From Arusha, Tanzania to Baron, Wisconsin: Working with Smallholder Farmers to Improve their Marketing Opportunities

By James Barham, SNRE Alumni

It was definitely a strange set of circumstances that landed me about a month ago in the small rural town of Baron, Wisconsin. It was all the more strange that in this town of about 8,000 people, many of whom make their livelihood as dairy farmers, that I would be sitting in a Somali-owned restaurant, eating a traditionally prepared goat dish, and chatting with some of these farmers about the market potential for selling halal-slaughtered goat meat to a growing refugee and new immigrant population. I was in Baron as part of my work for the USDA's Agricultural Marketing Service, which involved studying how small farmers were joining together to establish alternative distribution systems that could effectively link producers to consumers. By no stretch of the imagination could I have envisioned that one day I would have a job at the USDA, working with small-scale and resource-limited producers to improve their direct marketing opportunities.

In July 2006, my wife and I returned to the US after spending about a year and half in Arusha, Tanzania, where I was carrying out my dissertation fieldwork. My research involved studying a government-sponsored program that was attempting to improve the livelihoods of smallholder farmers through a number of market-oriented interventions. Instead of returning to the University of Florida, we
moved to Washington, D.C. where my wife had gotten a job, and thus put me in the enviable position of being to work exclusively on my dissertation without worrying about how to put food on the table. As occurs to most graduate students when the end is scarily close in sight, I become consumed with thoughts of how I was going to take what I learned through my years as a "professional student" and turn it into meaningful job.

With almost all my experience focused on international agricultural development work, primarily in the Middle East and Africa, I assumed my best shot for a job would be with an international research institute or a development-oriented NGO. I hadn't really given much thought to actually working with farmers in the U.S., when a chance encounter with a friend of a friend got me interested in the work that non-profits and the US government are doing with refugee and immigrant farmers. It was through this chance encounter and a subsequent conference (that this friend of a friend was able to get me into) that I met a lady working at the USDA. Explaining to a possible employer that you have a Ph.D. in Interdisciplinary Ecology can make for a tough sell. There's no immediate recognition of what you are or what you do, as opposed to saying you are an anthropologist, economist, agronomist, biologist, etc. But not being easily categorized can also be a great advantage. As in the case with the lady I met from the USDA, I quickly explained to her that my degree was a primarily a mix of agricultural economics and anthropology, and followed this with a quick summary of the type of work I did in Tanzania and how bringing an ecological perspective founded on systems thinking, helped me to better understand how markets are structured and function. If you practice your "pitch" enough times, you are bound to find a great number of people (of course, not everyone!) that will appreciate and value the interdisciplinary nature of the work we do at SNRE. In the end, my pitch had the desired effect, eventually landing me my present job at the USDA.

I honestly don't know how many SNRE students will actually read this piece, but for those of you who do, rest assured that your studies, experiences, and the skill sets you develop as an SNRE student will find a ready audience of employers. One of the key lessons I learned from my work in the field of international development was that interventions often fail due to fundamental breakdowns in communication between the respective stakeholders. The technocrats, economists, environmentalists, politicians, other social and natural scientists rarely
seem to speak the same language, and even if by chance they do, it is seldom spoken on behalf of the people they expect to help. This deep-seated constraint to development was one of the main reasons I decided to pursue a degree in Interdisciplinary Ecology. I knew through my coursework, research, and other experiences that I would learn a myriad of perspectives, enabling me to create bridges between these diverse disciplines, and to find a common language among them. As a SNRE student, you are uniquely poised to develop this skill set, which should serve you well as you take the step from SNRE graduate to whatever future employment that brings meaning and purpose for you and others.
Dean's Perspective

By Dr. James C. Cato
Senior Associate Dean and
Director, SNRE

As we begin to settle into the fall season, it’s a perfect time to reflect on our accomplishments and set our sights on new goals for the current academic year. SNRE programs continue to show tremendous success and growth. Our academic degree programs are recruiting students in the top of their field and admission has become increasingly competitive. The undergraduate Environmental Science Degree program has 112 students enrolled this fall; an increase for the third consecutive year. Our graduate Interdisciplinary Ecology Degree has 145 students this fall, with 61% enrolled as PhD students. This is another new high.

