

UMaine Today

CREATIVITY AND ACHIEVEMENT AT THE UNIVERSITY OF MAINE

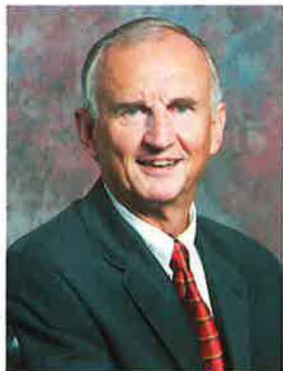
MARCH/APRIL 2005

THE MIDDLE EAST

A GLASS HALF FULL
OR HALF EMPTY?

From the President

Photo by Kathy Rice



OUR RECENT ANNOUNCEMENT that the University of Maine plans to create a Graduate School of Biomedical Science (GSBS) has been met with great enthusiasm. We are fortunate to have working relationships with highly regarded Maine-based bioscience research institutions, including The Jackson Laboratory, Maine Medical Center Research Institute and Mount Desert Island Biological Laboratory. Those partners, along with Eastern Maine Health Care Systems in Bangor and others, have helped us create this initiative, which will move Maine forward in this vital research area. Development of GSBS has been a wonderful example of cooperation involving


UMaine, its research partners, the Governor's Office and the state legislature.

Pending approval by the University of Maine System Board of Trustees later this year, GSBS will facilitate development of a College of Allied Health Professions in Bangor, which could combine programs now offered in Orono and at University College of Bangor. Such a college would complete the translational "bench to bedside" objective of Eastern Maine Health Care Systems' new Maine Institute for Human Genetics and Health, tying together the missions of basic and clinical research, education and wellness, and outreach. It would enhance our working relationships with St. Joseph Hospital, Eastern Maine Community College, and with social and human service agencies. Maine faces significant health problems related to cardiac disease, diabetes, cancer and other conditions. This work will have a positive, long-term impact on the health of our citizens.

Additionally, GSBS and its affiliated programs and institutions will attract biotech and biomedical companies, services and practitioners, not just to this region, but statewide.

GSBS will deliver a graduate education and fellowships program open to the partner institutions, and to other biomedical research and higher education institutions in Maine. Collaborating with GSBS faculty will be talented senior scientists in our partner institutions, many of who already teach in UMaine's cooperative Ph.D. programs in functional genomics, and in molecular genetics and cell biology.

Maine must be in the business of educating the "human resources" that will staff the state's existing and planned research centers for biomedicine and bioscience. These research institutions will prosper and continue to contribute to Maine's economic growth if, as we anticipate, they are able to attract and retain the best and brightest scientists.



Robert A. Kennedy
Interim President



ON THE COVER: How do you view the Mideast today? With pessimism? Optimism? According to University of Maine Professor of Political Science Bahman Baktiari, the United States' perception of the Middle East is of a glass half empty. Yet as a long-time consultant on Mideast foreign policy to U.S. administration officials like Madeleine Albright, Baktiari sees countries like his homeland of Iran poised and ready for dramatic change. He likens Iran to Spain in the early 1970s, with younger generations ready for regime change and democracy. Baktiari's perspectives are profiled in a story that begins on page 2. *Cover design by Michael Mardosa*

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2 **Dangers of Duality**

Political scientist Bahman Baktiari, a former national foreign affairs advisor and seasoned commentator on the Mideast, shares his views on Al-Qaeda and on the conflicts in Iraq, Israel and Palestine. His bottom line: pay closer attention to what's on the minds of the world's 1.2 billion Muslims.



2

6 **A Sporting Chance**

In recent years, interscholastic sports have been overshadowed by a troubling trend of out-of-control parents, win-at-all-costs coaches and student-athletes pressured to perform. A new report, *Sports Done Right*, hopes to change that.



16



10 **Oh! Canada?**

What do Americans know about their largest neighboring nation? According to Canadian Studies experts, too little.



10

12 **Sense Is**

Works by 22 of UMaine's leading student artists, exhibited as part of a senior capstone course, reveal a breadth and depth of talent, passion, voice and visual vocabulary.



12

16 **Arctic Dawn**

On a windswept desert island in the Arctic sleeps a fossil forest, evidence of a time 45 million years ago when this part of the world was warmer and 100-foot-tall trees thrived. UMaine forest biologist Richard Jagels wants to know how predecessors of today's dawn redwoods lived and died.

19 **Prehistoric Swordfishing**

In the land of birchbark canoes, the archaeological record clearly shows that prehistoric peoples in Maine and the Maritimes hunted swordfish. How can this be? A UMaine anthropologist has spent two decades trying to find the answer.



19

22 **insights**

- Tuning In
- Solar Power
- Distilling the Truth
- Insight Lite: Craving Crustaceans
- Parenting Relations
- Nano Mechanics
- Anthropology Affecting Policy
- Where Mountain Ranges Collide

UMaine political scientist
looks at the history, rhetoric
stymieing democracy in the Mideast

Dangers of

By Wayne Reilly

MARCH 20 MARKS the second anniversary of the launch of Operation Iraqi Freedom that led to the occupation of that country by a U.S.-led coalition. The conflict put the Mideast on the map for more Americans than ever before. Coupled with the ongoing Israeli-Palestinian bloodshed and Iran's recent threat of nuclear armament, it also has left people torn between looking at the Middle East glass as half full with opportunity for new democratic institutions or half empty with endless turmoil in sight.

Political scientist Bahman Bakhtiari understands the roots of such conflicted views and cautions against the dangers of duality, of promoting democracy and freedom while supporting undemocratic regimes.

As one of the University of Maine's leading authorities on the Middle East, Bakhtiari's perspectives have been getting an ever-wider audience since the destruction of the World Trade Center on Sept. 11, 2001. Combining the insights of a U.S.-trained political scientist with those of a native Iranian well traveled in the Mideast, the director of UMaine's International Affairs Program has been outspoken in assessing relations between Middle East countries and his adopted homeland.

Pointing out the inconsistencies and expediency in U.S. foreign policy through the decades, Bakhtiari has been urging Americans to pay closer attention to what's on the minds of the world's 1.2 billion Muslims.

Bakhtiari reminded a Carnegie Council conference on ethics and U.S. foreign policy in the Middle East about one of the great ironies of American history: "Many ordinary Arabs . . . would rather like some of that democracy and freedom that Mr. Bush has been telling them about. Instead, they have seen over the past decades how many democratic movements in their societies were crushed by despots supported by the West and using Western weapons. The memories linger."

On National Public Radio, Bakhtiari pointed out the confusing nature of U.S. foreign policy toward Iran: "The U.S. has shifted several times from supporting the reformists under the Clinton administration," he says. After President Bush encouraged student demonstrations in Iran, Bakhtiari warned in an op-ed piece in the *Christian Science Monitor*: "If anything, U.S. rhetoric fuels antidemocratic forces in Iran, just as Mr. Bush's 'axis-of-evil' speech benefited the hard-liners who used it as an opportunity to increase the repression of democratic reformers."

duality



Photo by Bill Drake

Dangers of duality

Such against-the-grain pronouncements have earned Baktiari a place at the table in shaping the public opinion of Americans and U.S. policymakers unused to thinking much about Middle Eastern problems before or after 9-11. The author of the book, *Parliamentary Politics in Revolutionary Iran, The Institutionalization of Factional Politics*, his views gained particular national prominence during the Clinton administration after then Secretary of State Madeleine Albright appointed him to an advisory group on Iran in 1997.

"The process of democracy and the U.S. occupation are at odds in Iraq," Baktiari told *Bangor Daily News* columnist Tom Weber after the Iraqi elections at the end of January. "I see nothing significant to come from this situation unless the U.S. finally learns to pay real attention to the causes of the insurgency, the feeling of dispossession among the Sunnis and the humanitarian issues the country faces."

Baktiari returns to the Middle East to do research two or three times annually. Last year, for example, he was in Iran in January and March to update his book; on his second trip, he also went to Jordan to chair a panel on Islam and elections, sponsored by the New School University in New York, and funded by the MacArthur Foundation and the Rockefeller Brothers Fund. In May and June, he participated in workshops in Lebanon and England, and last November, he was back as a keynote speaker on Iran for the Wilton Park Conference.

FOR THIS ARTICLE, Baktiari was asked to sum up his thinking on four questions or issues of interest to Americans.

Q: How do we restore amicable relations with Iran and convince that country not to develop nuclear weapons?

A: Regarding Iran, I think the United States' policy has fluctuated between open hostility and reluctant geopolitical cooperation. For

Iranians, Iraq is similar to the China card for the Nixon administration. Iranians know the United States needs them in Iraq and Afghanistan; without Iran's cooperation, there can be no stability in those countries.

In both Tehran and Washington, there is no consensus about how the U.S. and Iran should resolve their problems. In Washington, the hawks favor the invasion of Iran, arguing that logistically it would be easier to pull off than the invasion of Iraq because the



U.S. could launch land-based attacks on Iran from adjacent Afghanistan, Iraq and Central Asia. They also allege that Iran is a "rogue" state that has sponsored terrorist bombings in Beirut and Saudi Arabia, and is sheltering Al-Qaeda terrorists.

In contrast, the doves see tremendous difficulties in attacking Iran as compared with Iraq. Iran, they point out, is four times the size of Iraq and has a population three times that of Iraq. It has missiles capable of reaching Israeli and European targets, as well as American interests in the Middle East, and the capacity to instigate Hezbollah in Lebanon, and Hamas and Islamic Jihad in the Israeli-occupied territories against both

American and Israeli interests.

The only way Iran and the United States can normalize their relationship is through the European Union's initiative to denuclearize Iran. Bush has already acknowledged that we do not have "leverage" with Iran and that "diplomacy must be the first choice" in resolving international issues, including "nuclear armament."

A joint American-European diplomatic approach would make it far more difficult for Iran to renege on its commitment to Europe. Iran has promised to refrain temporarily from uranium enrichment while discussions for European technological, economic and commercial aid to, and political and security cooperation with, Iran make steady progress.

More important, such a joint approach would redound to the benefit of reformist and secular nationalist forces in Iran. It would deprive hard-line conservatives of the opportunity to exploit American and Israeli threats to repress pro-democracy forces.

Just like any other diplomatic problem, the nuclear issue is political. It can be resolved only through negotiation.

