

ENVIRONMENTAL NEWS

The Newsletter of the Environmental Programs at Middlebury

Seventh Issue • Spring 2006

Middlebury College • Middlebury, VT 05753

Dear Alumni and Friends:



Top-bottom: Middlebury students participate in the 2nd annual "Fossil Fools" bike-ride; educational displays at the Clifford Symposium all-campus picnic; Vermont had strong representation at the UN Climate Change Conference in Montreal, including 130 Middlebury students.

This past year has been exciting, enriching and reflective, as we celebrated the 40th anniversary of the Middlebury College Environmental Studies Program. We kicked off the year by hosting the Nicholas R. Clifford Symposium, the College's annual lecture series that in September 2005 was devoted to an interdisciplinary examination of climate change. By all accounts it was the one of most well-attended Clifford Symposia. Highlights included a keynote lecture by ES Scholar-in-Residence Bill McKibben, a plenary lecture by noted climate scientist Bill Ruddiman, panels organized by ES faculty affiliates Rebecca Gould, Jon Isham and Andi Lloyd, and two outdoor performances of ES faculty affiliate Andrea Olsen's "The Birdhouse Project" (see pages 6-7 for more details on these and other events).

The Fall 2005 Howard E. Woodin Environmental Studies Colloquium Series featured Middlebury alumni who are pursuing environmental careers. Presenters ranged from recent alum Dane Springmeyer's '02 account of his year traveling as a Watson Fellow to the distinguished work of Charlie Kronick '78, Chief Policy Advisor for Greenpeace UK. The colloquium, as always, helped us to build connections with alumni, community members and colleagues at other institutions, to present students with ideas about environmental careers, to build a sense of community within the ES Program, and to provide a forum for discussing interdisciplinary issues.

These events and others commemorating the origins and growth of the ES Program have given us ample opportunity to reflect on the pioneering vision of the Program's founders, Brewster Baldwin, Roland Illick, Louis Poole, DK Smith, and Gene Woodin, and the energy and rigor of subsequent directors Steve Trombulak,

John Elder, Christopher McGrory Klyza, and the late Bob Churchill. We were honored that DK Smith, Mimi Poole, and Beverly Woodin and her son David, were able to attend and be recognized for their lasting contributions at a special Clifford dinner reception.

ES majors continue to do great work in the classroom, in research venues, and in various community-oriented projects. Over 100 Middlebury students attended the United Nations Climate Change Conference in Montreal in December, and in early April many of those same students organized a bike ride of 250 participants to Montpelier to meet with Vermont politicians and raise awareness of the need for legislation to combat CO₂ emissions. Excellent work by numerous ES students in the service-learning classes of professors Jon Isham and Peter Nelson was recently recognized when professors Isham and Nelson received Vermont Campus Compact's Engaged Scholar and Excellence in Teaching awards respectively. These accomplishments, and many more, are highlighted in the following pages.

We close by welcoming the newest member of the ES faculty, Molly Costanza-Robinson, an environmental chemist whose research explores the fate and transport of organic and metal contaminants in soil using, among other techniques, synchrotron radiation at the Argonne National Lab particle accelerator. This year Molly taught courses that included Natural Science and the Environment, Chemistry in the Environment, and the ES Senior Seminar, where she worked in conjunction with ES seniors and Diane Munroe on pesticide issues and alternatives for Vermonters.

Nan Jenks-Jay
Director, Environmental Affairs

Peter Crowley Ryan
Director, Environmental Studies Program

Alumni News

Richard Tarlov '79 reports that there was a reunion of the Ray Mountains Project, a student-originated grant study that involved 11 Middlebury students and one UVM student, in which they explored a small mountain range and then published a complete environmental report, using the facilities of Middlebury after the trip. He shared, "It was an amazing project in many ways, and 26 years later we all assembled for a camping trip in Colorado."

Tim Howard '87 (Biology, minors in Northern Studies and Geology) and

David VanLuven '88 (Independent Studies-Northern Environments) are both working for The Nature Conservancy in the New York Natural Heritage Program. Tim is the Program Scientist, which has him in the field conducting ecological field surveys and in the office tying

together his program's botany, ecology, zoology, and information management activities. David is the Director, which has him in the office wearing a tie, raising money, navigating politics, and missing his field boots (except during black-fly season). Their program is part of an international network of natural heritage programs that find, track, and provide information about rare species and significant ecosystems in the Western Hemisphere. For more info, visit their website at www.nynhp.org.

Emily Price '01.5 (Geography major) spent 2004-2005 working for the City of Burlington, VT, within the Community and Economic Development Office on the Burlington Legacy Project, a long-term initiative guiding sustainable development and progress in Burlington. Legacy works on a variety of projects, and

over the last year has played a key part in the collaborative Burlington School Food Project, strengthening the local food system and food, farming and nutrition education for school age children in Burlington, VT. In Fall 2005 she moved to Chapel Hill, North Carolina, to begin a masters program in City and Regional Planning, focusing on community development.

Dane Springmeyer '02 is working as a GIS technician at Ecotrust, in Portland, OR. Dane is excited about combining geography and biology, and to be working for a great organization that bridges economics and the environment. His first big project will be working to map salmon status and distribution across the Pacific Rim in a partnership with an organization called the State of the Salmon.



Excerpts from the Field—

Watson Fellow,

Bennett Konesni '04.5

"The songs of the lalawlorlor:
Musical labor on Ga fishing canoes"

Nungua, Ghana. It's 3 A.M. in Nungua Township and I'm stretched out on a cot in a small, sticky room in front of a whirring fan. Suddenly there is a knock and a gruff voice, and I groggily swing my legs to the floor and throw on a T-shirt. Time to go fishing, Ghana-style.

