The Rubenstein School of Environment and Natural Resources News

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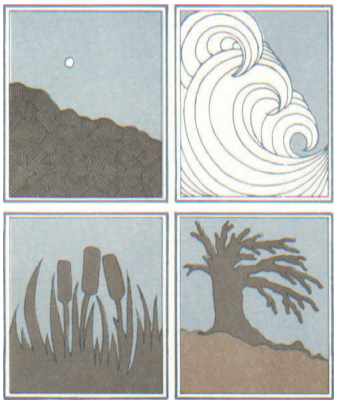

The Rubenstein School News, published monthly from October through May, is one of the school's primary vehicles for keeping students, faculty, and staff informed. We publish news and highlight coming events, student activities, and natural resources employment opportunities. Copies are available in the Aiken Center lobby and in the third floor mail room. **http://www.uvm.edu/rsenr**

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ISSUE HIGHLIGHTS:

RSENR and Gund Institute Leadership Attend National Conference on The New Green Economy

The human capital and expertise within the Rubenstein School of Environment and Natural Resources (RSENR) was apparent at this year's National Council on Science and the Environment (NCSE) annual conference. This year's conference on The New Green Economy explored how investment in green education, research, and jobs can help solve modern economic and environmental crises. Several UVM faculty and students, including RSENR Dean **Mary Watzin**, traveled to Washington, DC in late January to participate, present, teach, and learn. The Gund Institute for Ecological Economics and RSENR provided valuable Vermont insights to the conversations, developed exciting education and research plans, and demonstrated institutional capacity to lead the way in the emerging trend toward a greener economy built on the foundations of ecological economics.

Measuring environmental and economic performance is a key aspect of the new green economy. A session on this theme, co-organized by RSENR Professor and Gund Institute Managing Director **Jon Erickson**, brought together a cadre of experts from around the world to write recommendations for the reform of U.S. national and state accounts (including how to improve on the widely-accepted standard for measuring economies, the Gross Domestic Product or GDP).

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Panel Discussion at the NCSE Annual Conference. Far left: Moderator **Robert Costanza** *(Director, Gund Institute for Ecological Economics at the University of Vermont; Editor in Chief, Solutions Journal) Pictured from left to right:* **Van Jones**, *(author),* **Mindy Lubber** *(President, Ceres),* **Tim Jackson** *(Economics Commissioner, UK Sustainable Development Commission; Professor of Sustainable Development at the University of Surrey), and* **David Orr** *(Professor, Oberlin College)*

THE RUBENSTEIN SCHOOL IN ACTION

PUBLICATIONS, PRESENTATIONS AND AWARDS

Dr. Saleem H. Ali, Associate Professor of environmental planning was invited as the keynote speaker at a conference on ecological peace-building in the Middle East at Tel Aviv University. Dr. Ali's visit was also hosted by the U.S. embassy in Israel and the van Leer Center in Jerusalem. He was also taken on a tour of the Golan Heights -- a region that has been proposed as a potential area for using ecological peace-building approaches in resolving the conflict between Israel and Syria. During his time in Israel, Dr. Ali also visited the Arava Institute in the Negev desert where the Rubenstein School is planning to establish a jointly administered arid land ecology minor.

Dr. Ali's new book *Treasures of the Earth* was also chosen by Scientific American as a "notable book" in the January 2010 issue and he has been invited to a plenary lecture and book launch at the National Geographic Society headquarters in Washington DC.

The January issue of the Journal of Wildlife Management featured an article written by **Dr. Jed Murdoch** about corsac and red foxes in Mongolia on the cover. The article documented corsac and red fox survival and mortality and the effectiveness of a park ranger program at protecting both species from poaching. His results suggested ecological competition occurs strongly between species and that the ranger program was ineffective at protecting foxes. Hopefully as a cover story, his research in Mongolia will gain some momentum over the coming year.