Likewise, our Extension programs continue to foster collaboration around the state. The Natural Areas Training Academy (NATA) held eight workshops during the past year, with 173 participants coming from 50 organizations. The Natural Resources Leadership Institute (NRLI) graduated 20 students in October. We worked with the Program for Resource Efficient Communities (PREC) to submit a major proposal to EPA to expand their research and Extension activities. And recently, we received a commitment from a private donor to fund a three-year land use and natural resource based economic development research and education program in Hamilton County in north Florida. That project will hold its
organizational meeting in Hamilton County in late fall and begins with the start of
the spring semester. It will involve faculty and graduate students from the College
of Design, Construction and Planning, the College of Agriculture and Life
Sciences, three academic departments within those colleges and IFAS Extension
in Hamilton County.

SNRE is also supporting our faculty and students by publicizing potential funding
opportunities available to them. To meet this goal, a Grants Database
(http://www.snre.ufl.edu/funding/grants.asp) has been developed to help our
faculty workgroups identify funding possibilities and foster interdisciplinary
research within our established workgroups. Additionally, Nancy Peterson, our
Associate Director for Research and Outreach/Extension has participated on
behalf of UF and SNRE in the annual meetings of the Cooperative Ecosystem
Studies Units (CESU) to continue networking possibilities for our faculty and
students. Participation with this network has proved to be a useful source of
funding and has resulted in successful collaborations between faculty and federal
agencies. Utilizing the South Florida-Caribbean CESU, our Academic Programs
Director Dr. Stephen Humphrey secured funding through the National Park
Service for five, two-year post-doctoral appointments. Dr. Humphrey has also
secured supplemental grants to support faculty and student research. SNRE
would like to increase involvement of faculty and staff in using the CESUs.

We have just completed our mini-grants competition for 2007-08. The goal of the
Seed grant is to provide funding to interdisciplinary groups which allows them to
collect data or other activity that enhances their ability to secure larger
interdisciplinary extramural grants. The New Faculty grants work to help new
professors design new and innovative programs aimed at environmental issues
and challenges. This year SNRE funded four "new faculty" proposals and five
"seed grants" projects, from 70 submissions. Contributors to the program this
year were the College of Liberal Arts and Sciences, the College of Engineering,
the College of Law, the College of Veterinary Medicine, the College of Design
Construction and Planning, the IFAS Dean for Research and the Vice President
for Research.

As this academic year continues, we look forward to helping faculty and students
create professional opportunities and secure funding to ensure success. One of
our limiting factors of course is available budget. Like everyone in the university
system, we are dealing with our share of budget reductions, but hopefully
statewide economic conditions will soon improve and we can again progress in a
growth mode.

We wish you a wonderful and exciting year. Go Gators!!
Drowning in a Sea of Plastic Bags

By Stuart Carlton
PhD Candidate, SNRE

*This article appeared in the Gainesville Sun on October 8, 2007.

By the time you've finished reading this sentence, Americans will have thrown away over 15,000 plastic bags. They will have recycled about 150.

The simple plastic grocery bag is an amazing invention. Plastic bags are strong, inexpensive, and durable. They can be used to hold groceries, lunches, clothes (dirty or clean!), prescriptions, trash, and more. As a child in New Orleans I used them to hold the beads I caught at Mardi Gras parades. One of the most popular things to hold in a plastic grocery bag is more plastic grocery bags, lying ready, awaiting deployment.

But there's a problem with plastic grocery bags. Once they're made, they basically never go away. In a landfill, a bag may take over 1000 years to break down. In other words, the bag you carried home from the store yesterday might still be there for your great great great grandchildren's great great great grandchildren to enjoy. What an heirloom!
Of course, many grocery bags don't go to a landfill. They end up polluting rivers, oceans, beaches, forests, parks, streets, parking lots, schoolyards, backyards, and athletic fields.

This pollution is deadly. Californians Against Waste claim that 100,000 turtles and marine mammals are killed each year by plastic marine debris. That's approximately one every five minutes. A cow in New Delhi died after ingesting 35,000 plastic bags, according to Indian media reports.

While yesterday's plastic bags sully the landscape and kill wildlife, more and more plastic bags are being manufactured today. According to Salon.com, Americans use over 100 billion plastic bags each year. That's 274 million plastic bags a day, or over 3100 per second.

