults speak the truth, and confront our own fears, anxieties and desires to be loved and included at all costs. We need to question the relentless mantra of female perfection and its relationship to narrow views of beauty, and we need to openly contest the commodification of girls' bodies. We can do this by bringing girls together to develop an alternative reality for them. We can help them practice critiquing a culture rife with stereotypes and damaging voices. We need to offer girls legitimate avenues to power so they don't take their rage out on other girls. We need to be engaging them in cross-generational sisterhood, a resistance for liberation. We shouldn't be selling out girls to old stereotypes. We should be joining them in creating a counter-public discourse about girls, about power and possibilities.

Margaret Nagle



# Learning from The Classics

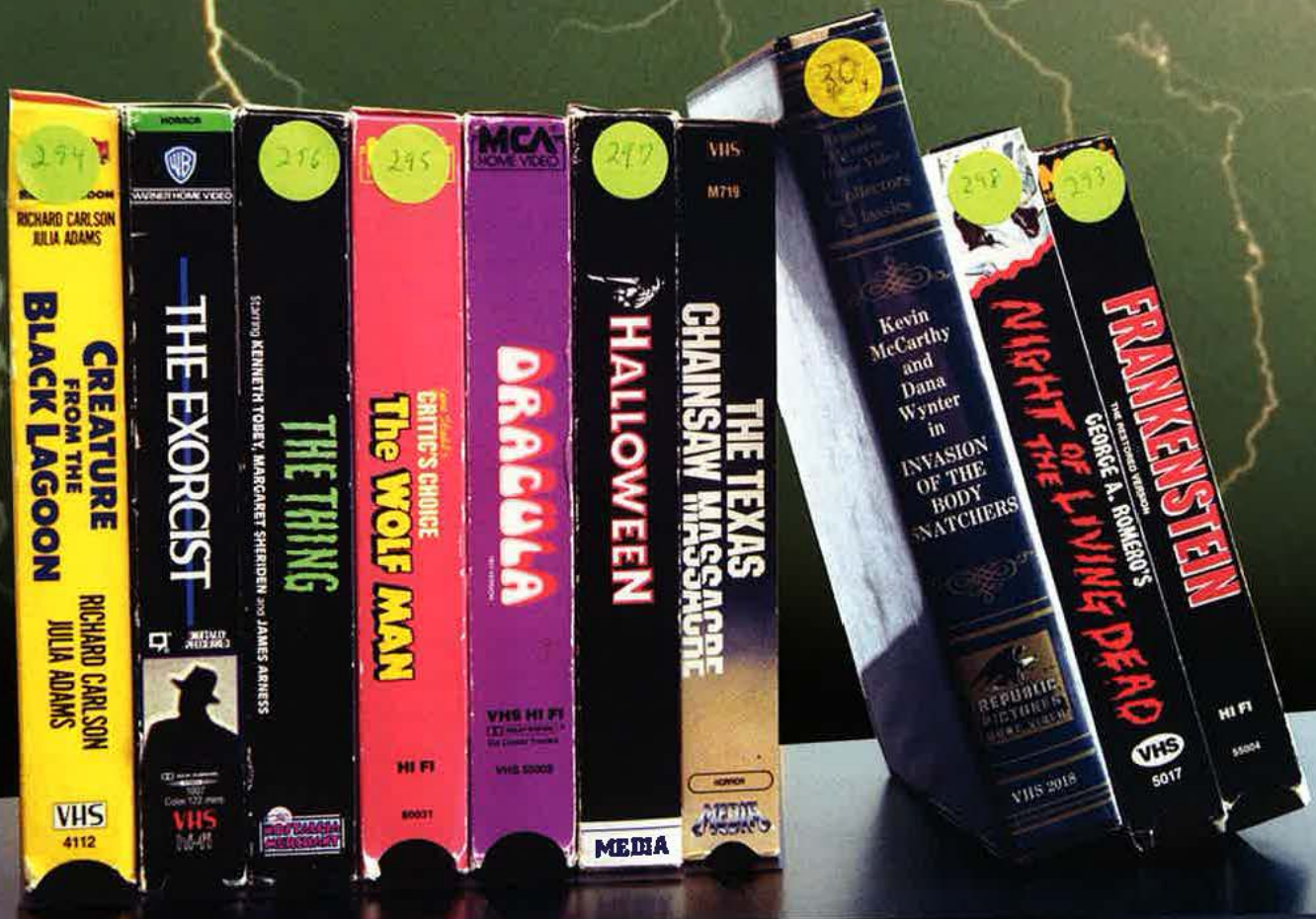
WELCH EVERMAN SEES THE GOOD in the bad and the ugly.

From the monsters, alien invaders, vampires and ax-wielding psychopaths of classic horror films and B-movies, The University of Maine professor of English has a passion for drawing out relevant and often profound commentary on society.

As one of the nation's foremost experts on horror films and popular culture, there isn't a flick Everman doesn't like.

"I love these movies, even the ones that are really bad," Everman confesses. "Even the worst of them are funny, and you have to admire the nerve of these people who make and release (them) to an unsuspecting public."

Everman has authored two books on "bad movies": *Cult Horror Films* (1993) and *Cult Science Fiction Films* (1995). He has taught UMaine courses on the history of the horror film, cult horror films and comic books.



Photos by Toby Hollis

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**ADMIT ONE**

UMaine professor unleashes zombies, mummies and vampires to help students understand popular culture



He also has written two books of literary criticism, a novel and a collection of short stories, and teaches courses on creative writing, contemporary European and American fiction, Jack Kerouac, Samuel Beckett and Stephen King.

*Cult Horror Films* earned him a national reputation and interviews with the *New York Times*, *London Times* and various newspapers and radio stations throughout the country.

He continues to field plenty of requests for commentary — especially around Halloween.

“I think people find it funny that a college professor is even interested in watching awful movies,” says a grinning Everman, who estimates that he watches at least 200 movies every year.

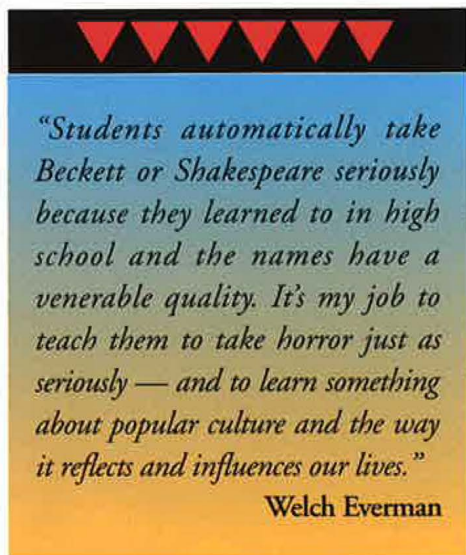
“I loved horror films long before I became a professor. I saw my first one when I was 10 years old. It was the original *Frankenstein*, on late night *Shock Theatre* coming out of Philadelphia,” Everman recalls fondly. “I asked my mother if I could stay up and watch it, and amazingly, she said, yes. I was hooked.”

WITH THE BRIGHT-EYED enthusiasm of that 10-year-old boy intact, Everman is changing the way people think about horror.

“My students tell me they can’t watch horror films anymore without analyzing them, and I say, good. A popular culture artifact like a horror film makes a statement, whether it intends to or not. It can’t help but make a statement about something — about authority, about women, about the social structure.”

Everman takes what he calls a literary approach

to horror films and comic books, submitting them to the same rigid analysis as he does the accepted works of high culture. On occasion, he’s met with resistance.



Once, Everman received a telephone call from a parent who was aghast that his son wanted to enroll in his course on comic books. After much persuasion, the parent relented. Soon, Everman received another phone call from the parent, aghast this time because his son told him it was a more difficult course than he thought it would be.

“I don’t see why I couldn’t teach Beckett and horror in the same course. Read some Beckett, and then watch *Texas Chainsaw Massacre*,” says Everman.

“Students automatically take Beckett or Shakespeare seriously because they learned to in high school and the names have a venerable quality. It’s my job to teach them to treat horror just as seriously — and to learn something about popular culture and the way it reflects and influences our lives.