Dr. William S. Keeton:
~Curzon, M.T. and W.S. Keeton. Spatial characteristics of canopy disturbances in riparian old-growth hemlock-northern hardwood forests, Adirondack Mountains, New York, USA. Canadian Journal of Forest Research 40.
~Stovall, J., W.S. Keeton, and C.E. Kraft. 2009. Late-successional riparian forest structure results in heterogeneous periphyton distributions in low-order streams. Canadian Journal of Forest Research 29: 2343-2354.
~Warren, D.R., C.E. Kraft, W.S. Keeton, J.S. Nunery, and G.E. Likens. 2009. Dynamics of wood recruitment in streams of the northeastern U.S. Forest Ecology and Management 258:804-813.
~Soloviy, I. and W.S. Keeton (eds.). 2009. Ecological Economics and Sustainable Forest Management: Developing a Trans-disciplinary Approach for the Carpathian Mountains. Ukrainian National Forestry University Press, Lviv, Ukraine. 416 pp.
~Keeton, W.S. and S.M. Crow. 2009. Sustainable forest management alternatives for the \Carpathian Mountain region: providing a broad array of ecosystem service. Pages 109-126 in: I. Soloviy and W.S. Keeton (eds.). Ecological Economics and Sustainable Forest Management: Developing a Trans-disciplinary Approach for the Carpathian Mountains. Ukrainian National Forestry University Press, Lviv, Ukraine.
~Kuemmerle, T., O. Chaskovskyy, J. Knorn, V.C. Radeloff, I. Kruhlov, W.S. Keeton, and P. Hostert. 2009. Forest cover change and illegal logging in the Ukrainian Carpathians in the transition period from 1988 to 2007. Remote Sensing of Environment 113:1194-1207.
~Ray, D.G., R.S. Seymour, N.S. Scott, and W.S. Keeton. 2009. Mitigating climate change with managed forests: balancing expectations, opportunity, and risk. Journal of Forestry 107(1): 50-51.

Dr. Robert Manning:
~Manning, R. 2009. The Tragedy of the Commons. Berkshire Encyclopedia of Sustainability (Volume 1). Great Barrington, MA: Berkshire Publishing Group LLC, pp. 395-396.
~Manning, R., S. Lawson, and W. Valliere. 2009. Multiple Manifestations of Crowding in Outdoor Recreation: A Study of the Relative Importance of Crowding-related Indicators Using Indifference Curves. /Leisure/Loisir/ 33(2): 637-658.

Dr. Christina Erickson:
~Erickson, C. & Eagan, D. (2009). Generation E: Students leading for a sustainable, clean energy future. NWF□s Campus Ecology Program, Reston: VA. http://www.nwf.org/GenE

NEWS OF NOTE

Bob Manning joined with former Rubenstein School doctoral student **Peter Newman** (now Associate Dean of the Warner College of Natural Resources at Colorado State University) and Karen Trevino, Director of the National Park Service's (NPS) Natural Sounds Program, to guest edit a special issue of *Park Science*, the NPS journal of science and resource management. This issue of the journal focuses on the emerging topic of "soundscapes" in parks and protected areas, and the associated program of research and management that has developed in the national parks. As human-caused noise has become more pervasive in society, and its potentially detrimental effects on parks and protected areas are beginning to be realized, soundscapes and "natural quiet" are being recognized as important resources that must be better understood and managed. Human-caused noise can impact wildlife and detract from the quality of the visitor experience. Peter, Bob, and Karen co-authored the introduction to the special issue (titled "From Landscapes to Soundscapes"), and Bob and Peter co-authored one of the papers included in the issue titled "A Program of Research to Support Management of Visitor-Caused Noise at Muir Woods National Monument." This paper outlines their work at Muir Woods over the last several years, including identification of acceptable standards for visitor-caused noise and the efficacy of management practices designed to reduce noise in parks. This research and management program has led to designation of a special "quiet zone" at the Cathedral Grove section of the park. The special issue also includes a paper by former Rubenstein School graduate students **Steve Lawson** (now Director of Public Lands Research and Management at Resource Systems Group, Inc.) and **Logan Park** (now Assistant Professor at Southern Illinois University) titled "Modeling and Managing Hikers' Exposure to Transportation Noise in Rocky Mountain National Park." Other papers included in this interdisciplinary issue of the journal addressed measurement and monitoring of sounds in parks and protected areas, managing aircraft noise at Grand Canyon National Park, effects of noise on wildlife, incorporating soundscapes in NPS planning, and a number of case studies from national parks across the country. This issue of *Park Science* is available electronically at http://www.nature.nps.gov/ParkScience/, and will be published in hard copy in February.

