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SUMMER 08

NATURAL RESOURCES
AND ENVIRONMENT
M UNIVERSITY OF MICHIGAN

Stewards

A magazine for alumni and friends of the School of Natural Resources and Environment



Coming soon:
NATIONAL
SUMMIT,
THE BOOK

AND AVALANCHES
ANTS

THE
NATURAL

DALAI.LAMA:
sustaining
OUR **home**

Dalai Lama shares environmental
passion in historic Wege Lecture



UNIVERSITY OF MICHIGAN



An Idea WORTH BANKING ON

This time of year, it's not easy to think about studying and taking tests as temperatures warm and the grounds surrounding the Dana Building become flush with color. So, in the spirit of the season, today's pop quiz consists of a single question: What do the National Summit on Coping with Climate Change, Nobel Peace Prize, Dalai Lama and World Bank have in common?



The answer, of course, is the School of Natural Resources and Environment, which has enjoyed an unprecedented level of attention in the past year. And all of it has transpired since we produced the first issue of *Stewards*, our alumni and friends magazine. I'm proud to present this second issue, the first of two to be produced this calendar year and biannually thereafter.

Here's some news behind the past year's major headlines:

First, SNRE hosted in May the first-ever National Summit on Coping with Climate Change. The Summit brought together international experts for three days of unprecedented discussion. The conference proceedings are now being compiled into a book (see story, page 5).

Seven months later, I had the privilege of attending the Nobel Peace Prize ceremony in Oslo, Norway. As someone who led several U.S. delegations to the Intergovernmental Panel on Climate Change plenaries over the years, I was at the ceremony as an invited guest of former Vice President Al Gore, who along

with IPCC, shared the 2007 Peace Prize. Holding the Nobel Diploma and Medal (pictured below) was an unforgettable moment. The Nobel Committee's decision to recognize their contributions validated years of groundbreaking research and communication – and acknowledged the unassailable evidence supporting anthropomorphic climate change.

Just this spring, SNRE's Center for Sustainable Systems had the honor of presenting His Holiness the 14th Dalai Lama as the 8th Wege Lecturer. His Holiness was as gracious as he was unassuming. His lecture on human and environmental sustainability was memorable as well (see story, page 14).

Last but not least, my valued and trusted colleague David Allan – a face and name known by a generation of SNRE students and supporters – is stepping in for me as acting dean. I've accepted an assignment to co-direct the World Bank's prestigious

World Development Report 2010, which will focus on climate change and development. Dave temporarily is relinquishing his role as associate dean to become day-to-day administrator of the school until I return in August 2009. The school is in great hands.

So, enjoy the issue – preferably outside under a tree, if you can. And goodbye until next fall.

Rosina M. Bierbaum
Dean, School of Natural Resources and Environment

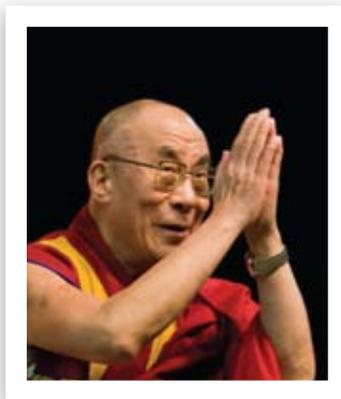


Stewards

A magazine for alumni and friends of the School of Natural Resources and Environment

DALAI LAMA & 14 sustainability

In his historic Earth Day address, His Holiness raised environmental concerns across themes as varied as population control and religious tolerance to consumerism and income disparity.



THE 20 NATURAL

Once Mark Retzliff arrived at the University of Michigan in 1966 and became an undergraduate at the School of Natural Resources, a metamorphosis occurred.

ONLINE

Visit www.snre.umich.edu for additional stories and more information about some of the articles in this magazine. New content is added daily to keep you up to date with events and news about SNRE.

4 Summit Proceedings

SNRE will publish the proceedings this summer of its historic May 2007 National Summit on Coping with Climate Change – the first event of its kind in the nation.

5 Landscape Architecture at 100

Planning is under way on the 100th anniversary celebration for the Landscape Architecture program in 2009.

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Whoever becomes the next U.S. President or a member of the 111th Congress, they will likely face tough questions from the League of Conservation Voters and Kerry Duggan (SNRE, M.S. '06).

27 The Big Green Purse

When Diane MacEachern (SNR, M.S. '77) chose Environmental Communications and Advocacy as her major in 1975, it was a match made in eco-heaven.

Stewards

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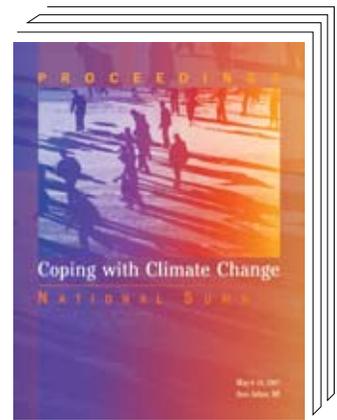
* includes gender identity and gender expression

The Regents of the University are Julie Donovan Darlow, Ann Arbor; Laurence B. Deitch, Bingham Farms; Olivia P. Maynard, Goodrich; Rebecca McGowan, Ann Arbor; Andrea Fischer Newman, Ann Arbor; Andrew C. Richner, Grosse Pointe Park; S. Martin Taylor, Grosse Pointe Farms; Katherine E. White, Ann Arbor; Mary Sue Coleman (ex officio).

Coming soon: NATIONAL SUMMIT,

by KEVIN MERRILL

THE BOOK



THE SUMMIT BROUGHT SCIENTISTS AND SCHOLARS TOGETHER WITH KEY DECISION MAKERS TO ADDRESS OPTIONS AVAILABLE TO U.S. INSTITUTIONS AND COMPANIES FOR ADAPTING AND RESPONDING TO CLIMATE CHANGE.

The School of Natural Resources and Environment is planning to publish this summer the proceedings from the May 2007 National Summit on Coping with Climate Change. The event – the first of its kind in the nation – focused on helping the United States prepare for the impact of climate change and the ongoing alterations in temperature, precipitation, sea-level rise and species range.

Experts identified adaptation needs in four critical areas: public health, energy industry, water quality and fisheries. Then, they developed options for actions to be taken at local, state and national levels to help prepare cities, counties and states as well as business and industry.

Those ideas, an executive summary and other materials are captured in the book, which also includes a CD with many Powerpoint presentations and related speaker information. SNRE organized the

May 8-10 Summit as the university's commitment to the Clinton Global Initiative, a non-partisan effort to devise and implement solutions to world challenges. Faculty from across U-M colleges, schools and institutes participated in the Summit. External sponsorship came from Google Inc., the Gordon and Betty Moore Foundation of San Francisco, the Frey Foundation of Grand Rapids, the National Science Foundation and the U.S. Environmental Protection Agency.

"The nation has lost a decade in thinking seriously about coping with climate change. This Summit was an effort to jump-start that conversation with science and policy leaders and put SNRE in the forefront of innovative thinking to confront climate change," said SNRE Dean Rosina M. Bierbaum.

Dan Brown, SNRE associate dean for research, and Jan McAlpine, a visiting scholar from the U.S. Department of State, edited the book.

READ MORE:
clintonglobalinitiative.org



Photo: U-M Photo Services

NEW FACES AROUND DANA

THREE FACULTY JOINED SNRE THIS YEAR. PLEASE HELP US WELCOME:

→ **Ines Ibanez** joins as an assistant professor in the Terrestrial Ecology field of study from a post-doctorate position at the University of Connecticut. Ibanez completed her Ph.D. at Duke University; her research focuses on the major challenges that natural communities face under global change that determine the distributional ranges of dominant plant species. Currently, she is developing and investigating predictive models of plant species' invasions across New England.

→ **Allen Burton**, professor and chair of the Department of Earth & Environmental Sciences at Wright State University, has been named director of the Cooperative Institute for Limnology and Ecosystem Research (CILER). Burton will hold a simultaneous appointment as a professor at SNRE, which houses CILER. He obtained a Ph.D. in environmental science from the University of Texas at Dallas in 1984.

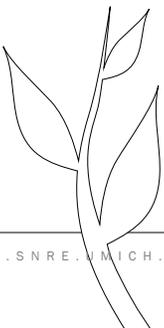
→ **Chris Ellis** joins as an associate professor from Texas A&M University's College of Architecture, Department of Landscape Architecture and Urban Planning. His scholarly interests include landscape architecture, planning and ecology; spatial modeling and analysis; and applications of information technology to planning and design. Ellis also has been involved in designing an environmentally sustainable educational facility for Texas A&M University next to the Monteverde Cloud Forest Reserve in Costa Rica.

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AMONG THE EXHIBITS AT THE 3RD ANNUAL SNRE EARTH ART INSTALLATIONS IN APRIL WAS "CORN FOR CARS: A VISUAL EXPLORATION OF THE MALADIES OF GROWING MAIZE FOR BIOFUEL," BY LA STUDENTS BECCA SOWDER, ANGIE CAMBELL, LAUREN DESILVA, LAURIE LESCH AND JESSICA NEAFSEY.

LA 100 YEARS



LA MARKS CENTURY OF SKILLFUL LEADERSHIP

Planning is under way on the 100th anniversary celebration for the Landscape Architecture program in 2009.

For nearly a hundred years, the program – which became part of SNRE in 1965 – has produced graduates who use their technical skills and artistic and ecological sensitivities to lead and challenge the profession as it strives for a more sustainable future. Recently, the program launched an electronic version of its former magazine “Michiganscapes” to keep alumni informed about events, fellow alumni, program developments and faculty and student research.

In April, LA Assistant Professor Beth Diamond organized the 3rd Annual SNRE Earth Art installations, featuring the work of Landscape Architecture students in her course, “NRE 503: Imprints & Archetypes.” The exhibits could be experienced at two campus locations: North Campus Quad and the Nichols Arboretum. (In past years, the presentations were on the main campus Diag near the Dana Building. Preparations for the 2008 commencement forced the exhibits to relocate this year.)

In March, LA faculty and guests recognized

student achievement at the 2008 Scholarship Luncheon. “This year’s class of recipients is truly outstanding,” said Chris Ellis, program coordinator. “I join my fellow faculty colleagues in honoring them and their work and for sustaining the Michigan tradition of excellence.”

Guests included former LA program chair Chuck Cares, director emeritus of the Botanical Gardens & Arboretum and an emeritus professor in Landscape Architecture, who received a special recognition for his contributions to the program and its students over the years; John Strauch, father of the late Paul L. Strauch, a 1994 LA graduate for whom the “Spirit of the Studio” Award is named; and Randall Sharp, a landscape architect with Sharp & Diamond LLC, who later in the day delivered the Whittemore Lecture as part



- Photo by Scott Soderberg, U-M Photo Services

JOHN STRAUCH WITH M'LIS BARTLETT, THE 2008 RECIPIENT OF THE AWARD NAMED AFTER HIS LATE SON, PAUL.



of the Winter 2008 Dean’s Speaker Series. His topic was “Urban Climate Relief: Ecological Strategies for Streets, Walls and Roofs.”