Six days a week in harbor towns all along this country's palm-fringed coast, small teams of fishermen make their way down to wooden canoes perched and waiting on the beach. They begin their work at a time of day most people sleep, those unaccountable moments after the partygoer's late-night farewells and before the shopkeeper's pre-dawn stirrings. In that inky hour the men use two long 3" x 6" and a log to skid their boats off the sand and into the water, and mounting a small outboard engine to the stern they shove off into the roaring surf.

I'm here in Ghana for two months to experience, record and learn the way fishermen and farmers sing while they

work. This month I am spending my time with members of the Ga tribe, a group of 300,000 who live and fish on a small stretch of coast around Ghana's capitol city, Accra.

We seek anchovies, what the Ga call amorni, a favorite local treat that can be seen atmospherically smoking in traditional red-clay ovens. To catch these fish the men post a lookout in the bow, peering down at the dark water running alongside the boat. If he sees silvery sides glinting in the moonlight he shouts, and the others immediately begin to cast 600 meters of net out over the side of our speeding, leftward-turning canoe.

The net is 180 meters wide and each edge is lined by a long rope, one sporting colorful styrofoam floats, the other heavy steel rings. Trapping the fish is as easy as cinching one rope up and leaving the other floating on the surface. This creates an enormous dish of netting about the size of two football fields, which, when the men are lucky and the fish are not, is chock full of splashing, writhing food.

It is during the cinching that the songs



begin. The lalawlorlor (the song leader) starts a lone call and in powerful harmony everyone responds, reaching forward and hauling straight back. The lalawlorlor's job is to create a good tempo for the rest of the workers. The workers in turn find patterns that follow and complicate the lalawlorlor's basic beat. The songs are arranged simply, with a lone voice urging the group to respond, but the constantly shifting rhythms created are fascinating.

Though the songs set the rhythm of the work, they do not rigidly determine it as one might expect. Instead all of the elements that are connected at sea—voices, ropes, and the ocean—combine in a startling equilibrium of environment and sound.



Faculty Profile

Rebecca Kneale Gould—Religion on the Ground

Rebecca Gould, Associate Professor of Religion and Environmental Studies, has been affiliated with the Environmental Studies Program since she joined the faculty of Middlebury College in 1998. Her position—which brings together her teaching and research interests in religion and the environment—was a perfect fit and came at a time when there was little graduate or undergraduate training making these important connections.

Now, as religious communities are increasingly responding to pressing environmental issues, Gould's research on, and involvement in, numerous national level organizations allows her to bring a wealth of knowledge to the classroom and the local community.

Rebecca recently realized the fruits of a long-standing research project that began with her dissertation when she published *At Home in Nature: Modern Homesteading and Spiritual Practice in America* (October 2005). Her book makes several provocative arguments about religion and nature. She begins by detailing how the traditional story of religion in America looked only at visible, institutional religion thereby ignoring an important minority story of people turning to nature as a source of spirituality. She traces this through the homesteading movement, where those who rejected traditional religion found meaning in nature through their work with the land.

Through extensive research and interviews, including a seven-month stay at the Helen and Scott Nearing homestead, she highlights how many who lived “off the land” gave ritual and symbolic meaning to their daily labors, and through their actions and speech interpreted nature as the center of meaning and authority in ways more traditional religious people would conceptualize

God. Her book praises the virtues of living lightly on the land, but also raises critical questions about class and gender, particularly the question of who has the privilege to *choose* voluntary simplicity and who does not.

Her current project “Religion on the Ground,” is an investigation of how various religious groups are speaking to the environmental crises before us, particularly global climate change. Through interviewing leaders of groups like the Coalition on Jewish Life and the Environment, Earth Ministry, and the National Religious Partnership for the Environment, and conducting participant observation of small retreats and gatherings, she is documenting how people are connecting their religious lives to their concern about the environment. Her findings have been mixed. The “good news” is that the religious voice in environmental discussions is getting stronger and beneficial alliances are being created between religious and environmental organizations. The “bad news” is that actual on-the-ground actions are getting a slower start than the climate crisis demands. Stay tuned for an edited book and film project coming from this research!

Her engagement at the national level is a third area of research and service. She is on the boards of the Simplicity Forum and Take Back Your Time, a founding board member of the International Society for Religion, Nature, and Culture, and serves on the steering committee of the Religion & Ecology group of the American Academy of Religion. These affiliations have allowed her to write more “thought-pieces,” including a recent article in *Orion* magazine, that compliment her scholarly writing.

On campus, she teaches Faith, Freedom, & Ecology, Environmental Ethics & Religion, Nature's Meanings, and the Environmental Studies Senior Seminar. Through these courses she is able to provide an introduction to how religious traditions speak to environmental issues

(both positively and negatively), delve more deeply into certain traditions as guided by student interest, take a historical look at the cultural construction of nature in America and have students apply their knowledge to community projects.

Professor Gould places a high value on civic engagement and has guided several successful service-learning projects—including most recently an assessment of the state of religious groups' engagement in environmental issues in Vermont, which served as the basis for the formation of a Vermont chapter of the national Interfaith Power and Light Movement. She notes a highlight of this project as “seeing students' assumptions about religion and how these dissolved when they got out into the community.” Experiential work meshes well with her teaching philosophy, which stresses “intellectual independence”—helping students find questions that drive them to go beyond fulfilling requirements to being their own seekers toward what satisfies them intellectually.

