

Master of Environmental Studies Program



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“The human race is challenged more than ever before to demonstrate our mastery - not over nature but of ourselves”

- Rachel Carson

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MESsages

Letter from the Director

I recently had the opportunity to attend three conferences on the East Coast. One of the joys of academic work is getting away from your home institution and ways of seeing the world. Traveling from our beloved Evergreen State College on the edge of the Olympic Peninsula to Washington, DC to attend the National Council for Science and Environment meetings, to Yale University in Connecticut to attend an environmental history meeting, and to Manhattan for the Association of American Geographers annual meeting is a reality check. Not only are the physical distances great, the distance between my perception of working to make the world more environmentally just is remote compared to what many environmental professionals are working towards. Attending these meetings has forced me to reconsider what our MES program is about and how we are aligned with other academic and professional organizations that identify as ‘green’ or ‘environmental.’

The NCSE meeting was subtitled “Environment and Security.” MES Assistant Director Gail Wootan also attended this meeting and we were looking forward to hearing more about

what we assumed would be just food systems and equal access to clean water. We were hoping to bring home ideas for curriculum and internships for the MES program and its students. We were, to use a word that hardly characterizes our thoughts, surprised to find plenary sessions and working sessions focused on the military security of industrial food producers, neo-Malthusian population predictions, and research funded by known arms and weaponry companies. The misuse of old data, avoidance of contemporary scientific thinking that focuses on protecting users of ecosystems and species, and assumptions about how to control specific human populations who are defined as a liability in the coming world resources food and energy fight was a traumatic experience.

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Martha Henderson

Martha and Gail’s Excellent Adventure

By Gail Wootan, MES Assistant Director

I’m sitting on an undulating magic carpet of ice chunks, which extends into oblivion, silence piercing the air. Ignoring my frozen fingers, I slowly lift up my paddle and slice through the white fabric, leaving a ribbon of midnight blue water in my wake and filling the silence with the satisfying crunch of plastic on sea ice. As I near the shoreline, I see penguins jumping like dolphins a few meters ahead of me, so I draw closer and watch them gracefully swim under my kayak through the clear, almost tropical-looking, water. The squawk of penguins

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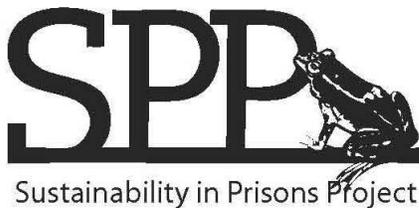
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Student Involvement in the Sustainable Prisons Project

By Brittany Galagher, MES 1st Year

The Sustainable Prisons Project (SPP) Interview with Brittany Gallagher



What is the primary objective of the Sustainable Prisons Project?

SPP “brings science into prisons.” We aim to reduce the economic, environmental, and social costs of prisons by inspiring and educating prison inmates and staff about conservation and sustainability.

As a graduate student, what is your role in achieving the objectives of SPP?

SPP employs graduate research associates to work on various projects in partnership with the prison(s) and community partners. Each one of us is “in charge” of a conservation or education project.

What projects are MESers currently working on?

I coordinate a sustainability lecture series at two prisons, which involves recruiting scientists and others who work on all matter of environmental topics to share their knowledge and experience with prison inmates. Dennis Aubrey is working at Mission Creek Corrections Center for Women on the captive rearing of the endangered Taylor’s checkerspot butterfly. Andrea Martin works with inmates at Cedar Creek Corrections Center raising endangered Oregon spotted frogs. Evan Hayduk and Carl Elliot, also MESers, work with inmates at Stafford Creek Corrections Center, where they are growing six types of endangered prairie plants.

What excites or inspires you most about working with SPP?

I’m happy to be a part of an organization that serves and empowers people who have been largely forgotten or given up on by the rest of society.

How does your work relate to MES? Or, how has MES helped you with your work?

SPP was one of the things that drew me to Evergreen, because it combined environmental education and social justice. It lets us apply what we’re learning in MES courses to the real world.

What are the hopeful impacts of SPP?

We hope to show that working with SPP helps inmates find something positive to do with their time, both while they’re in prison and after their release. We will be doing a study this year on recidivism rates to see if people who participate in our programs are less likely to re-offend after they are released from prison. Through publicity of our projects, we’d like the general public to see that conservation leadership can arise from unlikely places.

SPP also wants to inspire positive change toward sustainability in the way prisons operate (by reducing energy use and waste, for example). Finally, our conservation programs are making a big impact on the restoration of their target endangered species.