To learn more about upcoming anniversary events and to make sure you are on the “Michiganscapes” subscriber list, contact Erin Longchari, assistant director of the Office of Development and Alumni Relations, at 734.615.0270 or erinla@umich.edu. ♻️ - Kevin Merrill

STUDENTS IMMERSED IN CHILE'S HYDROELECTRIC DEBATE

For **Katie Goodall** and 17 other students from the University of Michigan, a special course this year allowed them to experience on-site education on cultural, political and environmental issues raised by a series of proposed hydroelectric projects. But the education took place not in the United States, but Chile.

"It was great for our class to experience the issues first hand," said Goodall (SNRE, M.S. '08), who has a research interest in Latin American agriculture and wildlife. "We were able to study how the issues were integrated at multiple levels and discuss the conflicts between the parties involved. The more we learned, the more questions we had."

The students traveled to Patagonia and across southern Chile for a week during spring break. They visited current and potential hydroelectric power plant locations and spoke with university and government researchers, local residents and company officials.

Goodall and Sara Adlerstein, a School of Natural Resources and Environment research scientist who co-taught the course, joined students from U-M's undergraduate-based Program in the Environment and the College of Engineering (CoE). Thomas Neeson, an SNRE doctoral candidate and graduate assistant, also made the journey.

The semester-long course, titled "Sustainable Energy Development in South America," was offered through CoE but featured guest-lecture experts from SNRE. The interdisciplinary format is an example of the collaborative teaching and research expected from SNRE's newest joint-degree program (see related story, page 9).

Michigan Engineering Professor Steven Wright and Adlerstein developed the course in collaboration with Evelyn Habit and Oscar Parra,

colleagues at the University of Concepción. The course focused on the Chilean government's pressing need for a plan to ensure adequate future energy supplies, specifically through hydropower. The class was the first one offered through the Graham Scholars Program, an initiative of U-M's Graham Environmental Sustainability Institute. The Scholars Program promotes multidisciplinary studies in environmental sustainability, especially topics in an international context.

"There is a big interest in establishing courses with international components," Adlerstein said. "It's a very successful way of educating students – and we need more of it. You can spend a whole semester teaching and it's not the same as taking the students on-site to experience it for themselves."

The course was so popular that it is being offered again next spring, with more room for SNRE students. ↴

Photo by Elizabeth Coome used with permission



ON THE TRIP, STUDENTS ENCOUNTERED THE POWERFUL AND UNTAMED RIVERS TARGETED FOR VARIOUS HYDROELECTRIC PROJECTS.

CHILE MORNING

KATIE GOODALL IN PATAGONIA



Photo courtesy of Katie Goodall

HOT IDEA

STUDENTS SPEAK UP FOR A

It sounded like a sure hit from the start: three SNRE graduate students, three microphones and one hour of live air time.

The result was "It's Hot in Here," an environmentally themed current events radio show. The weekly show debuted in March from the University of Michigan's student-run station starring Sarah Cwiek, Jennifer Johnson and Hugh Stimson.

Cwiek and Johnson came up with the idea and name, which reflects the group's interest in global warming and the environment. "We both are passionate about the environment – and like hearing ourselves talk," Johnson said with a smile. "We thought that maybe others would, too."

The show is a blend of talk show and dance party. Between news-talk segments focused on environmental headlines and

guest interviews, the hosts play music. Guests have ranged from a second-grade science teacher who spoke about science education to SNRE assistant professors Dean Bavington and Rebecca Hardin. A recurring guest is Kerry Duggan (SNRE, M.A. '06), who is campaigns projects manager for the League of Conservation Voters and the show's "Washington correspondent." (See profile of Duggan, page 26)

What the show lacks in technical sophistication it makes up for with unfiltered energy. "We're used to speaking our minds in a collaborative environment," said Cwiek, who is the only host with media experience, having worked at WDET-FM in Detroit.

Since launching the program, **Cwiek (SNRE, M.S. '08)** and **Johnson (SNRE,**

M.S. '08) graduated. Stimson graduates in December 2008. Still, they expect the show to return in the fall with at least Stimson and Johnson, who returns to the School of Natural Resources and Environment as a Ph.D. student.

The students don't expect to win any Peabody awards. They view the guerilla-like nature of the production and limited reach of WCBN's signal as part of the program's appeal. "Its roughness is part of its charm," said Stimson. 🍋

"It's Hot In Here" airs Thursdays from 12-1 p.m. EST at WCBN 88.3 FM. To listen live outside of Ann Arbor or to download shows from the podcast archive, visit wcbn.org/hotinhere. To contact the show, email itshotinhere.radio@gmail.com.



IT'S HOT IN HERE

FROM LEFT, JENNIFER JOHNSON, HUGH STIMSON AND SARAH CWIEK

TOP SEED

Erb students win second business plan competition

Four dual-master's degree students from the School of Natural Resources and Environment (SNRE) and Ross School of Business – and one student from New York University's Wagner School of Public Service – won Wal-Mart Stores, Inc.'s first "Better Living Business Plan Challenge."

Wal-Mart developed the competition to provide business students worldwide an opportunity to invent sustainable products or business solutions. Eight student teams presented their business plans to a panel of executives from Wal-Mart and other leading companies, and non-governmental organizations in April.

The winning team of Jeff LeBrun, Tony Gross, Mike Hartley, Amir Satvat (from NYU) and Ali Moazed were awarded \$20,000 for developing a biodiesel company that produces a nonfood-based renewable fuel while supporting sustainable development in Africa. In February, the four U-M students competing as a team won \$10,000 for an earlier version of the proposal as part of the inaugural "Africa MBA Business Plan Competition."

The team received significant support from a coalition of U-M institutes, including the Erb Institute for Global Sustainable Enterprise; the Zell /Lurie Institute for Entrepreneurial Studies; the Center for Sustainable Systems (which is part of SNRE), and the William Davidson Institute. The students receive dual degrees from SNRE and the Ross School of Business.

The students' company, Mozergy, plans to develop and propagate jatropha crops in Mozambique and other developing countries. Jatropha is a sustainable, low-cost, high-yield plant that produces oil-rich seeds that can be extracted and refined to produce biodiesel. Because jatropha is not edible and can grow on marginal land, it is not expected to impact food production.

"All of the students did a fantastic job developing their ideas and presenting them to a distinguished panel of judges," said Kim Saylor-Laster, vice president of energy for Wal-Mart, in a statement. "The judges selected the University of Michigan submission because it addresses the growing need for renewable fuel sources and the social mission of economic development, in a way that is both profitable and sustainable. We hope this concept and the other great ideas presented will help build the businesses of tomorrow while protecting our natural and energy resources." 



THREE OF FOUR MEMBERS OF THE U-M STUDENT TEAM TRAVELED TO NEW YORK TO RECEIVE THE TOP PRIZE AS PART OF THE INAUGURAL "AFRICA MBA BUSINESS PLAN COMPETITION." FROM LEFT: TONY GROSS, ALI MOAZED AND JEFF LEBRUN. NOT PICTURED: MIKE HARTLEY.



Photos courtesy of Tony Gross



AS PART OF THEIR PROJECT, THE STUDENTS TRAVELED TO MOZAMBIQUE, WHERE THEY OBSERVED THE INDOOR GROWING OF THE PLANT (ALSO PICTURED ABOVE).

FIRST-OF-ITS-KIND
DUAL DEGREE
COMBINES
ENGINEERING AND
SUSTAINABILITY

Quality

Engineers with an ecological outlook will be the product of a new dual-degree program between the School of Natural Resources and Environment (SNRE) and College of Engineering (CoE). The Engineering Sustainable Systems (ESS) degree program educates engineers who integrate the principles of sustainability into their work.

In real terms, that means civil and environmental engineers who minimize the watershed impacts of a new road; chemical engineers who can adjust biofuel recipes to use less water; and mechanical engineers who design more fuel-efficient vehicles using greener manufacturing processes.

It is the first such dual-degree program in the nation. Students must

be accepted into both SNRE and CoE and can choose tracks in sustainable energy, water or manufacturing.

The issues facing the generations of tomorrow are increasingly interconnected and must be tackled in a “systems thinking” way, said Rosina M. Bierbaum, SNRE dean. “This degree seeks to marry the best of engineering with the best of environmental design to reduce our human footprint on this planet.”

SNRE and the Ross School of Business have offered a dual-master’s degree in business and natural resources and environment for 13 years.

For more information, visit www.snre.umich.edu/degree_programs/.

“This degree seeks to marry the best of engineering with the best of environmental design to reduce our human footprint on this planet.”

CROWFOOT HONORED WITH GOLDEN APPLE

Emeritus Professor Jim Crowfoot gave his “last lecture” in March after receiving the 18th Annual Golden Apple Award, the only university-wide student-bestowed honor recognizing great teaching. But Crowfoot got the last laugh: he sent everyone home with homework.

Students voted to give Crowfoot this year’s award based on letters of support from current and former students he mentored during nearly 25 years of university service. He taught for 10 years at SNRE and led it for eight more as dean. As emeritus professor, he still teaches twice a year through the Michigan Community Scholars Program and the undergraduate-based Program in the Environment.

During his deanship, Crowfoot guided SNRE through perilous times and helped reestablish its value and place at the university. “That school

of Natural Resources and Environment means everything to me,” said Crowfoot, who also holds the title of emeritus dean.

True to his pedagogical philosophy that places great value on learner participation, Crowfoot’s last lecture involved open-mic audience involvement and a 14-page handout with citations and future reading lists. The “last lecture” ceremony is a mainstay of the annual award, which is one of the highest teaching honors at the university – and the only one voted on exclusively by students.

His lecture centered on two themes: the need to teach all U-M students the concept of *sustainability* – whether defined in terms of spirituality or natural resources – and on embracing a community approach to learning, which is a by-product of his professional and well-regarded work in conflict resolution.

“It’s not only the substance that’s important. It’s the process,” Crowfoot said about his philosophy to teaching. “Students aren’t memory machines on a stick. That ability to learn is so incredibly important for our future.”

He is the first emeritus professor to receive the award. “That proves that great teachers and their legacies never leave the university,” said Andrew Bronstein, co-chair of SHOUT (Students Honoring Outstanding University Teaching), the group that conducts the voting and bestows the award.

Rosina M. Bierbaum, professor and SNRE dean, said the award was well-deserved.

“He is a man of incredible integrity who has served as a mentor, professor and scholar

of sustainability and environmental justice for more than three decades and is still teaching undergraduate interdisciplinary seminars,” Dean Bierbaum said.

Introducing Crowfoot was Mark Chesler, an emeritus professor of sociology and 40-year friend. “Jim has been a steadfast, non-violent warrior for social justice,” Chesler said.



— Photo by Scott Soederberg, U-M Photo Services

Insects on coffee plants follow widespread natural tendency

Ever since a forward-thinking trio of physicists identified the phenomenon known as self-organized criticality – a mechanism by which complexity arises in nature – scientists have been applying its concepts to everything from economics to avalanches. Now, U-M researchers and University of Toledo colleagues have shown that clusters of ant nests on a coffee farm in Mexico also adhere to the model. Their work appeared earlier this year in the journal *Nature*.

The basic idea of self-organized criticality often is illustrated with a sand pile. As you trickle sand onto the cone-shaped pile, the cone grows until it reaches a “state of criticality” where it stops growing. Add more sand, and the grains just slide down the sides in mini-avalanches.

for three years and wondered whether the spatial distribution patterns they observed could be explained through the concept of criticality. With Stacy Philpott, then a U-M graduate student and now an assistant professor of ecology at the University of Toledo, they set out to examine the system in detail.