Muir Woods National Monument (California) is managed to reduce human-caused noise and allow visitors to appreciate the park's "natural quiet."

Focus on Graduate Research: Caitlin McDonough

Before she was a master's student in the Ecological Planning program, Caitlin McDonough was a Hut Naturalist. Working for the Appalachian Mountain Club (AMC) in New Hampshire, Caitlin hiked fresh food up to Greenleaf Hut and presented daily nature programs on the alpine habitat around Mt. Lafayette.

This summer Caitlin returned to the huts and the White Mountains to partner with the AMC on her master's project. She joined the research department's efforts to monitor the effects of climate change on alpine plants. Since 2005, Hut Naturalists and researchers have been tracking the reproductive phenology (the timing of budding, blooming, and fruiting) of alpine plants in plots with air and soil temperature probes.

Caitlin worked with the newest generation of Hut Naturalists and staff scientists, but her master's project focuses on volunteer-collected data. The AMC created Mountain Watch, a "citizen-scientist" program, to supplement their data by mobilizing hikers. Through this outreach and education program, hikers can volunteer to monitor the phenology of the alpine plants anywhere in the Whites, greatly expanding the scope of Caitlin's research. But how reliable is data collected by "citizen-scientists," who may easily confuse *Carex bigelowii* with *Scirpus caespitosus*?

The citizen-science data collection model asks people who may not be familiar with the alpine zone to identify plant species that they may never have seen before. Can the AMC amend the data collection model to improve the quality of volunteer datasheets? Now that she is out of the Whites and in the office for the winter, Caitlin is tackling these tough questions.

One of the surprises found in the volunteer dataset is what Caitlin is dubbing "Diapensia Bias." In the AMC, Diapensia is the celebrity of the alpine world. Hut naturalists often mention it in their programs, and pictures of it adorn the walls of the huts. Volunteers pass over lawns of Bigelow's sedge, and miniature thickets of alpine bilberry (two common, but lesser known alpine plants) to record observations of Diapensia. In more than a few cases, citizen-scientists have recorded multiple observations of Diapensia in locations where the species does not actually grow.

Caitlin's research continues to search for more trends in volunteer-collected data. She is excited by the challenge of integrating citizen-science with phenology data collected by researchers and trained naturalists. She is also considering launching a PR campaign for the unloved alpine bilberry.

Caitlin monitoring a patch of alpine bilberry on Franconia Ridge. Photo by Emily Stone.

Focus on Undergraduate Internship: Hilary Jane Archer

Hilary Jane Archer at the promo-table during August's "Your Food, Your Community Mixer Thursdays at the Intervale"

Summer Highlights: Interning with Burlington Permaculture

This summer I had the opportunity to work as an intern with the young and progressive ad-hoc organization, Burlington Permaculture. I joined the Burlington Permaculture team because it would give me a chance to experience, in an urban area, a lot of the ideology and science that lay at the core of my recently self-designed Natural Resources Integrated major, Urban Ecology. Specifically, it would allow me to be involved in active research, place-based/hands-on education, and field work that could provide me with the opportunity to weave together my ecological knowledge with aspects of urban landscape design/planning, while also teaching me about policy decisions and the way they affect the environment.