Beyond connecting her students to the community, Rebecca herself is active locally having served on the Board of Advisors for Spirit In Nature (a local interfaith path network), and speaking for the Middlebury and Burlington Unitarian Universalist communities and the Vermont Earth Institute about Take Back Your Time initiatives.

On campus, Rebecca is a member of the Environmental Studies Steering Committee, and is an active supporter of the College Organic Garden. She is proud of the “greening of the campus” she sees at Middlebury, and marvels at how far the College's reputation travels through her national networks.

Dissolving assumptions, encouraging the all important on-the-ground actions of both students and religious organizations, and reminding us all of the value of our time are just a sampling of the wonderful contributions Rebecca brings to our Environmental Studies Program.

Featured Speakers on Campus



2006 Scott Margolin
Environmental Affairs Lecture

Dr. Michael E. Mann

*Associate Professor, Department of Meteorology
Director, Earth System Science Center,
The Pennsylvania State University*

March 7, 2006

“Global Climate Change: Past and Future”

Dr. Mann’s research focuses on the application of statistical techniques to understanding climate variability and climate change from both empirical and climate model-based perspectives. He has been the recipient of several fellowships and prizes, including selection as one of the 50 leading visionaries in Science and Technology by Scientific American. He is also a co-founder and avid contributor to the climate blog “RealClimate.org.”

Dr. Mann was a lead author on the “Observed Climate Variability and Change” chapter of the Intergovernmental Panel on Climate Change (IPCC) Third Scientific Assessment Report and is the author of the famous “hockey stick” graph showing temperatures over the past millennium and the recent sharp rise in temperature. This fact was aptly noted when Professor Rich Wolfson presented Dr. Mann with a hockey stick signed by members of the Middlebury men’s hockey team at the beginning of his talk.

His lecture began with a review of the now-solid evidence for a human influence on the climate of recent decades including instrumental measurements, paleoclimate observations, and comparisons of predictions from computer models with observed patterns. He then addressed future impacts of human-induced climate change in the U.S., including possible influences on tropical Atlantic hurricane intensity and frequency and on water supplies in Western States.

Dr. Mann spent several days at Middlebury, giving not only the Margolin lecture, but also a second talk geared for a more science-literate audience. He also participated in several lively class discussions in the Natural Science and The Environment and Environmental Geology courses.

Jack Byrne—

Our New Campus Sustainability Coordinator

Jack Byrne recently joined the Middlebury College staff as our Campus Sustainability Coordinator and we are delighted to have him on the team. He brings a multitude of skills and experience that complement those of our other outstanding staff and faculty in the Environmental Affairs and Environmental Studies programs. Jack was Vice President at the Foundation For Our Future in Shelburne, Vermont developing and managing programs in international conservation training and education, sustainable development education, youth

Other Environmental Speakers on Campus

Sponsored or co-sponsored by Middlebury Environmental Programs

September 20, 2005

James Martin, *Founder of the James Martin 21st Century School at Oxford University*
“The Meaning of the 21st Century”

October 27, 2005

Constanza Ceruti, *Executive Director of the Institute of High-Mountain Research, Catholic University of Salta, Argentina*
“Sacred Mountains, Frozen Mummies And Inca Archaeology”

January 18, 2006

Michael Sacco, *Solar Technologist and Chocolatier*
“Solar Chocolate Making as a Form of Zapatismo: Stories of Technological Transformation in Social Movement”

April 3, 2006

Elizabeth Kolbert, *New Yorker Magazine staff writer*
“Field Notes from a Catastrophe: Man, Nature and Climate Change”

April 6, 2006

Patrick Bellew, *Principal and Founder of atelier ten*
“Anthills to Labyrinths: Engineering Sustainable Architecture”

April 27, 2006

Owen Gutfreund, *Director of the Barnard and Columbia Urban Studies Program*
“Bridges and Bypasses: A Historical Perspective on a Century of Traffic and Town Planning in Middlebury”

May 4, 2006

Scott Russell Sanders, *Essayist and Environmentalist*
A reading from his new book *A Private History of Awe*

Energy Star Award

Our Central Heating Plant co-generation system (Combined Heat and Power Plant) has won a 2005 Energy Star Award. This award is presented on behalf of the United States Environmental Protection Agency and the Department of Energy. The notification letter notes the following: “Middlebury College has demonstrated exceptional leadership in energy use and management. This combined heat and power system operates at approximately 81% efficiency and uses approximately 6% less fuel than equivalent separate heat and power systems.”

Michael Moser, Assistant Director of Facilities Services, and Sean Casten (1993 Middlebury alumnus and CEO of Turbo Steam Corporation) collaborated to collect data that demonstrated the efficiency of co-generation.

leadership, and learning technologies. He was the founder and Executive Director of the River Watch Network, a national non-profit organization that provides organizational development and technical training to people involved in local watershed conservation efforts. Jack earned a master’s degree in environmental law from Vermont Law School and a B.S. in biology from Kent State University. Asked why he took the job, Jack says, “I am thrilled to have the opportunity to work with so many motivated, committed and accomplished people to advance Middlebury College’s leadership on issues of sustainability.”

Sustainability News and Notes

Sustainable Paper and Printing Practices on Campus

Jack Byrne, Campus Sustainability Coordinator, is working with consultant Nadine Barnicle, Pam Fogg of the Communications Office, and an advisory team of faculty and staff to examine campus efforts to reduce paper consumption, increase usage of 100% recycled content and chlorine-free paper, and to use green printing companies for jobs that are outsourced. Preliminary findings show that most of the paper used on campus is either 100% or 30% recycled content and that there is a desire to move to 100% recycled, chlorine-free paper after trials with such paper are completed. Several departments are also outsourcing large print jobs to companies that use environmentally friendly materials and practices, and renewable energy. The advisory group will re-convene in the summer to review the report's findings and recommendations to develop strategies for moving ahead.

