

Sensing the Future

The Big Picture

Election 2008

UMaine Today

CREATIVITY AND ACHIEVEMENT AT THE UNIVERSITY OF MAINE

SEPTEMBER/OCTOBER

2008



Changing climate

Are we on an
environmental
precipice?

President's Message



THE UPCOMING ELECTION reminds us of the importance of promoting civic and community engagement in our academic community. At the University of Maine, we take this aspect of our broad educational mission seriously, and we are encouraged by the results.

Volunteerism is burgeoning at UMaine, where our students provided more than 55,000 hours of community service this past academic year. The UMaine/UVote program in the Division of Student Affairs has fostered useful discussion and participation in the political process, leading to strong student voter turnout in recent elections. The School of Policy and International Affairs and Cohen Center for International Policy and Commerce are leaders

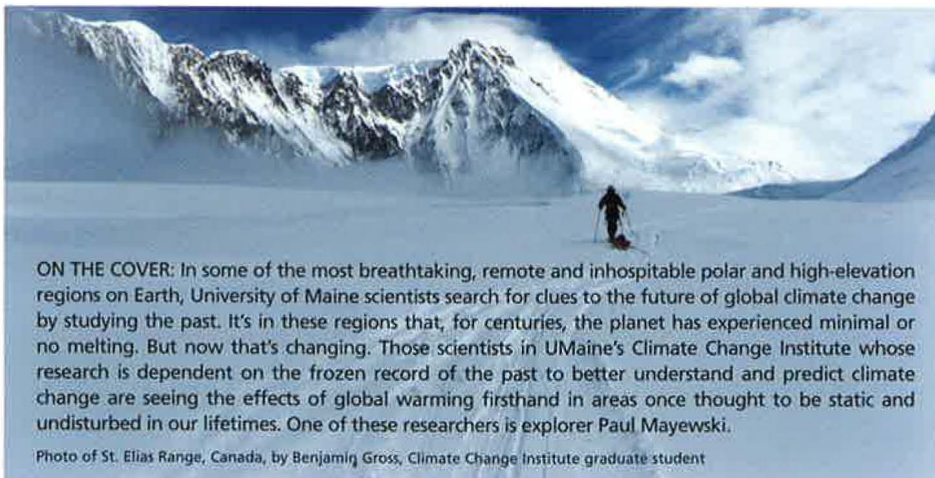
in bringing high-level experts to UMaine to share their perspectives and promote discussion.

UMaine students and recent graduates are getting involved in a significant way, making their voices heard in our communities, our state and beyond. To me, this all indicates a healthy academic community, where the free exchange of ideas is encouraged and the result is an informed, educated student population ready to contribute in meaningful ways.

This issue of *UMaine Today* includes stories that follow this same theme. For instance, in the cover story, professor Paul Mayewski, a world leader in the study of climate change, points out that the solution lies in each of us, and that our climate issues will not improve unless we commit — as individuals and as a society — to a different way of life. Also in this issue, several faculty members offer their research-based perspectives on some of the societal issues overarching this year's presidential election.

U.S. voters will make important choices in November. We can all be encouraged by the knowledge that students, faculty members and others in higher education communities nationwide are working together to promote individual and collective engagement. Through engagement, we develop new leaders and help ensure that our society makes those choices based on commitment to ideals and sound intellectual principles.


Robert A. Kennedy
President



ON THE COVER: In some of the most breathtaking, remote and inhospitable polar and high-elevation regions on Earth, University of Maine scientists search for clues to the future of global climate change by studying the past. It's in these regions that, for centuries, the planet has experienced minimal or no melting. But now that's changing. Those scientists in UMaine's Climate Change Institute whose research is dependent on the frozen record of the past to better understand and predict climate change are seeing the effects of global warming firsthand in areas once thought to be static and undisturbed in our lifetimes. One of these researchers is explorer Paul Mayewski.

Photo of St. Elias Range, Canada, by Benjamin Gross, Climate Change Institute graduate student

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University of Maine profile

Located in Orono, Maine, the University of Maine is the state's land-grant and sea-grant institution. UMaine serves its home state through its explicit statewide teaching, research and public service outreach mission. Offering 89 bachelor's, 92 master's and 30 doctoral degree programs, UMaine provides the most varied and advanced selection of programs available in Maine. The Carnegie Foundation for the Advancement of Teaching classifies UMaine as a Doctoral Research Extensive University, the highest classification.

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Climate Change Institute Director Paul Mayewski offers his perspectives on global climate change, the science that's getting closer to predicting its future and what our changing climate means to us.

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Sensing the Future

Sensors are so much a part of our everyday lives. And for hundreds of Maine schoolchildren, they also help unlock the fundamentals of physics, chemistry, biology, food science, marine sciences, microelectronics and engineering.

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The Big Picture

In many ways, the permanent collection of the UMaine Museum of Art is a who's who of American — and, more recently, international — art. Tour a selection of staff favorites from the nearly 7,000-piece collection.

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From their fields of expertise, UMaine faculty members in philosophy, history, economics, business and political science offer insights into the cultural realities overarching this historic presidential election year.

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Look for +Online throughout *UMaine Today* magazine. It indicates the availability of a wealth of additional content — Web-exclusive stories, video and audio clips, photo galleries, full-length versions of articles and a comprehensive editorial archive.



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Richard Diebenkorn
American, 1922–1993
Blue, 1984
Woodcut printed in colors, 40 x 24½"
Bequest of Robert Venn Carr Jr., Class of 1938



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On the Brink

By Margaret Nagle

UMaine Climate Change Institute Director Paul Mayewski offers his perspectives on our changing climate and the science that's getting closer to predicting its future

PAUL MAYEWSKI first set foot on the driest continent on Earth four decades ago. At that time, the world considered Antarctica and other remote polar regions as unchanging, frozen expanses that lured adventurers like him to explore the unknown.

Since then, so much has changed.

Today, we know the polar and high-elevation landscapes as bellwethers for greenhouse gas warming. Even in Antarctica, which has not experienced the dramatic melting recently seen in the Arctic and Greenland, the effects of climate change are evident on the continent's outer edges.

Denali National Park is a research site in one of the Climate Change Institute's four primary study areas. The North and South America and New Zealand study area includes research on the inter- and intrahemisphere climate change connections.

Photo by Ron Lisnet



"In a matter of decades in some parts of Antarctica, we'll probably see changes thought in the past as taking hundreds of thousands of years," says Mayewski, who this spring returned from that continent, where he led the final leg of an 8,000-kilometer, six-season International Trans Antarctic Scientific Expedition (ITASE).

Since that first trip to Antarctica as a student researcher helping reconstruct the history of the ice sheet, Mayewski has led nearly 50 expeditions to such remote regions as the Arctic, Tibet, the Himalayas, Greenland and Tierra del Fuego. As a scientist, he has pioneered the use of ice core records to reconstruct past atmospheric conditions, document changes in atmospheric chemistry produced naturally and by humans, and correlate associations between climate change and civilization disruptions worldwide.

It's the current implications of human-induced climate change,

particularly in the last 20 years, that have internationally renowned researchers like Mayewski stepping up research and speaking out.

"Since the 1980s, the warming rate has been large enough to push us to the possibility of abrupt climate change," says Mayewski, who directs the University of Maine Climate Change Institute, a multidisciplinary research unit focused on understanding past climate and how to use a variety of research tools, like ice cores, to predict change. Primary study areas for institute researchers are Antarctica; Tibet and the Himalayas; New Zealand and North and South America; Greenland and the Arctic.

"Until now, climate change occurred by natural processes. Today, we're overpowering the greenhouse gas system at a rate 100 times faster than nature. With stresses — from sulfate aerosols in the atmosphere to freshwater injection into the oceans



Mount Everest
Photo by Karl Kreutz



**STUDY AREA:
ALPIDE/ASIATIC**

Research includes climate reconstruction.

Adapting to change

ANTHROPOLOGISTS WHO STUDY the prehistoric archaeological record know the effect environmental destruction from natural climate change can have on humans. The evidence can be found in such places as the remains of abandoned ceremonial centers and villages, and burial sites that reflect a rising infant mortality and incidence of disease.

"Natural environmental change and human environmental destruction are two of the linchpins that lead to the collapse of civilizations around the world," says University of Maine Professor of Anthropology and Climate Change Kristin Sobolik, associate director of the Climate Change Institute, who studies human adaptation in desert

from melting sea ice — the climate system can't be expected to respond in a smooth way."