For more information about SSP, please visit <http://blogs.evergreen.edu/sustainableprisons/>



Dennis Aubrey, an MES Student, releasing Oregon Spotted Frogs

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Letter from the Director (continued from page 1)

Two weeks later I found myself in an academic meeting with the best environmental history and historical economists on the East Coast. Proudly, the invited speaker was Richard White from Stanford University, a great supporter of Evergreen and the MES program for years. Professor White talked about the American West and the role of the 1860s railroad building process that was instrumental in making western resources accessible to eastern businessmen. In fact, the railroad companies operated in a deficit and were able to survive because of American bankruptcy processes that protect corporations rather than labor or resources. The rest of the talks were about essentially the same level of coercion, collaboration and collusion in Roman and Chinese dynasties. I once again heard a belief in Malthusian population dynamics, the need to protect resources for exploitation by specific class, race and gender groups, and predictions of what could happen given the historic models of political control that mediates humans and the environment. I began to wonder how our MES program fits into this dismal arrangement.

My last stop on the conference tour was the Association of American Geographers meeting. I have been a member of the AAG since 1974; have served as a chair on one of its committees; and have given papers at its meetings since my grad school days. The AAG, like many social science organizations, has had to face some difficulties with regard to human rights and research agendas that have not protected human subjects, cultural identities or access to resources. As a member of the AAG Focus Group on human rights, I attended a working session led by the American Association for the Advancement of Science with Jessica Wyndham, Associate Director of the Scientific Responsibility, Human Rights, and Law Program. The AAAS has long worked to support the United Nations Universal Declaration of Human Rights. On April 16, 2010, the AAAS Board of Directors adopted the following statement: "On the human right to the benefits of scientific progress."

I found the AAG focus group members to share my concern for the misuse of science. Our expressed concerns addressed the rights of all humans to have access to the best scientific data and means of analysis. We underscored the need for vigilance in using the Human Subjects Review process. Finally, we asked that environmental justice be placed in funding reviews by the National Science Foundation. I requested that human rights be extended to all species and that NSF and other government agencies promote the usage of "Earth" rather than the common practice of "the earth."

The last plenary session at the AAG included talks by the *New York Times* editorial writer Nicholas Kristof, Secretary General Salil Shetty of Amnesty International, and Ivan Simonovic, Assistant Secretary-General for Human Rights, Office of the UN High Commissioner for Human Rights. These talks were sobering yet encouraging. Kristof encouraged us to see the world through the eyes and experiences of individuals if we expect to make change. Shetty applauded the capacity of geographic technology like GIS and GPS to help expose forced migrations, identify mass graves, and calculate the loss of agricultural capacity due to scorch and burn practices. While these technologies help to bring about the recognition of unjust conditions, Simonovic warned that the increasing capacity for surveillance and monitoring of specific populations reduces human rights and freedoms. All three of the speakers voiced a concern for social and environmental justice.

So what does this all mean for MES way back on the Olympic Peninsula in our own bubble of food systems studies, species and habitat protection, and discovering sustainable energy and resource use? Does the program do enough to distinguish the contingent relationships between natural and social sciences in the pursuit of environmental justice? Are students able to experience learning that leads them to do excellent science, examine political contexts and create new knowledge? First, MES is offering an alternative to what the majority of environmental studies programs and employers are doing. Second, our strong research program for class papers and thesis projects holds true to the absolute need to use the Human Subjects Review process. Third, our capacity to integrate internships and work with local non-governmental organizations is creating a pathway for social and environmental justice. Even our ecosystem internships with agencies such as US Fish and Wildlife or Washington Department of Transportation are ultimately about environmental justice for all species and groups of humans.

I am proud to say that MES offers an alternative to historic and contemporary conditions that bring about injustices. While I do not advocate a nominal change of our program as we are well known as the Master of Environmental Studies, I do subscribe to the unwritten subtext that our curriculum and student work supports the struggle for peace and justice. This entire experience makes me even more dedicated to our curriculum and opportunity to transform human relationships with Earth.