I had an incredible experience working both with Mark Krawczyck (RivenWoodCrafts.com), co-founder and brilliant mind behind Burlington Permaculture, as well as a fellow student & friend Naani Sheva. I was also constantly interacting with local experts, residents, students, small business owners, farmers, designers, builders, and newspapers. My responsibilities were extremely diverse, thus making my learning experience that much more interesting and rewarding. My time consisted mainly of actively organizing and promoting our summer workshop series, which included nearly two dozen events geared towards bringing together people around fun activities that also refine skills and increase self-sufficiency. Other responsibilities included growing our email list, networking, organization, publicity/press relations, website maintenance and development, e-mail management, helping to line up instructors and venues for workshops, designing promotional material, and of course attending as many events as possible. In addition, I organized and promoted the first workshop of the season on my own, designed a handout on Shade Gardening with Multifunctional Plants and taught a section of a workshop on the same theme. Lastly, as I continue with the internship into my final year at UVM, I am working with Lisa Coven of Burlington Parks & Recreation to incorporate more gardening, art, and education at the South Champlain Park. Our idea is to establish an edible landscape that is welcoming, beautiful, and educational about general maintenance needs and environmental benefits of such urban spaces.

I have learned about everything from urban agriculture, local resource assessment, and organizing community educational offerings, to increasing biodiversity in urban spaces and social networking. Professionally, I acquired skills in communications and leadership, as well as more hands-on experience with ecological concepts and sustainable livelihoods. Academically, I developed my understanding of environmental policy procedures by beginning to work with Burlington Parks and Recreation. But more than ever—and this was at the heart of my work—I was actively learning about and participating in the design, science, and vision that stretch beyond sustainability to arrive at what is known as permaculture. I still have much to learn, which is why I plan to continue with the internship.

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RSENR Spring Seminar Series: "Solutions" for the Global Climate Crisis

Climatologist James Hansen and colleagues have recently suggested that we must rapidly stabilize atmospheric carbon dioxide, then bring its concentration back down to 350 parts per million. On October 24, 2009, millions of people in 181 countries around the world gathered to put world leaders on notice that it's time to commit to the 350 ppm target. In this seminar series, speakers will discuss how "Getting to 350" must entail building reinvigorated economic and political systems that improve well-being for the world's poorest and assure the most basic freedoms for all.

Michael Woolcock

In the first talk of the series, **Jonathan Isham**, the Guest Editor of the 'Getting to 350' special edition of Solutions magazine, underlined the urgency of the need to get to 350 and set the stage for how to think about building solutions in this new decade. In the second talk, **Michael Woolcock**, Senior Social Scientist at the World Bank, reviewed the meaning of 'solutions' in this age of climate crisis.

Bring your lunch and join us this semester for The Rubenstein School Spring Seminar Series on
Tuesdays, 11:30 a.m.-12:45 p.m.
Aiken 104.

Jonathan Isham

Upcoming guest speakers include:

February 9, 2010 – **Rich Wolfson,** "Understanding 350"
The number 350 has become a rallying cry for climate activists. Most know that 350 refers a proposed maximum safe concentration of carbon dioxide in Earth's atmosphere, measured in parts per million. But why 350? Where does this number come from? What scientific evidence supports it? Is there consensus that 350 is the right level? And if it is, how do we get there? This talk focuses on the science behind 350, summarizing the reasoning that led Jim Hansen and colleagues to propose a 350-ppm limit and Bill McKibben to declare that 350 "may now be the most important number on Earth."

February 16, 2010 – **The Organizers of 350.org**
February 23, 2010 – **Kristen Shearan**
March 2, 2010 – **Randy Kritkausky**
March 16, 2010 – **Alan Betts**

Please visit the website for more information about the topics and speakers for this semester, and a link to view video of the talks:
http://www.uvm.edu/rsenr/?q=spring-seminar-series

RSENR's Carbon and Communities Research Group

By Elise Schadler

The maple tree outside of my window, upon which I am currently gazing, is comprised of about 40% carbon and will store about 1 ton of the element in its lifetime. I look at it and know that its carbon services contribute to the estimated 700 million tons of carbon stored annually and the 22.8 million tons of carbon sequestered annually by the roughly 3.8 billion urban trees in the United States. Of course, if this maple was part of a forest, I know that these numbers would be different and I would be able to give stored soil carbon estimates as well.