Biodiesel Fuel Testing and Conversion Project is a Success

The College has switched the fuel used in furnaces around campus to B20—a mixture of #2 fuel oil and 20% biodiesel. Biodiesel has a less harmful impact on human health and reduces greenhouse gas and particulate emissions as well as sulfur and nitrogen oxides. A test burning of the B20 fuels in 21 buildings around campus was part of a research project with the Vermont Biofuels Association, the Vermont Fuel Dealers Association, The National Oilheat Resource Alliance (NORA), the Vermont Bioheat Program and the Vermont Sustainable Jobs Fund. We found that the B20 fuel works well with a variety of heating equipment, which gave us the confidence to make the switch for all the furnaces on campus for buildings not connected to the central system.

Mike Moser, Assistant Director of Facilities Management, coordinates the project for the College and is enthusiastic about the use of biodiesel. “We see this program as a great opportunity to protect the health of the Middlebury

community, help the environment, and support local businesses,” Moser said.

The College is also using B20 in several of its maintenance vehicles with diesel engines as well.



Midd Recycling Program Wins National Competition

The College participated in the annual national RecycleMania competition for the first time. The competition requires that schools report their weekly generation of waste and how much is recycled in total, as well as in targeted areas including: bottles and cans, corrugated cardboard, food service organics, and paper. One-hundred schools in 33 states competed over a 10-week period.

Our outstanding recycling and compost program put us in the number one position in the organic waste recycling category nationally. We also finished in the top ten in six of the seven categories of competition. Among schools in the New England Small Colleges Athletic Conference who competed, we finished first in four of the seven categories.

Congratulations to the recycling program staff and the entire College community for making our efforts such a success!

Climate Champion Award

Middlebury College received a 2005 Climate Champion Award from Clean Air-Cool Planet (CA-CP). CA-CP gives the award every two years to individuals and organizations for actions aimed at reducing greenhouse gas emissions. The College was recognized for its wide array of efforts on this issue ranging from student initiatives, curricular opportunities, and the Trustees Resolution to reduce our emissions that was signed in May 2004.



Two Degrees Makes a Big Difference: Midd68 Campaign

In response to strong support from Middlebury students and the Student Government Association, all dormitories on campus lowered their thermostats by two degrees from 70° to 68° F this past winter. This is one of a number of steps being taken to become more energy efficient and to lighten our ecological footprint. While this change only affects dormitory space, faculty and staff were also encouraged to voluntarily follow suit and lower their office thermostats to 68 degrees as well. This small change makes a significant difference—over the period of November through March in a typical winter we will lower our fuel costs by nearly \$50,000 and send 800,500 fewer pounds of climate warming greenhouse gases into the atmosphere. We applaud this effort by the students and their leadership by example. Thanks go to Thomas Hand '06 and Caitlin Matthews '07 for their hard work and diligence in moving this initiative along.

Wind Turbine Powers Recycling Facility

Our 10 kWh (kilowatt hour) wind turbine project is spinning along after being installed and tested in August 2005. The turbine is located adjacent to our recycling facility and provides power to the lights and machinery in the building. The turbine is a joint project with the Vermont Department of Public Service to gather better data on wind resources around the state and to demonstrate the use of wind as a renewable energy source. The Midd turbine has been producing enough power to meet the demand of an average Vermont household and has been providing 15% of the electrical use of the recycling facility. For more on the project, see <http://www.vtwindprogram.org>.

Howard E. Woodin Colloquium Series

On Thursdays throughout the fall we were enriched by presentations and discussions from alumni speakers in our Howard E. Woodin Colloquium Series. Speakers were working in a diverse array of environmental fields as the below list demonstrates. This was also the first speaker series where we committed to purchasing certified carbon dioxide offsets through Native Energy to offset the impact of our speakers' travel—a practice that we continued this spring and will do so into the future.

- Dane Springmeyer '02, Projects Manager, E. F. Schumacher Society **Exploring Global Raptor Migration: Reflections of a Watson Fellow**
- Rodrigo Prudencio '91, Principal, Nth Power LLC **Venture Capital & Energy Technology: Is There a Google in Green Energy?**
- Randy Hagenstein '81, Director of Conservation, The Nature Conservancy (AK) **Intelligent Tinkering: Saving all the little pieces of Alaska**
- Terry Kellogg '94, Executive Director, One Percent for the Planet **The Intersection of Business and the Environment: Fertile or Fallow Ground?**
- Carol Lee Rawn '84, Attorney, Conservation Law Foundation **Restoring Urban Water Environments**
- Greg Hanscom '95, Editor of High Country News **Under fire: A report from the front lines of environmental journalism**
- Charlie Kronick '78, Chief Policy Advisor, Greenpeace UK **Hey U: Windowpanes, Lightbulbs & Other Widgets—An Unexpected Journey Through the Non-Politics of Climate Change**
- Gretchen Hund '79, Senior Staff Scientist, Pacific NW National Lab **Drafting an International Standard on Environmental Communication based on the World Business Council for Sustainable Development**
- Denise Schlener '77, Regional Director, Trust for Public Lands **Conserving Land from the Inside Out: Growing and Managing Non-Profit Organizations**
- Anne Hambleton '85, Senior Manager & Business Development, Native Energy **Can Global Markets Solve Environmental Problems? A Current Look at the Worlds of Carbon Finance and Ecosystem Services Banking and Trading.**

Environmental Studies Program 40th Anniversary: 1965–2005

Highlights of our 40th Anniversary celebrations included an interdisciplinary look at the Climate Crisis through the 2005 Clifford Symposium, our Fall Howard E. Woodin Colloquium Series dedicated to all alumni speakers, the dedication of a new wind turbine on campus, and an artistic performance focused on movement, birds, and the land at Middlebury College. Here are some snapshots that capture these wonderful events!