The ants, *Azteca instabilis*, have a natural history like that of many other ants. A queen establishes a colony in a tree, and once the colony reaches a certain size it splits and a satellite nest is established in a neighboring tree. Over time, you’d expect the ants to spread to every tree on the farm, but that’s not the case.

“The ants only occupy about three percent of the trees,” Vandermeer said. “But

decapitating fly. The parasitic fly lays its egg on the thorax of an ant; the egg hatches and the fly larva migrates into the ant’s head capsule where it feasts on the contents. Then the ant’s head falls off and the new adult fly emerges. Unfortunately for the ants, the bigger their clusters, the easier it is for the flies to find their colonies.

“So it’s the fly that maintains the ants’ spatial distribution,” Perfecto said. Looking at the frequencies of various sizes of clumps, the researchers found the telltale power law relationship, the hallmark of criticality.

Their understanding of the system has implications for controlling coffee pests, such as green coffee scale (*Coccus viridis*), a flat, featureless insect that lives on coffee bushes. On some bushes, Azteca ants protect the scale



– Photo by SWRE

U-M RESEARCHERS ARE EXPLORING SPATIAL DISTRIBUTION PATTERNS BY STUDYING COFFEE PLANTATION ANTS, SUCH AS THIS AZTECA ANT.

ANTS AND AVALANCHES



– Photo by Alex Wild

“What physicists have done – both mathematically and physically – is look at how many grains of sand actually fall with each avalanche,” said John Vandermeer, the Margaret Davis Collegiate Professor of Ecology and Evolutionary Biology and one of the *Nature* paper’s authors. “What they find is that most avalanches involve one or two sand grains, and relatively few avalanches involve hundreds of sand grains.” Such a pattern – with small versions of a phenomenon being more common than big ones – characterizes what’s known as a power law, a sort of fingerprint of systems that exhibit self-organized criticality.

What do avalanches have to do with ants? Vandermeer and co-author Ivette Perfecto, a professor at the School of Natural Resources and Environment, have been studying ants and other associated insects in a 45-hectare (111-acre) plot on an organic coffee farm in southwestern Mexico

once you find them, you find them in clumps.”

How to explain the clumpiness?

“Normally when you have an animal or plant that’s distributed in patches like that, you tend to think that there’s some kind of underlying habitat variable that’s responsible,” Vandermeer said. But on the coffee farm, the habitat is about as uniform as a habitat can be, as trees are deliberately planted in a grid pattern. So the non-uniform distribution of ant colonies must be due to something other than habitat – something inherent in the biology of the ants.

Combining computer modeling with field observations, the researchers came up with a scenario that explains the spatial patterns as a case of criticality.

As the ant colonies spread from tree to tree, local clusters develop, but the clusters don’t expand indefinitely, all because of another insect with a sinister name: the

insects from predators and parasites and in return collect honeydew, a sweet, sticky liquid the scale secretes.

One of the green coffee scale’s mortal enemies is a beetle whose adult and larval forms both feed on it. Not only are beetle larvae able to polish off plenty of green coffee scale, they also get an inadvertent assist from the ants. In the course of shooing off parasitic wasps that attack scale, the ants also scare away bugs that parasitize beetle larvae.

“The farmers see the ants protecting the scale insects and want to eliminate them. But what we’ve discovered is that the ant, by forming these clusters, is a key component to maintaining the main scale insect predator in the system,” Vandermeer said. The researchers received funding from the National Science Foundation. 🌱 – Nancy Ross-Flanigan

STEWARDS

One large organic shade-grown coffee, please – with extra bats

If you get a chance to sip some shade-grown Mexican organic coffee, please pause a moment to thank the bats that helped make it possible.

At Mexican organic coffee plantations, where pesticides are banned, bats and birds work night and day to control insect pests that might otherwise munch the crop.

Until now, the birds got nearly all the credit. But a study from University of Michigan researchers shows that during the summer wet season, bats devour more bugs than the birds at Finca Irlanda, a 740-acre organic coffee plantation in Chiapas, Mexico.

And they often do it using a “perch and wait” hunting technique that is proving to be far more common than bat researchers had believed. A report on the study appeared earlier this spring in the journal *Science*.

At a time when bat populations are declining worldwide, this newfound benefit to organic coffee farmers is another example of how these much-maligned mammals provide ecological services that go largely unnoticed. In addition to aiding agriculture, bats pollinate wild plants, disperse fruit seeds and gorge on pesky mosquitoes by the ton.

“Bats are impacting ecological systems in all kinds of ways, and I just want them to get the credit they deserve,” said Kimberly Williams-Guillén, a tropical ecologist and a postdoctoral fellow at the School of Natural Resources and Environment.

The bat’s role in controlling coffee-eating insects has been overlooked for two reasons, Williams-Guillén said. The first involves a flaw in the design of “exclosure” experiments used to study the impacts of various animals on coffee plants. In previous experiments, the exclosures – simply net-covered wood-and-plastic frameworks – were placed over coffee bushes around-the-clock. After several days, scientists counted the insects on the protected plants and compared the tally to totals from nearby unprotected plants. The protected plants usually had higher pest counts, and birds generally received the credit.

But because the netting remained in place day and night, bats also had been excluded,

A BIG-EARED BAT OF THE GENUS MICRONYCTERIS: BATS OF THIS GENUS ARE FOUND IN MEXICAN COFFEE PLANTATIONS, WHERE THEY GLEAN INSECTS FROM FOLIAGE AND HELP LIMIT PEST POPULATIONS.

– Photos by Merlin D. Tuttle, Bat Conservation International



Williams-Guillén said. And their impact went unnoticed.

To determine the relative contributions of birds and bats at the Finca Irlanda plantation, Williams-Guillén and her U-M colleagues established four types of exclosures: birds-only excluded during the day, bats-only excluded at night, both excluded day and night, and control plants with no netting.

They found that during the summer wet season, the bat-only exclosures resulted in an 84 percent increase in the density of insects, spiders, harvestmen and mites – exceeding the impact of birds. Williams-Guillén’s co-authors on the *Science* paper are Ivette Perfecto, a professor at SNRE, and John Vandermeer of the U-M Department of Ecology and Evolutionary Biology.

The second reason the bat’s contribution to coffee-plantation pest control had been overlooked has to do with hunting techniques. Bats are well known for a foraging strategy called aerial hawking, which involves fluttering through the night sky, zeroing in on prey using echolocation, and gulping countless flying bugs. A bat can eat half its body weight in a single night using this technique.

But many of the bats at the Chiapas plantation – about 45 species have been recorded there so far – rely largely on an approach called foliage gleaning. They patiently “perch and wait” in the tree canopy above the coffee bushes, inverted and clutching a branch with their feet, sometimes for hours at a stretch. Their large, pointy ears listen intently for the sounds of insects chewing, crawling across leaves or chirping.

Then they swoop down and snatch the bug off the leaf or stem. “People had believed that all the bats were flying around in mid-air and taking mosquitoes and moths,” Williams-Guillén said. “And if that’s all they were going for, then you wouldn’t expect them to have an effect on insects that were just hanging around on the plants,” such as katydids and leaf-eating beetles.

“But it turns out that foraging modes in bats are much more diverse than people had thought,” she said. More than 200 species of insects feed on, or can otherwise damage, coffee plant. – Jim Erickson



A SWORD-NOSED BAT OF THE GENUS LONCHORHINA: BATS OF THIS GENUS ARE ALSO FOUND IN MEXICAN COFFEE PLANTATIONS.

12 SNRE STUDENTS RECEIVE PRESTIGIOUS FELLOWSHIPS

Twelve School of Natural Resources and Environment students have been awarded prestigious national fellowships. Ten students were selected in a competitive process to be named 2007-09 Doris Duke Conservation Fellows. Two others were selected 2007-09 Wyss Conservation Scholars. The fellowships recognize all 12 as future leaders in nonprofit and public sector conservation, with Wyss Scholars committed specifically to work on Western land conservation issues. The students were recognized at a special dinner in March.

The Doris Duke Conservation

Fellows are: Becca Brooke, Erin Carey, Rachel Chadderdon, Andrew Fotinos, Aviva Glaser, Jose Gonzalez, Kristen Johnson, Brad Kinder, Lauren Lesch and Diane Sherman. Sherman is a dual-degree student through SNRE's program with the Law School.

The Environment Program of the Doris Duke Charitable Foundation created the Doris Duke Conservation Fellowship program in 1997 to identify and support future conservation leaders. The fellowships support students enrolled in multidisciplinary master's programs at partner universities who are committed to careers as practicing conservationists.

The 2007-2009 Wyss Scholars are Heath Nero and Liz Nysson. The Wyss Scholars Program for

the Conservation of the American West was designed to identify and nurture a generation of leaders on Western land conservation issues. Since its inception, the program took applications only from students at the University of Montana and Yale University. In a desire to broaden its reach, program leaders visited SNRE and met with faculty and students, and subsequently decided to include the University of Michigan.

The program is administered by the Wyss Foundation. Fellows are selected by participating universities during the first year of their master's program and are selected based on dedication, need and merit. ♻️ – Kevin Merrill

MY ENVIRONMENTAL EDUCATION EVALUATION RESOURCE ASSISTANT

MEERA

U-M LAUNCHES A NEW ONLINE RESOURCE FOR ENVIRONMENTAL EDUCATORS



THE WEB SITE IS WWW.MEERA.SNRE.UMICH.EDU.

In recent years, Michaela Zint, an associate professor of environmental education and communication at SNRE, found herself fielding an increasing number of calls from fellow environmental educators. All expressed a similar concern: how to evaluate their programs.

Environmental educators – whether K-12 teachers or instructors working for government agencies or nonprofit organizations including universities – expressed a strong need for information to assess the quality of their programs.

These evaluations have become more important for environmental education programs as budgets shrink at funding agencies and foundations. As cuts occur, environmental educators face more pressure to prove their programs are worth the investment and making a difference. In fact, many agencies and foundations do not fund programs unless they incorporate evaluation.

Reflecting on her colleagues' needs, Zint initiated a project to develop a web-based tool to assist and empower

environmental educators in conducting their own evaluations. The result was "My Environmental Education Evaluation Resource Assistant" or MEERA, the latest version of which was launched in May. The site's URL is www.meera.snre.umich.edu.

"Whether you are an environmental educator or just interested in the process of evaluation, this site provides guidance on all aspects of evaluating a program, including about how evaluation can help you improve your program," said Zint, who has appointments at the School of Natural Resources and Environment and School of Education at the University of Michigan.