For Mayewski, who has made 100 first descents in Antarctica and traversed more of the ice sheet than anyone else in the world, this crossroads for the planet is epitomized by his years exploring the bottom of the Earth.

"There you can experience the way nature has been for millions of years," he says. "In Antarctica, you can see for such long distances that you can see the curvature of the Earth. It's so quiet, the only sound is your own heartbeat. And you breathe more deeply because the air is so clean.

"That reoccurring experience is a constant reminder of what we've traded for our current existence. I enjoy our current existence as much as anyone, but I believe there's a better combination of the natural system and our involvement in it."

Before leaving this summer to join a research expedition in Greenland, Mayewski sat down with *UMaine Today* magazine to talk about climate change and his optimism for the future.

WHAT IS CLIMATE CHANGE?

Climate change is natural, constant and has happened for as long as the Earth has been around. A better term for what's happening now might be human controls on climate change or perhaps destabilization of climate beyond natural levels. The question is how much of the climate change we're introducing. Humans can't do anything about the natural part. It's the human-induced change that is gradually going to eat away at the way we live, both physically through sea level rise, through storms, through warming, but also through increased incidence of disease in warmer and wetter areas.



environments. "Like any other organism, humans' ability to adapt determines our success as a species."

The reality is when climate changes, people also change, says Dan Sandweiss, UMaine professor of anthropology and Quaternary and climate studies, who researches prehistoric coastal adaptations, primarily in Peru. The more complex the society, often the more severe the human consequences in the face of major climate change.

WHAT ARE THE BIGGEST MYTHS ABOUT CLIMATE CHANGE?

One of the biggest is that one person can't make a difference. The climate system is very big and it can toss us around, but we each have the capability of impacting it. Another misconception is that everything that's happening eventually will be taken care of by the Earth's system. It will, a few hundred to thousands of years from now, and by then, if we continue the way we are, we probably will have mutated into something different in order to survive. People also think that the current climate change is just part of a natural cycle. But this change is not natural and our impact on it is very, very great.

WHAT DOES SCIENCE TELL US ABOUT CLIMATE CHANGE?

It's absolutely undeniable that humans have had a very dramatic impact on both physical and chemical climate throughout the

world. There's evidence of warming in the Arctic. Almost all of the mountain glaciers around the world are melting back, and even in Antarctica, there's dramatic melting around the edges. In addition, we're seeing very big changes in the atmosphere with increasing greenhouse gases — the cause of much of the recent warming — and increasing levels of toxic metals and acid rain. A lot of these toxic metals and chemicals in the atmosphere have very detrimental impacts on human and ecosystem health.

HOW DO WE KNOW WHICH CLIMATE CHANGES ARE NATURAL AND WHICH ARE HUMAN-INDUCED?

To make that determination, you need records that are long enough to help you understand how the natural system operates. Records for the northern hemisphere demonstrate that temperatures for the last couple of decades are warmer than for the last



Greenland
Photo © Greenpeace/Morgan

Frozen time capsules

ICE CORES RETRIEVED from Greenland and other polar regions are like buried meteorological stations, revealing evidence of such climate controls as temperature, precipitation, atmospheric and ocean circulation, sea ice extent, biological productivity and volcanic activity as far back as 100,000 years.

- Cores also provide records of atmospheric chemistry, including the source regions and their emission histories. Upward of 50 chemicals can be measured in a small sample taken from an ice core, including carbon dioxide,



STUDY AREA: **GREENLAND AND ARCTIC**

Research includes abrupt
climate change events.

thousand years at least, but there have also been times between the 1940s and the 1970s when the climate was cooler. However, the farther you go back in time, the more it's clear that what's happening today with greenhouse gases and changes in other chemistries in the atmosphere haven't happened at any other time in the past few thousand years. That's how you understand that we're impacting climate.

FROM LOOKING AT THE PAST, WHAT HAVE WE LEARNED ABOUT THE PREDICTABILITY OF THE CLIMATE SYSTEM?

We have learned that there is a lot of predictability in the climate system. If it were left alone to take its natural course for the next few hundred or thousand years, there would be a lot of predictability. On the other hand, while looking for predictability, we discovered something that we never imagined — abrupt

climate change events with massive reorganizations in the ocean atmosphere system. Those abrupt climate change events involved a convergence of factors, with some small trigger actually pushing to make them happen. That's why I am so concerned about where we are right now. We're pushing ourselves way out of the natural system and we're pushing so fast that even the predictions for where we're going — the reality — could be very different, to the point at which we could have significant cooling in some parts of the world that we would have never, certainly today or in the last hundred years, expected. So, we've learned a lot. We've learned that the climate system is far more dynamic



nitrous oxide, methane, humanly engineered chemicals, bomb radionuclides, sulfuric acid, nitric acid, copper, lead and mercury.

At the University of Maine Climate Change Institute, ice cores are one of the many tools researchers use to add to our understanding of climate. UMaine scientists have retrieved ice cores from every continent and every major mountain range. [+Online](#)



Photo by Nicole Spaulding



than we ever thought it was, that the natural — I emphasize natural — climate system is more predictable than we thought it was, and that it can also be changed by very small things.

IS IT TOO LATE TO MAKE CHANGES THAT WILL HAVE AN EFFECT?

We can't assume that we're too late. If we do, it's nothing but gloom and doom ahead. However, the longer we wait, the more likely there will be more serious consequences. We have already begun to alter the natural climate system quite dramatically. We need to begin to respond quickly. There is giant momentum in the climate system. Even if we were to shut off all the greenhouse gas emissions from humans right now, it would take decades to centuries, if not longer, to recover from global warming.

WHAT CAN WE DO TO BEGIN TO ADDRESS CLIMATE CHANGE?

How much warming we have will be determined by how much higher we let greenhouse gases go. We have to think about how

we can reduce the emissions of toxic chemicals. Some of it is from factories; some of it is simply the way we live, using fertilizers to excess, using chemicals for cleaning. In addition, state and federal governments need to develop policies to legislate reductions and set benchmarks for greenhouse gases and toxic metals, acid rain, organic acids and humanly engineered chemicals. There also need to be incentives for individuals to become more energy self-sufficient. In the longer term, reductions of greenhouse gases will require a very big change in the way we live. We tend to think of change as being uncomfortable, but this is really going to be a change for the better— a better economy, a healthier life and a more predictable climate future.

HOW DO YOU RESPOND TO CLIMATE CHANGE SKEPTICS?

The first thing I say to them is, "thank you," because they forced the science to be better than it would have been had they not been naysayers. The second thing I say to them is, "Now you need

Antarctica
Photos by Daniel Dixon



STUDY AREA: OCEANIA/ANTARCTICA

Research focuses on
global climate change.

The next generation of explorers

IN THE UNIVERSITY OF MAINE Climate Change Institute, more than 50 faculty members and research staff in disciplines from anthropology, glaciology and paleoecology to geoarchaeology and numerical modeling collaborate to gain perspective on the past in order to make better predictions for the future. Conducting research throughout the world in conjunction with those faculty are more than 25 graduate students and postdoctoral fellows, as well as a handful of undergraduates — the next generation of explorers.



Climate Change 21

An Interactive Forum and Environmental Festival

A TWO-DAY CONFERENCE on climate change featuring an interactive public forum and environmental festival will be held at the University of Maine, Oct. 23–24.

Climate Change 21: Choices for the 21st Century, organized by UMaine's Climate Change Institute, will be highlighted by panel discussions led by world-class scientists talking about their research related to climate change.

As part of the conference, UMaine researchers will release a report prepared at the request of Gov. John Baldacci predicting future climate in Maine and the region.

Among other conference activities planned: an environmental festival, featuring organizations and businesses specializing in green products and technologies; a student poster contest and exhibition; and debut of a musical composition and sculpture related to climate change, created by UMaine artists.

"We hope that as many people as possible will come to hear about the scientific basis for the understanding of climate change," says Climate Change Institute Director Paul Mayewski. "There is a great deal to know about climate and what is expected for the future.

"We want people to leave CC²¹ not just believing that what is presented makes sense, but also knowing what is potentially in store and, most important, understanding what the opportunities are for the future," Mayewski says.

to get out of the way," because they're no longer talking about the science; they're simply talking about things that serve as blockades. In some cases, these are the same naysayers who tried to convince people that acid rain didn't occur, and that tobacco was not a problem. At some stage, if you're going to be critical, you've got to come up with a solution and the solution can no longer be that it's not a problem.