What happened to the Chinese nuclear issue? Nobody talks about it anymore. What really has happened to all the stockpiles of nuclear bombs in Russia? Nobody talks about it, What happened to all the nuclear stockpiles in Pakistan, an unstable regime today? Nobody talks about it. All these countries have an amicable relationship with the United States, so the latter is not making an issue of their nuclear arsenal.

Q: What does the United States need to do to end the fighting in Iraq, democratize the country and leave?

A: America can improve relations with Iraq if it accepts that Iraq is not a problem just between the United States and Iraq. It is a multilateral problem. America has to accept that fact that other parties, other powers in the region have to be involved, including European countries. And I would go one

step further and say America should build stronger relations with the Organization of Islamic Countries. In Iraq, the United States cannot defeat the insurgency alone. The future of Iraq will be decided by the majority of the country.

However, there is a catch-22. To keep Iraq successful and independent, the United States has to disassociate itself. Politicians inside Iraq need to stay away from the U.S. in order to build credibility. But the same politicians need the United States to defeat the insurgency. As a result, Iraqi politicians themselves do not have a clear solution for Iraqi problems.

We went to Iraq thinking we can do anything in a short time. Inevitably, the U.S. has to come out of Iraq in a much more defeated way. There's no way that the U.S. and Iraq can remain together. It's impossible; like oil and water.

Q: What can be done to settle the Israel/Palestinian conflict?

A: I think the biggest mistake America can make here is to pursue a policy that does not seem fair to the Palestinians. We have favored Israel on practically every policy imaginable, and this undercuts our objectivity during the peace process.

I think change will come because both Israeli and Palestinian people are getting tired of endless violence and bombings. I think people inside Israel are frustrated with too much politics played in their name and their country. The majority of Israelis are tired of settlement politics; they do not support the radical ideology of the settlers. Palestinians are tired of blockades, occupation and unemployment. They are desperate for a leader to bring peace and normality to their lives.

So what is happening in that part of the world is that leaders and politicians who are unaware of these factors become irrelevant. This is what happened to Yasser Arafat. He died without achieving his goal of establishing a Palestinian state for his people. The

new Palestinian leader, Mahmoud Abbas, is very different from Arafat. Although he has no street support, he is a skilled negotiator and has America's support.

I think there's going to be some tough times between the U.S. and Israel. I will not be surprised if there is some tough language on settlement issues, on withdrawal and on Israel loosening its economic stranglehold of the Palestinian territories. Without Arafat, we have a new beginning, but nobody can predict a new ending.

Q What can we do about Al-Qaeda?

A: Although some Muslims may identify with Osama bin Laden's message, I have not met any Muslim who agrees with his method and means. Killing Bin Laden will not destroy Al-Qaeda. We need to look at our policies toward the Muslim world in

general, and Saudi Arabia in particular. The 9-11 Commission report warns us about this. We have to stop thinking that by capturing Osama bin Laden, Al-Qaeda is going to stop. It's just like Saddam Hussein's arrest didn't end the insurgency. Al-Qaeda is a terrorist organization that thrives on discontent, alienation, anomie and frustration. The United States needs to address a whole range of political, economic and humanitarian issues in the Muslim world.

For example, the territory in Indonesia hit by the tsunami was very sympathetic to radical Islamic parties in the country, yet the American military's response to the tsunami will change people's attitude toward the U.S.

Unfortunately, I'm afraid that in Iraq we are creating more terrorists for Al-Qaeda, whereas in Indonesia we are shutting it down. We need to bring a better balance. ■



Studying international affairs

The University of Maine's International Affairs Program, directed by political scientist Bahman Baktiari, has grown apace with Americans' interest in Mideast issues since 9-11. The program had 34 majors in 2000; today, that number has nearly tripled to 95 majors in 2004, and now includes a dozen international students.

Students can specialize in one of six areas — anthropology, economics, environmental issues, history, modern languages or political science. Seventeen cooperating professors from different departments carry the teaching load.

Baktiari describes the major as "well connected." Last year, live video teleconferencing facilitated a discussion of the United States' Middle East policies between UMaine students and their peers at the American University in Cairo, where Baktiari has been a visiting professor. A similar three-hour transcontinental discussion between Orono and Cairo students is planned for March 16 on the subject of how Muslims perceive themselves and their relationship to the West.

In the past two years, UMaine students have attended campus lectures by Sen. Bob Kerrey of the 9-11 Commission, and by former U.N. Ambassador Bill Richardson. Retired Marine Gen. Anthony Zinni, an outspoken critic of the war in Iraq, attended a small luncheon with faculty and students Feb. 25 before going to give the keynote address at the Camden Conference on the Middle East.

Kenneth Hillas Jr., deputy chief of mission to the U.S. Embassy in Prague, Czech Republic, came to UMaine last fall to speak on the European Union at the International Affairs Luncheon Lecture Series. Hillas is one of 18 graduates from the International Affairs Program now working for the U.S. State Department, eight at the level of deputy ambassador. Three graduates work for offices of Senators Collins and Snowe.

Other students have gone to work for organizations in Maine with a focus on international trade and in the offices of the state's congressional delegation. Others go to graduate school.



A sporting chance

By Margaret Nagle

The final seconds ticked down on the scoreboard, ending the last varsity game of the season — and his dream. Ever since his son was old enough to hold a football, the father was sure the youngster was headed to the pros. But in this high school game, as in so many others, his son wasn't in the starting lineup. And today the team had lost. At home.

It was too much to bear. The father headed straight for his son's coach, John Wolfgram.

"He was angry," remembers Wolfgram, who was walking across the parking lot with his own family when confronted by the parent. "He felt his son had not had enough playing time, even though the staff had tried to be fair all the way through. He had played, but he did not start.

"The parent was viewing the situation from afar and didn't understand the internal dynamics of the team. He was very emotional because the end of the game meant the end of his son's career that he had followed and invested in for a long time. The situ-

IT'S ALL THEY'RE PLAYING FOR

ation ended quickly, but left a negative feeling about the season.”

For Wolfgram, the verbal attack was one of few in his 30-year career as a football coach in three Maine high schools, where his teams won eight state championships. Yet for him and so many other coaches, it epitomizes the dark side of interscholastic athletics. It's what happens with increasing frequency in Maine and across the country as unrealistic expectations of parents, young athletes and communities conflict with the realities and values of youth sports programs, often with dire and far-reaching consequences.

“Some of the situations we've been reading about around the country, (including threats and violence) occurring in youth sports and in high school, college and professional athletics, we're now seeing in Maine in ways we haven't seen before,” says former Maine Commissioner of Education J. Duke Albanese, co-director of the Sport and Coaching Education Initiative at the University of Maine. “A generation or two ago, there was considerably more authority given to coaches by the schools and parents. That's not to say that the iron-fisted coach of yesterday fits now, but a case needs to be made for leaving coaching to coaches.

“Today, there's incredible involvement by parents, the majority of whom are supportive. But some are over-involved. Parents have become the brightest and darkest sides of youth sports,” Albanese says.

In the traditional world of interscholastic sports, how student-athletes play the game has theoretically been more important than winning or losing. The emphasis is on an activity that, by dictionary definition, is engaged in for diversion or amusement. While a few youngsters might have stars in their eyes, the adults in their lives realistically understand such interscholastic sports are opportunities for children to take the court, field, track, pool or ice competitively for what's probably the first and last time in their lives, and to hone their lifelong love of athleticism and fitness. Only a handful out of the millions of American middle and high school athletes ever make it to the bright lights of professional sports.

But in recent years, the traditional concerns about good sportsmanship, the health benefits of athletics, and the role of sports in a balanced educational experience have been overshadowed by the troubling trend of out-of-control parents, win-at-all-costs coaches and student-athletes pressured to perform. The negativity is as insidious as it is pervasive. In such a school sports environment, people

are losing sight of the core values of interscholastic athletics, the experts argue.

“There's too much adult pressure placed on the sports experience,” says Robert Cobb, dean of UMaine's College of Education and Human Development, which graduates the largest percentage of the state's teachers and is home to the Maine Center for Sport and Coaching.

One of the most recent efforts to stem further erosion of the positive values of interscholastic sports is outlined in a 45-page report, *Sports Done Right: A Call to Action on Behalf of Maine's Student-Athletes*, published in January by UMaine's Sport and Coaching Initiative, directed by Cobb and Albanese. The report is the result of a 15-month study launched in 2003 by a 17-member

panel of statewide experts. Among them: Olympic gold medalist Joan Benoit Samuelson; Martin Ryan, executive director of the Maine Interscholastic Athletic Administrators Association; and Dr. Robert McAfee, former president of the American Medical Association.

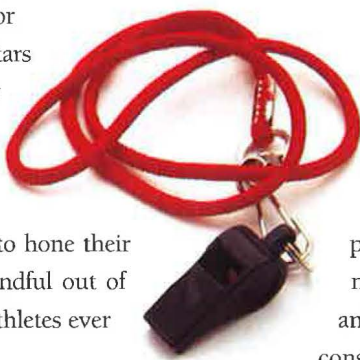
Funded by a two-year, nearly \$400,000 U.S. Department of Education appropriation secured by Maine Sen. Susan Collins, the study examines and defines healthy interscholastic sports, and sets new guidelines for conducting youth sports in Maine, and possibly beyond. The report was written as a companion piece to Maine's Learning Results, the state's academic standards.

Sports Done Right provides a philosophical framework for guiding Maine interscholastic athletics, linking sports to the overall school mission and community values, while supporting quality coaching education. It also addresses middle school and community recreational sports.

The report focuses on seven core principles and practices of a healthy sports program — philosophy, values and sportsmanship; sports and learning; parents and community; quality of coaching; opportunity to play; health and fitness; and leadership, policy and organization. Also highlighted are red-flag trends considered “out of bounds,” such as negative behaviors and attitudes, and detrimental athletic policies like pay-to-play arrangements.