The Clifford Symposium kicked-off Thursday evening with an all-campus picnic where in addition to sharing wonderful conversation and food, students and local community organizations shared creative displays about energy usage and other environmental issues.



After the picnic, the crowds moved up to Mead chapel, decorated with colorful flags, where a standing-room only audience listened to Bill McKibben, Scholar in Residence at Middlebury College, share his thoughts on the topic: "How Big is Too Big? Global Warming and Moral Choices."



Friday was filled with an array of events, starting with the dedication of the new wind turbine located next to, and helping power, our Recycling Center. Pictured L–R: Bob Huth, Dean Ouellette, Ben Davis '07, Rick Fritz, Amy Seidl, and a representative from Sen. Leahy's office.



The Friday afternoon plenary lecture and discussion featured Dr. Bill Ruddiman, leading climatologist and author, and Emeritus Professor of Environmental Science at the University of Virginia, whose talk was entitled, "Anthropogenic Warming Began Well Before the Industrial Era."

Clifford Symposium

September 22–24, 2005

Renewal: Perspectives and Possibilities in an Age of Climate Crisis

"Many have provided leadership during the past 4 decades to assure the continued success of Middlebury's evolving ES Program. It is not unlike the flocks of Canada and Snow Geese we observe migrating overhead this time of year. Scientists believe that their flight pattern reduces wind resistance and that an updraft created by the wingtip of the previous bird gives a lift to the next bird in formation. The lead bird does not receive this benefit, so the leadership position rotates providing new strength as the flock continues to move forward, much as this Program has done over time."

—Nan Jenks-Jay



Following Dr. Ruddiman's talk we were treated to a performance of the Birdhouse Project—a show of dance and music that celebrates movement, birds and the land directed by Middlebury College Professor of Dance Andrea Olsen, which included more than 20 faculty, alumni and student dancers, original music by composer David Rothenberg, and set design by Vermont artist and birdhouse designer Carl Phelps.



Needless to say, we were all thoroughly energized and challenged by what we heard and discussed over these three days, and these conflicting, yet synergistic emotions were well captured in the closing remarks shared by Professor John Elder and Middlebury College students Thomas Hand '06 and Julia West '06.



Friday concluded with a panel discussion, moderated by Prof. Andi Lloyd (Biology), on the theme of *Global Changes, Local Impacts: Climate change and indigenous communities*, where leaders of indigenous communities were able to express how their peoples and traditional ways of life were already feeling the impacts of climate change. Panelists included: Craig Fleener, Council of Athabaskan Tribal Groups; Dr. Darren Ranco, Environmental Studies Program, Dartmouth College; His Excellency Enele Sopoaga, UN Ambassador from Tuvalu; and John Mameamskum, Director-General, Naskapi Nation of Kawawachika-mach.



Saturday featured the last two provocative panel discussions. The morning panel, moderated by Prof. Rebecca Kneale Gould (ES/Religion), was on the theme of *Religious and ethical perspectives on climate change*. Speakers included: Dr. Laurel Kearns, Drew University Theological Seminary; Paul Gorman, Executive Director of the National Religious Partnership for the Environment; and Barbara Lerman-Golomb, Communications Director, Coalition on the Environment and Jewish Life.



The afternoon panel led us to discuss ways to address the climate crisis in a session, moderated by Prof. Jon Isham (ES/Economics), entitled, *Solutions: policy initiatives by government, business, and civil society*. Panelists included: Meg Boyle, Executive Director, The Climate Campaign; Rachel Harold, Investor Programs Fellow, Coalition for Environmental Responsible Economies; and Dr. Michael Dorsey, Assistant Professor of Environmental Studies, Dartmouth College.

Student Awards, Internships, Independent Study Projects, and Theses

2005–06 AWARDS

The 2006 Margolin Award, given annually to an outstanding senior Environmental Studies Major went to: **Marisa Lipsey '06**, (ES/Conservation Biology).

Asher Burns-Burg '05.5 was awarded the Nuquist Award for “outstanding student research on a Vermont topic” by the Center for Research on Vermont. The award honors Asher’s senior thesis, “Empowering Environmentalism: A Socioeconomic Analysis of Energy Consumption, Awareness, Attitudes and Actions in Vermont.”

Gillian May Boeve '06 was awarded the first annual Dana Morosini Reeve '84 Memorial Public Service Award. Boeve was recognized for her educational outreach and activism pertaining to the biodiesel-fueled Project Bio Bus and Middlebury College’s Sunday Night Group, an ad hoc student group concerned with global climate change and other environmental issues.

Thomas Hand '06 received one of six Middlebury College Public Service Leadership Awards for his volunteerism and leadership with Project Bio Bus, Middlebury College’s Sunday Night Group, and an energy-efficient light bulb campaign called the “Manchester Challenge.”