HOW DO YOU PREDICT THE WORLD WILL LOOK IN HALF A CENTURY?

I'm an optimist. It will still be warming and climate will still be unstable because of what we've done, but I see no reason why we won't be living primarily on renewable energy. I think we'll be a lot smarter about recycling. I think we will be healthier. I think we will be able to travel as well as we can now or more easily, but I think we will become more self-subsistent. ■ [Online](#)



UMaine Today magazine asked four of the young explorers from Maine — Alice Doughty, Aaron Putnam, Sean Birkel and Sam Kelley — what attracted them to research in such remote locations as New Zealand, Antarctica, Patagonia and Iceland. They describe the challenge and the questions yet to be answered.

"I really enjoy seeing the parts of the puzzle coming together," says Kelley. [+Online](#)

Sensing the

UMaine graduate students
unlock the mysteries of
science and engineering
with sensor technology

By Kristen Andresen



University of Maine graduate student William Spratt leads a Brewer Middle School class in how to use sensors to track the velocity of falling objects — in this case, small handmade parachutes. Photos by Michael Mardosa

future



“To a large extent, many kids are influenced by the environment they’re growing up in. You really don’t know what might trigger a kid to go into engineering. It might be an uncle or it might be a GK-12 fellow.”

John Vetelino



MONDAYS AND WEDNESDAYS, in a science classroom in Brewer Middle School, there’s a repeating refrain: “Mr. Spratt! Can you come help us? Mr. Spratt!”

Mr. Spratt is William “Kyle” Spratt, a University of Maine master’s student in mechanical engineering. Two days a week, he joins Frank Page, a longtime science teacher at the school, as part of GK-12 Sensors! a joint program of UMaine and the National Science Foundation. Last spring, Spratt and seven other UMaine graduate students collaborated with area middle and high school teachers to use sensor technology in the classroom to explain the fundamentals of engineering and science to students.

“It’s really about the concepts, understanding why things move, why they work the way they do,” Page says. “They understand that part of it. If you gave them the really heavy-duty math and physics, it would be too abstract.”

But Spratt, an outgoing lobsterman from Frenchboro, Long Island, Maine, makes the lessons seem like child’s play. To test the effect of mass on velocity, he has his seventh-grade charges build parachutes out of trash bags, string and tape, with washers as weights. The students launch them in front of a motion sensor that captures the data and converts the figures to graphs on their laptops.

Because sensor technology takes many forms — from everyday smoke detectors and thermometers to prototype airport screeners capable of detecting peroxide-based explosives — it lends itself to an array of subjects. GK-12 Sensors! graduate student fellows use the “gadgets” as keys to unlock the fundamentals of physics, chemistry, biology, food science, marine sciences, microelectronics and engineering.

“Lectures, presentations, that isn’t going to work in middle school,” says Page. But parachutes and hovercrafts are all in a day’s work. And sensors drive the lessons home.

“(The sensor) captures the statistics of falling objects — the velocity of parachutes,” says Annissa Nicola, 14. “It’s better than using timers and stuff like that.”



For William Spratt, being a GK-12 Sensors! fellow helped him hone his engineering and interpersonal skills. He plans to pursue a Ph.D. and become a professor.



Making science, technology, engineering and mathematics more accessible is what the NSF's GK-12 program is all about. The grants provide funding for graduate students in supported disciplines, in the hope that their interactions with K-12 students and teachers will improve their communication, teaching, collaboration and team-building skills. The program also aims to provide professional development opportunities for K-12 teachers, a richer learning experience for students and stronger ties between local schools and universities.

Many of the teachers involved, including Page, participate in the accompanying Research Experience for Teachers Sensors! In the summer program, K-12 educators work with faculty and UMaine students in various engineering labs on campus.

When NSF's original GK-12 program was established in the late 1990s, Maine's best and brightest were leaving the state in droves for education and job opportunities. To help stop the brain drain, John Vetelino, a professor of electrical and computer engineering, wanted to showcase UMaine's world-class sensor research.

To that end, he worked with Constance Holden, a UMaine colleague in spatial information science and engineering, and Stephen Godsoe of Bangor High School to integrate sensors into the existing GK-12 model.

In the 2007-08 school year, 1,554 students in 13 schools participated in the program. Since its inception in 2002, GK-12 Sensors! has brought nearly \$5 million in NSF grants to UMaine, sustaining the program through 2011. GK-12 funding is intended to initiate programs that will continue with public-sector support.

It is Vetelino's hope that strong role models from the University of Maine might inspire students to consider engineering when they get to college. If they choose to stay in Maine for schooling, this could, in turn, create a knowledge base large enough to lure high-tech companies to the region.

Joe Arsenault, UMaine's GK-12 Sensors! program coordinator, says such hands-on projects, led by enthusiastic graduate students, make for unforgettable learning experiences.

"When you take someone who has energy and the sense of discovery of what they're finding in their own research and have them convey that to the students, that sense that science is alive, it's very different from sitting in a classroom and listening to experts give out facts," Arsenault says. "Here, they can feel the facts with their hands. It's visceral." ■ **Online**

Peppered with potential



Ironically, Satyavan Singh hates spicy food, but he adores food science, which led him to pursue a second master's degree at UMaine. In 2006, he finished his first in chemistry. He plans to pursue a career at one of the country's top ingredient companies.

occurring compounds have antioxidant and antimicrobial properties, and they've been shown to increase the metabolism of lab rats. In humans, these compounds may help burn fat. But unlike capsaicinoids, capsinoids don't cause a tingling sensation on the skin or in the stomach, which means all of the benefits with none of the burn.

"The cool thing about this project is that capsinoids are newly characterized, naturally occurring substances, and we are the first researchers in the world to look for them in so many varieties of peppers," Singh says.

After Singh and Perkins — who has done extensive work with capsaicinoid extractions — synthesized analytical capsiate standards and developed a method for extracting and quantifying the compound, Singh spent a year screening 500 varieties of peppers. Capsinoids were present in 50 of them. He now uses the lab's cutting-edge gas and liquid chromatography equipment to extract and measure capsinoid levels in the top 10.

Using seed provided by the USDA germplasm repository, USDA researchers in Georgia and Oklahoma collaborating on the project with UMaine grow the peppers and Singh compares ripe and unripe, field-grown and greenhouse-raised varieties to determine which factors yield the highest level of capsinoids. His results could be used to help commercial food processors introduce new varieties of peppers into their food lines, raising both the nutritional and monetary value of their products. [Online](#)

H

IS FRIENDS CALL HIM Doctor Pepper.

Satyavan Singh doesn't have a Ph.D. or an M.D. But he does have a passion for peppers.

In the Food Chemical Safety Laboratory at the University of Maine, Singh surrounds himself with freezer bags full of them — big and small, hot and mild, green, red, yellow and shades in between.

Singh, a master's student in UMaine's Department of Food Science and Human Nutrition, and adviser Brian Perkins have received a \$100,000 grant from the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service to study the levels of capsinoids present in peppers.

Like their spicy counterpart, capsaicinoids, these naturally

The big picture

Premier works highlight UMaine's permanent collection

By Kristen Andresen



IT ALMOST GOES WITHOUT SAYING that the University of Maine Museum of Art has work by Andrew Wyeth, Winslow Homer and John Marin. It is Maine, after all.

But the permanent collection of nearly 7,000 pieces also boasts a Warhol and a Picasso, a seminal print by critically acclaimed artist Kara Walker and a gilt-framed oil by Hudson River School painter George Inness.

The name-dropping goes on.

"I don't think people know the richness of the collection," says Laurie Hicks, a UMaine art professor who served as the museum's interim director. "It isn't just the richness of our photography collection, it's also the many fine 19th- and 20th-century prints and paintings. We have diverse artists bringing different perspectives to their work and to the museum collection."

It is, in many ways, a who's who of American — and, more recently, international — art. Established in 1946 by director Vincent Hartgen, the collection reflects the passion of its stewards. Hartgen loved works on paper because he could get top-tier art on a land-grant university budget, a tradition Diana Hulick and Charles Shepard followed. Wally Mason brought a keen eye and a yen for photography into the mix. And George Kinghorn, who became the museum's director in June, will undoubtedly leave a footprint as he further grows the collection. But one thing — the museum's mission — remains constant.