Reuseable bags.com estimates that about 12 million barrels of oil are used annually to manufacture the plastic bags used in the United States. That's enough oil to create about 240 million gallons of gas, which could fuel over 500,000 cars with gas for an entire year.

We're swimming in a sea of plastic bags. If we don't act fast, we may drown.

Fortunately, there are several easy steps you can take to help reduce the plastic bag waste you produce. First, stop using plastic bags in the grocery store. Don't replace them with paper bags, which require more petroleum to manufacture than do plastic bags. Instead, replace them with reusable shopping bags. Reusable bags, often made of cloth or recycled plastic, are inexpensive, large, and sturdy. If each American household brought one cloth bag per trip to the grocery store, we would throw away 10 billion fewer plastic bags per year.

Reuseable bags come in all different kinds. You can get designer bags, such as the ones offered by Hermes for $960. Publix offers a less chic model for under $2. Better yet, look around your house and you may find a variety of cloth bags.
backpacks, or other suitable totes lying around. Stick them in your car so you don't forget them.

If you do forget your reusable bags, then make sure you bag your groceries carefully. Grocery baggers seem to operate on a per-bag commission, double bagging anything heavier than a loaf of bread. Ask the bagger to fill your bags up, and only double bag when absolutely necessary.

When you get home, don't throw the bags away. Bring them back to the store and drop them in the recycling bin. Experts estimate that only 1–2% of plastic bags used in the US are recycled.

These simple steps alone could cut America's plastic bag waste by tens of billions of bags per year, saving millions of barrels of oil, thousands of turtles and marine mammals, and preventing countless instances of unsightly litter and dangerous pollution.

Unfortunately, not enough Americans are taking these easy steps. If we don't clean up our act, then government may have to step in. In some places, it already has.

Several countries, including Taiwan, Thailand, and South Africa, have banned plastic grocery bags. San Francisco recently followed suit, and other American cities are considering similar legislation. Such legislation is expensive, time-consuming and should be unnecessary. Citizens need to stand up and act on their own to eliminate needless plastic bag waste.

In the time you took to read this column, Americans threw away over 900,000 plastic bags. Whether by legislation, innovation, or individual action, we must eliminate our dependence on plastic bags. Do your part today. Reach under your sink, grab the grocery bag filled with other grocery bags, and bring it to the store to recycle. Don't forget to pick up a reusable bag while you're out. We must eliminate our plastic bag addiction, one step at a time.

Stuart Carlton is a first year Ph.D. student in the School of Natural Resources and the Environment. He earned a B.A. in English from Tulane University, an M.S. in Fisheries Biology from the University of Georgia, and has spent time working as a biologist for the Fish and Wildlife Research Institute and as a middle school science teacher. His research focuses on the role of information flow and communication in stakeholder conflicts.

Visit the Gainesville Sun to read Stuart's article as it appeared in the paper.
Extension Training Enhances Community Involvement

By Patrick Heck

"It's not an us versus them situation. We are in it all together," says Dr. Jerry Culen, referring to the challenges posed by Florida's rapid growth. Around the state, loss of agricultural and natural lands and urban growth are causing conflicts (economic, environmental and political) among many different sectors of our society. It's true that issues are complex, problems are hard to solve and channels for action may seem limited. But improvements in environmental critical thinking and the development of problem solving skills can build a responsible and informed Florida citizenry.

Through the SNRE Mini-grants program, Family Youth & Community Sciences professors and Co-PIs, Drs. Mark Brennan and Jerry Culen, were awarded a New Faculty Support Grant in 2006-2007. They developed a curriculum for Extension, teachers, and other educators that will foster community and youth involvement in land use decision making. "Such education is particularly important when dealing with the increasing pressures placed on land use and sustainable development throughout Florida" explains Dr. Brennan.
"A direct need exists for Extension and other educators to be provided with effective curriculum and training to educate the public about natural resource management and sustainability. Environmental issues education is an important tool in the development of critical thinking and problem solving skills. These skills are necessary to help protect and conserve economic and environmental health in Florida. Teaching about Environmental Issues: Land Use provides process and content information for educators, including definitions, models, and Florida-specific examples of environmental issues," describes Dr. Mark Brennan, explaining the rationale for their project.