Funded by and in partnership with the U.S. Environmental Protection Agency and the U.S. Forest Service, MEERA enables visitors to learn about different types of evaluations; helps them choose an appropriate evaluation; guides them through the evaluation process step-by-step; and offers suggestions from a number of sample environmental education program evaluations. Zint believes that MEERA is well on its way to becoming the most commonly used evaluation resource by environmental educators. ♻️

WILEY NAMED ROOSEVELT PROFESSOR

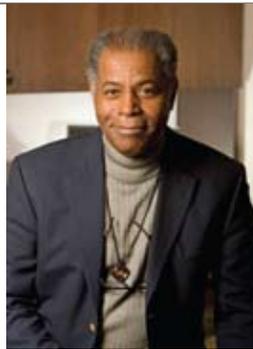
Professor Michael J. Wiley has been named the Theodore Roosevelt Chair of Ecosystem Management at SNRE. Wiley, who has taught at the school since 1987, was nominated by fellow SNRE faculty and recommended by an internal screening committee. "I'm honored that my peers recommended me and thankful to the committee members who reviewed the nominees," Wiley said. "I hope that during my tenure as the Roosevelt Professor, I can bring more attention to the science and policy of ecosystem management."

The Roosevelt Professor is one of seven endowed professorships at the school. It was named to reflect the bold, path-setting leadership of its namesake, the nation's 24th president, in the field of conservation and protection of natural resources. It is funded through the Sally and William L. Searle Endowment Fund, which was created jointly by the Searle Family Trust and the Salwil Foundation. The professorship is held for five years; Professor Steven L. Yaffee previously held the professorship.

The Roosevelt Professor is expected to focus his or her research and external outreach on ecosystem management, restoration and conservation. Wiley said the professorship's purpose dovetails well with his own research agenda, which pursues both science and its application to real-world problems. "Collaboration is central to ecosystem management," Wiley said. "I have always found that people really do care and want to manage their water resources more effectively." 🌱



PROFESSOR MIKE WILEY (FAR RIGHT) WORKS IN SOUTH KOREA WITH SNRE PH.D. STUDENT KYUNG SEO PARK (LEFT) AND KWANG GUK AN, EDITOR-IN-CHIEF OF *THE JOURNAL OF THE KOREAN SOCIETY OF LIMNOLOGY*, AND PROFESSOR AT CHUNGNAM NATIONAL UNIVERSITY IN DAEJEON, SOUTH KOREA.



BRYANT

RECEIVES TOP STATE HONOR FOR ENVIRONMENTAL ACTIVISM

Professor Bunyan Bryant, a founder of the academic field of environmental justice, was honored in May with the state of Michigan's highest environmental honor. Bryant received the Helen and William D. Milliken Distinguished Service Award from the Michigan Environmental Council (MEC). The annual Milliken Award recognizes an individual who has made outstanding contributions to the protection of Michigan's environment.

"I am honored to receive this prestigious award and grateful for the attention it gives the field of environmental justice, which has been my life's work," said Bryant, who began teaching at SNRE in 1972. He coordinates the school's Environmental Justice field of study and directs its Environmental Justice Initiative (EJI), which he helped create about 10 years ago. EJI's mission is to ensure the rights of all people to live in a safe, clean and healthy environment. "Environmental Justice seeks to help the public and policymakers use scientific information to build sustainable communities worldwide," Bryant said.

The Milliken Award was first bestowed in 2000. Past honorees have included John Dingell, Peter Wege and Peter Karmanos. The honoree is chosen by the board of directors of MEC, a coalition of organizations protecting Michigan's people and environment. 🌱

HOFFMAN TALKS CLIMATE CHANGE WITH CEOs IN NEW BOOK

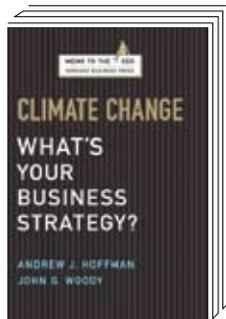
Companies that fail to shrink their carbon footprints and integrate energy policies with business strategies won't survive in today's marketplace, argues Associate Professor Andrew Hoffman in a new book. Every chief executive officer, regardless of company size, should be focused on those issues, said Hoffman and co-author John G. Woody in *Climate Change: What's Your Business Strategy?* The book was released May 1 by Harvard Business School Press.

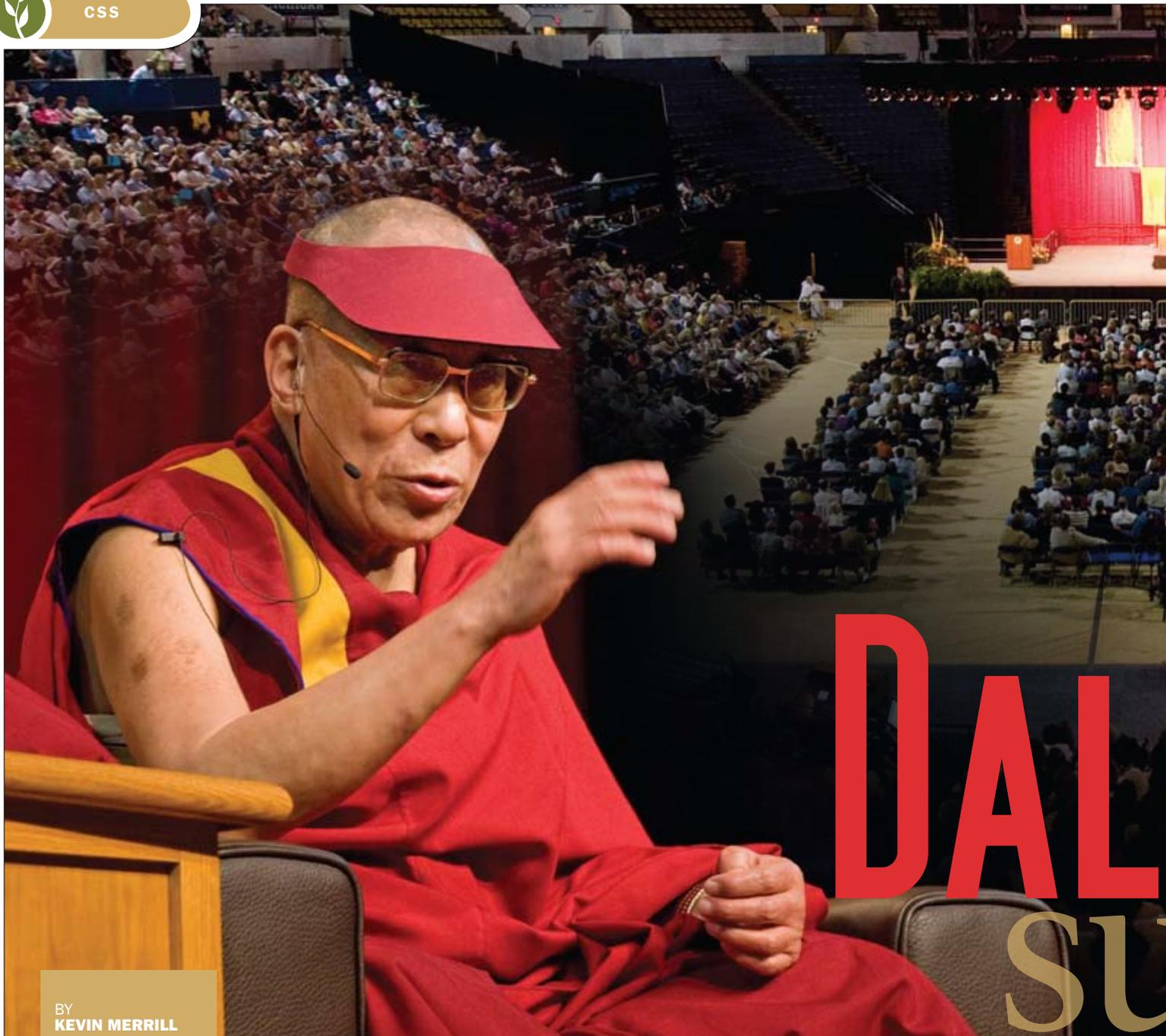
"You should not think of climate change as an environmental issue at all. Instead, you should think of it as a market transition," Hoffman said. "And as in any such transition, there will be winners and losers." Hoffman is the Holcim (U.S.) Professor of Sustainable

Enterprise at the Erb Institute for Global Sustainable Enterprise. Erb students are dual-enrolled in the School of Natural Resources and Environment and the Ross School of Business at the university.

The authors present questions every CEO needs to consider: What kind of climate-related action is prudent for your company? Are there opportunities in the uncertainty of this market transition? What do your competitors see?

"All companies should be aware of their carbon footprints," said Hoffman, who has taught at U-M since 2004. "If they are not thinking about their energy management, they are throwing money out of the window." 🌱





DALAI LAMA SUSTAINABILITY

BY
KEVIN MERRILL

PHOTOS BY
MARTIN VLOET, U-M
PHOTO SERVICES

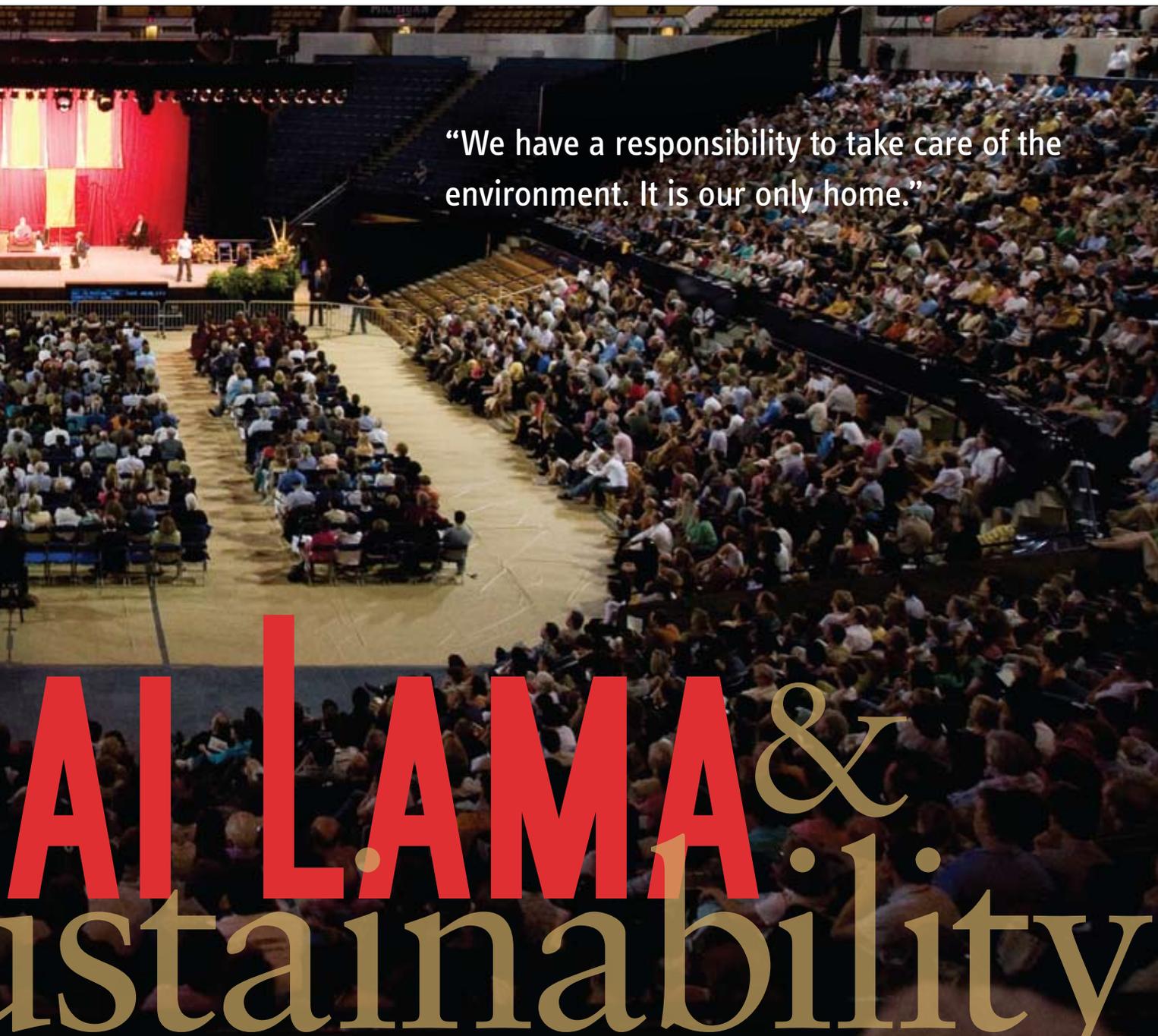
APRIL 20
2008

After nearly three days of police escorts, international media attention, press conferences and three sold-out lectures at Crisler Arena, His Holiness the 14th Dalai Lama faced perhaps the defining moment of his trip to Ann Arbor: Could he answer four unrehearsed questions posed by students at the School of Natural Resources and Environment (SNRE)?