2006 THESES

Nellie Barnard '06, “A Geochemical, Petrologic, and Hydrologic Investigation of Two Bedrock Arsenic Sources, South-Central Maine”

William Bates '06, “Framing the Climate Change Movement—Religion, Spirituality and Social Change”

Asher Burns-Burg '05.5, “Empowering Environmentalism: A Socioeconomic Analysis of Energy Consumption; Awareness, Attitudes and Actions in Vermont”

Hilary Eisen '06, “Effects of substrate variability on *Picea mariana* germination and survival at its northernmost range limit in the Brooks Range, Alaska”

Katherine Hawkins '06, “Seismic and core stratigraphy for Younger Dryas freshwater flooding and erosion in southern Lake Champlain”

Patrick Leibach '06 “A National Renewable Portfolio Standard: Lessons from Nevada & Pennsylvania”

Kristen Pelz '06, “Bumblebees in Addison County, Vermont: The effects of landscape context and floral resources on their relative abundance and diversity”

Amber Trotter '07, “Activism in a Difficult Era: Civic and Political Engagement among Contemporary College Students at Middlebury College and Beyond”

Kevin Bright '06, “Ultramafic Bedrock Source of Arsenic in Private Wells, Stowe, Vermont”

Marisa Lipsey '06, “Does subdivision of captive-bred wildlife populations improve reintroduction success?: A simulation using *Drosophila melanogaster*”

Lynne Zummo '06, “Soil geochemistry as an evaluation of forest health and indication of acidic deposition”

2005–06 Independent Studies

Zoey Burrows '07, “Vermont College Environmental Report: A Snapshot in Time of Student Initiatives (2005–2006)”

Katherine Cooley '06, “Community Wind: Political & Economic Prospects in Vermont”

Anna Curtis '07, “To Discover Oneself in a Foreign Land: Biology, Culture, Photography and Life in Belize”

Thomas Hand '06, “CFL Adoption Programs: Utilizing Horizontal Collaboration to Reduce Green House Gas Emissions”

Mark Little '06, “Creating Communal Vision in Natural Rhythms: Uniting Ethics with Action in the Weybridge Environmental House”

Christopher Rodgers '07, “The Process of Torrification and its Potential for use by Vermont Craftspeople”

Matthew Rales '06, “The Ecological Herbivore: Lessons in Bovine Environmentalism”

Jacob Whitcomb '06, “Applied Study in Carbon Credit Markets”

2005–2006 INTERNSHIPS

Benjamin Bruno '06	The Nature Conservancy
Devi Glick '07	Sierra Club/Maine Chapter
Jameson Henn '07	Energy Action
Alyssa Jumars '06	Vermont Biofuels Association
Laura Kelly '06	Haley & Aldrich
Austen Levihn-Coon '07	Energy Action
J. Baker Lyon '06	Addison County Regional Planning
Makely Lyon '07	The Climate Trust
Caitlin Matthews '07	Denver Botanic Gardens
Sierra Murdoch '09	US Forest Service
Nichole Nawfel '06	Escuelita de Nosara
Jeremy Osborn '06	Energy Action
Philip Picotte '08	The Nature Conservancy
Erin Pittenger '07	Tamarack Resort
Jessica Polebaum '06	Environmental League of Massachusetts
Elizabeth Schaumberg '06	The Nature Conservancy



Alumni in Action

Gabe Epperson '02 Fostering Quality Growth Models

Gabe Epperson, a Middlebury Environmental Studies–Human Ecology graduate, has long been interested in Sustainable Development and Globalization. He started his Middlebury studies with an interest in working internationally, but realized that many international problems are fueled by the U.S. consumer culture/economy, which he believes is facilitated through our man-made environments. Through Anthropology courses that emphasized the interrelationship between cultures, religions, economics and the natural environment, through ES Senior Seminar work on transportation planning, and involvement in the carbon-reduction initiative at Middlebury, he saw that changing people’s behaviors entails re-shaping our built environment.

For Gabe, the most striking example of this is transportation behavior. He states that, “No amount of intellectual or moral appeals will change an individual’s travel patterns.

This dilemma leaves two basic options:

- a) if gas is expensive enough people will change their travel behavior and
- b) changing the way our communities are designed to make walking and biking easier, which entails a whole-scale shift in development patterns away from suburban auto-oriented development towards more compact forms of mixed-use development oriented around mass transit.”

After graduating from Middlebury, Gabe returned to his hometown of Salt Lake City to work for Envision Utah —www.envisionutah.org— a unique public-private non-profit that promotes “quality growth” through a

collaborative, grassroots planning process. These quality growth goals include affordable housing, multi-modal transportation systems, water conservation, efficient infrastructure, the preservation of critical lands and improved air quality.

Starting as a GIS intern three years ago, he is now a project planner, working directly with cities to design and implement a planning process guided by

“No amount of intellectual or moral appeals will change an individual’s travel patterns.”

a local steering committee. Each project begins with a public workshop gathering ideas from residents of the study area on transportation, development, design and environmental issues, followed by an in-house GIS analysis of the workshop results and the formation of recommendations in the form of reference maps and policy statements guided by the Steering Committee.

He is also currently finishing a Master’s in Public Administration at the University of Utah, with a thesis focusing on the relationship between local government land use policies and the worsening condition of the Wasatch Front’s (Salt Lake–Ogden–Provo metropolitan area) regional transportation system. Recognizing that restrictive zoning policies are forcing households to move further and further away from urban areas to find affordable housing, thereby contributing to sprawl, traffic, air pollution and development in critical environmental areas, he’s designed a technique to measure the regional impact of an individual city’s land use policies in terms of vehicle miles traveled (VMT).