“I want students to read horror films as critically as they read a text, and to look seriously for a moment at

something that’s not normally taken seriously. Popular culture often challenges the status quo, but it also often reinforces it. It perpetuates stereotypes and makes the assumption that certain things go without saying, and when something goes without saying — that worries me,” he says.

EVERMAN SAYS it’s particularly important to analyze popular culture in an age of video games, DVDs, sound bites and reality TV.

“When the mass media is as all-pervasive as it is now, the lines between popular culture and reality become blurred. That kind of confusion means it’s important to be attentive to the forms that popular culture takes, and the give-and-take between popular culture and the way we live our lives,” Everman says.

Everman’s first pop culture course at UMaine was the history of the horror film, which he introduced 12 years ago. It analyzes classics such as *Psycho* and *Night of the Living Dead* that have influenced the entire history of horror movies. He conceived the idea for the class after hearing about a similar course Stephen King once taught at UMaine.

Everman’s cult horror film course focuses on those films that appeal only to the “marginal, rabid audience for horror films — myself included,” he says. These movies, Everman writes in *Cult Horror Films*, “have minimal budgets, are poorly written and directed, the production values are near zero, and the acting is appalling.”

But, he insists, these B-movies are his favorites because they can often be “pretty radical and challenging of the dominant culture.” A flick like *Bucket of Blood* is a good example of such a movie, as is Roger Corman’s *The Wasp Woman*. Mainstream horror like *The Exorcist* has to be fairly conservative to draw the largest audience, he says.

What a horror film says often reflects





Such a philosophy reflects Everman's unease about the distinction between high culture and low culture.

"That distinction implies that if something is liked by too many people, it can't be good. But most of what is now at the top — Shakespeare, Dickens, symphonic music — used to be at the bottom," Everman says.

"Stephen King is often compared to Dickens because he's in that kind of cultural position right now. But if it's popular, it must be saying at some level what we want it to say."

**WHAT A HORROR FILM SAYS** often reflects the anxieties of the time in which it was made. For instance, most 1930s horror films did not address the Depression. Rather, in movies such as *Frankenstein* or *Dracula*, individuals or small communities solved their own problems.

"People then needed to hear that individuals could make a difference," Everman says.

By the post-war era, large-scale problems such as alien invasions and giant monster attacks, portrayed in such movies as *Invasion of the Body Snatchers*, *The Thing from Another World*, *Them!* and *Earth Vs. The Spider*, dominated horror movies.

"These were global issues that individuals and communities could not solve. The message was that you had to depend on authority," Everman says.

The social unrest and political scandals of the 1960s and 1970s gave way to horror films that were anti-authoritarian and questioned science, politics and big business — *Endangered Species*, *Prophecy*, *Empire of the Ants*, *Kingdom of the Spiders*. That trend continued until the 1990s, when what Everman identifies as an underlying fear of AIDS was reflected in vampire movies — *Dracula Rising*, *Bram Stoker's Dracula*, *Near Dark*, *To Sleep with a Vampire*.

Today, given the events of Sept. 11, it's uncertain what direction horror movies will take, he says.



### Welch Everman's list of 10 horror movies you should see:

1. *The Cabinet of Dr. Caligari* (1919)
2. *Nosferatu* (1922)
3. *Dracula* (1931)
4. *Frankenstein* (1931)
5. *White Zombie* (1932)
6. *The Mummy* (1932)
7. *King Kong* (1933)
8. *The Wolf Man* (1941)
9. *Creature from the Black Lagoon* (1954)
10. *Night of the Living Dead* (1968)

"Popular culture often lags behind events, so it will take a little while to see how it reacts. I haven't seen any horror recently that I felt addressed the world we live in now, although one of the more popular (early summer) political thrillers, *The Sum of All Fears*, addresses terrorism. That's what frightens us now.

"The world we are in might be better addressed by other genres. For instance, there has been a revival of the war movie. I take my children to Toys 'R' Us, and there are G.I. Joe dolls all over the store. There are Spider-Man action figures in fire department and police uniforms. And Marvel Comics is bringing out a series where the heroes are policemen and firemen," Everman says.

**HORROR IS A GENRE** that won't lose its appeal, says Everman. Other types of films — Westerns, beach movies, kung fu movies, jungle movies, sword and sandal movies, women in prison movies, motorcycle gang movies — wax and wane in popularity.

Everman is interested in researching why certain types of films traverse boom-and-bust cycles. For instance, horror films remain popular because people like to be scared — as well as entertained.

"They can be almost like a Freudian reading of a dream in that they express our real fears in fantasy terms. For instance, it's a rare moviegoer who believes in vampires. You don't go to be convinced vampires exist," he says. "The fantasy fear of a vampire is analogous to real fears, such as the fear of change in oneself or the fear of change in a loved one.

"Horror films allow you to express your fears in a safe setting, and give you the notion that you can deal with your fears in a manageable way," Everman says. "They're safer than a roller coaster."

Gladys Ganiel

the anxieties of the time in which it was made.



# EXERCISING DEMOCRACY

**UMaine Political Scientist Urges Citizens  
to Give Their Own Opinions a Workout**



Photo by Toby Hollis



**I**F AMERICANS WANT TO LIVE in a healthy democracy, it requires some exercise.

That means more than simply trooping to the voting booth on Election Day, according to political scientist Amy Fried.

“One of the underlying principles of democracy is that the people have the power to rule,” says Fried, an associate professor of political science at The University of Maine. “You can judge how healthy a democracy is by looking at the involvement of citizens and the quality of the political environment.”

If a democracy is in tip-top shape, Fried says, citizens will not only vote, but they also will use other means to communicate their desires and policy preferences to elected officials. In turn, elected officials will engage in reasoned debate designed to convince others of the validity of their points of view.

For the past 11 years, Fried’s work on public opinion, the media, political culture, political psychology and political participation has diagnosed some of the unhealthy aspects of American democracy, including the propensity of elites — politicians, the media and interest groups — to manipulate public opinion and the perception of public opinion.

Today, Fried says, citizens are subject to manipulation by political elites more than ever before.

“Politicians and political parties now use sophisticated tools, first created by the advertising industry, to determine how to affect individuals’ views and votes,” she says. “Just as marketers present their products in the most favorable light, so do political consultants, who frame their issues and candidates — and their competition — to shift citizens in their direction. And just as consumers can be educated about product advertising, so can citizens learn how to assess political claims.”

Fried’s research in these areas, some done with UMaine political scientist Tim Cole, is widely published. In 1997 she wrote the book *Muffled Echoes: Oliver North and the Politics of Public Opinion*. She also has addressed media and legislator constructions of public opinion in the Clinton-Lewinsky scandal, why conservative politicians and interest groups promote public anger, and the way interest groups influenced the establishment and celebration of Earth Day. As a faculty fellow of UMaine’s Margaret Chase Smith Center for

Public Policy, she has worked on a project to improve political communication and citizen choice.

It’s an awareness of the way that the politics of public opinion works that can lead to remedies, says Fried, whose research on topics such as citizen participation deals with how people can manage to make their voices heard.

HAVING AN AUDIBLE VOICE means more than reading a few newspaper articles the week before the first Tuesday in November and then casting a vote. To guard against manipulation by elites, citizens need to realize that the way issues are presented by the media or by politicians may be skewed. They also can seek out alternative points of view when forming their opinions. Rather than relying on elites to tell them which issues are important, they can organize in groups to draw attention to the issues that most affect their lives.

Beyond that, citizens can work to ensure that future generations understand democracy and are enthusiastic about participating in it by encouraging reforms in the educational system. Civic skills can help students learn how to compromise and organize, and citizens can voice their support for programs, such as Americorps, that promote learning through service to the community, says Fried.

It can be an exhausting exercise, she admits. But it’s essential for democracy’s good health.

“For citizens, being skeptical is good, even essential, but being cynical is not. Citizens should be aware of and able to discern between manipulation and principled argument. This requires an interest in the world outside citizens’ immediate private circles, and a belief that they will be able to effectively communicate their preferences,” Fried says.