As expected, his responses were thoughtful, heartfelt and right on the mark. The questions gave His Holiness, a global spiritual leader whose teachings and writings on the topic of sustainability are well-

known, the opportunity to expound more on topics raised in his "Earth Day Reflections" Lecture. His responses, along with an award ceremony honoring three University of Michigan students, were the perfect coda to a months-in-the-making trip that started innocently enough last fall with an invitation, but which quickly grew in international importance as events in his native Tibet unfolded.

And what he came to say was this: If the planet is to be sustained, environmental education and personal responsibility will be key. "Taking care of our planet environment is like taking care of our own home," he said. "We have a responsibility to take care of the environment. It is our only home."



“We have a responsibility to take care of the environment. It is our only home.”

AI LAMA & ustainability

For SNRE and its Center for Sustainable Systems (CSS), the idea to invite His Holiness to deliver the 8th Annual Wege Lecture turned out not only to be very appropriate but timely, too. After giving four lectures over two days, His Holiness met in Ann Arbor with the U.S. special envoy for Tibet to discuss Tibetan-China relations.

The lecture presented CSS an opportunity to communicate its mission far and wide, said co-directors Jonathan W. Bulkley and Gregory A. Keoleian, adding that the lecture exceeded expectations. The lecture series is named after Peter M. Wege, the retired vice-chairman of the board of Steelcase, Inc., in Grand Rapids, Mich (see related story, page 17).

“Meeting him personally was a real honor. He’s such a humble and warm leader,” said Keoleian. Added Bulkley: “Hearing him speak on sustainability and share his insights on life and living had to be the most memorable part of the week.”

“It was an overwhelming success from the center’s perspective,” added Keoleian, who along with Bulkley, had a chance to meet and speak with His Holiness before the lecture.

In his 75-minute address, His Holiness raised environmental concerns across themes as varied as population control and religious tolerance to consumerism and income disparity. He connected the topics by emphasizing how the promotion of human

DALAI LAMA



values and religious harmony is needed in order to take care of humanity's "inner environments."

"Even if the environment – the external surroundings – [is] peaceful and beautiful, unless [the] inner environment is fully taken care of, the external will not bring inner peace," he said.

His Earth Day Reflections lecture was the last of four consecutive sold-out events April 19-20; the three teachings that preceded the lecture were coordinated by Jewel Heart Ann Arbor, a Tibetan Buddhist temple.

In introducing him, SNRE Dean Rosina M. Bierbaum selected the Dalai Lama's own words: "Because of the interdependent nature of everything, we cannot hope to solve the multifarious problems with a one-sided or self-centered attitude. Our failures in the past are the result of ignorance of our own interdependent nature," she quoted the Dalai Lama as stating.

"We try to imbue our students here at Michigan with that understanding," Dean Bierbaum continued in her own words. "As they go forth into the world, we hope they will share their compassion, their wisdom, and knowledge of how the resources of this precious planet can be preserved and sustained. In doing so, they will spread a key message of today's distinguished guest."

The students' questions addressed a range of topics: his thoughts on maintaining hope in pursuing environmental causes; the contrasts facing rich and poor nations; the ecosystem of the Himalayas near his own native home; and the role religious action and thought plays in the struggle for conservation and sustainable societies.

"The questions really engaged him and allowed him to expound on his philosophies of the environment," Keoleian said.

After providing his answers, His Holiness presided over a two-part ceremony: the awarding of the first Compassion in Action Awards (created by Jewel Heart Ann Arbor) and the presentation to him of a book of poetry authored by K-12 students across Washtenaw County. The Compassion Awards recognized achievement by

U-M students in the areas of poverty, public health and environment. One of the award recipients was Arie Jongejan, a student at SNRE and the Ross School of Business. He was honored for his environmental contributions. Jongejan is interested in sustainable energy

strategies, entrepreneurship and business development around the issues of renewable energy and clean technology.

As he did at the teachings, His Holiness sat in a brown chair at the center of a stage surrounded by Tibetan tapestry and wearing a red visor to protect his eyes from the stage lights above.

In response to one of the questions from an SNRE student about how to maintain hope as an advocate of change amid the mounting environmental challenges, His Holiness said the answer partially resides in increased awareness through education, especially of children. "From kindergarten, the concept of a dialogue about taking care of the environment should be part of their life," he said.

That concept of lifelong learning extends into adulthood and applies to political awareness as well. "If you have a Green Party (in this country), I want to join," he said to applause.

"This taking care of the environment should be part of our daily life," he said,

adding that it can and should start small. He conserves water by choosing showers over baths and by turning off lights when leaving a room. "Even in small ways, make a contribution," he said. "If we take care, things can change." The demands placed on the earth by its population – 6 billion and growing – raises the issue of population control. "Therefore, [a] limited number of people is a serious matter," he said.

Unlike other issues confronting humanity, such as contending with "violence and bloodshed," the environment can be harder to see and define. "It's invisible. Year by year, it becomes warmer. When you start feeling [that], it may be too late," he said.

He recalled how his own environmental awakening occurred, spurred on by ecological issues in Tibet, concerns about global warming and discussions with experts and scientists. "Then, I realize[d] the environment issue is so important," he said. ♻️

THE LECTURE WAS RECORDED AND ARCHIVED DIGITALLY, AND CAN BE VIEWED AT WWW.SNRE.UMICH.EDU/DALAI_LAMA.





— Photo courtesy of the Wege Foundation

WEGE LECTURE SERIES



The Center for Sustainable Systems at the School of Natural Resources and Environment annually invites an internationally recognized leader to deliver the Peter M. Wege Lecture on Sustainability. Established in 2001, the lecture series is named to honor Peter M. Wege (pictured at left), the retired vice-chairman of the board of Steelcase, Inc., in Grand Rapids, Mich. As founding chair of the Center’s External Advisory Board, his vision of sustainability and spirit of generosity guided the Center through its transition from the National Pollution Prevention Center for Higher Education, which was established at SNRE in October 1991. The Wege Lecture, one of U-M’s most visible annual events, is open to the public and the academic community. It addresses important sustainability challenges facing society such as energy security, global climate change, ecosystem degradation and sustainable development strategies – with a focus on improving the systems for meeting human needs in developed and developing countries.

→ **First Annual Peter M. Wege Lecture, Oct. 17, 2001**

“Environmental Challenges for the 21st Century – A Matter of Degrees”

Rosina M. Bierbaum, dean, School of Natural Resources and Environment, University of Michigan

→ **Second Annual Peter M. Wege Lecture, Nov. 6, 2002**

“Reflections on the Great Lakes”

Joseph L. Sax, emeritus professor of environmental regulation, University of California, Berkeley School of Law

→ **Third Annual Peter M. Wege Lecture, March 31, 2004**

“Cities as Sustainable Ecosystems”

Peter Newman, professor of city policy and director of the Institute for Sustainability and Technology Policy, Murdoch University, Perth, Western Australia

→ **Fourth Annual Peter M. Wege Lecture, Oct. 29, 2004**

“Sustainable Development – A Global Perspective on Ecology, Economy and Equity”

Gro Harlem Brundtland, thrice-former Prime Minister of Norway; recent Director-General of World Health Organization; Chair of United Nations World Commission on Environment and Development

→ **Fifth Annual Peter M. Wege Lecture, Oct. 24, 2005**

“Special Lecture on Global Climate Change”

Al Gore, 45th Vice President of the United States

→ **Sixth Annual Peter M. Wege Lecture, Nov. 14, 2006**

“Sustainability: A Practical Agenda”

Lord John Browne, group chief executive, BP

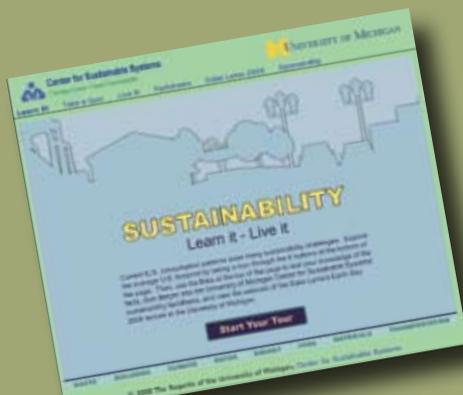
→ **Seventh Annual Peter M. Wege Lecture, Nov. 13, 2007**

“The Road to Sustainable Transportation”

William Clay Ford, Jr., executive chairman, Ford Motor Co.

TEST YOUR GREEN IQ

Learn It, Live It



On the eve of the 38th anniversary of Earth Day, a new online tool was rolled out to give educators, students and citizens everywhere the chance to test their “green IQ.”

The “Sustainability: Learn It – Live It” tool was built by researchers at the Center for Sustainable Systems (CSS), an interdisciplinary research, education and outreach center of the School of Natural Resources and Environment.

The launch of the “Learn It – Live It” tool builds on the most recent edition of the CSS Factsheet series. The 15, one-page documents – available as downloads through the CSS site – are researched by scientists but written for citizens, consumers, educators and advocates. They present brief but complete pictures of environmental issues as well as sustainable solutions and alternatives.

“Current U.S. consumption patterns pose sustainability challenges. The ‘Learn It – Live It’ tool presents the hard science behind many of those sustainability questions in an accessible and engaging way,” said Gregory A. Keoleian, an associate professor at SNRE and CSS co-director. “The tool offers something for everyone, but is especially useful to educators and their students.”

In the tool’s “Learn It” section, users learn facts about patterns of use and the resulting impacts on modern society. The facts are divided into eight themes: municipal solid waste, buildings, climate, water, energy, food, materials and transportation.

In the quiz section, users test their grasp of the facts found on the Factsheet and “Learn It” sections of the CSS web site.

In the “Live It” section, users learn specific behaviors to adopt in order to lower their environmental footprints and to save natural resources.