Like me, the other members of the Forest Carbon and Communities Research Group look at street trees and forest trees and can see numerous ecological and social values. And we increasingly see carbon: carbon figures, carbon and climate change, carbon accounting, and carbon policy. Like me, they know the integral role of these miraculous nature machines in climate change and their potential role in emerging domestic carbon markets. However, like me, they also know that there are major challenges and barriers to small-scale, community, and urban forests' participation in these markets.

Amanda Egan, Prof. Cecilia Danks, Elise Schadler, Ken Brown, Rachael Beddoe, and Jennifer Wright, members of the Carbon and Communities Research Group, calculate their diameter after spending a day at Little Hogback Community Forest assessing above-ground carbon storage.

The overall objective of the Forest Carbon and Communities Research Group is to identify how markets, policies, and practices related to climate change affect small-scale and community-based forest initiatives. Further, the group seeks to develop inclusive and equitable models and other products to engage communities and family forests in advancing their socioecological goals and addressing climate change. The members are currently involved in three specific projects and the members are: UVM professor **Dr. Cecilia Danks**, UVM graduate students **Rachael Beddoe**, **Ken Brown**, **Amanda Egan**, **Elise Schadler**, and **Jennifer Wright,** UVM undergraduate student **Meghan Thompson**, and research staff **Sarah Crow**.

Through the Family Forests and Small Scale Forestry study, opportunities and obstacles to market entry for these entities have been identified and models for participation in carbon markets have and will continue to be developed. Members of the Forest Carbon and Communities Research Group have been involved in this study since 2008 and completed products include an extensive literature review and two case studies. Currently, the team is working on a project involving degraded forest lands in Victory, VT and a state study of California.

Continued next page...

Carbon and Communities continued...

The Urban and Community Forestry Models study aims to better understand the connections between urban and community (often nonprofit-run) tree planting programs and potential carbon offset funding. Through widespread outreach this past fall, the group has identified several study subjects nationwide and is in the process of developing informative case studies.

Finally, the Community-Based Wood Biomass study has been developed through partnerships with UVM Extension, Vermont Family Forests, and the Northern Forest Alliance. By exploring and documenting the impacts of two models for community-based forest biomass projects in Washington and Addison counties, the group hopes to improve understanding and effectiveness of renewable local wood biomass production and conservation.

Last semester, the Research Group met each Tuesday afternoon for a 1-credit seminar focused on developing domestic and international climate policy and issues surrounding forest carbon. The weekly meetings also allowed us to share individual findings and to discuss the implications of climate policy in the weeks coming up to the United Nations Climate Change Conference in Copenhagen. To gain hands-on carbon assessment experience, we all headed to the Little Hogback Community Forest in Marlboro to measure aboveground biomass and ultimately estimate carbon storage in the forest. Also, throughout the semester, team members developed a working website, available at www.uvm.edu/forestcarbon/, to communicate our objectives and products to the general public.

I look at the maple tree outside of my window and am excited to be involved in research that could provide answers for how its complex services can be designated value to benefit my community and the environment.

If you are interested in becoming part of the Forest Carbon and Communities Research Team please email Elise.Schadler@uvm.edu; your involvement is welcome!

GREEN FLASH

Find Local Foods Year-Round

The Local Growers Guide at www.vermontgrowersguide.com/ is a searchable website of local foods in Vermont. Users may search the guide by town, product, farm name, and sales outlet to find turkeys, roots crops, desserts, and other products for holiday and everyday meals.

Listings include farms in Chittenden and Washington counties with a plan to expand to Addison, Franklin, Grand Isle, and Rutland counties. The guide plays an important role in connecting consumers to what is produced in their area. Viewing the producers on a map helps create the mental link that farmers are neighbors and that there is a wealth of local food available. For example, residents of Chittenden County may be surprised to see that there are at least four turkey farms within the county!

The Local Growers Guide is a joint project of the UVM Center for Rural Studies and the Winooski Natural Resources Conservation District. It aims to raise awareness about local food sources, link customers to local products, and support local farms.

