As we reach the end of our first year as directors, we are pleased to report many exciting changes for the Graduate Degree Program in Ecology. The GDPE Executive Committee has worked hard to plan this year for how we can build on our past decade of successes and continue to grow. Below, we highlight a few of these changes, and others that we are engaged in:

- **The GDPE Website.** If you have not visited the GDPE website [www.ecology.colostate.edu](http://www.ecology.colostate.edu) recently we encourage you to do so. We have made huge changes and plan many more. Suggestions are appreciated!

- **Front Range Student Ecology Symposium (FRSES).** The FRSES was a raging success again this year (see article). We are planning to couple FRSES in the future with a recruiting weekend, to allow potential students to meet current students and see their fantastic research.

- **Fall GDPE Activities.** We have begun a fall semester speaker’s program which will include a seminar by a GDPE distinguished ecologist (Jim Detling is the 2007-2008 awardee – see the separate article) and one by an honor alum (Ute Olsson is the 2007-2008 awardee – see separate article).

(Continued on next page...)
Message from the Directors, Continued

- **Spring Distinguished Ecologist Series.** We have decreased the number of speakers and are making their presentations available via the internet. Log in to the web page to see these!

- **Strategic Planning.** The Executive Committee completed a strategic plan for the next decade, with an attendant budget request to the central administration to support our program.

- **Spring Fundraising Run.** In May, nearly 50 GDPE students and faculty ran or walked in the Colorado Marathon, which represented our first-ever community fundraiser for student fellowships.

**Ecology Areas of Emphasis.** The major work in progress is the development of Areas of Emphasis (AoE) within GDPE. These are groups that will provide identity and recognition for subgroups within GDPE and give potential students a better opportunity to assess our ability to satisfy their interests. Thus far, we have identified 8 AoEs (see web page for the list). We plan for some of these AoE’s (such as Human-Environment Interactions) to become formal areas of specialization that will be reflected on transcripts.

We invite you to visit the web page frequently to keep up on GDPE activities and send us any comments you have about how the program is developing.

*Bill Lauenroth and Indy Burke*

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**Annual Meeting, Spring 2007**

Our annual meeting and salsa contest was hosted by faculty members Barry Noon, Indy Burke, and Bill Lauenroth. We feasted on a fantastic suite of salsas prepared by our students and faculty, enjoyed and contributed to bluegrass, and presented awards and appreciations to our hard working faculty and students.

**Awards announced and/or presented:**
- Keynote Presentation to the Front Range Student Ecology Symposium: Maria Fernandez-Gimenez
- Best Citizen Faculty: Tom Stohlgren
- Best Citizen Students: Liz Harp and Angie Moline
- Best Sport: Sarah Bevins
- Most Phylogenetically Accurate Vegetarian: Jim Bromberg

**2007 Distinguished GDPE Ecologist:** Jim Detling

**MANY thanks to the faculty and students who contributed their time and intellectual energies to the program this year:**
- Outgoing Executive Committee members: Cameron Ghalambor, Scott Denning, Rich Conant, Andrew Norton, Larry Todd, Sarah Bevins, & Liz Harp.
- Continuing Executive Committee members: Ruth Hufbauer, Barry Noon, & Bill Romme.

**Teaching Fall 2006**
- EY 592 – Michael & Marlis Douglas; Ruth Hufbauer
- EY 600 – Kurt Fausch
- EY 620 – Barry Noon & Dave Theobald

**Teaching Spring 2007**
- EY 571 – Tom Stohlgren
- EY 592 – Chuck Rhoades, Kate Dwire & Rob Hubbard; Ellen Wohl; John McKay; Dan Binkley; Mike Antolin & Liz Harp
- EY 693 – Jill Baron

All the others who teach ecology and related courses that our students take.
For the thirteenth year in a row, students from the Graduate Degree Program in Ecology organized the Front Range Student Ecology Symposium, which provides students from across the Front Range an opportunity to present their research and to find out about current research being conducted by their peers.

The theme of this year’s symposium was “Integrating the Natural, Social, and Mathematical Sciences,” and featured a keynote address by GDPE’s own Maria Fernandez Gimenez entitled “Lost in Translation: Tales of a Transdisciplinary Quest,” in which she presented her experiences regarding the benefits and difficulties of transdisciplinary and interdisciplinary research. Maria crosses the boundaries of the natural and social sciences in her research on rangeland ecology in the United States and Mongolia.

Also addressing this year’s theme was a very popular lunch session entitled “Quantitative Models in Ecology: Are They Worth the Effort?”, led by Tom Hobbs (NREL, FRWS), Barry Noon (FWCB), and Jay Breidt (Statistics) which overfilled the room and sparked a very lively discussion.