"This is the only publicly owned museum fine art collection in the state of Maine," Hicks says. "It acts as a public trust. A role and responsibility that includes preserving, maintaining, supporting and making accessible the University of Maine Museum of Art's evolving collection." ■

Pablo Picasso

Spanish, 1881–1973

Jacqueline au Chapeau de Paille (Jacqueline in a Straw Hat), 1962

Color linocut, 25 x 20¾"

Gift of Robert Venn Carr Jr., Class of 1938

William Gropper

American, 1897–1977

Plate from Heaven, 1963

Oil on canvas, 50 x 40"

Gift of Sophie Gropper



The big picture



Andy Warhol

American, 1928–1987

Mick Jagger, 1975

Screenprint, 42 x 28"

Gift of Robert Venn Carr Jr., Class of 1938

Angelo Ippolito

American, 1922–2001

Plataea, 1994

Oil on canvas, 84 x 12"

Gift of Jon & Michael Ippolito and
Joline Blais

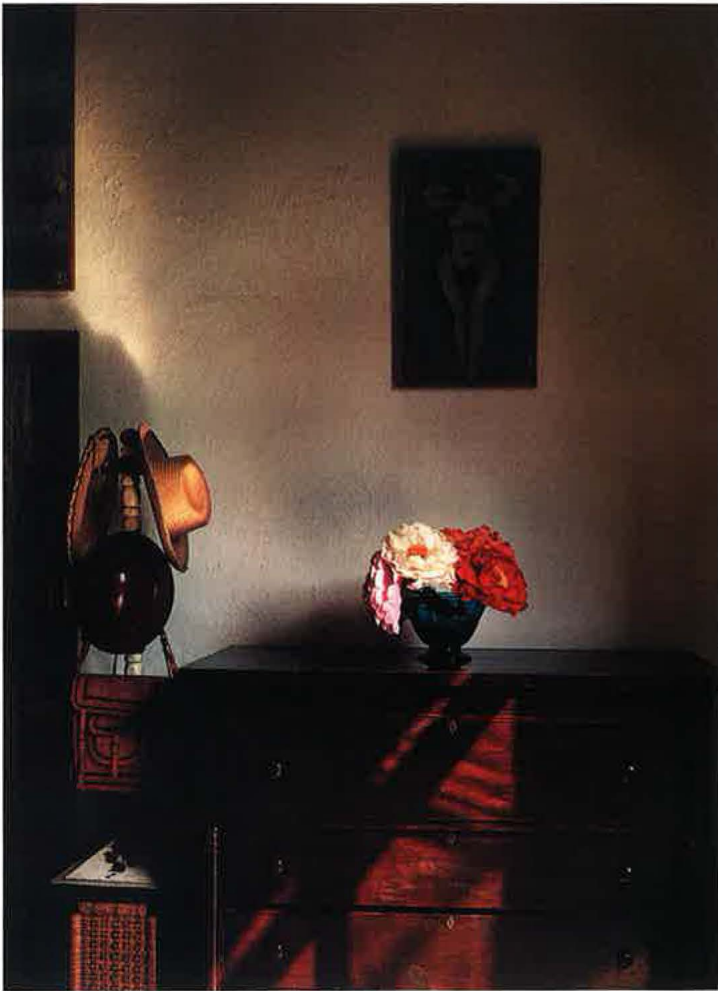
George Inness

American, 1825–1894

The Elm, 1864

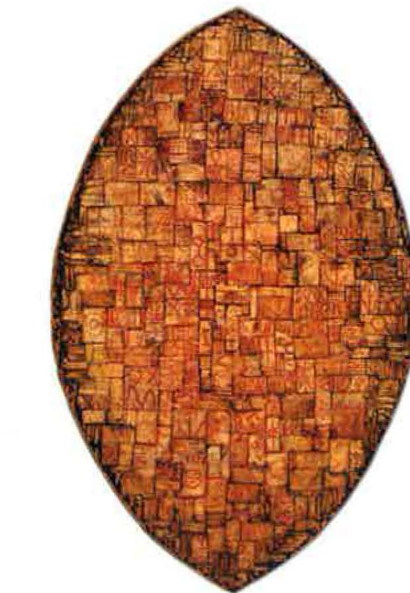
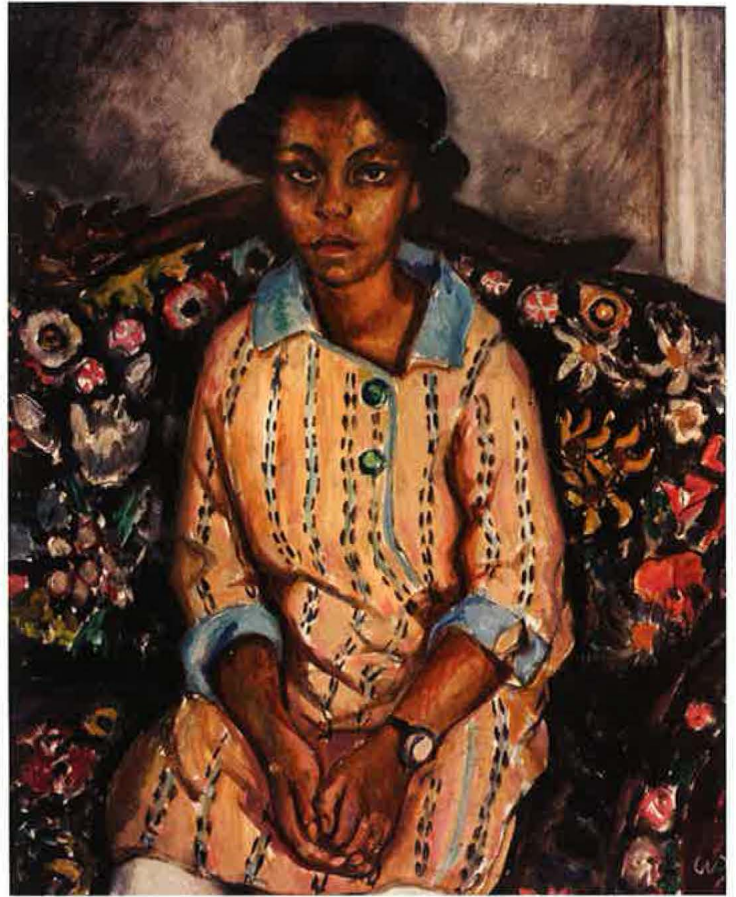
Oil on canvas, 36 x 50"

Gift of William P. Viles, Class of 1928



Emily Lansing Muir
 American, 1904–2003
Frieze #2, 1965
 Oil on Masonite, 24 x 39"
 Museum purchase

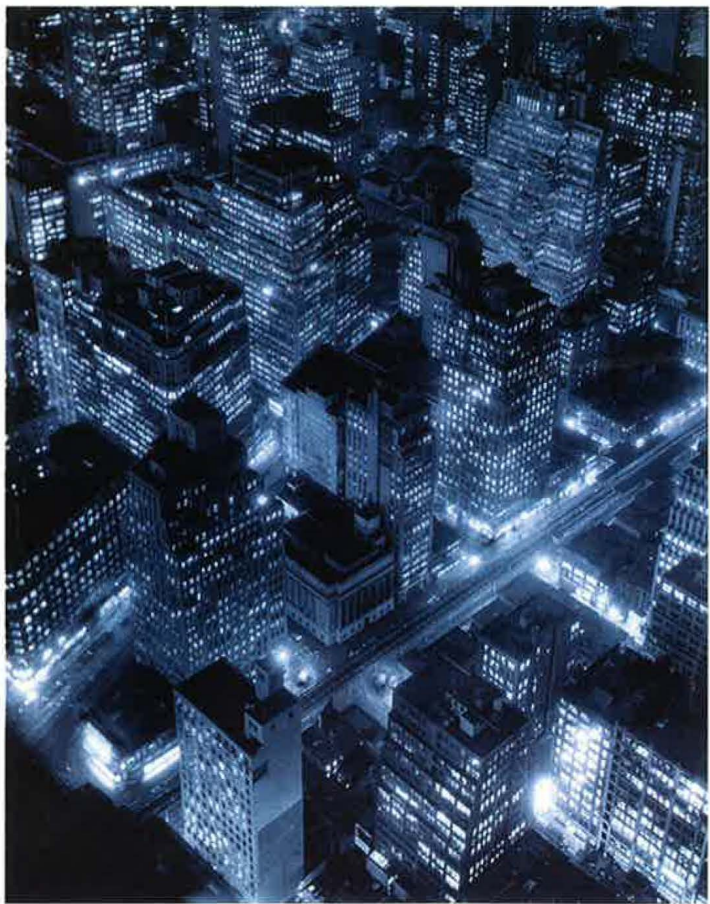
Evelyn Hofer
 American, born 1937
Diego Rivera's Bedroom,
Coyoacán, Mexico, 1983
 Dye Transfer Photo, 16½ x 13"
 Ruth Stebbins & Edmund G.
 Schildknecht Purchase Fund