Professor John Todd Honored by Smithsonian

Dr. Todd's clear-eyed vision of a world made better through environmental design has again earned him national honor and recognition, this time by the Smithsonian Cooper-Hewitt National Design Museum. This institution has selected Dr. Todd's Eco-Machine at the Omega Institute for its landmark "National Design Triennial: Why Design Now?" exhibition opening May 14 and running through January 9, 2011.

This exhibition will explore the work of designers "addressing human and environmental problems across many fields" (from the press materials), and will encompass design from around the globe.

By selecting Dr. Todd's work, the Smithsonian includes him among the "most innovative, forward-thinking" designers at the "center of contemporary culture" from the last three years. Dr. Todd's Eco-Machine at the Omega Center for Sustainable Living is located in Rhinebeck, New York. Dr. Todd worked on this project through his firm, John Todd Ecological Design, with Brad Clark, Laura Lesniewski, and Steve McDowell, BNIM.

Links to the press release can be found here: http://cooperhewitt.org/PRESS/press_kits.asp

Hilary Jane Archer continued...

My understanding of the principles, practices, and possibilities of permaculture has dramatically evolved over the course of my experience with this internship. I can appreciate the purpose and place that permaculture has in modern society as being far more than just a radical, idealistic concept. It— like ecosystem management, systems thinking, eco-machines, environmental planning, and conservation science—has a necessary place in our evolving culture and is just another important technology that we can (and must use) as a way to change dominant paradigms and fit in with nature.

Advice to prospective interns: The time is *now* to cultivate your strengths and put them to creative use.

If you are interested in joining our team, have a desire to attend upcoming workshops, or want to be added to our email list, please send an email to **burlingtonpermaculture@gmail.com**, or refer to our website **http://burlingtonpermaculture.googlepages.com**

What is Burlington Permaculture? As stated on our website, Burlington Permaculture "unites neighbors to promote urban agriculture and reforestation, enhance neighborhoods, and strengthen the web of community resources as we look beyond sustainability towards a healthy relationship with our landscape. Our vision is of a vibrant, productive Burlington in which community development promotes human interaction, food producing residential gardens and streetscapes supplant suburban lawns, and the abundance of social, educational, economic, and ecological services our community produces helps to regenerate other degraded landscapes."

Garden Bike Tour

What is permaculture? The term permaculture (the clever contraction of the two words "permanent" and "agriculture") was coined in Australia during the 1970's. As a discipline, permaculture is an inexact art—a design science—that offers a fundamental and holistic reframing of how humans can work with natural environments to reach socially and environmentally desirable conditions. Therefore, permaculture is about the development of sustainable communities, where the consequences of our lifestyles are not destructive, but rather rooted in allowing the endurance of healthy future human communities and ecosystems combined.

CONGRATULATIONS

on a great semester to **our entire community of hard working, dedicated students** who are striving to make the world a better place through practicing the leadership, service, and experience they need to become environmental professionals.

HAVE A GREAT SPRING SEMESTER!

Congratulations to the following students who made the **Fall 2009 Dean's List!**