“We've misplaced our ethics in many aspects of society, and sports is one of them,” says Wolfgram, a member of the *Sports Done Right* panel and an English teacher at South Portland High School, who now is an assistant football coach at Bowdoin College. “What's

“We've misplaced our ethics in many aspects of society, and sports is one of them. What's needed is competition without conflict. Competition is designed to raise the level of performance, but if it's not done with integrity, it provokes conflict. In the sports world, that leads to physical altercations; in business, to cheating.”
John Wolfgram





Core Principles of

Sports Done Right

- **Athletic participation must be healthful, positive and safe for everyone involved, conducted in an environment that teaches values and ethics; strengthens the community; promotes competition without conflict; and enriches the lives of athletes.**
- **Learning and personal growth form the foundation for interscholastic and intramural sports.**
- **Parents and community are actively involved in creating and supporting an environment that fosters positive athletic experiences for student-athletes.**
- **The coach is the key to making the student-athlete experience appropriate, positive and educational.**
- **Each student who meets the eligibility standards has the opportunity to participate and learn through sports.**
- **Participation in sports builds self-confidence while teaching good health and fitness habits to last a lifetime.**
- **High-quality athletic programs are built on a foundation of strong leadership, clear policy, adequate resources and effective organization.**

needed is competition without conflict. Competition is designed to raise the level of performance, but if it's not done with integrity, it provokes conflict. In the sports world, that leads to physical altercations; in business, to cheating.

"Football is a perfect example. The competition is very intense. The game is emotional. There's physical contact. But the game has to be played with self-control, with a focus on excellence and raising the level of performance. Conflict takes away from the dynamic of the game. If there's conflict, the result is social disorganization."

In its obsession with sports, the country has inadvertently condoned poor role modeling in professional and collegiate athletics, Cobb and Albanese agree. High-priced players engaged in violence and unethical behavior have lost their ability to offer young people a wholesome notion of what sports can be. Not only are youngsters mimicking the unsportsmanlike behavior they see in the media, but also parents are applying adult-athlete performance standards to their children.

Student-athletes are excessively involved in year-round play in a single sport, increasingly pressured to specialize in that sport to the exclusion of others. In addition, there's too little evidence that interscholastic sports programs are conducted in a manner that consciously contributes to student learning and the overall goals of schools. And there's a crisis in the availability of qualified coaches to lead youth sports programs at all levels, with most school sports teams being coached by individuals who are not on the teaching staffs of those schools and not fully trained to work with young people.

"We need to fend that off so we can protect sports as it should be for kids," Albanese says. "What's at stake is student burnout, with a lot of talented, young athletes dropping out by ninth or 10th grade because all the fun is taken out of the game. We have real concerns about the pressures and unrealistic expectations undoing all that sports has to offer young people."

The *Sports Done Right* report is unprecedented in its reliance on the voices of student-athletes to examine problems and solutions in interscholastic sports. In addition to small group meetings with the panel, more than 300 Maine student-athletes and adults responsible for their sports programs participated in a 2004 Maine Sports Summit at the university. The student-athletes called for stronger communication between athletes, coaches and parents; positive sports learning environments; more fun in sports; winning kept in perspective; and consistent, fair treatment of athletes of all abilities. Students also identified practices detrimental to healthy sports experiences, such as negative comments and behavior by parents and fans, win-at-all-costs attitudes and coaches favoring the best players. Given the choice between having a winning team and giving all team

members a chance to play, the student-athletes chose the latter.

“Winning and success are important for establishing healthy goals, but the reality is that students aren’t always going to win, and there’s a lot of rich learning that comes with falling short,” says Albanese. “Those are realities for student-athletes. It’s when the extremes, like winning at all costs, creep into sports that they become unhealthy. Or when all the good work by a coach who’s great with the student-athletes is undone because he or she isn’t winning enough. In that community, winning is too high on the pedestal.

“A balance must be struck between striving for success and excellence, and recognizing that the athletes are kids, allowing as many to participate as possible so the result in the end is learning.”

Community participation and school leadership are central to the decision and process to guide interscholastic athletics, according to *Sports Done Right*. Maine superintendents and school boards have been invited to participate as stewards of the initiative, assisting schools and communities with a broad dialogue and ultimately signing on to “compacts” developed in partnership between UMaine and the Institute for Global Ethics, based in Camden, Maine.

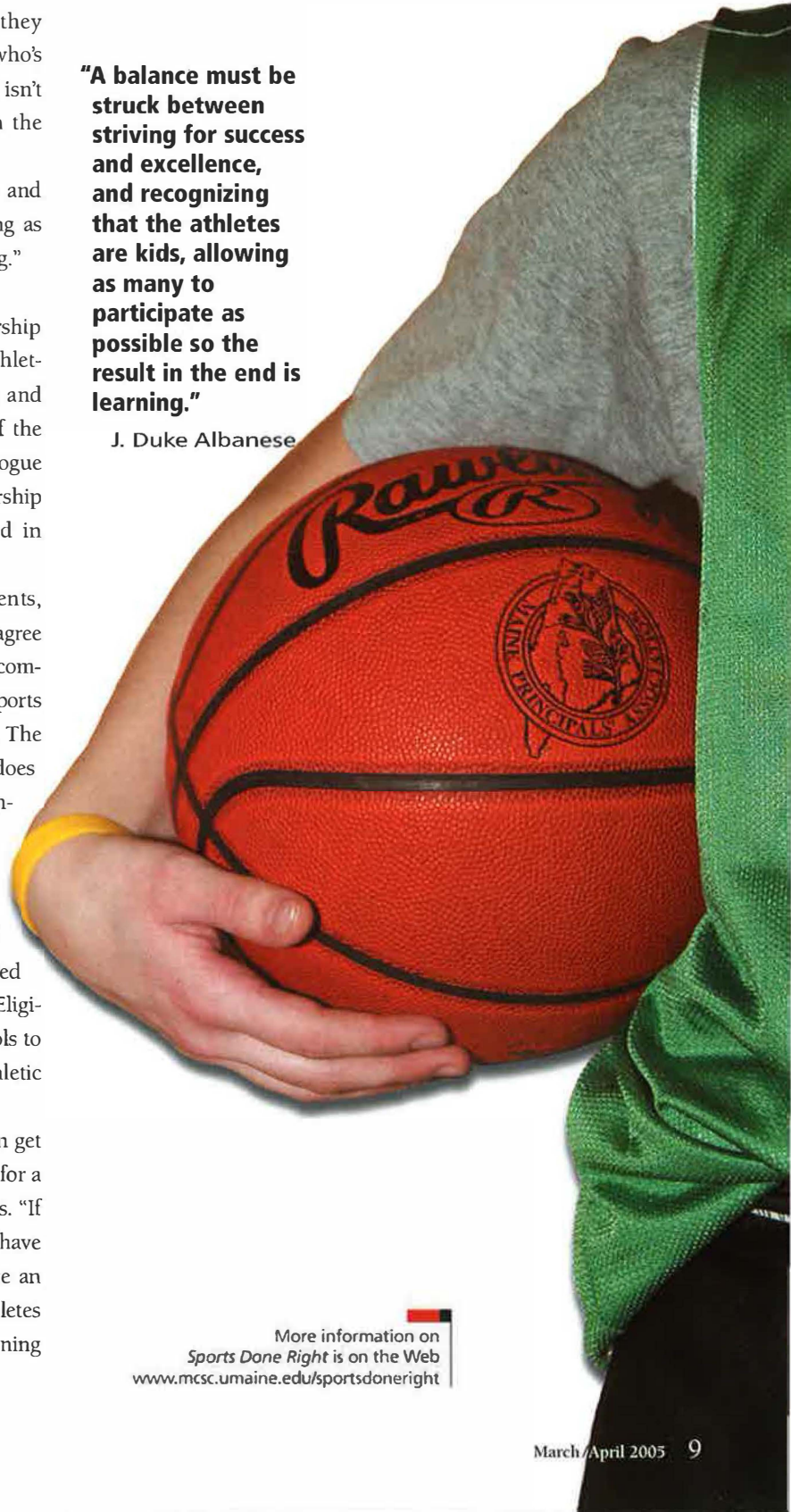
Under such compacts, all stakeholders — including parents, student-athletes, coaches, school boards and administration — agree to launch community conversations about the report and its recommendations, receive appropriate training and conduct school sports under the core principles and practices of *Sports Done Right*. The school-community compact is a long-term commitment and does not phase out with the changing of school boards and superintendents.

In addition, the Maine Center for Sport and Coaching at UMaine, in affiliation with the Institute for Global Ethics, will train local leaders to facilitate community conversations and implement *Sports Done Right*. The center has already incorporated the core principles and practices into its new Online Coaching Eligibility Course, which introduces aspiring coaches in Maine schools to information that promotes and supports positive and healthy athletic competition.

“The report gives us a model — a clear prototype — that can get everyone on the same page, understanding what has to be done for a more healthy interscholastic sports environment,” Wolfgram says. “If we get people across the state to buy into the compact, and we have the leadership to put the ideas in place, in 20 years we’ll have an interscholastic environment with the interests of the student-athletes at heart, helping them grow, have fun, strive for excellence. Winning will still be important, but will be kept in perspective.” ■

“A balance must be struck between striving for success and excellence, and recognizing that the athletes are kids, allowing as many to participate as possible so the result in the end is learning.”

J. Duke Albanese



More information on
Sports Done Right is on the Web
www.mcsc.umaine.edu/sportsdoneright



Go
Abroad.
Drive to
Canada.

By Margaret Nagle

Oh! Canada

FOR MORE THAN A DECADE, Canada has been rated as the best country — or one of the top eight in the world — in which to live by the *Human Development Report*, commissioned by the United Nations Development Programme. In the latest report issued in 2004, Norway was ranked first, followed by Sweden, Australia and Canada. The United States ranked eighth out of 177 countries last year, based on per-capita income or standard of living, education and literacy, life expectancy and health.

For Canadian studies expert Stephen Hornsby, the report confirms what he and others in his field have long known about America's northern neighbor. The irony is, too few Americans know what's above the 49th parallel.

"Many Americans who see the U.S. as a superpower view the American model as the only way to live," Hornsby says. "That's one of the main points about going to Canada: to see that people live in a modern way and yet do important things differently and, in some ways, in a better and more enriching way for their society. The American way is not the only way. There are alternatives."