However, a healthy democracy doesn’t necessarily require that the public’s preferences are automatically translated into public action. No democratic theorists argue for unrestrained popular command. American democracy was designed to create a space for deliberation by elected officials, Fried says.

“It’s important for elected officials to know what the public thinks, and to take it into account in their reasoning. But we also



**An awareness of the way that the politics of public opinion works can lead to remedies.**

**Amy Fried**



want them to use their own judgment. Decisionmaking doesn't come down to politicians using one method or the other — it's both," Fried says.

IN DEMOCRACIES, elected officials have many avenues for learning about the public's preferences. These include polls, mail and phone calls, focus groups, or idiosyncratic measures, such as sales of particular T-shirts. However, these indices do not always reveal what the public really thinks. They also are vulnerable to distortion, deliberate or not, by the media, elected officials and pressure groups.

"One of the problems with polls is that they only get answers to questions the pollsters ask. Those questions are written based on the agenda of politicians and pundits, so they may miss the way people really think about an issue. For instance, after the Clinton healthcare plan did not pass in 1994, pollsters stopped asking questions about healthcare. But that doesn't mean that a lot of citizens stopped thinking that dealing with the lack of healthcare is important.

"By and large, the issue agenda is elite-driven, including a combination of the media, elected officials, parties and large interest groups. The media also tends to take a blockbuster approach in its coverage, riding high-profile stories of personal tragedies, such as Chandra Levy, O.J. Simpson and Princess Diana, as well as political blockbusters, such as the Clinton-Lewinsky scandal and the war against terrorism. That drives out consideration of other issues," Fried says.

Fried believes that the use of public opinion today poses serious problems for democratic citizenship. By generating false impressions of what the public thinks, elected officials, interest groups and the media may make citizens feel more remote from their government, and doubtful that their participation in the political process matters.

This has fostered cynicism about politics among Americans, many of whom discount the sincerity of campaign promises and believe that debate among politicians is simply argument for the sake of argument, she says.

"Citizens must educate themselves about the issues and understand how the political process works," Fried says. "That means developing an appreciation for other points of view, the value of criticism and the difficulty of compromise.

"We tend to socialize with people we agree with, and that keeps us from being exposed to other points of view. We should cultivate the ability to listen to others, and not divide the world into enemies and allies," says Fried.

In her American government classes, Fried tells her students that they have the power to make a difference in politics and in their communities.

"When people pushed for political changes in the past, they didn't know when they started out if they would be successful. But they organized and made a difference. I tell my students that the people in Maine government and representing Maine in Congress are not different from them. If you believe something's important, go out and work on it, run for office, or bring it to the attention of your government," Fried says.

*Gladys Ganiel*

## Operating Under the Influence of Opinion

### HOW IS PUBLIC OPINION FORMED?

**AMY FRIED:** I believe there really is no one "public opinion," but rather opinions of different publics — composed of various individuals — each with its own concerns. That said, each public's (and each person's) opinions are affected by childhood socialization, the events and issues of the day, their own values, and communications from the media, politicians and interest groups.

### WHAT SHOULD PEOPLE BE MOST AWARE OF WHEN THEY FORM THEIR OWN OPINIONS?

**AMY FRIED:** Individuals should be aware of the extent to which their own, often unexamined assumptions have shaped their perspectives. These assumptions are based in core values they adopted and were taught. In addition, citizens should be aware that others are equally sincere about their positions, and that those others have similar and different values from them.

### WHAT DOES IT TAKE TO BE AN INFORMED CITIZEN (AND THEREBY VOTER)?

**AMY FRIED:** Citizens who know a lot frequently have developed an attitude of thoughtful attentiveness, have the ability to discern spin, and seek information widely from the media and from informed sources. While this may seem to be an onerous burden, in fact it is not, provided that citizens develop a base of knowledge at some point. Research shows that once a citizen knows a fair amount, it becomes easier to gather, integrate and remember new information.





## Biologist Rebecca Holberton's research focuses on hormones as indicators of avian and environmental health

AT JUST ABOUT 4 1/2 INCHES LONG, weighing in under 4 ounces, the blackpoll warbler looks like any other songbird as it summers in northern coniferous forests of Canada and Alaska.

But around this time of year, when nature calls it back to its winter home in South America, the blackpoll warbler turns into "the athlete of the bird world," flying nonstop across the open waters of the Atlantic, from New England and the Maritimes to the Caribbean, then on to the Amazon River Basin in Venezuela — approximately 2,300 miles in almost 90 hours.

It is believed to be the only Neotropical migratory songbird to make such a spectacular journey.

For years, scientists have known the birds do this, but had few clues as to how it was physically possible. Until now.

University of Maine biologist Rebecca Holberton has discovered that the blackpoll warbler prepares for its marathon migration by bulking up with the help of a natural steroid in its body.

In her research, funded by the National Science Foundation, Holberton has shown that a blackpoll warbler preparing for migration can virtually triple its body weight in 72 hours, going from its average weight of .385 ounces to 1.12 ounces. It also is more efficient than other songbirds in how it stores body fat and uses muscle.

"Imagine if you woke up three days from now weighing three times your normal body weight," Holberton says. "These birds don't eat any more than other songbirds at this time of year, but they undergo a huge change in physiology.

"If we can understand that physiology, perhaps we can better understand metabolic systems in humans."

# Survival of the Fittest

— and the Least Stressed





**W**hen nature calls it back to its winter home in South America, the blackpoll warbler turns into “the athlete of the bird world.”

**Holberton’s background is in physiology, or bodily processes.** In her work, physiology is the link between animal behavior and the environment. She uses birds as “a model system” by which to understand how external and internal factors affect individual survival.

Currently, her research focuses on how birds meet challenges to their energy demand. Holberton is studying endocrinology, or the hormonal response to any behavior or physiology — one of the least understood areas of avian biology.

“I’m trying to understand how things work, then trying to apply that knowledge to better the environment, and human and non-human life.

“While we can ask the same questions of reptiles or zebras, birds are my choice. They are on every continent, totaling more than 9,000 species,” says Holberton, who fields more than 50 inquiries annually from prospective graduate students similarly interested in pursuing research on Neotropical migrant birds.

When she was a graduate student, Holberton worked first with dark-eyed juncos in the Northeast. Post-doctoral research took her twice to Alaska to study several species of sparrows, and once to the Antarctic to study seabirds, including penguins and many relatives of the albatross. At the University of Mississippi, where she was a faculty member for seven years, she studied the endocrinology of birds and red-eared slider turtles.

She has collaborated with researchers working in Jamaica and Belize, Mexico and Puerto Rico to look at the health of habitats and birds that winter there. For the past five years in Manitoba, Canada, she has studied the breeding grounds of blackpoll and yellow-rumped warblers. In New Zealand, Holberton has collaborated with researchers in the Kakapo Recovery Programme.

In an ongoing collaboration with the Smithsonian Environmental Research Center, Holberton and her colleagues were the first to show that endocrine or hormone measures can assess how well birds survived in their wintering grounds, which can affect how likely some birds will survive to breed.

Now in UMaine’s 4,200-acre Penobscot Experimental Forest, Holberton is studying the transition from spring migration to breeding. She is interested in how hormones affect the energetic condition leading to reproduction in several species of migratory and resident songbirds, such as magnolia warblers, ovenbirds and hermit thrushes, chickadees, sparrows and blue jays.

Concurrently, Jason Johnston, a Ph.D. student in biology, is researching bird diversity in the Penobscot Experimental Forest. Zoology graduate student Brent Horton is studying “why some fathers are better than others” among white-throated sparrows.

“We have been studying in the Penobscot Experimental Forest for a couple of years now. This year we

expect some important answers,” Holberton says.

Holberton is completing the final leg of a three-year, \$270,000 National Science Foundation project to study the difference in long- and short-distance migrations of the blackpoll warbler and yellow-rumped warbler. Ornithologists already knew about the unusual migration strategies of the blackpoll warbler. These birds wait for autumn’s west-northwest winds, then follow the cold front out over the North Atlantic. After about a day-and-a-half over open water, the birds fly through the front, using the strong northeast winds on the other side of it to turn them south.