Todd Alleger
Ian Altendorfer
Autumn Amici
Hillary Archer
Meghan Arpino
Suzanne Ball
Erica Bareuther
Isabel Beavers
Evelyn Boardman
Katharine Bolton
Ellen Bortner
John Boucher
Noelle Bramer
Trevor Brown
Madeline Brumberg
Olivia Bulger
Audrey Burns
John Butler
Anna Carragee
Aaron Caum
Stephanie Cesario
Brooke Churas
Nathan Clark
Tyler Cohen
Nicholas Costello
Benjamin Danowitz
Hannah Davie
Kayla DeCarr
Alexandra DeCuollo
Katelyn Deppen
Stephanie DiBetitto
Sarah Donelson
Nicholas Dove
Stephanie Drozd
Eliese Dykstra
Katharine Ebel
Paul Eberts
Claire Erhart
Kaitlyn Farrar
Elisabeth Fenn
Alyssa Frediani
Sasha Freeman
Kaitlin Friedman
Erik Gilbert
Ryan Glew
Aviva Gottesman
Michael Grubert
Sarah Gruver
Dana Gulley
Tyler Hall
Kelly Halloran
Kathleen Hartin
Kelsey Head
Kathryn Helterline
Marian Herbick
Kathryn Holmberg
Avery Hurst
Diego Irizarry
Matthew Judd
Patrick Kemple
Martha Klepack
Eleanor Krause
Zachary Lance
Robert Lawless
Maija Lawrence
Justin LeClaire
Kaitlin Lee
Spencer Lee
Daniel Levy
Evan Limberger
Natasha Loeffler
Kindle Loomis
Kaitlin Lucas
Ian Lynch
Jessica MacQueen
Alexandra Marcucci
Alisa McGowan
Caylin McKee
Ana McMonigle
Elizabeth Mitchell
Kaitlyn Moulton
Teddy Norman
Whitney O'Brien
Amy Pennock
Jason Plotkin
Duncan Pogue
Julian Post
Hannah Prescott
Allison Rapp
Molly Reddington
Audrey Reid
John Ringer II
Dewitt Rogers
Samantha Rothberg
Andrew Rothstein
Christian Ruf
Elena Schneible
Samantha Seals
William Seegers
Caitlin Shea
Lee Simard
Joseph Snowdon Jr.
Elijah Sobel
Gregory Soll
Jillian Spies
Isabella Stachowski
Caitlan Stephens
Walter Stevens IV
Cole Talbot
Cayla Tepper
Julia VanderWoude
Melissa Wheeler
Katharine White
Arthur Zahor
Rebecca Zeyzus
Zachary Zimmerman

National Conference on The New Green Economy continued from p. 1...

The breakout session group brought their thinking to bear on critical questions regarding how to incorporate environmental, human, and social elements within new green accounting systems. The group, which included senior staff from the U.S. Bureau of Economic Analysis (the government agency responsible for publishing GDP and other national economic statistics), outlined a strategy for developing new government accounting systems that integrate ecological realities with indicators of sustainability and economic progress.

The emerging green economy also involves improved accounting for how we impact (and depend on) natural capital, especially with regard to the ecosystem goods and services critical to our survival and well-being. Gund Institute post-doc **Ken Bagstad**, along with **Roel Boumans**, presented their work on two complimentary ecosystem service modeling systems. Ken presented the latest version of the Artificial Intelligence for Ecosystem Services (ARIES) project, a web-based platform to map and model spatial dynamics of ecosystem services. Roel demonstrated his work on the Multiscale Integrated Model of Ecosystem Services (MIMES) project, a dynamic systems model designed to better integrate the human and natural sectors of the economy. The workshop on ARIES and MIMES made clear how these projects are improving the measurement, mapping, and valuation of ecosystem services, a critical component of a more sound and sustainable economy.

On the final day of organized activities, RSENR Professor **Alan McIntosh** attended the meeting of the Council of Environmental Deans and Directors (CEDD) and spoke about an effort he is leading through CEDD to develop a nationally coordinated masters degree in Climate Science and Solutions. A group of faculty from campuses including Tufts, Colorado State, Florida Atlantic, Boston University, Bard, and several others have been working to develop a framework for a graduate degree designed to prepare traditional students and returning professionals to work in the rapidly expanding job market associated with the mitigation of and adaptation to global climate change. In addition to presenting on the topic, Professor McIntosh led a discussion group to gather further input from the CEDD membership. He and others aim to develop a final framework by the summer CEDD meeting in July 2010. After also participating in the CEDD meeting, Dean Watzin noted that while "the Rubenstein School is at the forefront of environmental research and education, there are many exciting opportunities and directions in which we can continue to grow."

RSENR and the Gund Institute played key roles at The New Green Economy conference in several other ways as well, including a plenary session with Professor **Robert Costanza** among the discussants, a workshop where Professor Jon Erickson presented on economics education reform, a session on the economics of information organized by **Ida Kubiszewski** and **Carol Franco**, and a launch of The Solutions Journal.