Their curriculum was tested in two in-service trainings and will continue to be refined as needed. The curriculum will also be published as a workbook through Stipes publishers in Spring 2008. In their final report, Dr. Brennan added, “the developed curriculum meets an established need of better involving communities and youth in the process of environmental decision making. Through the curriculum a variety of skills are presented to participants that allow them to better gather information and develop plans to contribute more effectively to the decisions that affect them and their local natural resources.”

Dr. Culen, echoing that sentiment noted the program’s value will give citizens the motivation to work on solving environmental problems and help identify what types of actions are available. Eco-management is a prime example of community driven involvement and participation. "Moving species and habitat enhancement are two options for mitigating the impact of land use. Building bird houses for threatened species or relocating Gopher Tortoises to conservation areas are actual ways of citizen involvement. Our program is devised to promote action," "said Culen.

SNRE has just completed our mini-grants competition for 2007-08. The goal of the Seed grant is to provide funding to interdisciplinary groups which allows them to collect data or other activity that enhances their ability to secure larger interdisciplinary extramural grants. The New Faculty grants work to help new professors design new and innovative programs aimed at environmental issues and challenges. This year SNRE funded four "new faculty" proposals and five "seed grants" projects, from 70 submissions. Contributors to the program this year were the College of Liberal Arts and Sciences, the College of Engineering, the College of Law, the College of Veterinary Medicine, the College of Design Construction and Planning, the IFAS Dean for Research and the Vice President for Research. Since its inception, the SNRE Mini-grants Program has generated more than $11 million in extramural and leveraged funding from outside sources and hundreds of presentations, workshops and articles for publication developed.

For more information on Mini-grants Program, read the 2005-2006 Annual Report.

Click here to read a full list of SNRE mini-grant awardees.
Mark Brennan is Assistant Professor of Community Development for Family, Youth, and Community Sciences. He specializes in community development and rural sociology. His current research focuses on rural disaster preparation, response, and recovery through Community Emergency Response Teams (CERTS). He received his PhD from Pennsylvania State University in 2003.

Gerald Culen is Associate Professor of Youth Development and the Undergraduate Coordinator for Family, Youth, and Community Sciences. He specializes in environmental education, program and curriculum development, and implementation and evaluation. His current research centers on the evaluation of after school programs and activities for CYFAR (Children, Youth and Families at Risk). He received his PhD from Southern Illinois University.
From Climate Change to Cappuccinos: The challenges and rewards of course development

By Elisa Livengood

The prospect of designing and teaching courses looms in the future of many masters and doctoral students wishing to remain in academia. Students may have opportunities to teach in previously prepared courses, but few have the freedom to take their instruction to the next level by designing their own course. Danny Coenen and Tracy Van Holt, two SNRE doctoral students, pursued separate opportunities to design and teach their own courses. By combining the knowledge gained through their program of study and their research, each student was able to add their unique perspective to a natural resource subject area not previously addressed at the University. The environmental issues they showcase in each course were both highly relevant and very relatable to the students.

When the opportunity presented itself to Danny Coenen, through the Center for European Studies, he jumped at the chance. In 2007, the Center issued a call for graduate students to design a course with a focus in countries within the European Union (EU). Coenen's idea required using his research background on climate change as the foundation; from this, the course Climate Change and the European Union: Science and Policy was born.
"This class begins with an introduction to interdisciplinary thinking, the physical science of climate change, and the structure and function of the European Union. The final part of the course consists of combining all of that knowledge and applying it to policy analysis," explained Coenen. "For example, students examine the Kyoto protocol and the European Climate Change program and start to bring the science and policy together. They begin to ask if those policies actually make sense and are they targeting the right mechanism."

Coenen faced numerous challenges including where to find appropriate texts for the course and how to register these books with campus bookstores. However, the challenges he faced as a first time instructor, were offset by his knowledge in the subject area. "Essentially, I have been preparing for this course from the start of my graduate education; I have 7 years worth of knowledge to pass on to these students," said Coenen.

Tracy Van Holt, another SNRE doctoral student, won a fellowship to teach a course of her own creation sponsored through UF’s Center for Latin American Studies. Tracy's course dissected a popular coffee drink using components of development, ecology, and sustainability as denoted by the title *Ethical markets in Latin America: the Mocha Cappuccino*. "We examined the social, ecological, and political aspects of the essential ingredients in a mocha cappuccino specifically coffee, chocolate, sugar, and milk, all of which have particular economic importance in Latin America," said Van Holt.