In recent years, some in the world have done a double take when it comes to the traditionally unassuming nation with a population less than that of California. From 1992–2000, the UN's *Human Development Report* rated Canada as the best country to live in, as reported by the Canadian Broadcasting Corp. In 2003, Canada was in eighth place, the first and only time it ranked below the U.S. Yet that same year, Britain's *Economist* magazine looked at Canada's social liberalism, economy and "certain boldness" in social policy, and concluded "Canada is now rather cool" (as in hot, happening, in a Renaissance sort of way). The magazine's five-year survey of the 60 most prosperous nations, conducted by international economic analysts, cited Canada as the best place in the world to do business.

Because of its proximity and growing stature, Americans need to know much more about Canada, says Hornsby, who directs the University of Maine Canadian-American Center, the largest institute for the study of Canada in the United States. Increasingly, the U.S. and Canadian economies are integral as a result of the North American Free Trade Agreement. (More than 80 percent of Canada's trade is with the U.S.) The two countries also share environmental concerns, particularly over-harvesting of natural resources, and pollution of common waterways and airspace.

In addition, the nations have long-standing social and cultural ties. Many Canadian social policies and issues are relevant to the United States, including the continuing debate in Canada about the role of the government in social and welfare issues, and efforts made by Canadians to develop a distinctive cultural tradition in the face of homogenizing tendencies of mass culture.

"While Canada has a standard of living and material existence like the United

Unbeknownst to most Americans, there's much to

da?

States, there are fundamental social differences — a more collective social safety net ranging from healthcare to education to social security,” Hornsby says.

Among its many distinctions, Canada has established an official bilingual policy, strict gun control, and state-supported colleges and universities. Most recently, it approved same sex marriages. Canadians rate universal healthcare as the most important aspect about their nation, Hornsby says.

However, no nation is a utopia. Canada struggles like other countries with such issues as high taxes and poverty. But what Canadians are showing Americans is that there are different ways of living on this continent, says Ray Pelletier, associate director of the Canadian-American Center. “From them, Americans could learn cultural tolerance and the importance of being able to communicate in a second language. While we do a lot of things right in the U.S., we need to recognize the strengths of other countries. Canadians, for example, seem to be more respectful of cultural identity.”

UMaine’s Canadian-American Center, founded in 1967, promotes cross-border research in the humanities, and the social and natural sciences, and directs educational outreach programs. Both duties are particularly pertinent in Maine, which is bordered by two Canadian provinces. Possibly as much as half of the state’s population has ancestral roots in Canada.

The Center’s outreach initiatives include professional development workshops and Atlantic Canada summer institutes for teachers, both in English and French. Last summer, 32 teachers from 12 states participated in two institutes in Nova Scotia and New Brunswick. Among them was Debbie Blake.

“I never knew anything about the Acadian people before this trip,” says Blake, who grew up in Massachusetts and teaches school in New Hampshire. “It seems since we’re such close neighbors, we ought to do more. It’s such an interesting story, even beyond the historical significance, that it should be shared.”

At a time when the American image abroad is tarnished by claims of cultural insensitivity, learning about the largest, nearest nation to the U.S. could be a stepping-stone toward greater international understanding, Canadian-American Center officials agree.

“It’s easier to relate to Canada because it’s similar in many ways to the U.S. For many Americans, it’s far more difficult trying to understand other countries,” Hornsby says. “That’s why the center’s outreach is so important. We have the opportunity to take students and teachers and immerse them in Canada. They not only come to better understand that nation, but to see the U.S. from a different perspective.” ■

No nation is a utopia, but what Canadians are showing Americans is that there are different ways of living on this continent.

More information on the Canadian-American Center is on the Web www.umaine.edu/canam/

Learn from — and about — our northern neighbor

Sense Is

Senior exhibit is a census of UMaine's leading student artists

By Margaret Nagle
Photographs by Bill Drake

MOST UNIVERSITY OF MAINE undergraduates complete their final exams knowing that their test performance is a matter between them and their professors.

Not so for studio art majors in one capstone course. Their final exam is on display for the public to see.

In the senior studio seminar, the artists spend a semester planning and preparing an exhibition of their works. The goal is to synthesize what they've learned in previous coursework to demonstrate essential professional practices in the visual arts.

The class is designed to "be a bridge from undergraduate study to the real world," says Professor of Art James Linehan, who teaches the course.

This fall, 22 studio art majors were in charge of every aspect of launching an exhibit on two floors in UMaine's Carnegie Hall — from selecting the works to designing the lighting, orchestrating the publicity and planning the opening reception.

The result: *Sense Is*, the senior exhibition showcasing works by some of the leading young artists completing their studies at UMaine. It reveals their talent and passion, vision, voice and visual vocabulary. As a chapter in their lives nears an end, this exhibit invites final examination.

The seven works featured here were selected to demonstrate the diversity of media used by the artists.

I have always had a fascination with masks, and this project began as an exploration of self-identity. My intent was to create a series of self-portrait masks that would be worn in various settings. During the course of the semester, my idea evolved from focusing on the ways in which each of us changes and adapts to different settings, to becoming a statement about how my own self-consciousness causes me to change and reflect the people with whom I surround myself; how my own self-image reflects my surroundings.

Lauren Jellison

Reflective Self Mask

Mixed media, 2004

I am inspired and driven to make art by seeing it all around me.

Lauren Jellison, Bangor, Maine, a studio art major with a concentration in sculpture



Celena Grover



A Portrait of a Young Woman of the 1920s

Mixed Media, 2004

I come from a family of women who have crafted all their lives. I (lived) with my grandmother and learned the traditions that had been passed down to her.

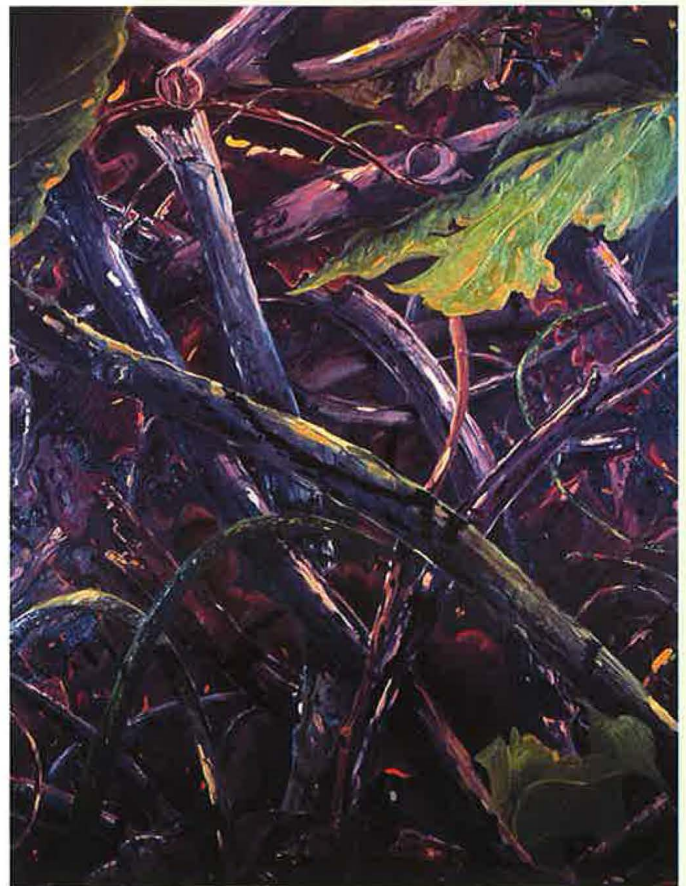
Celena Grover, Bangor, Maine, a studio art major with a concentration in mixed media



My *Portrait of a Young Woman in the 1920s* is of my great-grandmother who, at that time, was the same age I am now. I am drawing a comparison between women today and in the past, how the roles and views of women have changed or remained the same. I also am exploring how we romanticize the past and look back at the “good old days.” It’s fascinating how some of these objects transcend time.

Microcosms exist in our relative space, (some) no more than four inches square, but they are environments all their own — smaller subsets of the larger whole of our macro world, which is itself a minor subset of a greater existence. On a more personal level, this imagery seems to reflect an inward state, my mind-set as I prepare to leave school to face some sort of uncertain professional art career. The images and subject matter are familiar yet foreboding. It is structured but chaotic, for it cannot be determined in nature how this detritus is going to accumulate. The space beyond is not quite visible.

Christopher Peary



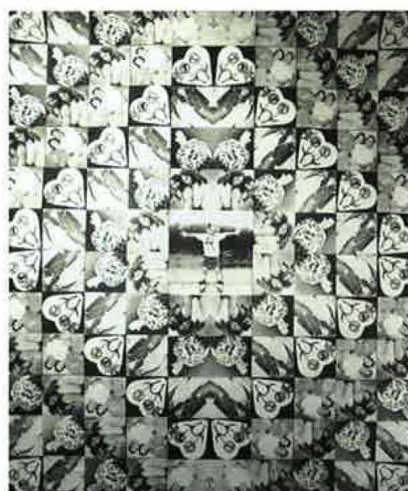
Inward

Oil Painting, 2004

My inspiration is the fantastically mundane existence of everyday life.

Christopher Peary, Washburn, Maine, a double major in journalism and studio art, with a concentration in drawing and painting

Anne Shank



Made with Love

Intaglio print, 2004

The influence of my family's creativity has been my main inspiration.
Anne Shank, South Portland, Maine, a studio art major with a concentration in photography

My piece is a self-portrait. The quilt is a homage to those who helped to make me who I am, both literally and figuratively. I have always considered myself to be one of the lucky ones who had two dads — my biological dad and my

stepdad. However, growing up, this always caused confusion and frustration. In reality, the true story of how I came to be had been untold. In *Made with Love*, both my fathers are shown, because they both have played vital

roles in my development as a person. For the same reason, my stepdad's parents also are shown. I am in the center square. It is amazing to think of how many people it takes to make a single life.

Two of my three pieces in the show were partially consumed on the first night at the opening reception. *Okashi(i)1* was a sushi meal made entirely of mass-produced candies; *Okashi(i)2* had a garden-meets-mandala feel, inviting participants to consume and, in turn, destroy the cliché images of a bonsai tree, a crane and Mt. Fuji, created out of gumballs. The bronze work, *Kitty-Chan: Mamorinuku*, takes a highly recognized (cultural) character and treats it as a god. In her circle, she protects other anime characters that are lesser known or more destined to fade away. This protective side of Kitty-Chan is not far from her origins.