Waldo Peirce
 American, 1884–1970
Jim's Daughter, 1929
 Oil on canvas, 29½ x 23½"
 Gift of the artist

Bernard Langlais
 American, 1921–1977
Large Oval, 1958
 Abstract wood relief, 63 x 39"
 Gift of Helen Friend Langlais and
 Aucocisco Gallery

The big picture



Winslow Homer

American, 1836–1910

Eight Bells, 1887

Etching, 18¾ x 24¼"

Gift of Adeline F. and Caroline R. Wing

Berenice Abbott

American, 1898–1991

Nightview, New York, 1932

Gelatin silver print, 13½ x 10"

Gift of the artist



Helen Frankenthaler

American, born 1928

Essence Mulberry, 1977

Woodcut, 38½ x 18½"

Bequest of Robert Venn Carr Jr., Class of 1938



Collect calling

THE QUALITY of a museum is often defined by the quality of its collection.

That's why a strategic plan for collecting is a priority for George Kinghorn, the new director of the University of Maine Museum of Art.

"It's absolutely essential for a museum to take a look at its collection to identify strengths and weaknesses and areas that may need improvement," Kinghorn says. "A plan guides the growth of the collection and helps us find areas where we may seek donations and make strategic acquisitions."

Kinghorn comes to UMaine from Florida, where he most recently served as deputy director and chief curator of the Museum of Contemporary Art Jacksonville. He was instrumental in opening MOCA Jacksonville's six-floor, 60,000-square-foot facility in the heart of downtown. He also led a subsequent renovation of the museum's galleries, which added exhibition space and improved flow.

During his nine-year tenure, he added significant works to the permanent collection, implemented a comprehensive strategic plan and created a collections management master plan, which redefined the scope of the collection. He previously was a member of the art faculty at Jacksonville University. In Maine, Kinghorn hopes to

strengthen ties between the UMaine Museum of Art in downtown Bangor and students and faculty on the Orono campus.

When he arrived in June, Kinghorn had only begun to explore the UMaine museum's holdings, nearly 7,000 works in all. However, a clear pattern emerged.

"The strength of the University of Maine Museum of Art collection is largely composed of works on paper: original prints, multiples, as well as photography, which has always been an emphasis here," Kinghorn says. "The prints range from historically significant pieces by Käthe Kollwitz, Winslow Homer and John Marin up to more contemporary masters like Alex Katz, Andy Warhol and Chuck Close."

When he started the collection in 1946, the late Vincent Hartgen used his shoestring budget to purchase works on paper — mostly prints. Over time, donors such as Robert Venn Carr Jr., a 1938 alumnus who collected contemporary works by influential artists, had a major impact.

Still, some holes remain in terms of media. Moving forward, Kinghorn hopes to acquire original paintings and drawings by both Maine artists and artists of international stature.

"It's not about quantity, it's about quality," Kinghorn says.



Roy Lichtenstein

American, 1923–1997
Reclining Nude, 1980
 Woodcut with embossing
 on Arches cover paper, 28¼ x 33½"
 Bequest of Robert Venn Carr Jr.,
 Class of 1938

Kara Walker

American, born 1969
Cotton, 1997
 Etching, 12 x 9"
 Ruth Stebbins & Edmund G.
 Schildknecht Purchase Fund

Election 2008

What issues are raising the stakes for most Americans as they head to the polls?

By Margaret Nagle

This historic presidential election year, equally unprecedented economic pressures and ever-challenging social dynamics are shaping the perspectives of many Americans as they prepare to head to the polls. To explore some of these issues facing the electorate, *UMaine Today* magazine tapped faculty members in philosophy, history, economics, business and political science. From their fields of expertise, they offer insights into the cultural realities overarching today's political landscape.

Historic High Stakes

Mark Brewer, Assistant Professor of Political Science

The 2008 presidential election promises to be historic in a wide variety of ways. The victory of the viable presidential hopefuls will represent some form of presidential first or record. A win by Sen. Barack Obama would result in the first African-American president in American history, no small matter in a nation with such an ignominious history on issues of race. A win by Sen. John McCain would be historic as well. He would be the oldest person ever inaugurated as president of the United States, a development that may tell us something about the changing nature of age in American society. This also will be by far the most expensive race in American history, and there is a strong possibility that we will see voter turnout higher than it has been in decades.

The stakes are high in the 2008 presidential election. Unlike some elections where it seems that it might not matter much who wins (1952 perhaps), there is a good deal riding on the outcome of this contest. Whoever takes the oath of office in January will face some incredibly important and complicated issues. The American economy is facing some difficult times that likely will continue. The new president will be expected to act. American military actions continue in both Iraq and Afghanistan, with the former extremely unpopular among the American public.

The nation is in the midst of an energy crisis the likes of which we have never seen, and short-term solutions are unlikely to be an option. Environmental concerns seemingly mount by the day, and immigration did not go away as an important issue just because Congress and President Bush could not agree.

Americans have been clamoring for healthcare reform seemingly for decades, and the explosion in healthcare costs, combined with the rapidly accelerating graying of American society, means the time is soon approaching when the American healthcare system will have to change, whether we like it or not. And finally, somewhere on the far back burner, but capable of taking center stage at a moment's notice, is the issue of terrorism. September 11, 2001 is not that long ago.

So how will the 2008 presidential election play out? There are

simply too many variables involved to make a solid prediction. Will Barack Obama be able to maintain his mobilization of perhaps millions of new voters through until Election Day? How many votes will Obama lose because of his race? I suspect that figure will be much higher than we would like to believe. And let's not forget John McCain, who is not terribly popular among a key element of the Republican base — religious conservatives.

Elections that dramatically change American politics, and thus American society, are few and far between. The 1932 presidential election was one such election, and the 1980 contest was another. One gets the feeling that the 2008 contest could join that exclusive club.

Changing Climes

Mark Anderson, Senior Instructor in the School of Economics and Coordinator of the Ecology and Environmental Sciences Program

The political discourse around climate change and energy is clearly different in this presidential election campaign from what we came to expect from the Bush administration. There is none of the initial denial and then grudging acceptance of the science of anthropocentric climate change. Yet there is little in the literature of any of the campaigns to make us think that this issue will be tackled as seriously as the science suggests it must be.

This is, in part, the political legacy of Jimmy Carter and his 1979 address to the nation on energy when he admonished that "... too many of us now tend to worship self-indulgence and consumption." He concluded: "There is simply no way to avoid sacrifice." But ignore Americans did, punishing Carter at the polls and then going on a three-decade binge of "self-indulgence and consumption."



There are only deeply buried hints of the need for sacrifice in the campaign literature this year. The keystone policy for all three campaigns is a “cap and trade” plan for greenhouse gas emissions. The message is that climate change is something that big companies create and will have to fix. You and I are not part of the problem and, therefore, will not need to participate in the solution. It will be painless.

The fact that both Hillary Clinton and John McCain supported a gasoline tax “holiday” to deal with rapidly rising gas prices demonstrates the inability of the candidates to tell Americans the difficult messages at the heart of climate change solutions. The rhetoric here for all the candidates includes “greenhouse gas emission targets and timetables.” But the candidates do not present a credible set of policies for achieving these targets, because they do not challenge the American people with the seriousness of the looming problems or the need for fundamental change.

The tone has changed; climate change is acknowledged to be real. Now the denial is about the challenges inherent in the solutions.



About Iran

Bahman Baktiari, Director of Research and Academic Programs in the School of Policy and International Affairs

Whoever wins in November 2008, surely one of the biggest issues will center around how to end U.S. occupation of Iraq. Sen. Barack Obama wants to redeploy most of the 160,000 troops in Iraq within 18 months of becoming president. Sen. John McCain is sticking to the status quo policy of keeping the troops there until there is a stable government and peace in the country.