Her course also emphasized interdisciplinary thinking by having students analyze the issues surrounding development and land use from multiple perspectives. Van Holt explained, "After students learned about the driving concepts affecting the ethical markets surrounding these ingredients, they then had to evaluate the effectiveness of fair trade, organic and local farming, and corporate responsibility." Students examined these factors on the global and local scale and identified how mocha cappuccino ingredients affect producers and traders in Florida. Van Holt engaged external partners such as Dave Rochlin, the chief operations officer of TransFair. "Students were able to have their questions answered about fair trade by talking with Rochlin who actually certifies the
products coming into the U.S. Students also met with Sweetwater Coffee, a local business that specializes in organic and fairly traded coffee in Florida. By engaging in this experience students learned about the business challenges for social entrepreneurs in a slow-Floridian coffee market" explained Van Holt.

Students came to this course from variety of academic backgrounds including business, neuroscience, environmental science, anthropology, and political science. "Framing this course in terms of the mocha cappuccino attracted a diversity of students; everyone did not agree and this really enriched our discussions and enhanced everyone’s learning experience," explained Van Holt. From these discussions students also gained insight into other fields. "Business students learned about social and environmental issues, and environmental students better understood how complicated it is to run a quality business. I am proud that sixteen undergraduate students from the US have some understanding of the role the World Bank plays in shaping international development," Van Holt exclaimed!

Teaching students can be a rewarding and often challenging experience and is something every graduate student should experience. By creating the innovative courses, these SNRE students were able to share with undergraduates their knowledge and build upon their academic program. Each course brought a new perspective to an ecological issue and exposed students to cutting-edge information enriching the curriculum offered to undergraduates at UF.
Working in Suriname, South America: A Student Perspective on Field Work

By Elisa Livengood

Carrie Vath, an SNRE Masters student, balks at the idea of no more monkey business. In fact, the business of primates, birds, jaguars, tapirs, peccaries, and other large vertebrates is exactly what concerns her most. By measuring habitat heterogeneity, plant productivity, plant species diversity, and seasonality, Carrie hopes to grasp potential key indicators to vertebrate species richness in the Central Suriname Nature Reserve in South America. From this work, Carrie hopes to make some broader applications for the conservation in the Guianan shield. "Guiana, French Guiana, and Suriname compose part of the Guianan Shield, and these areas have been relatively understudied by scientists," claims Carrie.

"With this research we hope to take our findings and establish a baseline for similar forest ecosystems and potential application of conservation measures in the other countries," she explains.

Due to the nature of Carrie's research question, extensive fieldwork for data collection is required. However, working in the field can present many challenges to a researcher, whether it is communicating with the locals or dealing with logistics of a site. Carrie takes the time to share the insights, experiences, and lessons learned from the field.
Expect the unexpected in the field

Working in the field can lead to some great experiences with the natural flora and fauna of the area. In-field researchers will often witness events rarely documented outside of these wild habitats. Carrie Vath also had the opportunity to experience the many unpredictable events that can occur when working in the field with wild animals. "One the most intense things I have witnessed was a 'take over' or change in the social structure of a troop of brown capuchin monkeys. The alpha female, Julia*, was attacked by the third ranking female Gina and another subadult female, Banana. These two monkeys removed the alpha female and reduced her to the lowest ranking individual in the troop. This event was very unnerving with the troop reacting in a cacophony of screams," Carrie described.

Monkeys are social animals, and these social hierarchies within a troop determine eating order, amount available for consumption, and their health. The alpha male or female of a troop also leads that troop to food areas. "It was very hard to watch this once competent female be reduced to having to eat meals last and constantly being harassed by the other higher-ranking females. However, to witness something of this nature can give insights into animal behaviors that are rarely seen," explained Carrie.

Incorporate Community Involvement

One important aspect of working in another country is how you can contribute to local communities and cooperate with them to enrich your study. "I think it is so important to communicate and bring back whatever you are finding to that home country and that you include the people that have helped you. For example, the Qwinti Indians of Suriname were able to provide local ecological information with regard to plant identification, flowering seasons, and insight into the forest species interactions. They were so helpful and integral to the success of this study," Carrie exclaimed.