The Factsheet topics are: greenhouse gases; climate change: policy and mitigation; climate change: science and impacts; U.S. energy system; U.S. food system; personal transportation; U.S. municipal solid waste; U.S. material use; photovoltaic energy; commercial buildings; residential buildings; U.S. renewable energy; wind energy; U.S. water supply and distribution; and U.S. wastewater treatment.



FIND THE TOOL ONLINE:
css.snre.umich.edu/facts

UP FOR RENEWAL

U-M REPORT: MICHIGANIANS WILLING TO PAY EXTRA FOR RENEWABLE ENERGY PRODUCTION

Three out of four residents in the auto-industry-dominated state of Michigan would be willing to pay for ways to increase the role of renewable energy sources, a new University of Michigan survey says.

Many states have enacted policies that mandate increased use of renewable energy as well as other policies that could reduce greenhouse gas emissions. Michigan, however, has been among the least active states, which makes these latest findings surprising, said Barry Rabe, a professor at the School of Natural Resources and Environment and Gerald R. Ford School of Public Policy.

"The strong support for better vehicle fuel-efficiency standards and a willingness to pay for expanded renewable energy production are surprising, considering Michigan is home of the

U.S. automotive industry and the nation's highest unemployment rate," Rabe said. "Despite all that, the residents support these changes and say they're willing to help pay for them."

In fact, while the costs estimated to reduce global warming vary, nearly half of Michigan residents surveyed said they would be willing to pay more than \$50 annually in order to produce more renewable energy. Most Michigan residents support state requirements to increase the level of renewable energy in the state's electricity supply.

Rabe co-authored the survey of 1,001 adults with Christopher Borick, a professor of political science at Muhlenberg College in Pennsylvania. It is the first known survey of its kind to ask Michigan residents about global warming issues and climate policy options.  — *Jared Wadley*

OTHER FINDINGS:

- ➔ Residents believe that both federal and state governments have a responsibility to take actions to reduce greenhouse gas emissions.
- ➔ Residents were evenly split between support and opposition for a policy that would allow businesses to buy and sell carbon permits.
- ➔ They strongly support government requirements for vehicle manufacturers to increase the fuel efficiency of their products.
- ➔ A substantial majority of Michigan residents support increased use of nuclear power to reduce greenhouse gas emissions.
- ➔ Michigan residents strongly oppose either a tax on gasoline or a broader carbon tax as a means of reducing fossil fuel consumption.

The Center for Local, State, and Urban Policy at the Gerald R. Ford School of Public Policy funded the survey.

TAKING THE SCENIC ROUTE

RESEARCHER FINDS LINK BETWEEN GREENBELTS, STUDENTS' DESIRE TO WALK TO SCHOOL



Maybe when we were their age, we walked five miles to school, rain or shine. So why don't most children today walk or bike to school? It's not necessarily because they're spoiled, lazy or over scheduled.

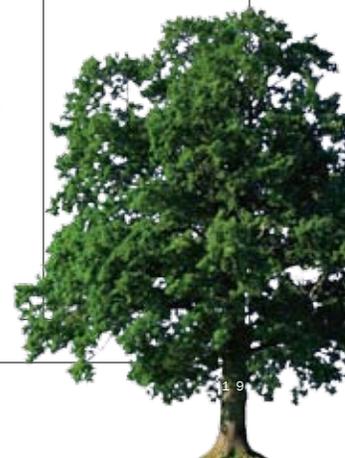
According to a University of Michigan researcher, concerns about safety are the main reason that less than 13 percent of U.S. children walked or biked to school in 2004, compared to more than 50 percent who did so in 1969. "These concerns are strongly linked to the kind of physical environment children navigate between home and school," said *Byoung-Suk Kweon*, an environmental and landscape architecture researcher at the U-M Institute for Social Research. "The greener the route, the more likely it is that children will walk and bike." She also is a research investigator and adjunct assistant professor of Landscape Architecture at SNRE.

Using geographic information system

data combined with a survey of 186 parents of students in the 5th through 8th grades, Kweon found that parents were most concerned about the speed and volume of traffic students encountered en route to school, the possibility of crime and the weather.

Kweon found that children use sidewalks, not bike lanes, when they ride to school. "Parents may be concerned about the safety of bike lanes, and they may be telling their children to ride on the sidewalk because it's safer," she said. "We may need to rethink how to place bike lanes in school walk zones."

By identifying environmental elements conducive to walking and biking to school, Kweon hopes her research may help improve children's physical health and reduce the incidence of childhood obesity, especially prevalent among minority children.  — *Diane Swanbrow*





THE NATURAL

ONCE MARK RETZLOFF ARRIVED AT THE UNIVERSITY OF MICHIGAN IN 1966 AND BECAME AN UNDERGRADUATE AT THE SCHOOL OF NATURAL RESOURCES, A METAMORPHOSIS OCCURRED.

There were few signs in Mark Retzloff's childhood that pointed to him becoming a national figure in the organic and natural foods industry. He and his three siblings had a more-or-less idyllic upbringing in the Detroit suburb of Royal Oak. The family didn't grow up on a farm or around animals, and environmental stewardship was not a regular topic of conversation around the dinner table. But once he arrived at the University of Michigan in 1966, and became an undergraduate at the School of Natural Resources, a metamorphosis occurred.

A change in diet from typical Midwestern fare to macrobiotic (with its emphasis on grains and vegetables) led to a growing interest in farm-production practices, which led to greater environmental awareness. The growth of the counterculture movement then prevalent in Ann Arbor further nurtured his thinking. The seeds of those early beliefs – eating healthily, growing foods naturally and finding markets for them – became the roots of a nearly 40-year career in the organic and natural foods business.

Today, Retzloff (SNR B.S. '70) is chairman and co-founder of Aurora Organic Dairy and is recognized as one of the pioneers of the organic foods industry. The distinction comes from the unique way his career has evolved: from co-founder of a small natural foods co-op at U-M to co-founder of one of the country's largest private-label organic dairy operations (Aurora Organic Dairy). Along the way, he founded national trade associations, grew several businesses into multi-million-dollar sales organizations and helped write the very Congressional law – the Organic Food Production Act – that governs the organic industry today.

BY **KEVIN MERRILL**



AURORA ORGANIC DAIRY AND ITS PRODUCTS ARE HELPING TO FUEL THE GROWTH OF THE DAIRY COMPONENT OF THE ORGANIC FOOD INDUSTRY. INDUSTRY SALES WERE \$5 BILLION IN 2000 AND ARE PROJECTED TO REACH \$33 BILLION IN 2010.



“I like getting ideas going,” said Retzlöff, matter-of-factly.

As a result, he has played a significant role in fueling the organic foods industry from those days in 1969 when he walked across the Diag in search of a location for his co-op, Eden Foods (it eventually opened on Williams Street near State Street). Today, the industry is projected to have sales of nearly \$33 billion by 2010, up from just over \$5 billion in 2000, according to the Organic Trade Association. Still, the industry’s current \$20 billion in sales is only 3 percent of total grocery industry sales of \$575 billion. And of that \$20 billion, only about 13 percent was dairy; more than half was breads, grains and produce.

GIVING BACK

Retzlöff’s perspectives on the industry are so valuable that companies regularly invite him to serve on boards and “green” private-equity funds seek out his counsel. (He also serves on SNRE’s Visiting Committee, which contributes its expertise to Dean Rosina Bierbaum and the school’s leadership team.)

Capitalizing on that experience, he was a co-founder of Greenmont Capital Partners in 2004, an equity venture fund focused on early-stage companies in the \$500-billion Lifestyles of Health and Sustainability – or LOHAS – market. The term has come to describe the market for goods and services focused on health, the environment, clean technology and alternative energy, personal development and sustainable living. He serves as a board member for nearly two dozen companies, trade associations and centers, from Under the Canopy, an organic fiber and fashion company, to Traditional Medicinals, a manufacturer of herbal remedy teas.

He shared his personal and business philosophies with current School of Natural Resources and Environment students during a February 2008 lecture at the Dana Building. Titled “Lessons of a Serial Entrepreneur,” the talk covered his investment and managerial

THE NATURAL

interests and concluded with advice on becoming successful: walk your talk; listen to customers; focus on gross margin (the “key” to profitability); stay focused (be a finisher, avoid distractions); and know yourself (don’t believe your press clippings.)

Only weeks earlier, Aurora Organic Dairy (AOD) announced a major initiative with SNRE’s Center for Sustainable Systems (CSS). The project’s goal is to measure and reduce Aurora Organic’s “carbon footprint” across its entire product lifecycle, from cattle feed to cartons in retail dairy cases. The research is believed to be the most comprehensive carbon emissions-reduction initiative undertaken in the organic dairy industry and is funded with \$350,000 from the newly established Aurora Organic Dairy Foundation.

CSS will conduct lifecycle and sustainability research at AOD’s facilities, including its High Plains, Colo., organic dairy farm and its Coldwater organic dairy farms in Texas. The research initially will focus on developing an energy and carbon footprint model, creating a baseline against which AOD can make improvements in its sustainability performance. Aurora Organic will use the project’s framework and recommendations in pursuit of its goal of achieving a sustainable, carbon-neutral organic dairy farming and processing system for the intermountain west.

“Aurora Organic Dairy is providing the Center for Sustainable Systems with an excellent opportunity to apply our research expertise and address real challenges faced by organic agriculture producers,” said Gregory A. Keoleian, an assistant professor at SNRE, CSS co-director and research team leader. “We’re grateful for this opportunity and look forward to sharing our findings and recommendations with the organic agriculture community to help drive meaningful change in energy consumption and carbon-emission patterns resulting from organic farming.”

Four SNRE students recently arrived in Platteville, Colo., home to an AOD dairy farm and processing plant to start the work. “We intend to learn as much as we can about how to make organic agriculture even more sustainable,” Retzlloff said.

It’s ironic then that Retzlloff, who helped pioneer the industry and has received adoration for his contributions, found himself and his company under fire in October as the result of a complaint filed with the U.S. Department of Agriculture (USDA) by an activist group alleging the company had violated organic food production regulations. A still-pending lawsuit was subsequently filed against Aurora Organic for allegedly failing to comply with federal organic standards. The suit cited a USDA April 2007 notice alleging possible violations of several federal production practices. In August 2007, Aurora Organic and the USDA entered into a consent agreement, which resolved the allegations raised in the April notice. Aurora Organic has denied the allegations and vigorously defends the fact that its products have always been certified organic by USDA-accredited certifying agents.

Retzlloff cites the CSS carbon-footprint project and his lifelong contributions to the industry in refuting his critics. “We know that livestock production casts a long shadow in terms of its environmental effects. Somebody has to step forward and move that process forward, and we want Aurora Organic to be in that leadership position,” he said.

ANN ARBOR ORIGINS

Awakened almost 40 years ago by a holistic need to be healthy physically, spiritually and mentally, Retzlloff and his newlywed wife starting adhering to a macrobiotic diet. Another married couple joined with them, and the four moved to a farmhouse near Saline in order to grow their own food. “I became a very active

environmentalist at that time,” said Retzlloff, who turns 60 in September. “Going into organic foods made a lot of sense to us.”

Unable to find enough of the produce and grains they wanted – the kind grown without chemical pesticides or fertilizers – led them to the idea of starting their own business. The result was Eden Foods, a natural foods co-op, which quickly evolved into a regular grocery store. Retzlloff and others continued to operate Eden after graduating. His role was to reach out to Ann Arbor-area farmers and encourage them to grow products more naturally. (He remained a partner in Eden Foods until 1973. By then, it had become a successful retailer, distributor and manufacturer of natural and organic foods.)