“They put on fuel reserves and take off,” Holberton says. “Once they’re committed to taking off, they’re stuck.”



**Migration routes and summer breeding range of the blackpoll warbler**





The key to the physiological change needed for such an arduous migration is corticosterone, a steroid hormone secreted by the adrenal gland. Corticosterone is important in protein and carbohydrate metabolism. Holberton has found that if a bird's ability to increase corticosterone is blocked prior to migration, it is unable to fatten for its flight.

With the discovery of a direct relationship between corticosterone and fat in the blackpoll warbler, Holberton and graduate student Jennifer Long are now studying the hormone at the molecular level. The goal is to better understand corticosterone's cellular mechanisms, including enzymes it is regulating.

In September at the 3rd North American Ornithological Conference, Holberton will present research results that support the theory that a single hormone can have varied physiological responses with different cell receptors.

"Corticosterone

rises to low or moderate levels on a short-term basis for migratory fattening or during other natural, non-stressful life stages, like natal dispersal. It reaches high levels when birds are stressed and meeting emergencies.

"In such a chronic stress response, the hormone is believed to be signaling a different set of receptors than during the normal migratory period. That's what's challenging people. We're working to understand how one hormone can signal different physiological effects."

Corticosterone is essential to birds' survival, whether they are going through the natural life stages or fighting to stay alive in stressful conditions, such as habitat deterioration or other human pressures. At abnormally high levels, the hormone acts to obtain energy in the form of glucose from skeletal muscle when fat stores are depleted. Extended

In all her research, biologist Rebecca Holberton, pictured above, in the field with doctoral student Jason Johnston, is ever-mindful of the need to minimize impact on her study subjects. Birds like the two blackpolls, center photo, with and without migratory fat, are captured and released. In the lab, graduate student Jennifer Long analyzes blood samples. Blackpolls breed in northern coniferous forests.



Photo by Stephen Bicknell



Photo by Rebecca Holberton

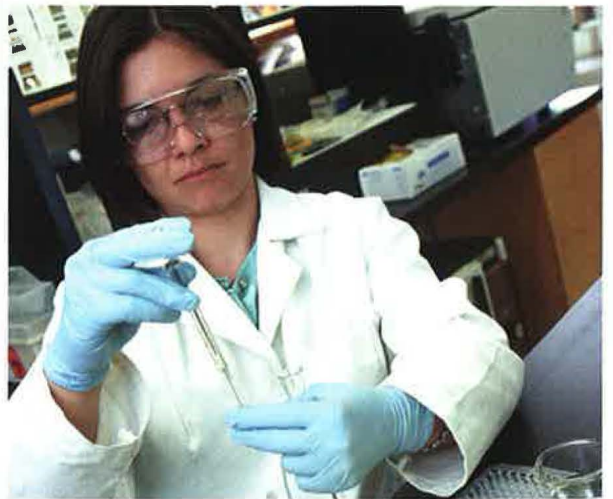


Photo by Toby Hollis



Spring. Photo by John Haidt, courtesy of the Cornell Ornithology Department



Photo by Rebecca Holberton



“(Blackpoll warblers) don’t eat any more than other song-birds at this time of year, but they undergo a huge change in physiology. If we can understand that physiology, perhaps we can better understand metabolic systems in humans.”

*Rebecca Holberton*

periods of elevated hormone levels due to chronic stress can affect growth, development, reproduction and, ultimately, survival.

For Holberton, migratory birds are bioindicators. Their health, including endocrine disruption, is directly related to environmental health, and all life stages of migratory birds are inextricably linked.

“With migratory song-bird populations declining, people pointed to conditions of wintering and summering grounds. But I was seeing birds in trouble during migration. That’s why it’s important to link all stages of birds’ annual cycles. You can save habitat on either end of the migration route, but if you don’t have the necessary habitats en route, birds will have problems.”

The need for such a holistic approach is clear in the research of graduate student Deb Perkins, who is in the High Arctic studying ruddy turnstones, a long-distance migratory shorebird. Her work focuses on the birds’ health following an exhaustive intercontinental migration from southern South America to their Arctic nesting grounds.

Once female turnstones lay eggs, they all but exhaust their energy reserves, leaving males to incubate the eggs and rear chicks. But what if the males also are weak because of declining habitats at stopover sites on the migration route? For the ruddies, that critical stopover is Delaware Bay, where development is increasingly diminishing natural habitat.

“The research is getting at a conservation question,” says Holberton. “If these birds arrive in poor (health) condition with the (reproduction) strategies they’ve used in the past, the species will fail.

“We need to understand the mechanisms at work in order to understand what’s wrong and how to fix it — in any species.”

*Margaret Nagle*

Rebecca Holberton, pictured below, and her graduate students have researched such birds as the ruddy turnstone in the Arctic, the prothonotary warbler in the Southern states and king penguins in the Antarctic. For Holberton, migratory birds are bioindicators. No matter the species, the goal is to understand the physiological link between animal behavior and environment.



Photo by J.R. Woodward, courtesy of Cornell Lab of Ornithology



Photo by Rebecca Holberton



Photo by Liz Mitchell



Photo by Liz Mitchell



## The University of Maine's Sea Grant and Cooperative Extension marine team helps the state's shellfish aquaculture industry

# Oyster options.

IN THE DISTANT PAST, when Maine's waters were warmer than today, oysters thrived all along the coast. Yet even now with a cooler climate that has restricted oysters to a smaller area, Maine enjoys a good reputation for the shellfish.

A small cottage industry has grown up to serve consumers who appreciate the salty, sweet, slightly crunchy raw oysters plucked from the clean, cold waters of the Damariscotta River.

Seven oyster aquaculture companies now call the Damariscotta home. Many of their owners received training and developed new growing techniques as students at The University of Maine. And their influence on Maine's coastal economy is growing.

The industry produced more than \$2 million (dock value) in shellfish for the market in 2001.

Moreover, oyster aquaculture is taking root in other locations up and down the Maine coast as a result of the state's experimental aquaculture lease program. Fledgling efforts are under way from Kittery to Washington County. Ten full-time and 25 part-time oyster aquaculture businesses are now in the state, according to Mike Hastings of the Maine Aquaculture Innovation Center.

"Shellfish aquaculture fits with coastal communities," says Dana Morse, a member of UMaine's Sea Grant and Cooperative Extension marine team. "It continues the tradition of making a viable living from the sea in a way that can be compatible with other uses, and (it is) sustainable from an environmental point of view. This industry also taps a lot of traditional skills and knowledge on the waterfront."

BASED AT THE Ira C. Darling Marine Center in Walpole, Maine, Morse is one of six marine Extension team members coastwide. Sponsored by the Maine Sea Grant College Program and UMaine Cooperative Extension, they provide technical assis-

tance to industry, coordinate environmental monitoring efforts, and foster research on fisheries and coastal ecosystems. Among other tasks, Morse serves the oyster aquaculture industry by promoting research, answering questions and facilitating public meetings.

"Wherever possible, we rely on scientifically credible information, and we almost always act as a bridge between the industry, researchers and the public, whether the need is technical or otherwise," says Morse. "For example, we bring researchers and industry together to work on problems of common interest, such as juvenile oyster disease or on upweller development. We also transfer information from outside the region to the local industry members."

MORSE'S PROJECTS include efforts to perfect the design of a device known as a tidal upweller, which speeds the growth of young oysters. He also works to understand the causes of juvenile oyster disease, which can kill up to 90 percent of a farmer's young stock, effectively eliminating production for that year.

Morse and his colleagues host public meetings to discuss pending aquaculture lease applications. While oyster aquaculture facilities are minimally visible in the water, they do occupy areas that traditionally have been used by the public for boating and other purposes.

Not surprisingly, applications for new oyster leases can stimulate considerable debate in coastal communities. The meetings inform people of proposed aquaculture sites and stimulate dialogue.

"Industries we think of as traditional are always in some sort of change, and shellfish aquaculture, while a newer one than many, is another step in that change. On the whole, shellfish aquaculture is a good option for a marine-based livelihood, in a time when those options are growing fewer," Morse says.