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Modeling Ecological Processes with VISTAS

By: Evan Hayduk, MES 2nd Year

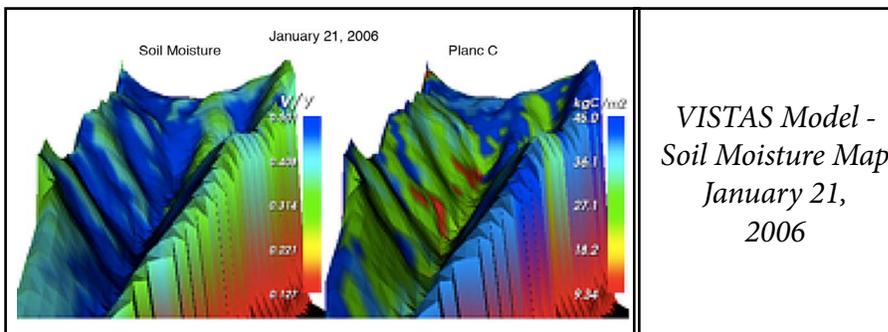
The VISualizing Terrestrial Aquatics Systems (VISTAS) project is an NSF funded collaboration among faculty and graduate students at The Evergreen State College, Oregon State University (OSU), and the H.J. Andrews Experimental Forest (HJA). The goal of VISTAS is to develop visual analytics to help scientists understand relationships among ecological processes at the same and different scales, develop new testable hypotheses, and



*2nd Year MES Student
Jerilyn Walley*

explain research results. VISTAS' scope is interdisciplinary in nature, combining computer science research and development, a broad range of ecological research domains, and social science inquiry to develop and evaluate software and visualizations for ecologists to utilize in their work.

The VISTAS project currently supports three graduate students, two here at Evergreen and one at OSU. Kirsten Winters, a PhD student at OSU, works with Denise



*VISTAS Model -
Soil Moisture Map
January 21,
2006*

Lach, heading up the social science component of the VISTAS' project. Kirsten is currently interviewing our domain scientists, programmers and computer scientists in order to provide input to the development of the VISTAS software. Jerilyn Walley, a second year MES student, is completing her thesis work with Christoph Thomas, a professor in biometricology at OSU. Their project, VALCEX (VALley Circulation EXperiment), involves developing a wind profile for a valley in the HJA using two sophisticated SODAR (Sonic Detection and Ranging) systems. I am also a second year MES student, and I work with Barbara Bond, former Lead PI of the HJA, and Scott Allen, a master's student in ecohydrology at OSU, developing visualizations of ecologic and hydrologic phenomena in Watershed 1 and creating an accurate measure of canopy cover by comparing Leaf Area Index (LAI) with LiDAR (Light Detection and Ranging)

measurements. The new measure of canopy cover would be used for modeling precipitation interception.

Along with our thesis work, Jerilyn, Kirsten and I are currently surveying six months of articles from leading research journals to assess what visualizations are currently being used by ecologists. This involves creating a visualization database, where we store our survey of the nine journals, roughly 1,300 articles and over 32,000 visualizations!

Working with the VISTAS project has provided Jerilyn and me with an amazing opportunity to perform and be a part of cutting edge research. The collaboration with OSU and the HJA has provided us resources and expertise that have enriched our MES theses. Currently in its first year, the VISTAS project is moving forward, and the next two years are sure to bring more excitement and further results.



VALCEX Team - Jerilyn Walley and Evan Hayduk on left

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Alumni Corner

Natalie Pyrooz, MES 2009

After graduating from the MES program in 2009, focusing on sustainability, conservation, and botany/ethnobotany, Natalie Pyrooz took an eight-month journey through much of South America, volunteering with several NGOs and private reserves. Afterwards, she wanted to lend her expertise in a more substantial manner to these countries that host fascinating biodiversity but lack many financial or academic resources. She volunteered for the Reserva Biologica Cerro Seco (RBCS), in the coastal dry tropical forest of Ecuador, near Bahía de Caráquez. This area has had very little ecological study but boasts a 25% endemism rate, and Natalie was inspired to return to do a botanical inventory and develop a field guide to the plant species of the area.

Self-funded by a combination of extreme frugality and seasonal field jobs, in May 2010 Pyrooz returned to the reserve and embarked upon the study. The project involved collecting

samples of fertile and infertile plant specimens, and working either alone or leading groups of volunteers and tourists to do this. Because there is no taxonomic key to the area, and there are over 18,000 documented plant species in Ecuador she volunteered in the National Herbarium in the capitol city of Quito to ID the plants to species when possible, as well as educate herself on herbarium management in a developing country. During her time at RBCS, Natalie also educated school groups and locals about plant and forest ecology, and helped with restoration efforts.