By Stephen Posner and Ken Bagstad

HELP WANTED

The following is a sampling of positions listed at The Rubenstein School. Job postings are updated daily on the Job Board outside the Dean's office in the Aiken Center and weekly on the web at:
http://www.uvm.edu/envnr/employment/Featured postings/Featured VT Opportunities.htm
For further information contact: Marie Vea-Fagnant, Career Services Coordinator, 656-3003, email: marie.vea-fagnant@uvm.edu

INTERNSHIPS

Food Systems Research Internship; Mapping Project Intern - The Intervale Center
More information on the Intervale Center can be found at www.intervale.org.
Food Systems Research Internship: Food Systems interns work closely with ADS staff and are expected to produce high quality and original work that furthers the local foods conversation in the state. Interns may develop and implement supply and demand surveys, conduct and synthesize original research into crops, value-added products, marketing strategies, land access issues or other topics and/or tackle a range of administrative tasks.
Mapping Project Intern An intern is needed to assist with an agricultural lands mapping project for Chittenden County. Intern must have strong communication skills and a willingness to work independently on a complex project. A familiarity with and access to GIS or other mapping software a plus. Graduate students are encouraged to apply. This internship posting, as well as internship guidelines and application procedure can be found at
http://www.intervale.org/get_involved/volunteers.shtml#Internships.

Mountain Birdwatch technicians needed
FIELD TECHNICIANS (11) needed for a monitoring program of high-elevation songbirds in the Northeastern U.S. from 26 May 2010 to 21 July 2010. Learn more about Mountain Birdwatch here: http://www.vtecostudies.org/MBW/. Application deadline is 15 Feb 2010. To apply, email letter of interest, resumé, and contact information for three references to Judith Scarl (jscarl AT vtecostudies.org) AND mail a hard copy of these documents to Judith Scarl, Mountain Birdwatch Program Manager, Vermont Center for Ecostudies, PO Box 420, Norwich, VT 05055.

PROFESSIONAL

Communications and Philanthropy Manager
The Nature Conservancy, Vermont Chapter
The Vermont Chapter of The Nature Conservancy seeks a versatile communications professional to tell the stories of our work - on the web, in the Oak Log newsletter, in donor letters and foundation proposals. Duties include writing, editing, managing contractors and printers, juggling multiple deadlines and working within a budget. Qualified candidates will have a bachelor's or master's degree in marketing or communications, 3-5 years experience, and proven communications skills. APPLICATION DEADLINE: January, 15, 2009. Interviews begin immediately. Applications not accepted after deadline. For detailed job description and to apply, visit www.nature.org/careers.

Bird Jobs at Hubbard Brook, NH
Seasonal Avian Ecologists (12) needed for long-term ecological study of forest bird populations at Hubbard Brook Experimental Forest in the White Mountains of New Hampshire. Current NSF-funded research focuses on the effects of climatic variation on bird distribution and abundance along an elevational gradient. Two position types are available. Individuals applying for a BIRD SURVEY position (4) must be able to identify New England forest birds by sight and sound; previous survey experience is preferred. Individuals applying for a WARBLER DEMOGRAPHY position (8) should have prior experience in finding and monitoring passerine nests; applicants with experience banding and taking blood samples from small passerines are especially needed. Both positions involve insect and small mammal surveys and measuring vegetation, and require people with good color vision, able to hike and work alone in remote, rugged, and steep terrain, and with an interest in avian behavioral and population ecology. Field work starts in early to mid May and lasts 10-12 weeks. Lakeside housing provided plus a stipend of $350 - $400 per week, depending on experience. To apply, visit the job web page:
http://nationalzoo.si.edu/ConservationAndScience/MigratoryBirds/About_Us/hb_field_assistant.cfm
Applicants without internet access can mail materials to Dr. Scott Sillett, Smithsonian Migratory Bird Center, National Zoological Park, PO Box 37012 MRC 5503, Washington, DC 20013-7012. Web applications are preferred.

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