Both are high-risk strategies. Obama’s strategy might produce a cascade of problems. The precarious Iraqi state might collapse. The civil war could intensify as various sectarian groups smell victory. McCain’s talk is of staying in Iraq for 100 years.

But the Iraq question cannot be resolved unless the United States resolves its differences with Iran. As the biggest neighbor of Iraq, Iran’s influence in Iraq is now greater than it has been for decades. Iraqi leaders make visits to Tehran and negotiate on substantive issues, including border security and joint energy proj-

ects. Iranian businessmen are investing heavily in Iraq’s southern regions, and Iran’s intelligence operatives are deeply embedded throughout Iraq’s nascent security forces and within the Shiite militias that have great street power in the south, as well as in several neighborhoods of Baghdad.

The question is then not whether the United States should negotiate with the Iranian government, it is the question of how the United States and Iran can move their discussions forward without getting bogged down by what one expert called the “weight of history.” This weight has shackled U.S.-Iranian relations for decades. The 1979 Iranian Revolution, and the ordeal of the American hostages who spent 444 days in captivity, has poisoned relations between the U.S. and Iran for nearly 30 years. And many Iranians still chafe because of U.S. support for the 1953 coup that toppled their elected government.

It is difficult to forgive past injustices and outrages, but once a dialogue begins, both nations have enough positive experiences in their past to help them focus on the future. November 2008 provides a unique opportunity for them to start a new path of mutual understanding.

Civic Involvement

Amy Fried, Associate Professor of Political Science and Associate Dean of the College of Liberal Arts and Sciences

The 2008 election brings with it the prospect that a new age of civic involvement is at hand. During the nominating period, particularly in the very lengthy, competitive and emotionally engaging Democratic contest, voting and caucusing were at record levels.

With clear issue differences between the candidates, and high interest in the campaigns and the state of the nation, turnout should be extremely high this fall. Campaign operatives are using new communications tools — social networking sites, self-organized groups within each campaign’s Web site, emails and blogs — to get prospective voters to volunteer, donate and vote. Still, voting or caucusing does not an engaged citizenry make. That requires an ongoing commitment.

Beyond the fall election, both candidates have suggested their interest in a civic agenda. Saying that governing success would depend on Americans “paying attention,” Sen. Obama has promised to revamp the White House Web site to provide a central location for information on policy issues, congressional leaders and groups concerned with that policy, and the means to contact appropriate elected officials. Each has spoken about decreasing the power of special interests, of increasing transparency in government. Since the belief that one’s voice matters is correlated with political involvement, reforms may encourage more activity. To be sure, these candidates’ biographies present different models of civic concern — military service and community organizing.

But both candidates have demonstrated their commitment to public service and have heralded the importance of care and sacrifice for the common good, a value that may inspire citizens to act.

Power Struggle

Doug Allen, Professor of Philosophy

The most important realities, even during this election year, do not involve who is elected president, but rather whether we can create a new political and cultural climate with a change in relations of power. We can participate in the electoral process, but with a different attitude and political culture. We must get away from the top-down approach in which we become totally dependent on our president and other elected officials to solve our political, economic, military, healthcare, energy, environmental and other problems. When so dependent, we then become cynical and feel powerless when elected politicians disappoint us and represent the interests of the wealthy and powerful.

Instead, we must create and further a culture in which we educate ourselves, raise consciousness and build a real democratic movement. In the electoral and other political processes, we must challenge fearmongering, misinformation, lies, rush to war, false patriotism, undermining of civil liberties, promoting torture, war profiteering by corporations, planned occupation of Iraq with permanent military bases and control of the oil, undermining of real science and other recent policies not in our real interests.

It is only a broad-based and diverse movement, not defined by money and limits of electoral politics and the power status quo, that can support progressive politicians and put pressure on those

complicit with economic and military power. Without such a political culture, we are left waiting for the superstar politician who will solve our problems, and that is not how history works.

The abolition of slavery, women's right to vote, the end of child labor, the eight-hour workday, civil rights, the end of the Vietnam War, environmental legislation and other really significant cultural and political changes were opposed by powerful and privileged economic and political forces. Only when the people educated themselves, organized, resisted, struggled and became a powerful political culture did the "leaders" at the top have to listen. Only through real democratic empowerment can we support progressive candidates and then hold them accountable.

Mideast Image

Alexander Grab, Professor of History

The ongoing war in Iraq is one of the most important issues in the current U.S. presidential election. By now, it is clear to many Americans that the invasion into Iraq was the biggest blunder in U.S. foreign policy history. Currently, most Americans oppose the war in Iraq and want to see the American soldiers back home. Most people understand that the war was based on lies and false claims by the Bush-Cheney administration. President Bush decided to invade Iraq to pursue economic, political and military interests, and not to "democratize" Iraq or the Middle East, as he claims. In fact, for decades the U.S. has supported numerous dictatorial rulers in the Middle East, Saddam Hussein being one of them. The U.S. invaded to gain control of Iraq's rich oil resources and to construct bases, and thus have a permanent military presence in this strategically located country.

Americans were promised a quick and easy victory with minimal costs in human lives and money. Instead, a widespread insurgency against the U.S. broke out. More than 4,100 soldiers have died and many more have been injured, and the costs of the war have amounted to well over \$600 billion. Iraq itself has suffered hundreds of thousands of casualties, millions of refugees and huge material damage. The war in Iraq has also caused growing resentment toward the U.S., not only in the Middle East but also among European allies. The next president will have to rethink the U.S. policy in Iraq and end the occupation. As long as the U.S. stays in Iraq, bloodshed will continue and tension will remain high.

The next president will also have to rethink the U.S. policy regarding the Israeli-Palestinian conflict. Bush and past administrations have only exerted pressure on the Palestinians to end their hostile acts and to recognize Israel's existence. Very little, if any, pressure has been placed on Israel to end its 41-year occupation of the Palestinian Territories and the illegal Jewish settlements. The next president needs to play a more evenhanded role in this conflict and bring about a two-state solution along the 1967 borders.



Superficial Spontaneity

Howard Segal, Professor of History

In the last decade, high-tech communications technology has played an increasing role in political campaigns. It has provided instantaneous access to news and analysis, and facilitated new formats such as blogs. But while providing around-the-clock access to news with the power to influence and inform, technology also has triggered a spontaneity that can lead to messages that are dangerously superficial in substance, even as they are overwhelming in number.

The irony is that the unprecedented availability of information doesn't necessarily, automatically or inevitably lead to knowledge. It's unfortunate that so many Americans and others assume that the immediate response is necessarily the preferred and most honest. Indeed, such spontaneity often is coupled with a compulsion to say something provocative, whether accurate or not.

Today, we have an information overload in political analysis as in so much else, to the point that we have to spend a lot of time digging through the rhetorical garbage to come up with any gems of wisdom. And as we delete that unwanted electronic junk mail or tune in and out of nonstop CNN or FOX coverage, we begin to wonder about built-in biases. Paradoxically, we know almost everything there is to know about a candidate; almost nothing is hidden.

People shouldn't let cutting-edge, instantaneous technology substitute for serious reflection on the candidates, the issues and the nation's future. Sound bites should not be allowed to become fatal — pun intended — to our political process at any level.

Horizon of the Possible

Michael Howard, Professor of Philosophy

We are approaching what could be the most significant shift in the American political landscape since the 1960s. In this political environment, it becomes possible to move the horizon of the possible, to begin to put on the agenda the most urgent issues of our time, which must include weaning ourselves from fossil fuels — more quickly and thoroughly than is currently proposed — to try to avert catastrophic consequences from climate change; finding a solution to poverty domestically and globally; reversing the growing inequality in the U.S. and the world; altering our long bipartisan policy of global military dominance, using our declining strength to usher in a world governed by law and justice; and reforming the media and our

electoral process so that ordinary people count as much in opinion formation and decision as people with power and wealth.

These problems are interrelated and require bold solutions and courageous leadership. There is no effective solution to climate change without fair sharing globally of the burdens of a transition to a sustainable economy. Giving up use of military force requires a willingness to negotiate and give up privileges, and to make real commitments to abolishing poverty and reducing inequality that generates conflict.