Pyrooz was fortunate to have a few exciting discoveries: she found a plant species new to science, which she hopes to describe and publish; there are also at least two species collected which are Critically Endangered.

Pyrooz says the MES program cemented her abilities to coordinate groups, manage large amounts of data, and plan an intensive study of this



Natalie Pyrooz, MES 2009

magnitude. It also helped in enhancing her perspective on how policy influences environmental management and she provided valuable input to the decision-making process at RBCS as they develop sustainable eco-tourism.

Natalie hopes to return next year to continue the study. She believes her current findings will help to solicit future funding and partnership opportunities. If anyone is interested in learning more about her work, please contact her at natalie.pyrooz@gmail.com.

Eva Otto, MES 2003

Eva Otto is a graduate of the MES program where she focused her study on International Trade and the Environment. Eva's research explored the historical connection between our political economy and the degradation of the Earth's biosphere. Eva's thesis made recommendations for reforming the global economy towards sustainable development, and ultimately restructuring the political economy towards restorative development.

After completing her MES coursework in 2003, Eva moved to Seattle and co-founded Infiniti Real Estate & Development where she is a LEED



Eva Otto, MES 2003

Accredited Professional and an

Ecobroker specializing in marketing, selling, and educating the public about green homes, Eva is an industry expert

in green building, real estate and also works internationally in Costa Rica where she is developing an eco-community in Playa Esteriollos.

Eva is grateful to Evergreen and the MES program because during her graduate study she was able to intern for the Washington State Office of Trade and Economic Development for a full year in 2001, and afterwards intern with the United Nations for 6 months preparing a policy agenda for the World Summit on Sustainable Development. Later in 2002 Eva spent 6 months in Brazil researching and participating in the World Social Forum. "MES gave me the framework

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Alumni Corner (continued from page 5)

to carry out some of my life's most important research, and allowed me freedom to create my educational experience. These accomplishments through the MES program gave me the confidence to forge my own path as an eco-entrepreneur and go out and create the change I wanted to see in the marketplace."

Currently, Eva is selling Washington State's first Zero Net Energy multifamily development in Issaquah (www.z-home.org). Eva also finds time to give back to her community, and is on the board of directors for EcoAudit USA, the Seattle Institute for Oriental Medicine, and the Sustainability Committee for the Seattle Chamber of Commerce. She is a member of the Global Interdependence Center where she travels internationally to participate in discussions on economic interdependence between nation states. You can visit Eva's website at www.infinitiRED.com

Rachel Carson Forum, 2012

By: Aaron Zimmer, MES 1st Year



In recognition of the 50th anniversary of Carson's first publication of *Silent Spring* and in coordination with the Willie Unsoeld Seminar (which this year on May 3 is presenting Kaiulani Lee in her play *A Sense Of Wonder*, about key moments in Caron's life), the student-run Master of Environmental Studies Association (MESA) is presenting the Rachel Carson Forum. This year, a panel of policy makers, activists, biological scientists, and research scientists will be speaking on "The Social, Ecological, Economical, and Political Implications of 'Correct' Pesticide Use in Our Society Today" in our gorgeous 400-capacity Salish Longhouse, Tuesday, May 1 at 6:00pm.

Big Changes to MES Financial Aid Awards

By: Gail Wootan, MES Asst. Director



MES students can now apply for scholarships, fellowships, and tuition waivers for 2012-2013. Students should pay close attention to award descriptions, as several have changed since the 2011-2012 award application. New this year are awards specifically for incoming students, based on their admissions applications, so they will receive an award at the same time they are admitted. For all students, we've changed the ever-popular AmeriCorps Service Award to be available for ALL AmeriCorps alumni no matter the length of service – all that is required is proof of service. In addition, awards are broken up for new students and continuing students. All students will continue to be eligible for need-based waivers, as long as they filled out a FAFSA by

March 1. Applications are due Wednesday, April 11 at 5pm PST.
Apply online at <http://www.evergreen.edu/mes/awards.htm>.

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Antarctica (continued from page 1)

from the shore, a sound that reminds me of the harshness of a crow's call, but belongs to feces-stained birds that stumble on land like human toddlers yet swim like underwater missiles, breaks my reverie. I think, for the five-billionth time that day, "Holy crap, I'm kayaking in Antarctica!"



Orne Harbor, Antarctica. Photo by Gail Wootan

In November 2011, the MES Director, Martha Henderson and I jumped on a plane to experience summer on the other side of the world and to snag my sixth and seventh continents. The idea of going to Antarctica was sparked by a college friend of mine. It had been a lifelong dream of Kate's to hit all seven continents and it took me putting the down payment on a trip to get her to go. I told Martha about the upcoming trip and the rest was history.