Sarah Holodick



Kitty-Chan: Mamorinuku

Mixed Media Installation, 2004

I'm inspired by what I see around me, the main portion of which is pop culture.

Sarah Holodick (aka "bug"), Smithtown, N.Y., a studio art major with a concentration in sculpture



Morgan King



Untitled

Installation with metal, glass, leaves, dirt, 2004

I want to create a work of art that's so powerful and intense that the viewer is speechless.

Morgan King, North Stonington, Conn., a studio art major with a concentration in drawing and sculpture

This piece was created during my final semester at UMaine. The whole realization that I would soon fully become an "adult" was terrifying and it felt more like I was dying rather than moving forward with my life. I created this sculpture to echo my thoughts and feelings about graduation and what lies beyond. I didn't want to think about joining the real world with everyone else. I don't want to fall and be washed away by the rain like everyone else. I want to hold on to my branch as long as I can. I want to be young forever.

Sculpture is no longer limited to objects that are attached to a building or a base; it has grown into video, installations and performance, among other things. It also has laid claim to new materials — sound, real time, the artist's own body, for example. This medium gives me the chance to re-experience my life through a different lens of truth. Because of the content of my video and audio pieces in the senior show, I chose not to have an artist's statement. My intention was to create an intense and deeply personal experience, which I hope will lead to dialogue among the participants.

Sarah Louise Peters

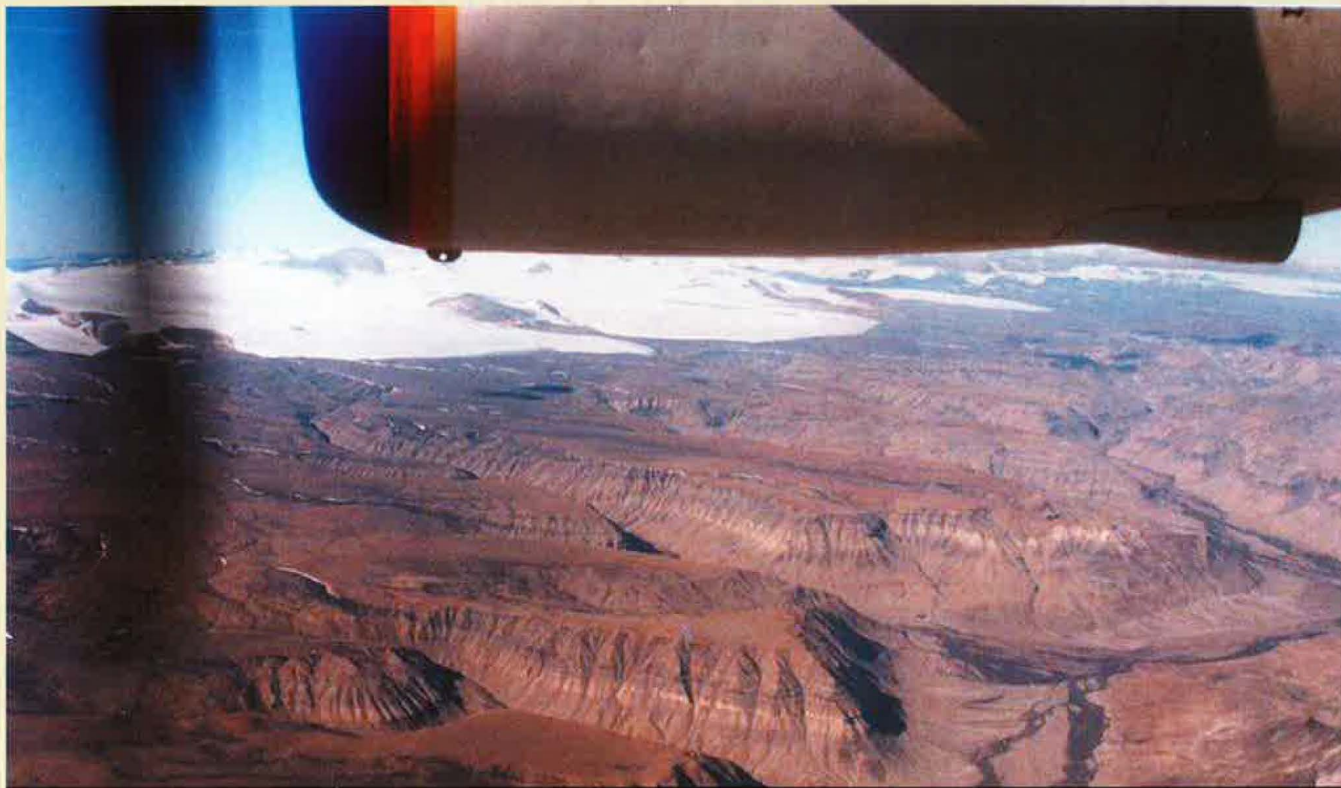
Bloody Knuckles

Video Installation, 2004

Art is as much about research and decision-making as it is about object making.

Sarah Louise Peters, Bangor, Maine, a studio art major with a concentration in sculpture





Flying over Axel Heiberg provides a dramatic view of the canyons cut by melt from the island's polar cap. The Canadian High Arctic island is home to a fossil forest, the remains of lush vegetation that thrived about 45 million years ago, most notably in nearly three months of 24-hour sunlight annually. Photo by Richard Jagels

Arctic Dawn

Fossil forest yields clues to a polar swamp

By Nick Houtman

Axel Heiberg, a desert island in the Canadian Arctic, is an unlikely place for a lush forest. From Cape Stallworthy, its northernmost point, you can see the Arctic ice pack stretching toward the North Pole and beyond. Over the horizon, the next landfall would be Siberia. The island, which is about half the size of Maine, is shrouded in four months of winter darkness, ice and snow, but summer brings 24-hour-a-day sunlight and enough warmth to expose brown hills and river valleys that drain streams off the island's year-round ice cap.

Summer also reveals the remains of an ancient forest — multiple layers of stumps, bark, cones, leaves and even logs — squeezed tightly into the soil of exposed hillsides. Discovered by

a helicopter pilot in 1985 and extending across more than 38 square miles, these forest remnants have since been studied by scientists from Canada and U.S. Unlike the petrified forests of Arizona in which wood is literally turned to stone, this debris was “mummified,” buried by floods and then, as the climate changed, preserved for millennia by cold and arid conditions.

The wood is so well preserved that tree rings can be counted; when dried, the wood burns — a true fossil fuel. Scientists at the University of Saskatchewan and the Geological Survey of Canada began analyzing fossil remains in the late 1980s. A team from the United States, including University of Maine forest biologist Richard Jagels, visited the island in 1999 and 2000. Carleton

University in Ontario, Canada, hosts an illustrated Web site (<http://hoopermuseum.earthsci.carleton.ca/forest/eo12a.html>) on what is described as “one of the best fossil forests in the world.”

Meanwhile, fossils continue to emerge from the soil as persistent Arctic winds peel black bits of wood, bark and seed cones out of the earth, and scatter them across the land. Skiers who have trekked across the island report being slowed by wood stuck to the bottoms of their skis.

Scientists have determined that the forest lived about 45 million years ago during the Eocene geological age. The fossils speak of far warmer times, hotter even than what have been projected for the Arctic in the next century as a result of rising global temperatures. Today, low-growing sedges and arctic willow briefly poke their heads above the soil; years ago, the predecessors of 100-foot dawn redwoods and broad-leaved trees shared the landscape with prehistoric crocodiles, rhinoceros and birds. Now those types of trees live in warm, temperate regions of the world. Just how warm it was, and how plants and animals responded to the combination of warmth and seasonal light extremes, is the focus of ongoing research and scientific debate.

At UMaine, researchers are studying one species of fossil tree, a relative of the modern dawn redwood or *Metasequoia*, that was dominant until the planet gradually cooled over millions of years. Dawn redwood fossils have turned up across the northern hemisphere in Greenland, Asia, Europe and North America. Scientists thought the species was extinct in modern times until living specimens were discovered in south-central China in the mid-1940s. Jagels will tell you that, although the conditions in which this species thrived no longer exist anywhere on the planet, dawn redwoods could play a role in our future.

A specialist in both forest biology and wood science, Jagels traveled to Axel Heiberg with a research team led by University of Pennsylvania scientist Arthur Johnson. Jagels and his students are studying the ancient material, as well as live dawn redwood trees, to understand how the species thrived in the Eocene and what stresses it might have encountered.

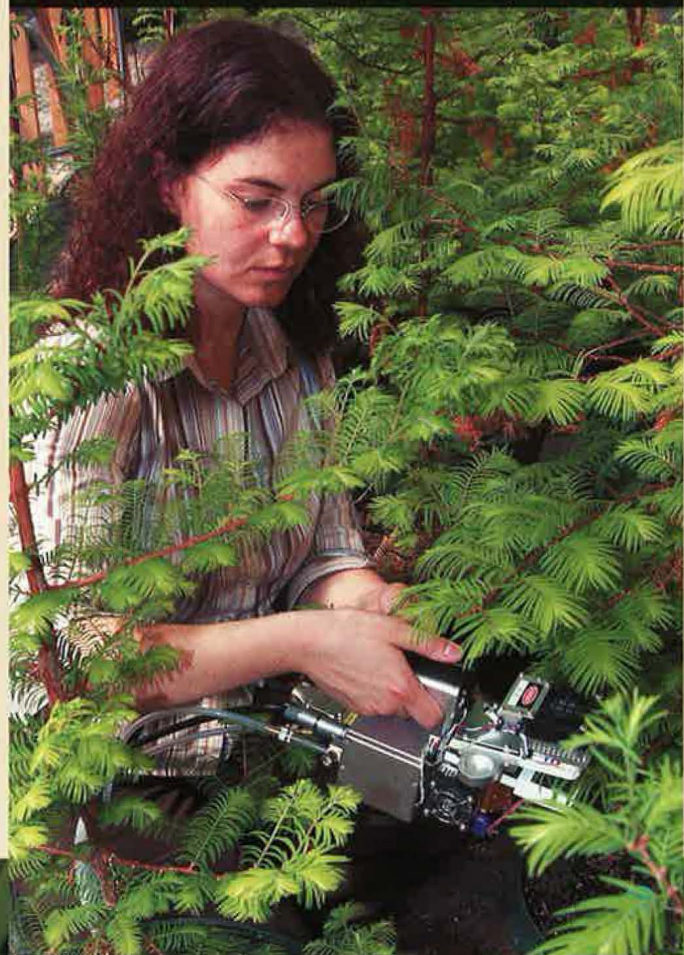
“What interests me most is the physiology and ecology of this forest. How did these trees grow in a regime of continuous light? During May, June and July, the sun never sets, although it shines weakly at a low angle. The whole tree received direct sunlight at some time as the sun circled above the horizon,” says Jagels, a professor in the Department of Forest Ecosystem Science, whose

research has been supported by grants from the Andrew W. Mellon Foundation and the Maine Agricultural and Forest Experiment Station.