Less than a year after graduating in December 1970, he and his



- Photos courtesy of Aurora Organic



RETZLOFF GIVES A LIFT TO ONE OF THE COMPANY'S 10,500 WORKING COWS. NOW THE COMPANY CHAIRMAN, RETZLOFF IS LOOKING TO SPEND MORE TIME AS AN INVESTOR AND ADVISER.

wife moved to Seattle, where he became store manager at Erewhon West, a natural foods and macrobiotic foods store. For the next 20 years, Retzlöff would be on the retail side of the organic industry, bringing growers and consumers together, either as a manager, president, partner or general manager.

The spiritual nature of his organic food interests was most evident in 1973, when he left Seattle to serve as director of business and productions of Divine Light Mission, a spiritual organization with offices in Denver that ran a grocery store as part of its outreach programs.

His retail career reached its zenith in 1990, when he served as president, chief executive and chairman of Alfalfa's Markets, a leading natural foods retailer he co-founded in Boulder, Colo., which Retzlöff has called home for 35 years. In opening the first Alfalfa's store in 1978, he was also perfecting the concept store for the natural foods industry, but he didn't realize it at the time. The store became noted around Boulder and nationally for its offbeat and accommodating culture, hosting folk musicians on weekends and encouraging community giving and environmental activism. The culture at Alfalfa's was so distinct that a Boulder-based band named "Leftover Salmon" wrote "When I grow up, I want to work at Alfalfa's" as a tribute to the store's atmosphere.

While at Alfalfa's, he and business partner Marc Peperzak came up with the idea of an organic dairy – a farm that would produce the milk using the best industry knowledge and practices then available. Retzlöff left Alfalfa's in 1990 to start Horizon Organic Dairy. (Wild Oats Markets Inc., a national natural foods supermarket chain, acquired Alfalfa's Markets in 1996, and in August 2007, Whole Foods Markets Inc. acquired Wild Oats.)

During this time, Retzlöff became a leading advocate for federal legislation to bring clarity to then-fragmented state and industry organic standards. Through the Organic Trade Association (OTA), Retzlöff and others lobbied Congress and the USDA for a law that would put all organic producers on equal footing. The result was the Organic Food Production Act of 1990, which led a few years later to the creation of the National Organic Program, which spells out the rules behind the Act.

Retzlöff was a founder and past president of the OTA, which today is the major membership-based business association for the organic industry in North America. In 2002, the association honored him with its Outstanding Individual Achievement Award.

William R. Knudsen, who was then OTA's president, called Retzlöff a "catalyst [who] brought together the representatives of the leading companies in organic retailing, manufacturing, distribution, and certification to debate the necessity and content of organic standards."

From 1991-2002, Retzlöff served Horizon Organic in a variety of management roles. He was a board member when Dean Foods acquired the company in 2002. Immediately, Retzlöff again turned his entrepreneurial eye to the future. After a three-year non-compete agreement expired, he and longtime business partner Peperzak started Aurora Organic Dairy.

AOD is a leading producer of private-label and store-brand organic milk and butter. It is based in Boulder, and operates five organic dairy farms in Colorado and Texas and an on-farm organic dairy processing plant near Platteville. The company can't divulge its customers, but chances are pretty good that when a customer drinks milk labeled organic from a major grocery store, it was produced and processed by AOD.



MOST OF AOD'S BUSINESS IS SELLING ORGANICALLY PRODUCED MILK TO OTHER COMPANIES, WHICH THEN PRIVATE-LABEL IT. BUT THE COMPANY DOES PRODUCE SEVERAL ITEMS UNDER ITS OWN LABEL, SUCH AS HIGH MEADOW ORGANIC BUTTER.

Today, the company has about 10,500 milking cows and 3,800 acres of organic pasture. Another 120 family farmers support AOD by contributing forages, feed and pasture. The company has about 300 employees, including three full-time large-animal veterinarians and a nutritionist. It also runs its own wastewater treatment facility at the Platteville plant.

"We believe that being a large-scale organic producer, we can make a huge positive difference for animals, people and the planet," Retzlöff said.

Anticipating his next move, Retzlöff voluntarily relinquished the additional title of AOD president in February, but remains its chairman. He plans to spend even more time as an investor – he was an early investor in Boulder-based Crocs Shoes – and adviser to young companies with a "green" product or philosophy.

"Now, I just mentor and help," Retzlöff said. "I just enjoy watching things grow." 🌱

THANKS



To improve funding for graduate students, U-M President Mary Sue Coleman is matching every dollar donated to a special initiative with 50 cents. The goal of the “President’s Donor Challenge” is to increase financial support to graduate students at SNRE and across the university.

At any given time, SNRE has more than 350 enrolled students but less than \$500,000 a year is generated to support these students from endowed funds. A full graduate or professional fellowship can cost \$40,000 to \$50,000 annually. Therefore, individual endowments of \$750,000 or more make the most difference by funding a graduate student for an academic year in perpetuity.

All gifts up to \$1 million are matched 1:2. The challenge began in September 2007 and ends Dec. 31 or once \$40 million in graduate student support is committed university-wide as part of the Michigan Difference Campaign.

SNRE wants to publicly acknowledge and thank those individuals, corporations and foundations who have contributed to the growing success of the President’s Donor Challenge. At right are the 10 largest SNRE contributors to date to the Challenge. 🍃

- ➔ **The Wyss Foundation** chose the University of Michigan as its third partner (joining the University of Montana and Yale University) in the prestigious Wyss Scholars Program for the Conservation of the American West, which identifies and nurtures a generation of leaders on Western land conservation issues. The Wyss Scholars Program offers financial support for tuition, plus a stipend for a summer internship working on Western land conservation for either a nonprofit organization or a government agency. SNRE will receive \$676,827 over five years, garnering an additional \$338,413 in matching funds.
- ➔ **Peter (SNR B.S. ’74, M.B.A. ’81) and Carolyn Mertz** pledged \$250,000 to establish the Peter C. and Carolyn P. Mertz Graduate Award Fund, which receives an additional \$125,000 in matching funds. The Mertz Graduate Award supports graduate students enrolled in the Erb Institute for Global Sustainable Enterprise, a dual-degree program of SNRE and the Ross School of Business.
- ➔ **Tamara Reeme (SNR B.S. ’83)** pledged \$200,000 for the Tamara L. Reeme Scholarship Fund, which receives an additional \$100,000 in matching funds. The Tamara L. Reeme Scholarship assists students enrolled in the Behavior, Education and Communication field of study or Environmental Policy and Planning field of study.
- ➔ **Joel Heinen (SNR B.S. ’79, Ph.D. ’92)** pledged \$150,000 to establish the Joel T. Heinen Graduate Support Fund, which garners an additional \$75,000 in matching funds. The Heinen Graduate Support Fund assists students engaged in conservation and resource management research and pursuing conservation ecology, environmental policy and ecosystem management fields of study.
- ➔ **Mark Retzloff (SNR B.S. ’70)** provided a \$150,000 gift to establish the Retzloff Family Graduate Fund, which receives an additional \$75,000 in matching funds. The Retzloff Family Graduate Fund supports students working with the school’s Center for Sustainable Systems.
- ➔ **Robert (SNR B.S. ’58) and Jean Kirby** pledged \$100,000 to the Dean B. Gorham Fellowship Fund, which garners an additional \$50,000 in matching funds. The Dean Gorham Fellowship, established in honor of longtime mentor and friend, Dean Gorham, helps recruit graduate students interested in ecosystem management.
- ➔ **Marshall M. Weinberg (LSA A.B. ’50)** pledged \$100,000 to the Marshall Weinberg Endowed Fund for Summer Fellowships, which receives an additional \$50,000 in matching funds. Weinberg Summer Fellowships provide opportunities for graduate students pursuing practical environmental fieldwork.
- ➔ **Gerald Wolberg (SNR B.S. ’57, M.B.A. ’58)** pledged \$50,000 to establish the Wolberg Family Graduate Grant Fund, which receives an additional \$25,000 in matching funds. The Wolberg Grant Fund supports SNRE graduate students.
- ➔ **Burton V. (SNR B.S. ’52, M.F. ’53, Ph.D. ’59) and Lenora W. Barnes** pledged \$20,000 to the Endowed Scholarship in Forest Ecology, which receives an additional \$10,000 in matching funds. The Forest Ecology Scholarship helps recruit graduate students interested in pursuing forest ecology and field studies.
- ➔ **Frederick (SNR M.L.A. ’78) and Helen Arbuckle** provided \$15,800 for the Fred and Helen Arbuckle Scholarship in Landscape Architecture, which receives an additional \$8,000 in matching funds. The Arbuckle Scholarship supports students pursuing master’s degrees in Landscape Architecture.

DUAL-DEGREE FUND HONORS SAX

The School of Natural Resources and Environment (SNRE) and the Law School are working to endow a graduate fund for students enrolled in the schools' dual-degree program. The Joseph L. Sax Graduate and Professional Student Fund honors the career of Professor Sax, a world-renowned environmental law expert. He taught at the University of Michigan from 1966-86. The schools already have an annual award named after Professor Sax that recognizes the program's top graduating student.

Professor Sax's writings on the public trust doctrine and "takings" have frequently been cited by the U.S. Supreme Court and remain definitive in the field. He is often called the "father" of environmental law and advocacy.

He developed the idea of citizen enforcement of environmental laws in his 1970 landmark book, *Defending the Environment: A Strategy for Citizen Action*. He worked as a policy advocate and legislative draftsman to turn this concept into practice in the "citizen suit" provisions of several federal environmental laws and in the Michigan Environmental Protection Act, popularly known as the "Sax Act."

A distinguished and honorary committee is leading the campaign to endow this fund by the end of the Michigan Difference Campaign (Dec. 31, 2008). Committee co-chairs are Bruce Babbitt, former Secretary of the Interior; Fred Krupp, president of the Environmental Defense Fund; and former governor and first lady of Michigan, the Honorable William G. and Helen Milliken.

Donations are matched 1:2 by the U-M Office of the President. The committee has set a goal of \$500,000 over five years. Through this fund, the schools will recruit and support top students interested in environmental policy and law careers. Five students are currently pursuing J.D. and M.S. degrees through the program, established in 1974, and both SNRE and the Law School hope to grow it further. The program encourages more-effective integration of knowledge of natural resources and environmental problems with the methodology and skills of the lawyer. Students generally complete both degrees in four years.

For more information, please contact Ann Boyd-Stewart, SNRE director of development and alumni relations, at 734.615.0315 or aboyst@umich.edu. 



Class Notes

Stewards plans to expand its Class Notes section in future issues. To do so, we need your help. Please keep us in mind when it's time to share news about your new positions or achievements with fellow alumni. We also welcome photos (preferably color). Send your information to Erin Longchari, assistant director of development and alumni relations, either via email (erinla@umich.edu) or through regular mail. The address – in case you've forgotten – is SNRE, Dana Building, 440 Church St., Ann Arbor, MI, 48109-1041. We're looking forward to hearing from you and spreading your good news.