*Nick Houtman*



Photo by Linda Healy

**"Shellfish aquaculture fits with coastal communities. It continues the tradition of making a viable living from the sea in a way that can be compatible with other uses, and (it is) sustainable from an environmental point of view."**

*Dana Morse*





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# Fungi Wars

## and the biology behind them

**UMaine Upward Bound students learn the practical uses of math and science, and where those lessons can take them**

### Sharon Tetteh

surveyed the laboratory counter crowded with dozens of petri dishes. With a pipette in one hand and a tube of a thick, bluish substance in the other, she turned her attention to the five other students standing nearby, ready to help her calculate the fate of some fungi specimens.

"We can decide how much slurry to use," said Tetteh, adjusting the pipette to deposit just the right amount of the mixture of blue cheese, milk and penicillin into the dishes where the students were growing fungi. The slurry had been formulated to destroy bacteria that inhibits growth of the fungi.

"We also can choose what nutrients we want to add (to make the fungi grow faster)," said Tetteh, whose group decided to add yeast and gelatin to several of their samples.

Then it was all over but the waiting.

"We're trying to figure out what makes the fungi grow the fastest," said the 17-year-old from East Boston. "We'll take the fungi that grew the best and put it in a plate against (other fast-growing fungi). Then we'll have a fungi war."

For Tetteh and the other 43 high school students conducting similar science experiments in a biology lab at The University of Maine, such "fungi wars" were a light-hearted front for some serious learning. These highly motivated math, science and technology students from throughout New England spent six weeks at the Upward Bound Regional Math/Science Center, which is located in



Photos by Toby Hollis

**"We're trying to figure out what makes the fungi grow the fastest. We'll take the fungi that grew the best and put it in a plate against (other fast-growing fungi). Then we'll have a fungi war."**

**Sharon Tetteh**

UMaine's College of Education and Human Development.

The federally funded center assists economically disadvantaged high school students in their efforts to succeed in college. It is one of 123 nationwide; one of four in this region. As a TRIO program, introduced by the U.S. Department of Education 11 years ago, Upward Bound Math/Science (UBMS) helps students overcome economic, social and cultural barriers to higher education.

For the past five years, 90 percent of the students in UMaine's Upward Bound Math/Science program have gone to college.

The teens, often the first generation in their families to pursue college educations, have demonstrated the talents necessary to seek careers in mathematics, science, computer science and engineering. And in Tetteh's case, a career in communications.

This fall, she is enrolled at the University of Massachusetts – Amherst.

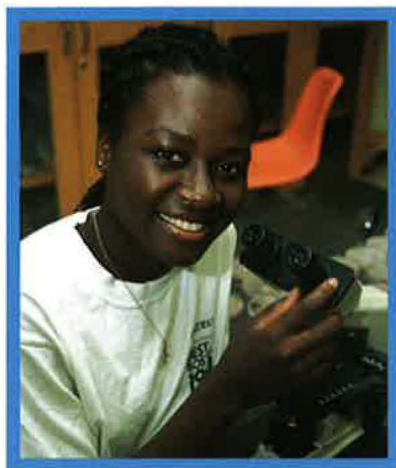
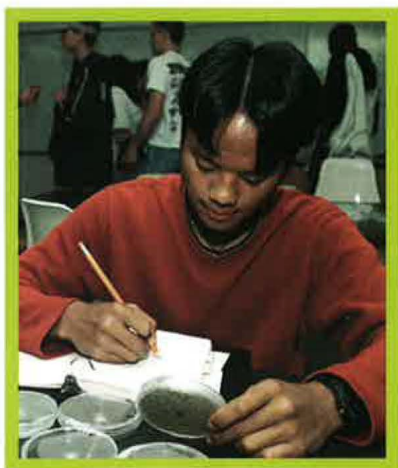
"We don't just learn by sitting in a classroom and taking notes," said Tetteh, a native of Ghana who immigrated to Massachusetts five years ago. "Between our projects, the labs and the fieldtrips, we learn so much more. It's a loving community. Every staff member and student is willing to help each other."

This was Tetteh's second summer participating in the Upward Bound Math/Science program at UMaine. During her six weeks on campus, she and the other students did group and individual research projects, and took courses on scientific writing, college English and the college application process. When they return to their high schools, the students receive follow-up visits and academic advice throughout the school year.

UMaine's integrated research and college preparatory curriculum has become a model for other UBMS programs. William Ellis, UBMS coordinator and a cooperating assistant professor of marine sciences, says other colleges and universities have asked to observe UMaine's program.

Her first summer, Tetteh's individual research project was "Chemotaxis of *Dictyostelium discoideum*: Saving the Spore





This past summer, 44 highly motivated math, science and technology students from New England high schools studied at UMaine.

Cells,” involving amoebas. As a group, students analyzed the effectiveness of natural pesticides in controlling Colorado potato beetles.

This past summer, Tetteh did research on the health benefits and risks of vegetarianism. Fungi was the focus of group research.

The students gathered specimens such as mushrooms, flowers and bark in the nearby Marsh Island Trails. In the lab, they measured the growth of their fungi daily, analyzed them using statistics and reported on their results.

“This allows the students to get acquainted with science in a way they normally wouldn’t unless they were taking advanced undergraduate or graduate courses,” said Dan Look, an Upward Bound staff member who served as a mentor to Tetteh’s group.

“The processes they are learning here teach them how they would begin to study fungi if, for instance, they were trying to figure out how to protect crops, or eliminate fungus on the human body,” said Look, one of 12 graduate and undergraduate students who taught this year’s math/science program with five UMaine faculty members. Look has undergraduate and graduate degrees in math from UMaine, and is working on his doctorate at Boston University.

For their individual research projects, students worked with mentors from on and off campus. Some projects took students to chemistry, physics and biology labs to work with UMaine professors and graduate students; others took students into the community to

work with physicians or veterinarians. The results of their research projects were published in the program’s *Journal of Explorations* and placed in UMaine’s Fogler Library.

“It’s an entirely new style of learning. You learn the practical uses of math and science,” said UBMS student Vireak Gilpatrick of Sanford, Maine, a native of Cambodia who came to Maine seven years ago and is now an electrical engineering major at UMaine.

“I loved being on my own, and doing the research. It made me really proud of what I do,” said April Butler of Irasburg, Vt., who is now studying marine biology and secondary education at Middlebury College in her home state. “The experience I got working with college professors and having resources like a library and labs — I just didn’t get that in a small high school like mine.”

In addition to offering a rigorous curriculum, the math/science program included free time for students to socialize, as well as trips to museums and weekend camping.

“I slept in a hotel for the first time on one of those trips. I did so many things for the first time because of this program. I learned so much, from how to camp to how to do statistical tests,” Tetteh said.

“Before Upward Bound Math/Science, I was 100 percent nervous about college. Now everything seems smooth. Upward Bound really does push you higher,” she said.

*Gladys Ganiel*

## TRIO Programs at UMaine

**THE UPWARD BOUND Regional Math/Science Center is one of five federally funded TRIO programs assisting people who are economically disadvantaged or disabled.**

**The University of Maine’s Classic Upward Bound serves low-income high school students in four counties. Students come to UMaine for six weeks to study and do research. Tutoring and mentoring continue into their school year.**

**The Maine Educational Talent Search serves students in grades 6–12 in seven counties. It offers academic support and experiential activities to increase educational, cultural and career participation.**

**The Maine Educational Opportunity Center is devoted to helping adults access post-secondary education. Counselors assist with college applications, the financial aid process and career goals.**

**The Onward Program assists nontraditional students and students with disabilities. It offers academic counseling and assistance with basic college requirements, motivating students to complete post-secondary education.**



## Intonation in Infancy

As a University of Maine undergraduate, Jessica Weed maintained a 3.96 grade point average in communication sciences and disorders, and elementary education. But it was her commitment to laboratory research that helped her to land a fellowship in the Speech-Language Pathology Program at Purdue University, and the opportunity to present her original research findings at a professional conference this fall.

The Deer Isle, Maine, native, who graduated from UMaine in May, was selected for the two-year Purdue University Andrews Fellowship, which provides a \$12,855 stipend annually. She will use the fellowship to study for a combined master's degree and doctorate in speech pathology.