Continuous light presents a problem for trees. “Without a dark period, a tree doesn’t have the opportunity to recharge the sap wood” with water and nutrients, says Jagels. In addition, the products of photosynthesis can build up in leaves and halt or reduce photosynthesis itself.

In experiments with dawn redwood seedlings, Jagels, UMaine associate scientist Michael Day and postdoctoral research associate Alejandra Equiza have found evidence that the tree responds to continuous light by rapidly funneling sugars to growing stems and needles. Continuous growth and an expanding crown literally give the dawn redwood a branch up on the competition. Its primary competitor on Axel Heiberg was the larch or tamarack (*Larix* species), another conifer that loses its needles in winter. In contrast to tamarack, dawn redwood produces more needles and branches that effectively shade out the competition.

In UMaine greenhouses, postdoctoral research assistant Alejandra Equiza is studying the physiology of dawn redwoods by exposing them to continuous light that mimics a warm polar summer. Photo by Kathy Rice





In 1999 and 2000, UMaine forest biologist Richard Jagels (above) went to Axel Heiberg as part of a U.S. research team, led by University of Pennsylvania scientist Arthur Johnson, to study fossil remains of the early ancestors of dawn redwoods.

Photo courtesy of Richard Jagels

Another factor in the dawn redwood's favor is its ability to conduct photosynthesis in the dim light of an Arctic spring or fall. Working with Jagels, UMaine graduate student Xiaochun Li analyzed cells at the surface of dawn redwood needles. Putting the needles under an electron microscope, she found that they contain chloroplasts — photosynthetic machinery located well below the surface in most other trees. Like an owl's eye designed to function at night, the position of these chloroplasts makes the tree more sensitive to available light. Together with a convex cell shape that helps to concentrate light, chloroplasts at the needle surface enable dawn redwoods to conduct photosynthesis at a high rate, even when the sun is low on the horizon.

In comparison to modern dawn redwood trees, Jagels' studies of annual growth rings in ancient wood have revealed that the trees on Axel Heiberg appeared to be as productive as their modern counterparts. In fact, dawn redwood prefers wet locations (its Chinese name, *shui-sa*, means "water fir"), and in the warm, damp paleo-Arctic, it took advantage of swampy conditions.

Jagels and his colleagues have yet to fully understand the whole dawn redwood story, why it lost its dominance and could not compete with other species in places with a regular day and night cycle. But their work suggests that as the Earth got cooler and drier, dawn redwood had difficulty competing with newly evolving species better adapted to changing environments.

Some other conifers, says Jagels, including bald cypress and the towering redwoods of California, appear to be headed toward

a status as relicts of earlier ages, hanging on in places that are marginal for other species. As a wood scientist, Jagels would like to harness dawn redwood for a useful role in industrial forestry. In a 2003 article in *WoodenBoat* magazine (for which he writes a regular column), he suggested that the species has growth and wood properties that make it ideal for tree plantations.

Fast growth (up to 6 feet annually), preference for growing with its own kind and ability to do well on low-nutrient, acidic soils enable it to produce fiber at competitive costs for wood product industries, Jagels argues. Moreover, the wood's moderate rot resistance and light weight make it useful for new wood composite materials in boat building and construction industries.

"Dawn redwood will not be the panacea to fulfill all our future wood needs," he wrote in 2003, "but I am going to predict that it could become the radiata pine (currently the most common plantation tree in the world) of the late 21st century."

Jagels' suggestion has drawn criticism from people who warn of spreading non-native species in the name of commerce. For example, eucalyptus, a native of Australia, has raised concerns on the U.S. West Coast, as has Norway maple in the East. Both have shown an ability to spread and to outcompete native vegetation. But Jagels notes that dawn redwood was widely distributed across the globe before it succumbed to a cooler, drier climate. He stresses that in nearly 50 years of cultivation, it has not escaped from gardens and other developed landscapes. It also is important, he adds, to maintain natural preserves of indigenous species outside of plantations.

Ultimately, saving the genetic stock of relict species, such as dawn redwood, provides resilience in the face of global change. "That's an important goal for me and my colleagues. The Earth will continue changing, and dawn redwood may once again live in high-latitude forests. Black spruce and other species that dominate in northern boreal forests do better in cold climates, but in the distant future, those trees may be restricted to higher elevations," says Jagels. ■



In his laboratory, Richard Jagels studies the growth rings and cellular structure of the ancient wood, comparing them to the physical characteristics of their modern counterparts, dawn redwoods.

Photo by Kathy Rice



An 1851 woodcut engraving in *Gleason's Pictorial Drawing-Room Companion* depicts Maine's Passamaquoddy tribe members hunting porpoises. The accompanying article in the weekly newspaper indicates that the porpoises were shot, then retrieved with fish spears, all from "frail" canoes. Porpoises or dolphins can weigh almost 300 pounds; north Atlantic swordfish at the turn of the century averaged 300–400 pounds, according to a Natural Resources Defense Council report.

Image courtesy of the University of Maine Hudson Museum

UMaine anthropologist unravels the myths
that contradict the artifacts unearthed in the land of birchbark canoes

prehistoric swordfishing

By Margaret Nagle

WHEN ZANE GREY WASN'T CAPTIVATING millions of readers with his Westerns, the prolific literary pioneer was having his own hunting and fishing adventures. His prey included the swordfish, which Grey characterized as "the noblest warrior of all the sea fishes."

"Lassoing mountain lions, hunting the grizzly bear, and stalking the fierce tropical jaguar, former pastimes of ours, are hardly comparable to the pursuit of *Xiphias gladius*," wrote Grey of the fish, who's Latin name means gladiator.

Such depictions of broadbills can be found throughout history. Maritime annals contain descriptions of the swordfish's "war-like" demeanor and malicious ferocity. Turn-of-the-century newspaper headlines herald stories of swordfish menacingly attacking fishermen and maniacally piercing dories. Sports fishermen today characterize the broadbill swordfish as an ocean predator like no other.

So how does an anthropologist explain the remains of such a beast-fish in coastal archaeological sites in Maine and the Maritimes, where native peoples traditionally traveled in birchbark canoes? For years, the well-



Barbed harpoon heads, some like this replica of an artifact attached to a shaft made from a swordfish bill, were uncovered in archaeological sites in Maine thousands of years old. They resemble technology used by modern-day swordfish hunters, like the brass harpoon head pictured above. An archival 1930s photo from Nova Scotia shows a fisherman reeling in the float and retrieval line attached to a harpooned swordfish, drifting below the dory.

Photo courtesy of the Maine Folklife Center, University of Maine

documented disposition of the feisty swordfish and lack of archaeological record of boats opened the door to speculation that peoples of the Late Archaic period, 5,000–3,800 years ago, must have used dugout canoes for such treacherous ocean hunting.

University of Maine anthropologist David Sanger was one of the experts who remained unconvinced that it was dugout technology that allowed paleo-Indian fishermen to hunt swordfish in the Gulf of Maine. Such an unfounded conclusion was the result of “stacking of one assumption upon another,” says Sanger, quoting his longtime colleague, noted archaeologist James Wright of the Canadian Museum of Civilization. Birchbark canoes were more seaworthy, compared to hard-to-manage dugouts.

In 1975, Sanger first wrote about aboriginal swordfish hunting, looking at why the practice stopped on the Maine coast around 3,800 years ago. One hypothesis is that there was a significant change in swordfish range, brought on by cooling sea-surface temperatures; the other is that a cultural shift occurred when a new way of life was

introduced during the Susquehanna period by peoples of the Chesapeake Bay region.

In subsequent years, Sanger has investigated swordfish behavior and sea-surface conditions in an attempt to understand why coastal middens younger than 3,800 years are void of pieces of swordfish bill, skeletal remains and artifacts made with the swords. He has consulted oceanographers and marine biologists about sea-surface conditions, climate change, and fish physiology and behavior. Key to his research were interviews with seven former swordfishermen from Nova Scotia who hunted by harpoon, technology with striking similarities to that unearthed in Late Archaic middens.

While the question is still open as to whether a change in culture or climate occurred 3,800 years ago, the logistics of aboriginal swordfish hunting are better understood — and debunked — as a result of Sanger’s interdisciplinary investigation.

“Anecdotal evidence has built up, and even some biological literature suggests that the swordfish is pugnacious, implying volition,” Sanger says. “I wanted to find out if fishermen with face-to-face encounters regard this fish as pugnacious.”

SANGER AND JAMES MOREIRA, a folklorist and director of the Maine Folklife Center on campus, interviewed long-time swordfishermen from Nova Scotia who plied the waters off Maine and the Maritimes in the 1930s–50s using hand-thrown harpoons and dory retrieval.

Up until the 1960s, before the use of spotter aircraft, radar and longlines, swordfishing in New England and Nova Scotia was largely still done using a harpoon with attached retrieving line (about 100 fathoms or 183 meters) and an empty 10-gallon wooden keg as a float. The harpooner stood on a pulpit projecting over the bow in order to get directly over the fish, aiming for the body below the backbone and between the ribs. Once struck, a dory was dispatched to retrieve the keg and reel in the swordfish.

Barbed harpoon heads, some with gouged holes for the retrieving line, uncovered in archaeological sites in Maine thousands of years old, clearly resemble technology used by modern swordfish hunters. The earliest evidence of North American harpoon technology came from a 7,500-year-old burial site in Labrador. In the Late Archaic age, lines could have been made from leather or plants. Line holes in the harpoons indicate cordage of small diameter; attached to the line was probably a float, perhaps made of inflated sealskin.