Center-leaning politicians alone cannot lead. People need to redefine the center by mobilizing for the common good against the resistance of corporate media and entrenched interests in both parties, or change will be more talk than substance.

People mobilized during the New Deal, and later in the social movements of the 1960s. Union organizers, community activists, freedom marchers, antiwar protesters, artists and writers did not achieve everything they sought, but remarkable changes occurred because of their efforts to reach beyond the horizon.

Not Business as Usual

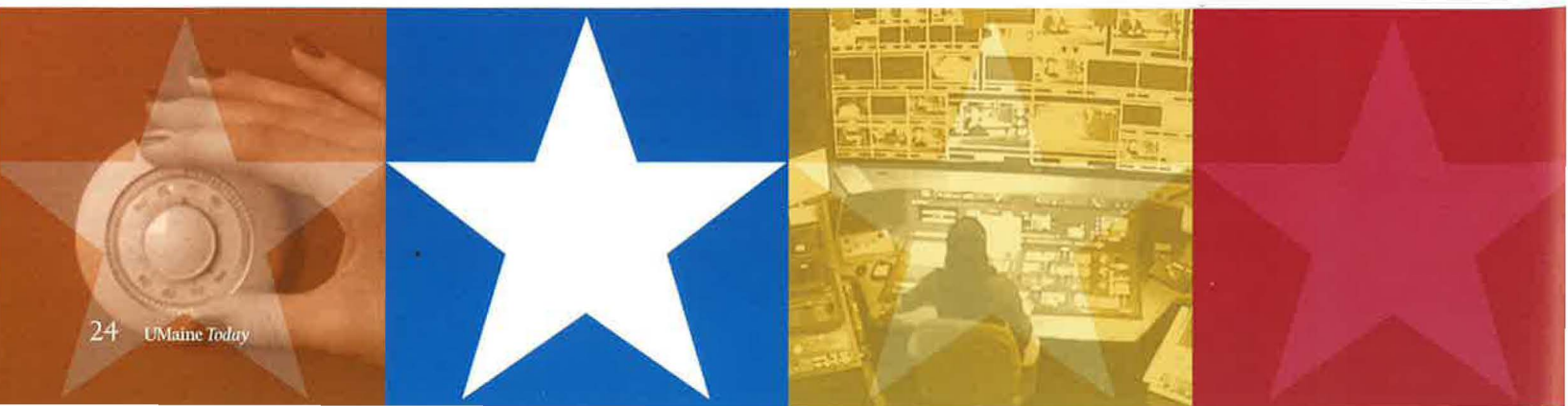
Martha Broderick, Senior Lecturer of Business and Commercial Law

This election will be pivotal in addressing the fuel price issue. Due to the price of heating oil and vehicle fuel, people are spending much less money on and for businesses in Maine. Small and large businesses are shutting down as the cost of operation exceeds revenues.

The elected candidate for president will be handed a sinking economy and rising inflation. As the cost of waging a protracted foreign war hits home, federal heating assistance that Maine's poor have come to rely on may disappear in the sea of red ink. The multiple effects of this federal deficit crisis and our trade deficit may rapidly accelerate the loss of population and businesses for Maine.

If we are to develop Maine's economy and hold our population, the federal government, led by our next president, must get its house in order and reduce spending. If federal social and financial support for Mainers is reduced any further, we can expect to see more mill closures, more home foreclosures and more school closures.

The tax-and-spend attitude of the federal government needs to take a look at the hard choices states like Maine are made to make because we constitutionally require a balanced budget. Our next federal leader would do well to remember that what helps our economy at home strengthens our dealings abroad. ■ **Online**





University of Maine Cooperative Extension Educator Louise Kirkland knows firsthand just how dangerous food contamination can be. Her brother survived a salmonella infection. When cooking for a crowd, so much can go wrong at every step. But with a little training, Kirkland says, food-borne illnesses can be prevented.

Safe spreads

THEY'RE SINISTER, perhaps even deadly. And they can lurk in the most unexpected places: church halls, Grange kitchens and picnic baskets.

Food-borne contaminants such as salmonella, E. coli and staphylococcus pose a serious public health risk. That's why University of Maine Cooperative Extension educators are doing their part to reduce that risk through the popular Cooking for a Crowd classes.

"We attract church people, agencies, civic organizations and other groups who cook for many people as a fundraiser," says Extension

"One of the reactions we get from our students is that more people should be attending these workshops. They find it increasingly important."

Louise Kirkland

Educator Louise Kirkland. "In Maine, it's a really common activity, and we approach this like a prevention program so no one will get sick if people learn the (proper food handling) practices."

In the Extension classes held throughout the state several times a year, Kirkland and Extension Educator Kathy Savoie cover topics ranging from menu planning and record keeping to hand washing and storing leftovers.

Among Kirkland's lessons: Serve hot food hot and keep cold food cold. Always follow the two-hour rule: Food should sit at room temperature for no longer than two hours, or one hour in the summer months. Use an instant-read thermometer while cooking and periodically while serving. Wash hands often, using soap and warm water for at least 20 seconds. And tell anyone with a cold or cough to stay out of the kitchen.

"Whether you're serving the food or cooking, you need to be a clean worker," Kirkland says.

That advice doesn't just apply to churches and soup kitchens, either. Recent classes have included students from small fast-food businesses in Maine.

Students who have taken the Cooking for a Crowd classes have written to tell Kirkland how they have improved their cleaning, dishwashing and cooking practices as a result. She finds it encouraging that a growing number of professional and volunteer cooks consider food safety a priority.

Social Security investing

experts
on topic



Dianne Hoff



IN RESPONSE TO growing concern about food allergies in America's schools, a uniform, nationwide policy called the Food Allergy and Anaphylaxis Management Act is now moving through Congress.

But sweeping legislation often doesn't address the legal and ethical issues schools face when trying to accommodate students with food allergies. Dianne Hoff, an associate professor of educational leadership at the University of Maine, has done extensive research in the legal and ethical dilemmas public schools face, including peanut allergies.

"Federal acts will say something like, 'All schools have to have a plan,'" Hoff says. "But that still doesn't answer the ethical or legal dilemmas: How far do we have to go? And whose rights trump whose rights?"

The home care field is populated primarily by women between the ages of 25 and 55, and has about a 50 percent turnover rate, even though it also is the fourth fastest-growing occupation in the country, according to University of Maine social work professor Sandy Butler.

Because of the market volatility and the need for public investment education, a proposed investment component for Social Security is bound to have detractors. But by framing the investment process as a need to maintain purchasing power, the stock component may be more feasible from a political standpoint, according to finance professor Robert Strong.

Taking the pulse of home care

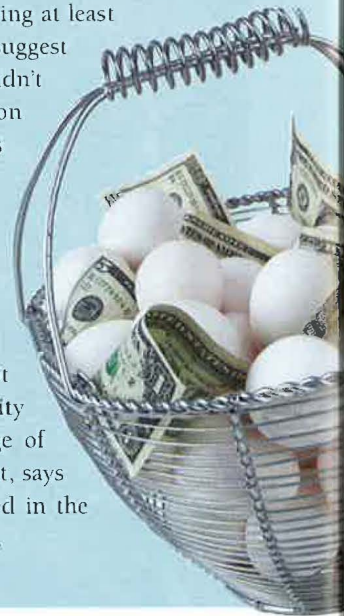


CONTRARY TO POPULAR BELIEF, there is no Social Security trust fund. Instead, future obligations are funded by U.S. Treasury bonds, and that's not the best news for returns, according to recent research by a University of Maine professor of finance.

Robert Strong, the University of Maine Foundation Professor of Investment Education, found the earning potential of a portfolio invested completely in Treasury bonds isn't likely to keep up with inflation. But by allowing participants to invest a small percentage of the portfolio in the stock market, he says, such investments have a better chance of meeting or exceeding cost-of-living increases.

Rather than considering performance in a traditional risk/return framework, Strong's research centers on an investment program with an objective of simply earning at least the rate of inflation. Historical data suggest that a bonds-only portfolio wouldn't achieve that goal. However, the inclusion of a surprisingly small amount — as low as 5 percent — of stock investments would dramatically increase the chances of keeping up with cost-of-living increases without significantly increasing risk.

The results indicate that from a simple cost-of-living perspective, it makes sense to permit Social Security participants to put a small percentage of their contributions in the stock market, says Strong, whose findings were published in the *Journal of Business & Economic Studies*.