Kurt Byers (SNR, B.S. '85) is education services manager for Alaska Sea Grant in Fairbanks. Byers (pictured at right) oversees planning and guides Alaska Sea Grant's educational and communications activities. During his final semester in Ann Arbor, he received an editorial internship at Michigan Sea Grant, and eventually was hired full time. In 1988, he accepted his current position and moved to Alaska.



—Photo by Carol Warbelow

As president and co-founder of the University of Alaska Good Time Swing Dance Club and a founding member of the Ballroom Dance Club of Fairbanks, Inc., he organizes and promotes swing and ballroom dances and lessons.

Sara Barth (SNRE, M.S. '94) and **Mark Zankel (SNRE M.S. '94)** returned to campus this spring and encouraged current SNRE students to take seriously the challenges that climate change presents to land U.S. conservation policies and practices. They gave a joint lecture titled "Beyond Cap and Trade: The Transformative Impact of Climate Change on Land Conservation in the U.S." Barth is regional director of The Wilderness Society's California/Nevada Region. Zankel is deputy director for The Nature Conservancy's New Hampshire Chapter. He also serves on SNRE's Visiting Committee.

Molly Notarianni (SNRE B.S. '03) is the new manager of the Ann Arbor Farmers Market. After graduation, she worked at a number of positions, including on a farm in Tuscany, Italy, and as a site manager for a farmers market

in Portland, Ore. Notarianni (pictured, bottom) told the Ann Arbor News: "It's really exciting to be back at the market that introduced me to locally grown food, and back in Michigan."

Sarah Hines (SNRE M.S. '07, M.B.A. '07) is a Presidential Management Fellow with the U.S. Forest Service (Northeastern Area State & Private Forestry and Northern Research Station). In her position, she has focused on issues related to climate-change mitigation and adaptation, and the potential for private landowners to engage in emerging carbon markets and greenhouse gas registries. She is a speaker at a June 23-25 conference sponsored by the Great Lakes Forest Alliance, Inc., in Madison, Wis., titled: "Crisis Or Opportunity? Sustaining and Strengthening Forest-Based Industries in the Great Lakes Region."



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ENDORISING THE ENVIRONMENT

Whoever becomes the 44th President of the United States or new members of the 111th Congress, the candidates likely will face tough questions from the League of Conservation Voters (LCV) and **Kerry Duggan (SNRE, M.S. '06)**.

As campaigns project manager for the Washington, D.C.-based organization, Duggan has the enviable task of interviewing candidates on their environmental voting records and stances on issues. Her interview summaries are used to help LCV reach its endorsement decisions.

"My primary job is staffing LCV's political and campaigns committee that makes endorsement decisions on the presidential and Congressional races," said Duggan, who joined LCV after graduating in December 2006. "I'm interviewing candidates on a regular basis and vetting them on their environmental record."

Most interviews are conducted in person; and some weeks, she has done up to five interviews. "This job is not only a great use of my degrees (her undergraduate degree is in environmental studies from the University of Vermont), but it also uses some

of my best skills. I'm kind of an extrovert and I enjoy the face time with the candidates. It's a skill that I have and like to use."

Duggan also serves on the Michigan League of Conservation Voters' Board of Directors, which conducts its own interviews and makes endorsements at the state level. Duggan worked for the group before and while completing her master's

degree in Natural Resource Policy and Behavior.

"My policy degree has really come in handy," she

said. "Not only in terms of being fluent on the issues, but in understanding the political process, how Congressional districts work, and how things differ from state to state."

So, which presidential candidate will get the LCV endorsement in 2008?

"This time, we at least have candidates that have something in common. They all acknowledge that global warming is a problem – that it's real and backed by science-based evidence," Duggan said. "The two Democrats (Barack Obama and Hillary Clinton) have policies in place to address it,



– Photo courtesy of LCV

"THIS TIME, WE AT LEAST HAVE CANDIDATES THAT HAVE SOMETHING IN COMMON. THEY ALL ACKNOWLEDGE THAT GLOBAL WARMING IS A PROBLEM – THAT IT'S REAL AND BACKED BY SCIENCE-BASED EVIDENCE," DUGGAN SAID.

but Sen. (John) McCain falls short of where science tells us where we need to be."

According to the lifetime LCV Scorecard (based on a 100 percent scale), Sen. Clinton has an 87, Sen. Obama an 86, and Sen. McCain, 24. The non-partisan LCV Scorecard is a nationally accepted yardstick used to rate members of Congress on conservation and clean-energy issues.

"I wake up every morning pretty fired up about what I'm doing," Duggan said. "At the end of the day, I sleep pretty well knowing that I'm helping to advance the environmental discussion on a national level."  – Kevin Merrill

READ MORE:
www.lcv.org/scorecard

WELCOME BACK Class of 1958

Each year, the University of Michigan welcomes back the graduating class from 50 years ago as part of Homecoming activities. This year, two days of activities are planned for Friday, Oct. 3, and Saturday, Oct. 4. SNRE alumni can participate in any of the events, which range from a class photo and reunion gala to a "Go Blue Tailgate" – and of course, the homecoming football game itself.

This year, the school is hosting an Alumni and Friends Campfire from 5-10 p.m. Friday at Saginaw Woods off Liberty Street. Saginaw Woods, as everyone knows, is a field research area used for demonstrating forest and

sustainable ecosystem management. It is used primarily by SNRE faculty and students and is 5 miles west of the main campus.

Barton E. Snyder (SNR, B.S. '58)

is the school's representative on the reunion committee.

REGISTRATION INFO:
www.reunions.umich.edu





BIG GREEN PURSE

Gets Great Big Press

When **Diane MacEachern (SNR, M.S. '77)** chose Environmental Communications and Advocacy as her major in 1975, it was a match made in eco-heaven.

For more than 30 years, MacEachern has written books, magazine articles and newspaper columns on a range of environmental subjects while starting and leading a worldwide communications firm. She returned to Ann Arbor this spring to sign copies of and talk about her latest book: *Big Green Purse: Use Your Spending Power to Create a Cleaner, Greener World*.

"After the last two presidential elections, the opportunity to use legislation to effect change has ground to a halt," said MacEachern in a phone interview from her energy-efficient home in suburban Washington. "We've really been playing a defensive game as 'industry' has come into positions of power. But in the marketplace, things are moving like gangbusters. Companies are tripping over themselves to compete for the honor of 'greenest' company. The marketplace is pulling industry in exactly the direction we want to go."

But why not title the book *The Big Green Wallet*? "Eighty-five cents of every dollar is spent by women," she said. "I wanted to talk to the person spending the most money, and that's the female."

The book's message is simple but revolutionary. If women change the way they spend their money, they can help solve the environmental crisis – and protect themselves and their families. To promote that change, the book offers steps to changing behaviors, such as urging readers to look beyond a company's marketing hype.

"Look to see who else is supporting their claims," she said. "Does a third party back them up? I encourage consumers to ignore marketing words like 'green' and 'eco' in favor of certifications from nonprofit organizations or scientific groups that verify the companies' claims."

MacEachern doesn't let her professional accomplishments get in the way of her heart-to-heart conversation with readers. "I'm a suburban mom with a husband, two kids, a dog and two cats," she said. "I really identify with people who are reading this book. And I've practiced every behavior I outline."



– Photo by Randy Mascharka

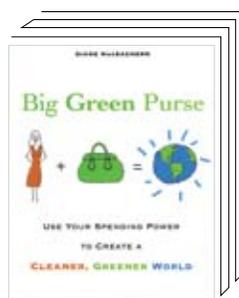
As co-founder and president of a communications company in Washington, D.C., MacEachern worked with clients including the World Bank, the United Nations Development Programme, World Wildlife Fund and the National Wildlife Federation, among others. She also played a key role in the U.S. Environmental Protection Agency's campaign to educate the public about global warming. For many years, she wrote a nationally syndicated weekly "Tips for Planet Earth" column for The Washington Post Writers Group. She answered readers' questions on environmental topics.

After selling her company in 2001, she spent a few years looking at the marketplace and thinking about how to best use her interests in advocacy, communications and environmentalism. The result was Big Green Purse, a web site and consulting company she launched on Earth Day 2007 after about a year of planning.

The site offers eco-lifestyle tips, shopping suggestions and an opportunity to join One in a Million, a campaign to encourage 1 million women to shift \$1,000 of their household budgets to eco-friendly products and services. Through her consulting, she works with companies that want to meet higher environmental standards and alert consumers to those higher standards.

She said her own environmental awareness was nurtured in SNR classes with professors Bunyan Bryant, James Crowfoot and Bobbi Low. While a student, she worked on Michigan's bottle-return bill campaign, which voters passed in November 1976. She also volunteered for door-to-door canvassing with the Michigan United Conservation Clubs and the Public Interest Research Group in Michigan. She later went to Washington and worked as a national coordinator on a bill to get a national bottle-return bill passed.

Her previous books are *Save Our Planet: 750 Everyday Ways You Can Help Clean Up the Earth* and *Beat High Gas Prices Now! The Fastest, Easiest Ways to Save \$20-\$50 Every Month on Gasoline*. ♻️ – Kevin Merrill



READ MORE:
www.biggreenpurse.com

– Photo courtesy of biggreenpurse.com



440 Church Street
Ann Arbor, MI 48109-1041

Stewards

WIRED

INSIDE DANA

This spring, the school launched a new quarterly email newsletter for alumni and friends: "Inside Dana." The newsletter shares the latest news from our faculty and students; dates and times of upcoming events; and success stories of fellow alumni. If you want to subscribe, please contact Sarah Jarzembowski in the school's Office of Development and Alumni Relations at 734.763.1577 or sejar@umich.edu. To view online, visit www.snre.umich.edu/alumni.



iTunes U. The service launched in April at www.itunes.umich.edu and already includes two presentations from the school's Peter M. Wege lecture series: William Clay Ford's address from November 2007 and the April 2008 address by His Holiness the 14th Dalai Lama.

In the familiar iTunes Store format, visitors can find lists of audio and video content.

Users select desired content by downloading the segments to their computers or iPods. One big difference: the content is free. The service makes content available in audio and video formats. SNRE plans to place more content on the iTunes U site while also increasing the amount of multimedia available at snre.umich.edu.

More info: itunes.umich.edu

ITUNES

Content from the University of Michigan, including the School of Natural Resources and Environment, is now available at Michigan

Current students use the same functions, but also can use NREeRecruiter to post resumes and apply for jobs and internships. Employers use it to post jobs and internships, search student resumes and set up on-campus visits.

To register and use the site as an alumnus, send an email to snre.erecruiter@umich.edu and request a username and password. In your request, specify your name (first, last and maiden name if applicable) and



CLICK & NETWORK

To better serve alumni (and current students), the SNRE Career Services Office this fall launched NREeRecruiter, an online career services portal.

Alumni can use the site to create a job-search agent to receive customized job postings; view a career events calendar; and create a profile in order to search other registered alumni for networking opportunities. They also can register to serve as career mentors to current students.

UM unickname or student ID number. If you do not remember your unickname or student ID, go to accounts.www.umich.edu/create/alumnirec to obtain this information.

In one or two business days, you will receive an email with your username and password. You can use it to log on to NREeRecruiter and begin creating a user profile.

For more information, visit erecruiter.snre.umich.edu.



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