The seven Nova Scotia fishermen interviewed each landed an average of 300 swordfish per season while fishing a total of 80 seasons. Out of the 24,000 swordfish landings they witnessed, they could only cite a dozen encounters in which dories or men were harmed.

“People hunting swordfish 4,000 years ago had to solve some of the same problems swordfishermen have today, including how to land the fish safely,” Moreira says. “The behavior of the fish, presumably, has not changed, and once early hunters understood that the fish would not, by nature, attack the pursuing boat, then harpooning swordfish from a canoe or any other small craft would become a viable pursuit.”

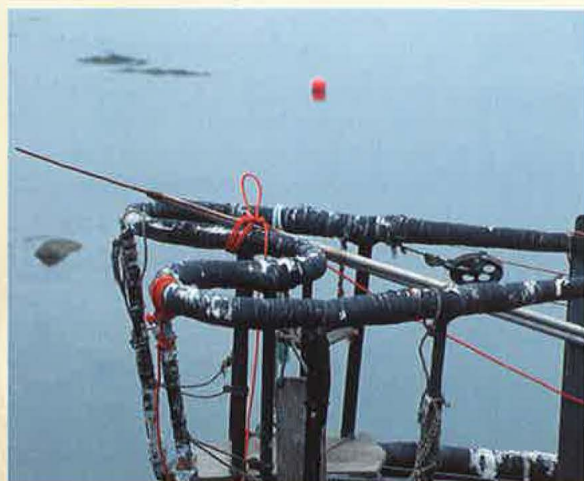
Very real accounts — not just fish tales — of swordfish encounters with marine vessels have been documented. In 1931, the *Gloucester Times* published a photograph of the schooner *Mary D'Eon* with a swordfish impaled in its wooden bow. In 1967, the research submersible *Alvin* from the Woods Hole Oceanographic Institution was hit by a

swordfish off the east coast of Florida at a depth of 2,000 feet.

Sanger and Moreira came away from their ethnoarchaeological project in Nova Scotia with eyewitness accounts of swordfish behavior that could then be further explored with fish biologists. The swordfishermen talked about the ease in approaching an adult of several hundred pounds basking on the surface, even with a motorized vessel. They verified that, once harpooned, the fish dives deep. If still alive when pulled aside the dory, a dagger in the gills kills it.

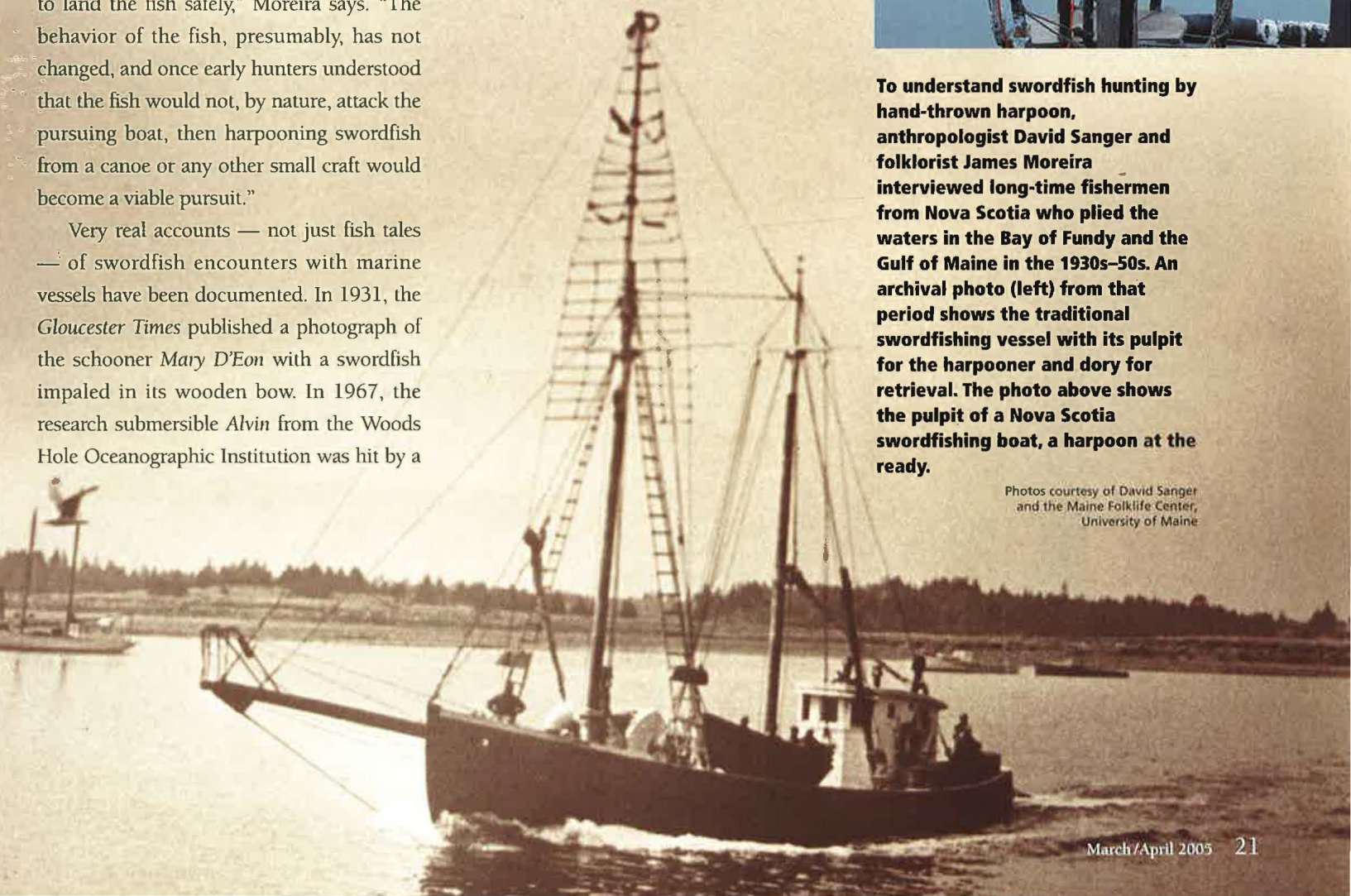
Today, as documented by oceanographers, the Eastern Maine Coastal Current running from Grand Manan Island in the Bay of Fundy south to Penobscot Bay is too cold for swordfish to be hunted regularly with harpoon. Swordfish prefer to bask when sea-surface temperature hovers around 60 degrees F, and where the food supply is high, as on the east side of Georges Bank today.

The fact that so many swordfish occur in archaeological sites beside the Eastern Maine Coastal Current indicates that their normal range extended farther between 5,000 and 3,800 years ago than it does today. This suggests a significant change in the coastal current's sea-surface temperature. Lacking strong paleo-oceanographic data on the Gulf of Maine, scientists speculate that rising sea level, increasing tides and tidal mixing, as well as climatic cooling may have contributed to lower temperatures. ■



To understand swordfish hunting by hand-thrown harpoon, anthropologist David Sanger and folklorist James Moreira interviewed long-time fishermen from Nova Scotia who plied the waters in the Bay of Fundy and the Gulf of Maine in the 1930s–50s. An archival photo (left) from that period shows the traditional swordfishing vessel with its pulpit for the harpooner and dory for retrieval. The photo above shows the pulpit of a Nova Scotia swordfishing boat, a harpoon at the ready.

Photos courtesy of David Sanger and the Maine Folklife Center, University of Maine



IN APRIL, DOZENS of Penobscot Nation children will become songwriters in a cultural project designed to help them learn more about their heritage, language, history and Native identity.

Leading them will be California singer-songwriter Dave Nachmanoff, who will spend a week working with the children and other members of Maine's Penobscot community, including tribal elders. They will share cultural stories, and put their thoughts into lyrics that will be recorded and also performed at the end of the workshop.

Nachmanoff's visit to the island community is funded by a Maine Community Foundation grant to the Penobscot Nation Boys and Girls Club, in collaboration with UMaine's Wabanaki Center and University of Maine Project Opportunity.

It will be Nachmanoff's second visit to Indian Island. Last summer, he conducted a songwriting workshop with Bangor-area Jewish children and spent an afternoon with Penobscot children. The product of that session was a song, "It's Just for Fun," about Penobscot canoe racing.

A group of boys on the island came up with the words and Nachmanoff, a soft-rock and folk artist, composed the music, recorded the song and sent the youngsters a CD.

Tuning In



A TEAM LED BY University of Maine scientists has reported finding a potential link between changes in solar activity and the Earth's climate.

In a paper for the *Annals of Glaciology*, Paul Mayewski, director of UMaine's Climate Change Institute, and 11 colleagues from China, Australia and Maine describe evidence from ice cores pointing to an association between the waxing and waning of zonal wind strength around Antarctica and a chemical signal of changes in the sun's output.

At the heart of the paper, "Solar Forcing of the Polar Atmosphere," are calcium, nitrate and sodium data from ice cores collected in four Antarctic locations, and comparisons of that information to South Pole ice core isotope data for beryllium-10, an indicator of solar activity. The authors also point to data from Greenland and the Canadian Yukon that suggest similar relationships between solar activity and the northern hemisphere atmosphere.

Their focus is on years since 1400 when the Earth entered a roughly 500-year period known as the Little Ice Age.

The researchers' goal is to understand what drives the

The ice core data show that when solar radiation increases, more calcium is deposited. Additional calcium may reflect an increase in wind strength in mid-latitude regions around Antarctica, especially over the Indian and Pacific Oceans.

Earth's climate system without taking increases in greenhouse gases into account, says Mayewski. "There are good reasons to be concerned about greenhouse gases, but we should be looking at the climate system with our eyes open," he adds. Understanding how the system operates in the absence of human impacts is important for responding to climate changes that might occur in the future.

Mayewski founded the International Transantarctic Scientific Expedition (ITASE) and is the coauthor of *The Ice Chronicles: The Quest to Understand Global Climate Change*, published in 2002 with Frank White. The United States' ITASE office is located at UMaine.

Antarctic locations used in the paper include Siple Dome, a 2,000-foot-high ice-covered mound, located between two ice streams that flow out of the Transantarctic Mountains into the Ross ice shelf, and the site of a U.S. research station.

Since at least the 1840s when sunspot cycles were discovered, scientists have proposed that solar variability could affect the climate, but direct evidence of that relationship and understanding of a mechanism have been lacking.