Through his work and research, Gabe has realized that in order to make sustainability a reality, you have to make it an unconscious lifestyle for as many people as possible. “Sustainability advocates need to create competitive, cost-effective and well-designed products and communities that appeal to our cultural values. People will change their behavior because it makes economic sense, or because they do not realize what they’re doing. We need to reshape our built environments in a sustainable fashion, in which our populations ‘do the right thing’ de facto.” Luckily, he has a lot of faith that sustainability *is* the most cost-effective approach in many areas, and will speak for itself over time.

He calls his philosophy a “proactive-zen approach to change” that is relevant to many policy areas. Here’s an example: “How do we fund health care in this country? I think that’s the wrong question. Our burgeoning health care costs represent something fundamentally wrong with the way we are living. Instead, we need to ask ‘what are cost-effective ways of preventing illness in the first place?’, which gets back to what I do for living—designing energy-efficient, healthy, active communities.”

Citing the impact of increased fuel costs on trucking and shipping, Gabe also advocates local production of food and other goods, eliminating the need for travel and energy-use in the first place.

Outside of work, Gabe continues to play basketball, soccer, piano and attempts to recreate the sense of community that he felt at Middlebury. His parting advice to Middlebury students, “It’s sad but true—everyone has a college degree on the resumes we look at. Make yourself look useful!”

Gabe will be the alumni speaker for the Fall 2006 Howard E. Woodin Colloquium Series.

Student Project Leads to Land Conservation

Middlebury College recently sold a 16-acre piece of land to the nonprofit Middlebury Area Land Trust (MALT), which will use the property to create a new public park, Otter View Park, and three housing lots. The idea to conserve the land began with a Middlebury College service-learning project in the Spring 2001 Environmental Studies Senior Seminar. Nan Jenks-Jay, who led the 2001 seminar, said that “specific recommendations made by students are ones that have become a reality. It is gratifying to see an academic endeavor by students, the college and MALT all come together over the future of this important parcel of land. A boardwalk plank for the Otter View Park will be engraved with the words ‘Middlebury ES 401 students’ to acknowledge the students’ work.’” Ariel Diggory ’01 who participated in the seminar, shared that, “Hearing the story of what will happen with that property, and knowing the role we had in it, is more rewarding than any grade I received while at Middlebury. It’s so much more real and tangible. It also makes me proud of the great approach Middlebury has with service learning.”

Governor’s Award for Environmental Excellence

Middlebury College and Burlington-based energy consultant Efficiency Vermont, were awarded a 2005 Governor’s Award for Environmental Excellence & Pollution Prevention. The award is the direct result of a service-learning project in the Fall 2004 conservation and environmental policy class. The class developed an educational campaign for the Town of Middlebury, which culminated in a weekend event where compact florescent light bulbs were freely distributed. The goals of the event were to reduce our community’s overall energy consumption and to raise awareness of energy efficiency and its potential to mitigate climate change. This annual award honors those who contribute to the protection of Vermont’s environment, the safety of its citizens, and the health of its economy.



Service-Learning in Environmental Studies

ES 401 Senior Seminar Projects

Fall 2005 (Kathryn Morse)

Partnering with local NGO ECOLOGIA, students focused on Corporate Social Responsibility (CSR) surveying Vermont businesses to get their feedback on a draft international standard for CSR; gauging consumer “willingness to pay” for socially and environmentally responsible products; and identifying the main drivers of CSR in China.

Spring 2006 (Molly Costanza-Robinson)

Under the theme of “Pest Control Issues and Alternatives,” students partnered with a newly formed mosquito control district in Addison County to devise integrated pest management strategies. In partnership with the Northeast Organic Farming Association of Vermont, two other student groups worked on developing a grant resource guide for on-farm research on pest control issues, and synthesized control strategies for common pest issues facing organic farmers.



More information on all service-learning projects can be found on the new service-learning page of the Environmental Studies Program
 Web page: <http://www.middlebury.edu/academics/ump/majors/es/courses/service>

Winter Term 2006 Projects

Nadine Barnicle

Social Marketing and Environmental Affairs
 Students undertook three collaborative projects including, “Buy Local, Think Local: Consumer awareness of buying locally produced food,” “Vermont’s Low Emission Vehicle Program: Are Vermonters aware of emissions when making vehicle purchasing decisions?,” and “Wind Energy at Addison County Elementary Schools: A Feasibility Study.”

ES 211 Conservation and Environmental Policy Projects

Spring 2006 (Jonathan Isham)

Students worked on several climate policy projects including work with the Climate Crisis Coalition to advance their Kyoto and Beyond platform in the 2006 mid-term elections; extensive networking to garner support for the Cape Wind Project; developing materials on the impact climate change will have on the maple syrup producers in Vermont for the Vermont Energy and Climate Action Network; developing materials that will diversify and broaden Vermont Interfaith Power and Light’s constituency; and work to publicize what the Regional Greenhouse Gas Initiative will mean to Vermonters.

Faculty and Community Partners Recognized for their Service-Learning Leadership

Pete Nelson (Geography) and Jon Isham (Economics/ES) were recognized by Vermont Campus Compact with two annual statewide awards. Pete received the “Excellence in Teaching Award,” given to a faculty member who has made public service an integral part of their teaching. Jon Isham received the “Engaged Scholar Award,” honoring a faculty member for his/her engagement both in and outside the classroom.

The Reverend Paul B. Bortz, a community leader working to develop realistic and spiritually based responses to our most pressing environmental problems, was the recipient of a Middlebury College Citizens’ Medal for 2005. Paul has maintained a collaborative relationship with the students, faculty and staff of Middlebury College through service-learning projects, lectures and conversation. The annual award recognizes local residents who have helped strengthen the Addison County community.