Embrace a holistic approach to field work

The interdisciplinary nature of Carrie’s research also required her to pull from many fields of study. "During those situations that required 'thinking outside the box' I had to rely on the training I am receiving through my degree program in interdisciplinary ecology. SNRE continues to promote in their programs of study, the idea of different thinking caps and works towards training scientists to think..."
and communicate on many different levels," says Carrie. "With regards to my work, I had to pull from the field of botany for identification of plant species, and I never before considered myself a botanist! As it turns out, I love figuring out the plants, fruits, and flowers, as part of determining species richness."

The lessons learned from fieldwork can be both informative and rewarding often influencing the careers of students and scientists. The knowledge gained from such experiences can also contribute to conservation measures and policies. Carrie hopes that through her study they can provide nations of the Guianan Shield critical information on the current state of their ecosystems, as they face changes from development.

* Names are those assigned to the brown capuchin monkeys monitored in a troop in the Central Suriname Reserve.

Carrie has returned to the States to finish writing her thesis on the Suriname research and currently works as the Coordinator for the Teaching and Learning Center. For more information on current projects in Suriname and field research possibilities contact:

Sue Boinski at boinski@ufl.edu or visit her website at http://www.clas.ufl.edu/~boinski.
Re-discovering the Beautiful Miami Blue

By Alfredo Rios

Rapid urban development and high invertebrate endemism (species is *only* found in one region), combine to make the state of Florida a critical place for insect conservation. Once common in the southern coastal areas of Florida, the Miami Blue butterfly was eliminated from much of its former range due to ever-expanding urbanization and the associated loss of coastal habitat. In the years following Hurricane Andrew, researchers feared that the butterfly may have become extinct as no verified sightings were recorded.

Fortunately, the Miami Blue was rediscovered on November 29, 1999, as part of a small population of less than 100 individuals within the boundaries of Bahia Honda State Park in the Lower Florida Keys. The rediscovery triggered a petition from the general public, launched through the North America Butterfly Association, to include the Miami Blue as a state-listed endangered species.

Dr. Jaret Daniels, a new affiliate faculty member in SNRE, led efforts to study its biology and develop a captive breeding program to help recover the insect. However, reintroduction efforts were hindered by the potential conflict with existing mosquito control spray programs. As a result, sites for organism reintroduction had to be relocated to non-human populated areas.
In 2004, captivity-bred Miami Blue butterflies were first released in areas evaluated suitable for their survival. Butterfly activity and reproduction were recorded in the release sites during the next two years despite challenging weather conditions and continued hurricane impact. Today more than 25,000 Miami Blues have been produced in the UF lab with some 3,800 individuals released.

Since that time, the Florida Fish and Wildlife Conservation Commission founded a stakeholder group composed of representatives from numerous interested agencies and organizations. Collectively known as the Miami Blue Working Group, it's charged with directing current and future recovery actions, identifying priority areas of research, and most importantly providing an open forum for dispute resolution. Daniels points out that "by including all stakeholders, communications are easier and solutions are reached faster in a transparent way."

With assistance from the Florida Department of Agriculture and Consumer Services and the Florida Coordinating Council on Mosquito Control, the Miami Blue Working Group catalyzed research partnership development and participation to assess the non-target impact of mosquito control adulticides on the Miami Blue-channeling previous discordant associations into productive cooperative conservation efforts.

Dr. Daniels notes that "the Miami Blue is a good conservation model that can be used to help promote awareness of other insects." The involvement and cooperation of three key players are evident in the conservation model: the public, the state and federal agencies and the research institutions. Daniels works actively with each of these three groups.

Dr. Daniels works with the public by directing community-based projects aimed at bridging the current disconnect between nature and people. He believes that "by actively engaging people and helping to raise their awareness of the important roles insects play in the larger environment, we can move closer to effectively conserving this much overlooked group. Luckily, butterflies are the most popular insects worldwide. They can serve as umbrella species, help rally public environmental involvement and are stellar tools for youth education."

He worked with other faculty at the Florida Museum to develop a demonstration native butterfly and wildflower garden. The living outdoor exhibit provides
information on backyard habitat and butterfly biology. He is also the director of the Butterfly Monitoring Network, an initiative linking six public zoos and two universities to train citizen scientists for collecting data through direct observations to monitor butterfly trends and health in the state.