With the fellowship, Weed will further the research she conducted for her UMaine honors

thesis on vocalizations in babies who do and do not have hearing impairments.

Weed's undergraduate thesis focused on pitch and intonation (i.e., the way people's voices rise at the end of a sentence when they ask a question). Research has demonstrated that pitch and intonation are different for adults with normal hearing and adults who are hearing-impaired. Weed's research seeks to discover if the same is true for hearing and hearing-impaired infants. The results could shed light on when the

differences develop, which could lead to more effective assessment and intervention protocols.

Because this sort of research on infants is so new, Weed had to refine existing methodology to analyze infants' pitch and intonation. She will present her research, including the methodology she developed, at the American Speech-Language and Hearing Association international conference in Atlanta, Ga., Nov. 21-24.

Weed was attracted to Purdue's graduate program in speech-language pathology because of the research conducted there on cochlear implants and speech development.

Cochlear implants are put directly into the ears of people who are severely deaf. The implants stimulate nerves that can improve hearing. The research at Purdue is focusing on the language development of infants who have received the implants.

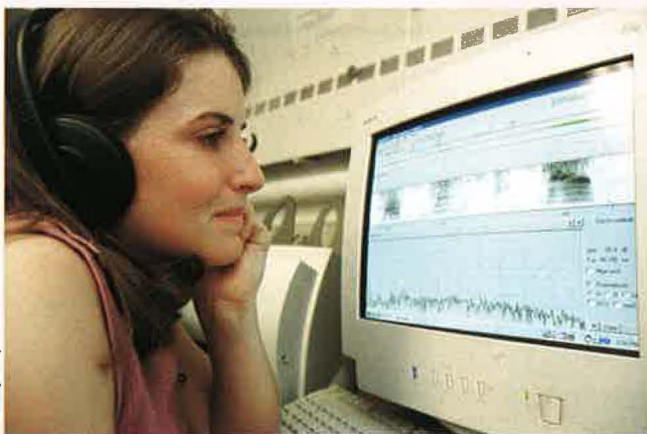


Photo by Toby Hollis



Photo by Jon Riley

## Birth of the Appalachians

There's a historical boundary line in the western Maine woods that's unmarked by fences or signs, but it's unmistakable to University of Maine graduate student Chris Gerbi.

The line divides some of the oldest rocks in Maine from those that form the much younger, surrounding landscape. Known to geologists as the Chain Lakes massif, this ancient terrain is the largest of its type in the Appalachians and may provide important clues to the processes that gave birth to the mountains.

Gerbi, who is from Concord, N.H., and his advisor, Scott Johnson, UMaine assistant professor of structural geology and tectonics, have a National Science Foundation grant to study the massif. Their goal is to understand the forces that, over hundreds of millions of years, have pushed and pulled this part of the North American landscape into its present shape.

The 250-square-mile area is located between Jackman and Eustis, Maine, and extends northwest into Quebec. The granitic rocks of the massif are more than 450 million years old.

Geologists don't know what collided with North America to start the Appalachian mountain building cycle. It's likely that the rocks of the massif were initially formed from sediments that accumulated in a depression off the coast. However, what happened next isn't clear.

Gerbi and Johnson will study a lump of that ancient sea floor that still sits on top of the massif just west of Eustis. How Boil Mountain arrived on top of the older terrain is a mystery that Gerbi and Johnson would like to solve.



**R**ESOURCE ECONOMIST  
Mario Teisl wants to know what you'd do if you went to buy groceries and found some of the products affixed with labels indicating they were made with genetically modified (GM) ingredients. Would you still buy them? Or would you seek out products bearing labels indicating that the food does not contain these ingredients?

In recent years, food labels have become a battleground for consumer groups, the food industry and government regulators.

Advocates promote mandatory labeling of all products that contain genetically modified ingredients (foods whose genetic makeup has been changed to offer agronomic or nutritional benefits). In opposition, companies and industry associations argue that the cost and complexity of such labeling outweigh the benefits.

Both the Clinton and Bush administrations have gone on record as opposing

mandatory labeling of GM foods. However, a bill introduced in the United States House of Representatives, first in 1999 and again in 2002, would require the labels on any foods containing genetically modified ingredients.

The issue has been debated by the Maine State Legislature. This fall, Oregon may be the first state to vote on a GM labeling law after Oregon Concerned Citizens for Safe Food got the issue on the November ballot.

Many of America's trading partners, especially the European Union and Japan, already require such labels, and recent polls indicate

# To Label or Not To Label?

**That's the question resource economist Mario Teisl's been asking about genetically engineered food**

that a majority of U.S. consumers want GM foods labeled.

That's why Teisl, an associate professor in The University of Maine's Department of Resource Economics and Policy, is asking consumers their opinions on how GM labeling should be done. His survey is part of a nationwide labeling study, supported by a \$180,000 grant from the U.S. Department of Agriculture (USDA).

If legislation mandates such labeling in the U.S., Teisl's analysis of consumer attitudes will provide a basis for developing standards for label content, size and appearance.



Photo by Toby Hollis



What's at stake is consumers' trust in the food they buy. The sticker shock also could translate into millions of dollars in labeling and food handling costs to industry, and a potential shift in purchasing habits.

"Knowledge of consumer attitudes helps to determine what and how information is presented on the label. To be helpful to consumers, label information must be simple to use and be seen as credible," says Teisl, whose research focuses on measuring the effects of health and environmental information on consumer markets, and on designing effective environmental information policies.

Teisl and his colleagues began their project in 2001 by meeting with six groups of people (a total of 56 adults) in Orono, Maine; Columbus, Ohio; and Phoenix, Ariz. This fall, the researchers will expand the project by mailing questionnaires to 7,000 people, including 1,000 Maine residents.

In his USDA research, Teisl is collaborating with UMaine faculty members Mike Vayda in the Department of Biochemistry, Microbiology and Molecular Biology, and Kelly O'Brien in Resource Economics and Policy, as well as Nancy Ross of Unity College, and Brian Roe of Ohio State University.

The University's Maine Agricultural and Forestry Experiment Station is publishing the results of the meetings in the three states.

From those meetings, it was found that some participants opposed any genetic modification of food ingredients, and others were surprised that such ingredients are already common in processed foods.

Participants were generally uncomfortable with the idea of genetic manipulation of food products, and they desired more information on labels and through educational efforts. They also noted that details on labels need to be clear and certified by either the federal government or a trusted third-party organization.

Many participants said that labels should not say that the food product "may contain genetically modified ingredients." That simple phrase, they noted, was too ambiguous.

They also discussed the "GMO Free" labels already appearing voluntarily on some products. The new labels are designed to indicate that the food does not contain GM ingredients. Most survey participants did not know what "GMO Free" means; others viewed it simply as a marketing tool. As a result, they have been simply ignoring the labels.

The debate surrounding GM food labeling centers on two issues, Teisl says. First, what are the benefits of labeling GM foods (and which consumers are benefiting)? Second, what are the costs of providing those benefits?

but by a desire to protect domestic farmers," says Teisl. "Given most GM foods are produced by U.S. farmers, mandatory labeling effectively provides a barrier to U.S. agricultural trade.

"The on-going struggle between proponents and opponents of GM labeling, both within countries and at the international level, makes the analysis of the benefits and costs of these programs particularly important."

In many ways, labeling programs and policies have helped to develop or improve the workings of a diverse set of markets, says Teisl,



**A**nalysis of consumer attitudes will provide a basis for developing labeling standards.

**It is well known that the flow of information between consumers and producers plays a critical role in the efficient operation of markets. Simply stated, labeling policies can make markets work better. Consumers are more informed about the exact attributes of products, and firms producing goods with desirable attributes are rewarded with sales.**

*Mario Teisl*

Benefits of labels can be measured by their ability to inform consumers about a product's positive and negative attributes. When such information is well understood and credible, consumers' purchases match their preferences.

However, it's been estimated that a labeling program could increase food prices by about 5 percent, Teisl says.

"In addition, some people believe that international support for GM food labeling is driven not by consumer protection concerns

who also has studied labels for forest products and power supply promotions.