The trip actually started in Buenos Aires, which is an entirely different story unto itself filled with samba parades, Italian street festivals, late night feasts, an 18-meter high Jesus, a death-defying bike ride through potholed streets, and newfound friendships. To get to Antarctica from Buenos Aires, we had to fly to the small mountain town of Ushuaia, which considers itself "El Fin del Mundo," or "The End of the World." The town was exciting enough with

its crisp, spring air and stunning views, but it was time to hit the road on the Akademik Sergey Vavilov, our shipboard home for the next 10 days.

One of the things about an oceangoing trip to Antarctica is that you spend much more time onboard the ship than you do off the ship, so a good crew of people and an uneventful Drake Passage crossing are crucial. Luckily, we hit the jackpot with our ship considering that two of the staff on board, our kayak guides, were Greeners!! We knew we'd chosen the right trip from that point forward. The actual passage itself was literally smooth sailing – no seasickness for us, although the side effects of our seasickness patches were another story.

But you really want to know about Antarctica, right? Antarctica is one of those places and experiences that are hard to explain using just our common vernacular. Instead, one must hear the sounds, drink in the impossible blues, and view the never-ending glaciers, icebergs, mountains, and penguins to understand that it is best just to experience it yourself. It is difficult to portray just how exciting it is to see that first iceberg and that first penguin, and then to have each day provide a new experience until the end of the trip when the icebergs, penguins, and colors become an expected everyday spectacle outside your room's porthole.

However, I will try to share some of our experiences with you here. For the actual Antarctic part of the trip, we had five days in the region to explore with twice-daily trips by Zodiac to the mainland or islands off the peninsula

(like the South Shetlands). For a bit more (okay, a lot more) money, passengers could also sign up to kayak, cross-country ski, climb, or camp. Martha and I chose to kayak, and I also chose to ski. Every stop we made had its own special memory. My first climb up a glacier, roped up on skis with complete strangers on Livingston Island, was exhilarating, but not as exhilarating as the "polar plunge" into the gunmetal waters of the old whaling station on Deception Island.

The second day was our first step on the actual continent (although the islands off the mainland are also considered to be Antarctica). Kate and I stepped off the Zodiac together to share the experience of "bagging" our seventh continent. That day was crystal clear – the blues of the sky and water were incredible, and the white of the snow was dotted with black chinstrap penguins waddling around with rocks in their beaks for their nests.

The rest of the trip was a whirlwind of long days of daylight; laughing with new friends from around the world; waiting for the dinner announcement; walking through the halls in just our robes to get to the shower; waking up at Oh-dark-thirty to wiggle into a drysuit for a morning paddle; encountering giant sapphire-blue icebergs; penguins, penguins, and more penguins; dealing with



Chinstrap penguin. Photo by Gail Wootan

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Antarctica (continued from page 7)



Martha Henderson and Gail Wootan in Antarctica

quite a bit since getting back to the US. Since then, I've become more active in local environmental issues, I've met new friends through various hiking and volunteer groups, and I'm excited for my adventures yet to come (Habitat for Humanity in Sri Lanka is the next one for me)! I know it sounds cheesy, but anything truly is possible – even going to Antarctica. Essentially, it can all be summed up by my new credo: “Try it! It's not as hard as it seems.”

windburned skin; and the delicious taste of a cup of warm hot chocolate at our favorite spot: the top deck bar.

My magic carpet kayak trip was my most memorable experience, not only for the beauty and the otherworldly experience of floating in an infinite ice patch, but because it reminded me of my love for the water and mountains, for fresh air, for challenging my body, and for the epiphanies that adventure and travel bring for me. When Martha and I, regretfully, landed at SEA-TAC and jumped into her car, I felt a slight sadness, as I realized it was back to the daily grind of the “real-world.” But that feeling was soon replaced with the possibilities for my life: I could work in Antarctica if I wanted to! I can play in the snow here in Washington – there's plenty of it! I can meet new people, join new groups, learn new things. Now that I think about it, my life has changed

MES 2011 Graduates

Summer

Nahal Ghoghaie

Aaron Litwak

Ashley Lyon

John Richardson

Fall

David Falzetti

Mercy Kariuki-McGee

Melanie Kincaid

Daniel Wolff



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