The ice core data show, the authors write, that when solar radiation increases, more calcium is deposited at Siple Dome and at one of the ITASE field sites. The additional calcium may reflect an increase in wind strength in mid-latitude regions around Antarctica, they add, especially over the Indian and Pacific Oceans. Calcium in West Antarctic ice cores is thought to derive mainly from dust in Australia, Africa and South America, and from sea salt in the southern ocean.

That finding, they note, is consistent with other research suggesting that the sun may affect the strength of those mid-latitude winds through changes in stratospheric ozone over Antarctica.

Image courtesy of the Solar & Heliospheric Observatory (SOHO), a project of international cooperation between ESA and NASA

Solar Power



Distilling the truth

WASHING FRESH FRUITS AND VEGETABLES with distilled water appears to be as effective in protecting food safety as using some commercial products designed for that purpose, according to a new University of Maine Cooperative Extension fact sheet.

Eating fresh produce provides important health benefits, but raw foods not properly cleaned can carry risks of food-borne illness. As a result, a market has developed for new commercial wash treatments designed to reduce those risks.

To test the effectiveness of these products, UMaine researchers in Extension and food science compared the results of washing with three products, according to package directions, and with distilled water that is free of microorganisms. Each product was used on lowbush blueberries.

Distilled water, which is filtered and purified to remove contaminants, was as effective as Fit® Fruit & Vegetable Wash (Procter & Gamble) in reducing microbial levels and pesticide residues, as compared to unwashed samples. Two ozone systems, Ozone Water Purified XI-301 (Air-Zone Inc.) and JO-4 Multi-Functional Food Sterilizer (Indoor Purification Systems), removed microbes from blueberries, but distilled water was more effective than either one.

Cooperative Extension recommends soaking fruits and vegetables in distilled water for one to two minutes. Some fragile produce should not be soaked, but sprayed with distilled water in a colander. Thick-skinned produce should be scrubbed.

The fact sheet also recommends washing hands before preparing food, and cleaning counter tops and utensils after peeling produce or preparing each food item. Produce from stores and home gardens should be similarly treated.

Parenting Relations

RECOMMENDATIONS TO HELP older relatives care for grandchildren, nieces, nephews and other children in their extended families have been developed by the Relatives as Parents Project, coordinated by the University of Maine's Center on Aging in cooperation with a consortium of child and aging advocacy agencies.

Presented in a policy white paper, the recommendations culminate three years of research into factors that make it difficult for grandparents and other relatives to become recognized guardians of children who are unable to live with their parents. They include calls for financial reimbursements and aid; educational and professional resources, including reimbursable family counseling sessions and daycare; subsidized healthcare for children in their custody; and support from mental health and child welfare services.

Many of the proposals have less to do with money and more to do with providing moral and professional support for relatives as parents, according to the white paper's principal author Sandra Butler, interim director and associate professor in the UMaine School of Social Work. The changes are preemptive measures that could help keep more children in extended family settings and out of foster care.



According to the 2000 U.S. Census, more than 6 million children nationwide — 11,000 in Maine alone — live in households headed by grandparents or other relatives.

Craving Crustaceans

PEOPLE HAVE LOTS OF REASONS for longing for lobster. At the Lobster Institute at the University of Maine, Director Bob Bayer and Assistant Director Cathy Billings know most of them. The institute facilitates research and educational outreach focused on protecting, conserving and enhancing lobsters and lobstering as an industry and as a way of life. Among the favorite lobster lines lodged with the institute:

Lobster is **low in fat** and has less cholesterol than beef or white meat chicken. Only 80 calories per 85-gram serving.

Eating lobster **supports the Maine economy** and jobs. More than 7,000 licensed commercial lobstermen live in Maine; the fishery contributes an estimated \$500 million annually to the Maine economy.

Lobster is considered **both a gourmet delicacy and a real down-home food**. You can dress it up — lobster thermidor with champagne at a five-star restaurant — or serve it informally — a lobster bake with beer on the beach.

According to Ed Blackmore, a seasoned lobsterman from Stonington, Maine, his grandfather always told him, *"If the good Lord ever made anything that tastes better than lobster, he kept it for himself."*



AFFORDABLE, HIGH-SPEED DNA sequencing could pave the way for medical treatments tailored to an individual's genetic make-up. In addition, scientists could expand gene sequence databases to plants, animals and microorganisms.

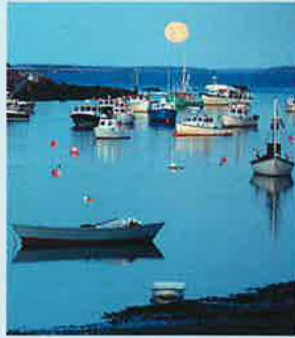
Three University of Maine scientists are now fabricating a nanopore with tiny electrodes and built-in circuits that will be used in such DNA sequencing experiments. Biochemist Scott Collins, and bioengineers Rosemary Smith and David Kotecki will attempt to measure differences in the electron tunneling of individual nucleotides in DNA molecules.

Such measurements are important because each nucleotide can be identified by the way it affects an electric current. Electron tunneling is a process that allows an electric current to pass through a material that is normally resistant.

Their research is funded by a two-year, \$850,000 grant from the National Human Genome Research Institute of the National Institutes of Health.

Nano Mechanics

Anthropology Affecting Public Policy



UNIVERSITY OF MAINE anthropology and marine sciences professor James Acheson has been named the 2004 winner of the prestigious American Anthropological Association's Solon T. Kimball Award for Public and Applied Anthropology.

Acheson, a cultural anthropologist, author and professor at UMaine since 1968, is an internationally recognized authority on economic anthropology and the social science aspects of fisheries management.

The award, given only every other year since 1978, recognizes outstanding achievement in applied anthropology and research that has had an impact on public policy.

Acheson has studied the system of self-governance in the Maine lobster industry, and has chronicled the circumstances under which lobster fishermen developed informal rules and lobbied for formal laws to conserve the lobster stock. In his research, he has used "rational choice theory" to show under what conditions groups of people will and will not develop rules to conserve the resources on which their livelihood depends.

Where Mountain Ranges COLLIDE

THE ST. ELIAS MOUNTAIN RANGE of southeastern Alaska and western British Columbia is an ideal place to study the interaction of atmospheric and tectonic processes at work in mountain building, glaciation and erosion. It is the highest coastal mountain range on Earth and may exhibit the highest glacial erosion rates as well.

With a more than \$298,000, five-year grant from the National Science Foundation — part of a \$4.5 million project — Peter Koons of the University of Maine Department of Earth Sciences is helping to develop a comprehensive model to explain the evolution of the Gulf of Alaska, onshore and off. Questions focus on the origins of mountain building activity and the interaction of crustal processes and redistribution of mass by glacial and stream transport. The results will have implications for understanding global mountain building processes at continental margins and the influence of those processes on climate.

Other participating institutions include: University of Alaska, University of Texas, University of New Orleans, University of Washington, Lehigh University, Virginia Technical University, Purdue University and Indiana University.



Photo courtesy of Hal Borns



THE UNIVERSITY OF MAINE'S federally funded Antarctic science program, one of the most active in the United States, traces its beginnings, in part, to a 1960 research trip to the southern continent. Robert Nichols (far left), who taught geology at Tufts University, inspired generations of students to study Antarctica's ice sheets and landforms. Those students included Harold Borns and George Denton (second and third from the left, respectively), soon to be two of UMaine's leading scientists.

In this photo, taken at Marble Point near McMurdo Station, the main U.S. Antarctic base, Borns was an assistant professor at UMaine, and Denton was a Tufts undergraduate, as were (left to right) Roger Hart, Ellory Schempp and Parker Calkin. Calkin continues to collaborate with the UMaine researchers.

Borns and Denton met on this expedition, pulling sleds and making observations in the Transantarctic Mountains. Both later studied glacial geology at Yale University, where Denton earned his Ph.D. and Borns was a postdoctoral fellow.

In addition to his studies of ice sheets and glacial landforms in North America and Europe, Borns served three years as Program Manager for Glaciology for the National Science Foundation. Presently, he is leading the creation of an Ice Age Trail in Down East Maine. A member of the National Academy of Sciences, Denton has been recognized internationally for his groundbreaking research, receiving the Vega Medal in Sweden in 1990 and, in 2004, an award from the Italian Academy of Sciences. Recipients of the Antarctica Service Medal, Denton and Borns have had glaciers and other landscape features on that continent named for them. Many of their students are active in glacial geology today, and some, such as UMaine Assistant Research Professor Brenda Hall, continue to work in Antarctica.

UMaine is now the home of the U.S. International Transantarctic Scientific Expedition led by Paul Mayewski, director of the Climate Change Institute and former student of Parker Calkin. In the past four decades, UMaine scientists have focused on the biology of the Antarctic Ocean and factors underlying the growth and retreat of ice sheets.



STARRY STARRY Nights

Photo by Bill Drake

MAYNARD JORDAN believed that the sky's the limit when it comes to education. The native of Little Cranberry Island started his collegiate teaching career at the University of Maine, his alma mater, in 1917. It lasted nearly four decades. Jordan taught mathematics, which was his area of study, and astronomy, which was his passion.

Jordan used the night sky as a dynamic laboratory. His primary teaching tools included the UMaine Observatory, built in 1901, and Planetarium, installed in Wingate Hall in 1954.

The Planetarium, named for Jordan in 1993, just celebrated its 50th anniversary. Today, its astronomical productions include shows for young sky watchers and seasoned astronomy buffs. In addition to simulating a clear Maine sky, Planetarium shows transport audiences

across time and space for close-up views of the planets and the center of the Earth, the edge of the universe and the birth of the solar system.

Approximately 6,000 visitors and 500 UMaine students taking astronomy classes use the Planetarium annually. An endowed Maynard F. Jordan Fund, established with the University of Maine Foundation by Jordan's daughter, Dorothy Whitehouse, and her husband Theodore Whitehouse of Wellesley, Mass., (members of the UMaine Classes of '48 and '50, respectively), helps to ensure the future of the Planetarium and Observatory as educational resources.

The endowment is described as an endorsement of the value of astronomy education — a field that continues to interest students of all ages as it has intrigued astronomers for millennia.

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