"Nutrition labeling of food is an obvious recent example, but examples abound: safety labeling of bicycle helmets, dolphin-safe labeling of tuna, safe-use labeling for household pesticides and cleaners, unit pricing of foods, fuel efficiency labeling of cars and trucks. U.S. markets would be quite different without the use of labeling."

*Nick Houtman*





## A Living Tribute

THE LARGE IMAGE of a waving American flag, created out of petunias and marigolds in Fort Allen Park, Portland, Maine, honors the victims and heroes of Sept. 11.

University of Maine Cooperative Extension Master Gardeners designed and planted the living memorial. In a dedication ceremony on Memorial Day, special recognition was given to the seven Sept. 11 victims from Maine.

Two Maine master gardeners, Ann Miles of Portland and Karen Henderson of Scarborough, coordinated the garden project. Materials were donated by area businesses.

"The response to this idea has just been overwhelming," Miles says.

**U**NDERSTANDING THE EFFECTS of pollution on the environment sometimes requires finding the cleanest places on the globe. Thirty years ago, Bruce Wiersma found such a place in the mountains of extreme southern Chile.

At that time, he was helping to establish a network of pristine global monitoring sites. By measuring the function of natural ecosystems, the scientists had reference points by which to measure more impacted areas.

Since 1984, Wiersma, dean of the College of Natural Sciences, Forestry, and Agriculture at The University of Maine, has traveled to Torres del Paine National Park more than 20 times to collect data from the soil, water, trees and air. The research, involving graduate and undergraduate students, has revealed some of the lowest concentrations of heavy metals, such as cadmium, copper and lead, of any site in the world.

Torres del Paine is internationally recognized for its beauty and pristine qualities. In 1978, the United Nations declared the site an international Biosphere Reserve and recently named it a World Heritage Site. For his research there, Wiersma has received funding support from the United Nations, the U.S. Department of Energy and U.S. Department of State, and most recently, the National Geographic Society.

While Wiersma is starting to see evidence of human impact in the park, including a rise in lead levels, his research continues. Working with him are former student Greg White, now with the Idaho National Engineering and Environmental Laboratory, and UMaine Ph.D. student Alex Elvir Murillo of Honduras.

## Studying Pollution in a Pristine Park

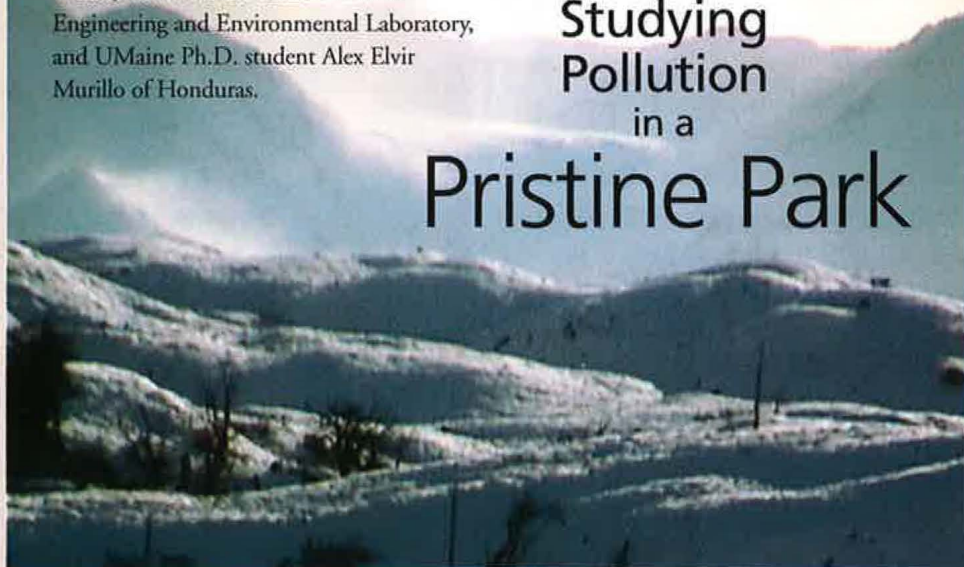


Photo by Bruce Wiersma

## A decade of youth sports



THIS SUMMER, the National Youth Sports Program (NYSP) opened its 10th season at The University of Maine, offering six weeks of activities for more than 200 area youngsters.

The free day camp features swimming and team sports, as well as educational opportunities for youths ages 10-16 from more than 30 local communities.

The program and staff are committed to helping campers achieve the goals of believing in themselves, getting along with others, and experiencing success through individual and team achievement.

This year, annual health assessments for young participants were provided by staff from UMaine's

Cutler Health Center, Bangor Family Practice, Healthworks and Eastern Maine Medical Center.

NYSP is made possible by a partnership between the U.S. government and participating universities and communities, with oversight by the National Collegiate Athletic Association. Under the federal grant, most campers must come from families who meet Department of Health and Human Services income guidelines.

UMaine's award-winning NYSP is directed by Professor of Education Stephen Butterfield. Until this year, UMaine's NYSP was the only one of its kind in northern New England.



**FROM EARLY SUMMER**

to late fall, shareholders come twice a week to pick up their dividends — bags brimming with greens and peas, corn, cucumbers and cabbage, squash, melons, and other fresh fruits and vegetables. The farmers are there to answer questions and to offer recipes for the prolific produce.

The process connects consumers with their food — community-supported agriculture (CSA) at its best.

The student-operated Black Bear Food Guild, a project of The University of Maine's Sustainable Agriculture Program, was initiated in 1995 to provide in-the-field learning. Students manage three acres of certified organic vegetables, herbs, flowers and cover crops at UMaine's Rogers Farm, providing fresh produce to 75 shareholders.

Annual fees paid by members, coupled with sales of surplus produce at a farm stand and local farmers' market, make the Black Bear Food Guild self-sufficient. Every year, there's a waiting list of prospective shareholders.



Photo by Michele Stapleton

*Fresh*  
**FROM THE FIELD**



with nature, rather than combating nature," says Cornville, Maine, native Michael Bowman, a sustainable agriculture major.

To emphasize the point, the students instituted a composting program so shareholders can return their peelings, husks and other organic food waste to the farm. The result is community-supported agriculture brought full circle.

"This is a great program because it's so hands-on and we're in charge of ourselves," says Julia Trunzo of Kinnelon, N.J., a sustainable agriculture major and one of six students managing the guild this season.

Beginning with the selection of heirloom and hybrid seeds, the students are active in a range of farm management activities — from pre-season planning and planting to cultivating and harvesting. Plus, there's always weeding — and more weeding.

Sustainable organic agriculture is "farming within and

the **ATLANTIC** ecosystem

THREE UNIVERSITY of Maine scientists will help to lead a new international effort to improve understanding of the North Atlantic Ocean ecosystem.

Susan Brawley, Les Watling and Robert Steneck in the School of Marine Sciences, as well as three former UMaine graduate students — Ester Serrao, Richard Wahle and J. Emmett Duffy — are on the 27-member steering committee

for CORONA (Coordinating Research on the North Atlantic).

The project is funded by a five-year, \$499,803 National Science Foundation grant to Duke University.

Among the initiatives the grant will establish is an annual meeting of European and North American scientists to share their research, consider biological differences between

ecosystems on both sides of the Atlantic and develop collaborative projects.

One expected benefit is better prediction of the ecological effects of invasive species transported across the ocean. Scientists also hope to study how organisms have evolved under the influence of currents that travel from the Pacific Ocean through the Arctic and into the North Atlantic.

**Defying Traditional Roles**

**R**ESearch BY University of Maine anthropologists Rebecca Bliege Bird and Douglas Bird is providing insights into early human ways of life, including the division of labor between the sexes and protracted childhoods.

To do their research, the Birds live in Australia for extended periods with aboriginal hunter-gatherers, the Mardu of Western Australia's Great Sandy Desert and the Meriam of the Great Barrier Reef.

Their most recent trip, January–July 2002, was funded by the National Science Foundation and the Leakey Foundation.

Conventional explanations for divisions of labor contend that men and women worked together to maximize the family's food. But the Birds' research draws that theory into question, as detailed in the lead article in the journal *AnthroQuest*.