Faculty and Staff News

David Bain (English) was a consultant and appeared in a new History Channel "Magic Marvels" documentary on the subject of his book, "Empire Express: Building the First Transcontinental Railroad."

Daniel Brayton (English) debuted a new course, "Maritime Literature and Culture" last spring and it was offered again this past fall. He has been selected to participate in an NEH Summer Institute at Mystic Seaport, "The American Maritime People," this summer. This will be an opportunity for him to explore maritime history and cultural studies as part of his ongoing effort to pioneer "maritime nature writing."

Pieter Broucke (History of Art and Architecture) is currently teaching "Architecture and the Environment," a course that serves as the capstone of the new joint-major in ES and Architecture. With an enrollment of twenty-five, the course is filled to capacity.

Molly Costanza-Robinson (ES/Chemistry) presented several posters, including one at the National Science Foundation's Celebrate REU (Research Experiences for Undergraduates) symposium. She co-authored a paper describing high resolution "CAT scans" of soils, and has received funding for two students to work on the CAT scan project. This summer, she will begin work on an Inter-institutional project entitled "A Watershed Research Consortium for Undergraduate Institutions."

John Elder (English) received a Guggenheim Fellowship which he will be using next year to write a book on sustainable forestry and the future of Vermont.

Miguel Fernández (Spanish) presented a paper entitled "Place in *Martin Fierro*: Through the Lens of Ecocriticism" in a session on "Ecocriticism in Theory and Practice" at the Latin American Studies Association Conference in San Juan, Puerto Rico, March 2006.

Jon Isham (Economics/ES) co-authored three papers with former Middlebury students including one entitled, "The Greening of Social Capital: An Examination of Land-Based Groups in Two Vermont Counties."

Nan Jenks-Jay (Env. Affairs/ES) contributed a "Viewpoints" section on sustainability to the recently published textbook, *Environment: The Science Behind the Stories*, by S. Brennan and J. Withgott (Pearson Benjamin Cummings, 2006).

Anne Knowles (Geography) has been on sabbatical in 2005–06, with support from an NEH Fellowship. She is writing a historical geography of the U.S. iron industry, 1800–68 and editing her fourth volume of essays on the use of GIS in historical research. In spring 2007 she will premier a new course on American landscapes.

Matt Landis (Biology) has recently published an article on the fire ecology of pitch pine in the *Journal of Ecology*.

Marc Lapin (ES) received a grant from Lake Champlain Basin Program for the Champlain Valley Clayplain Forest Project, to work with towns and watershed associations on education regarding conservation planning. He also completed a piece entitled, "Old-growth forests: a literature review of characteristics of Eastern North American forests," prepared for and published by Vermont Natural Resources Council.

Andi Lloyd (Biology) continued research with students in Alaska last year, focusing on how climate warming may (or may not) affect the distribution of black spruce at its northern limit in the Brooks Range. Recent publications include papers on climate change effects on treeline in Alaska and how climate and fire affect population dynamics of black spruce at its northern limit.

Pat Manley (Geology) took three Middlebury students to Antarctica to participate in SHALDRIL, a demonstration cruise to test a mobile drilling rig (aboard the *R/V Nathaniel B. Palmer*) on the Antarctic shelf. She and Tom Manley produced a new bathymetric map for Lake Champlain based on ten years of data collection from various vessels on Lake Champlain. Pat was inducted into the Vermont Academy of Science and Engineering this year.

Tom Moran (Chinese) will teach the FYS "The Culture of Nature in China" in Fall 2006. The course combines a survey of Chinese environmental history with a study of conceptions of "nature" found in Chinese literature. Tom spent the spring of 2006 in Beijing, where he

observed some of the effects on the environment of China's current economic boom.

Jeff Munroe (Geology) continued summer work with Middlebury students coring high-elevation lakes in northeastern Utah, aiming to reconstruct past climate changes. In Vermont he has continued to study the development of alpine soils on Mt. Mansfield, and has begun an investigation of the glacial geology in the Northeast Kingdom and a project with John Elder investigating the relationship between the chemistry and taste of maple syrup, and the underlying bedrock geology.

Pete Nelson (Geography) recently had a paper published in *Environment and Planning* which explores the ways migration serves to draw new sources of income into rural economies in the US. Last summer, he engaged in community case studies in rural Tennessee examining new destinations baby boomers appear to be targeting in their early retirement migration as part of an ongoing project supported by the USDA.

Peter Ryan (Geology) recently published results of an ongoing project on the chemical evolution of tropical soils with G. Burch Fisher '04 in the peer-reviewed journal *Clays and Clay Minerals*, and is embarking on a collaborative, Mellon grant-funded project with fellow ES affiliates Molly Costanza-Robinson, Patricia Manley and Sallie Sheldon to study environmental change in the Otter Creek Basin.

Amy Seidl (Research Scholar) is currently the Associate Director of LivingFuture, a non-profit organization dedicated to creating social and entrepreneurial conditions that perpetuate rather than deplete life systems. Amy has recently worked with Lea Davison '05, Ainsley Close '05, and Nathaniel Vandal '06, on independent projects ranging from the role of micro-hydro energy production in Vermont streams to methane bio-digestion on small dairy farms.

Rich Wolfson (Physics) recently testified before the Vermont Senate Natural Resources Committee, refuting an earlier presentation by global-warming skeptic John McClaughry of the Ethan Allen Institute.

ENVIRONMENTAL NEWS

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