Recognizing that education is not only important at the public level but also at the state agency level, Daniels notes that, "Often land managers are aware of the effects of land use practices on plants or vertebrates but they know little about their impact on invertebrates." He sees a current need and opportunities for professionals in insect conservation. Currently, he teaches a course in insect conservation and mentors students from SNRE.

Dr. Daniels emphasizes that the future of insect conservation should not only be remedial but also preemptive. Studying butterflies before their populations are imperiled is a better way to gain a complete picture of the organism ecology before they decline to very low numbers. In addition it is a less risky investment and is financially less expensive than having to list an organism.

Dr. Jaret Daniels is an IFAS Assistant Professor in the Department of Entomology and Nematology and Assistant Curator at the Florida Museum of Natural History's McGuire Center for Lepidoptera and Biodiversity. His research focuses on insect conservation, which he approaches in an interdisciplinary manner by integrating behavioral, population and landscape ecology as well as public education. Dr. Daniels is also an avid naturalist and photographer and has published several field guides on butterflies of the eastern U.S.

Dr. Daniels' first exposure to this field was as a graduate student under the supervision of UF professor Tom Emmel when he managed a captive breeding program to help recover the Schaus Swallowtail (a native and endangered butterfly). Jaret Daniels received his doctorate from the University of Florida in Entomology. After graduating, he continued to work with another state native the Miami Blue butterfly. For more information on Dr. Daniels Research or Graduate School opportunities see:

- [http://entnemdept.ufl.edu/daniels.htm](http://entnemdept.ufl.edu/daniels.htm)
- [http://www.flbutterflies.net/](http://www.flbutterflies.net/)

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SNRE International Frontiers: An Examination of Our International Student Population and Participation in Overseas Research

By Elisa Livengood and Alfredo Rios

The University of Florida’s School of Natural Resources and Environment (SNRE) has trained international students in Interdisciplinary Ecology since its inception in 1999.

A survey based research study was conducted by Alfredo Rios, a SNRE PhD student, to investigate and provide a better picture of international student enrollment. Surveys consisted of multiple choice, ranking, and open-ended questions designed to address the composition of the international student body and the scope of international research within the program.

Demographics relative to student country of origin, reasons for selecting SNRE, and location of research sites were determined through survey based information and student records. Survey questions examined student career aspirations upon graduation and plans for future residency. SNRE graduates from other countries were surveyed to determine their current professional activities and residency. A third survey set was created to examine U.S. SNRE graduate students and was augmented with student feedback on international student presence. A total of 63 students (past and current) participated in the study. Questionnaires were reviewed by UF faculty and graduate students and were then posted through an online web-based program in summer 2007.

Findings from the survey and student records examined the student body composition, participation in international research and benefits of participating in SNRE’s interdisciplinary degree program. SNRE has a slightly higher proportion of international students than the UF average. However, the composition of students by continent is quite different between the two. At the University level, international students are mostly represented from Asian countries, while at SNRE most international students come from Latin America. Other highlights include:
• One out of four students in SNRE is an international student; with many students coming from Latin American (57%), Asia (17%), Africa (14%), and the Caribbean (4%).

• Almost half (44%) of all SNRE student research projects were conducted outside the U.S., with most international students researching in their country of origin.

• Approximately 42% of the U.S. students taking the survey conduct their research outside the U.S., with over half (62%) of those students working in Latin America.

• The interdisciplinary nature of the program, the cross departmental affiliations, the availability of funding, and working with their advisor were all important reasons international students chose the SNRE program.

• After graduation, most international students plan to work in their country of origin or in regions associated with their home countries, mainly with non-profit organization or universities, and are likely to continue research efforts.

• National students felt that international students are beneficial as they provide a different perspective and aid in the planning and networking of their research. For example, one person stated, “[international students] often share a more realistic perspective for those of us working internationally, regarding local livelihoods, relevant cultural traits, and politics.”

Surveys provided much needed feedback from international and national students that led to several conclusions about the demographics of the SNRE population. Surveys also provided anecdotal evidence of how these student populations value their interdisciplinary degree training. This information is useful internally to the administration of SNRE through a better characterization of the school's student body. Students and faculty advisors may also use this report when seeking extramural funding from international granting agencies.

A full report is forthcoming and will be provided online at www.snre.ufl.edu.