The Birds found that Mardu women hunt what is predictable to catch, such as lizards and small game. Men hunt larger animals, such as bush turkey and kangaroo. The Birds' data indicate that women's work consistently yields more food; men choose hunting activities that demonstrate skill and earn them social or political gains.

The Birds' research on foraging among Meriam children is outlined in two articles in a recent issue of *Human Nature*. Their analysis, which again challenges conventional explanations, was highlighted in July in the *New York Times*.

It was thought that long childhoods allow time to learn complex hunting skills. But among the Meriam, children quickly master high-skill activities such as spearfishing. The Birds say growing slowly keeps children from being competitive threats to adults.

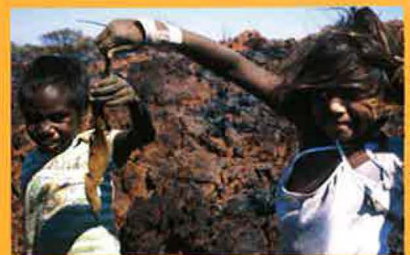


Photo by Rebecca Bliege Bird



## Honors in Canadian History



TWO DOCTORAL CANDIDATES in The University of Maine History Department's Canadian Studies program have been awarded Fulbright scholarships and research grants from the Canadian Embassy.

Hans Carlson of Burlington, Vt., and Laura Detre of Warren, Ohio, will use the funds to conduct archival research in Canada and to study for a year at Canadian universities.

Carlson's research focuses on how the Cree people of Eastern James Bay in Quebec have interacted with the environment to develop their distinctive culture. Detre's work concerns immigration propaganda produced by the Canadian government and private institutions from 1896-1939.

Carlson and Detre were among about two dozen students awarded Graduate Study and Research Abroad grants through Fulbright's U.S.-Canada exchange. The competition was open to students whose research addresses aspects of the relationship between the U.S. and Canada.

Carlson's research will result in an "environmental history" of the Cree people, in which he describes how people create "cultural spaces" within their environments and how the environment shaped Cree culture. His work also will detail the way the Cree negotiated cultural space with the European settlers.

Detre's research comes to grips with government activities and the dynamics of transborder migration in North American history. In her work, she will examine documents such as posters and promotional brochures — materials depicting an ideal society for the prairies and designed to appeal to American and European farm families.

## Writing Across Maine

YOUNG AUTHORS attended camp in three locations in the state this past summer, one of many service projects of the Maine Writing Project at The University of Maine.

The annual camp is led by some of the state's top writing teachers. They are among the more than 140 who have completed the rigorous requirements of the Maine Writing Project, which was established in 1997 in the University's College of Education and Human Development.



The Maine Writing Project is an affiliate of the National Writing Project, a federally funded professional development program designed to improve the teaching of writing at all grade levels. Writing Project Fellows provide instruction to other teachers and offer innovative activities, such as a summer school literacy project for high school boys and a *Rural Voices* radio program, featuring students and educators in the state.

## In Cod Blood

**A** RECENTLY discovered

phenomenon in fish blood may have benefits in medicine, biology and aquaculture, according to University of Maine scientists Ione Hunt Von Herbing, Michael Vayda and Robert Cashion.

When some cold-water fish, such as cod, haddock and toadfish, encounter extreme cold or conditions that are low on life-giving oxygen, their red blood cells change shape. Under a microscope, the cells change from round to sickle shape, and they tend to clump together. In some species, the cells contain rods or needles of crystallized hemoglobin that can even cause tissue damage.



Sickling in fish blood may correspond to an inherited blood disorder in humans known as sickle cell disease, which can cause a variety of health problems. Fish blood may provide a useful model for sickle cell disease research, in addition to determining if these fish have special adaptations to extreme environments.

With funding from the National Science Foundation, UMaine scientists are testing the idea that sickle cell formation in fish may increase the chances for survival under stress. Testing for sickle cells in aquaculture stock also may indicate harmful levels of stress in fish.

## LEADING BUSINESS

THE FORMER ASSOCIATE DEAN of the College of Business at Ohio University has assumed a new position as dean of the College of Business, Public Policy and Health at The University of Maine.

Daniel Innis earned a Ph.D. in business from Ohio State in 1991. That year, he joined the marketing faculty at Ohio University. In 1997, he became chair of the marketing department.

Innis was named associate dean of Ohio University's College of Business in 1999. In that



job, he was responsible for the operational aspects of the college, including budgeting, strategic planning, program management and academic issues.

UMaine's College of Business, Public Policy and Health is the administrative home of nationally recognized programs in business, nursing, public administration and social work. It also includes

UMaine's Center on Aging and the William S. Cohen Center for International Policy and Commerce.



## LASTING IMPRESSION

DEC. 20, 1866, legendary landscape architect Frederick Law Olmsted stood on the frozen fields of what was then Maine's year-old land-grant university and began describing the campus plan already forming in his mind's eye. Set to paper that spring, the campus plan marked the beginning of years of consultation and correspondence between UMaine and Olmsted's firm, led by his sons and successors after his retirement in 1895.

Before his commission at UMaine, then the Maine State College of Agriculture and the Mechanic Arts, Olmsted and a partner, Calvert Vaux, designed New York's Central Park. Olmsted

went on to plan parks in many major cities, such as Boston, Mass., Chicago, Ill., Atlanta, Ga., and Buffalo and Niagara Falls, N.Y. Other high-profile projects included Acadia National Park in Maine, the White House grounds in Washington, D.C., and Yosemite National Park in California. Olmsted died in 1903.

Olmsted's designs and those of his successors reflect his passion for preserving green, open landscapes and creating a sense of community. Today, those are among the distinctive features of UMaine's 660-acre campus overlooking the Stillwater River.

*"Lasting Impression" features a memorable person or event in UMaine history.*



UMaine campus from the west side of the Stillwater River, circa 1890, courtesy of Fogler Library Special Collections  
General Plan for Campus Showing Proposed Buildings and Roads, 1932, and Frederick Law Olmsted Sr., courtesy of the National Park Service, Frederick Law Olmsted National Historic Site, Brookline, Mass.



## Building a world-class marine center



**T**HE UNIVERSITY OF MAINE'S marine laboratory on the Damariscotta River is within six miles of the Gulf of Maine. Here, researchers from around the world, Maine-based marine scientists, and students from UMaine and other universities find a rich diversity of ocean organisms and habitats.

The Ira C. Darling Marine Center was donated to UMaine in 1965. Darling, a retired Chicago insurance executive, also established three endowment funds through the University of Maine Foundation — the Ira C. Darling Fund; the Agatha B. Darling Professor of Oceanography, held by Larry Mayer; and the Clare S. Darling Professor of Oceanography, held by Gary King.

The general endowment fund has been essential in leveraging federal grants to build the Darling Center into a world-class marine center. From 1992-2001, Darling Center Director Kevin Eckelbarger wrote a different proposal each year to the National Science Foundation (NSF). In those nine years, NSF made nine grants totaling \$4 million to the University for Darling Center capital improvements and equipment purchases.

"It's a perfect example of how effective an endowment fund can be," says Amos Orcutt, president/CEO of the foundation.

The combination of federal and private monies brought about the construction of state-of-the-art facilities, including a Dive and Field Staging Building, a Flowing Seawater Laboratory, Marine Culture Laboratory, two Flowing Seawater Classroom buildings, a dormitory/dining hall and library. Equipment has included the latest instrumentation and a fleet of five marine research vessels.

Today, the Darling Center is the only marine laboratory in northern New England that is actively developing its facilities to accommodate visiting marine scientists and students. In the last five years, 983 visiting scientists from 312 universities, 32 states and 25 countries came to the center. Undergraduate and graduate students from UMaine and out-of-state colleges have participated in education and research programs.

Here, more than 25 faculty in the School of Marine Sciences do federally and state-funded research on the world's oceans.

The nonprofit Gulf of Maine Foundation is partnered with the Darling Center to provide K-12 education, summer scholarships for undergraduates, lectures and public tours.

"We discovered that the more we improve the Darling Center, the more demands there are for use," says Eckelbarger.