HOME CARE WORKERS provide a critical service by helping Maine's elders stay in their homes when they need extra personal care, but the labor pool serving that expanding population is shrinking.

Sandy Butler, professor of social work and coordinator of the University of Maine Master's in Social Work program, has begun a three-year research project to find out why. With funding from an Academic Research Enhancement Award from the National Institute on Aging, she will oversee a survey of 250 home care workers in Maine to investigate factors influencing job turnover and retention, and how those factors differ between older and younger workers.

Personal support specialists and personal care attendants classified as direct care or home care workers provide in-home assistance for frail elders and individuals with disabilities. The work can include bathing, dressing, feeding, assistance with transportation and light housework. Butler notes that they usually work for very low wages, often without benefits and under difficult conditions.

The study explores two areas of interest to Butler, a nationally recognized gerontologist and eldercare researcher: the financial security of women throughout their lives, and the health and well-being of elders.

Maine's story bank

#N by the Numbers

MAINE: THE WAY LIFE SHOULD BE. It's a catchy slogan that speaks to Maine's quality of place. But while the concept is easy to grasp, it's a bit hard to define.

The Story Bank Institute, a project of the Maine Folklife Center at the University of Maine and Cultural Resources Inc., of Rockport, hopes to uncover what sense of place means, from the Great North Woods to the southern coast. After a four-day intensive workshop this summer, participants went into their communities to collect stories of Maine: The way life is. Their subjects included bateau building on the St. John River, basketmaking materials collection on Indian Island, the culture of Bangor's Hispanic community and the coastal traditions of crab picking and clam digging.



Photo courtesy of the Maine Folklife Center

Preliminary work was presented live at the American Folk Festival in Bangor in August. Audio, video and photographs from the project will reside in the Folklife Center archives. The project is funded by grants from the National Endowment for the Arts and the Maine Humanities Council.

UNIVERSITY OF MAINE
Museum of Art
 permanent collection

6,989
pieces of art

4,561
works on paper,
including drawings,
photos and prints

1,926
paintings

1,733
artists represented

142
Maine artists
represented

46
exhibits in the Museums by Mail
traveling art exhibit program

Sustainable sculpture

THINK SCULPTURE IS BUILT TO LAST? Think again. This summer, University of Maine students explored the use of natural — and, in many cases, biodegradable — materials in the first sustainable sculpture class.

Trash became treasure. Twigs became shrines. Salt and mineral blocks were carved into figures that would eventually dissolve.

"To actually have a conversation with our environment, that's a really liberating experience ... allowing myself to let go of that work that is 'mine' as part of something bigger," says senior Samantha Jones.

In the four-week summer course, students worked with biodegradable materials such as handmade paper and scavenged wood, as well as castoffs from the campus recycling center.

"That is one of our objectives in the course, to get students to seriously consider the materials from the inception — Where do they come from? Are they mined/collected from renewable resources? What types of processes and resources are involved in getting them to your studio? — through the entire design process, which includes how the artist uses them and the real life span of the material," says Andy Mauery, a professor in UMaine's Department of Art.

The students took their charge seriously; for instance, questioning the impact a mineral block laced with copper might have on birds and small animals. In an online forum, they developed a vocabulary of sustainable art. When the class ended, the students formed a club to continue the conversation.

"A lot of students are thinking very deeply about the concepts," says sculptor and adjunct professor Susan Camp, who cotaught the class with Mauery.





Term limit drawbacks

AT THE STATE LEVEL, term limits don't provide the significant boost to minority party representation that proponents expect, according to a recent study by University of Maine political scientist Richard Powell.

When states began imposing term limits in the late 1980s and early 1990s, the populace was dissatisfied with elected officials at all levels of government.

Term limits have also meant more turnover in state legislatures, but that doesn't always have a partisan effect. In fact, partisan change was higher in states without term limits than in those with them.

Many political scientists predicted the move would benefit Republicans — the traditional minority party — by eliminating Democrats' incumbency advantage.

Powell, an associate professor of political science at UMaine, studied the partisan makeup of state legislatures from 1990–2004. His findings, published in *State Politics and Policy Quarterly*, challenge those early predictions.

On paper, it seemed there were a number of reasons why term limits would benefit Republicans, but in practice, this didn't happen in states with term limits, possibly because of the types of states involved. Term limits passed more easily in predominantly Republican states because voters viewed the issue as a tool against congressional Democrats. However, term limits undercut majority Republican incumbents in their state legislatures.

NEITHER UMaine junior James Daniels nor Kurtis Petersons, a 2005 UMaine graduate, is a golfer, but that didn't hinder collaborative development on a prize-winning reality-based golf program.

The \$10,000 cash prize and a \$15,000 consulting services package they won in the annual statewide Business Plan Competition held by the Center for Entrepreneurship at the University of Southern Maine in April has enabled mCaddie to move to the next development level — national launch of a limited version of the program.

mCaddie allows golfers to track and replicate an actual game with a simultaneous virtual one that generates statistics. In addition, mCaddie offers an online social clubhouse and allows players to see which of their friends are playing golf at a given time and how they are doing.

Cyber caddie



Mock-up of an iPhone screenshot courtesy of James Daniels

James Daniels and Kurtis Petersons are the second business plan team from UMaine in three years to win first place in the USM competition. In 2006, economics major William Sulinski and alumnus Matthew Rodrigue took first for Heat-Safe 1000, a wireless device that lets heating oil companies know when customers' oil tanks get low.

The system begins on the green with a cell phone with GPS function. Players save their tee off location with a waypoint. As the game progresses, mCaddie logs strokes and ball travel distances. The game is saved to the mCaddie Web site, where it can be reviewed and analyzed, or viewed by other players.

"It's a caddie with ties-in to golf courses," Daniels says. "We already have a number of golf courses that are quite eager to sign on."

Petersons came up with the idea for mCaddie and Daniels provided the technical expertise. Since January, the two have been refining mCaddie with help from UMaine's Foster Student Innovation Center and the Maine Center for Enterprise Development in Portland.



Mississippi mud

HOW MUCH CARBON Mississippi River mud contributes to the ocean and to the atmosphere is the focus of research by a University of Maine Ph.D. student in oceanography.

Margaret Estapa, a recent recipient of a NASA Earth and Space Science Fellowship, is measuring the release of carbon from mud delivered by the Mississippi River and deposited along the Gulf of Mexico coast.

When exposed to intense sunlight, some of the carbon is released from the mud and flows out into the ocean, where it could be consumed in the ocean food web or released as carbon dioxide, a heat-trapping greenhouse gas. Using light-measuring equipment and satellite data, Estapa is hoping to determine how much carbon is liberated by the sunlight, and how much remains buried in the mud.



“

Our interest is to find high-value products from natural resources. It could create a whole new industry.”

Barbara Cole



Money may not grow on trees, but good health just might. Resveratrol, the antioxidant compound found in grape skins and, thus, red wine, is also present in the bark and foliage of trees harvested from Maine forests. University of Maine chemistry professors Barbara Cole and Ray Fort, along with graduate student Regan LeBlanc, are researching the viability of extracting resveratrol using equipment Maine's pulp and lumber mills already have. If it proves to be economically feasible, partnerships with pharmaceutical companies could be a huge boon to the industry. "We're using something that's basically wasted now," LeBlanc says. "If you can find a way to get something out of it, it's a bonus to the process."

Natural history

THE UNIVERSITY OF MAINE has one of the top 10 graduate programs in environmental history in the country. Now a new endowment could help it develop into an international center.

The **Col. James C. McBride Endowment** established in the **University of Maine Foundation** will create new graduate research opportunities, courses, lectures, a national conference on New England environmental history and a campus database of New England and Eastern Canadian scholars in the field.

The endowment highlights the importance of the natural sciences in history, says UMaine environmental historian Richard Judd, who has been named the first Col. James C. McBride Professor. It also will further collaboration among researchers in a variety of disciplines, including forestry, sustainable agriculture, marine sciences, wildlife, tourism, Native American studies and folklife.

James McBride, a North Dakota native, graduated from UMaine in 1954 with a degree in economics. His extensive military career included tours in Korea and Vietnam. He died in 2003 and is buried in Arlington National Cemetery.

Professor of History Richard Judd is the first Col. James C. McBride Professor. Judd's research focuses on the Maine forest industry and the roots of conservation in New England, Oregon and the nation. He is the author of five books related to environmental history.



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