The symposium also featured oral and poster presentations by 49 students from CSU, Colorado College, Fort Lewis College, the University of Northern Colorado, and the University of Wyoming. Prizes for best oral and poster presentations were awarded to graduate and undergraduate students judged to have the best oral or poster presentation in their class. We were especially excited that the top poster in terms of total points awarded by judges was presented by an undergraduate, Johanna Hamburger (CSU)!

Awards for best poster and oral presentations:

Best Graduate Student Oral Presentations:
1st Place: Molly Cavaleri, GDPE, Colorado State University
"Estimating foliar nighttime respiration in a tropical forest canopy."
2nd Place: Mark Hayes, University of Northern Colorado
"Hibernacula selection by Townsend’s big-eared bats (Corynorhinus townsendii) in southwestern Colorado."
3rd Place: Seth Magle, GDPE, Colorado State University
"A new method for estimating population densities for prairie dogs."

Best Graduate Student Poster Presentations:
1st Place: Meagan Bayless, University of Wyoming
"Biotic and abiotic drivers of soil respiration across a sagebrush fire chronosequence"
2nd Place: Zac German, GDPE Colorado State University
"Climate change at high elevation: decoupling warming from growing season length"
3rd Place: Michelle Haddix, GDPE, Colorado State University
"Measuring the active fraction of soil organic matter and its temperature sensitivity"

Best Undergraduate Oral Presentation:
Rebecca Kurup, Colorado State University
"Competition in limber pine seedlings"

Best Undergraduate Poster Presentation:
Johanna Hamburger, Colorado State University
"Zinc toxicity thresholds for reclamation shrub species"

Best High School Poster:
Andres Garcia, Greeley West High School
"The effects of fertilization and herbivores on the diversity and dynamics of the surface active Collembola of the dry heath"

To take a look at the abstracts and submitted photos, visit the FRSES website: http://lamar.colostate.edu/~ecosym

2007 FRSES Coordinating Committee members:
Liz Harp (Chair), Stephanie Owens (Co-Chair), Greg Buis, Michelle Haddix, Lisa Mason, Nate Mellor, Madeleine Scheintaub, Rod Simpson, Apple Snider, Charles Stone, and Karl Wyant.

Faculty Advisor: Indy Burke
Congratulations Spring and Summer 2007 Graduates!
Log in to www.ecology.colostate.edu to see graduation photos

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<td>Michael Wunder</td>
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<td>Geographic Structure and Dynamics in Mountain Plover</td>
<td>Dr. Barry Noon</td>
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Rick Knight wins Board of Governors Teaching Award

Dr. Rick Knight, professor of Forest, Rangeland, and Watershed Stewardship in the Warner College of Natural Resources and the Graduate Degree Program in Ecology, is the 2007 recipient of this prestigious award established in 1993 by the Board of Governors of the Colorado State University System.

Professor Knight’s nominators emphasized his commitment to enriching student learning, his ability to impart a love of the land and his passion for natural resources stewardship. Nominators also described Knight’s consistently positive reviews from students who recognize him as the most inspirational teacher they have ever had and one of the most sought-after instructors and advisers. Congratulations, Rick!

Fall GDPE Awards and Activities

Dr. Jim Detling is the recipient of the 2007 GDPE Distinguished Ecologist Award. Award and seminar on September 19.

The research that Jim and his students conduct has focused on understanding how biotic and abiotic factors affect structure and function of grassland ecosystems. He has been especially interested in determining the direct and indirect effects that herbivores have on individual plants, plant populations, plant communities, and nutrient cycling processes. This research has included: (1) laboratory, greenhouse, and field studies of individual plant responses to grazing by aboveground and belowground herbivores, (2) examination of changes in plant species composition, productivity, and nutrient cycling along natural or experimental grazing gradients in the field, (3) controlled field experiments to examine the effects of defoliation, competition, and long-term grazing history on plant productivity and nutrient uptake, and (4) field studies of how disturbance by one group of herbivores affects the abundance, diversity, and foraging behavior of other species of herbivores. Much of this research has involved prairie dogs and native or domesticated herbivores that utilize prairie dog colonies. A second avenue of research has centered on evaluating the potential effects of global climate change on grassland ecosystems.

Jim received his B.A. in biology from the University of California at Berkeley (1963), his M.S. in Botany from Ohio State University (1966), and his Ph.D. in Biology from the University of Utah (1969). He has been at Colorado State since 1975 when he joined the Natural Resource Ecology Laboratory (NREL). After teaching in the Range Science Department from 1982-1990, he joined the Department of Biology full-time in 1990. Since 2006, he has been on a half-time, transitional appointment and was recently named Director of the Life Sciences Core Curriculum. In 2002, he was named an ISI Highly Cited Researcher in the Ecology/Environment category. He was recently cited for Excellence in Graduate Education and Mentoring by NREL (2002), the Department of Biology (2003), and College of Natural Sciences (2004).

Best Study Organism

Front Range Student Ecology Symposium
Photo Contest 2007

Elliott Spencer
“This is a burrowing owl juvenile who didn’t like having its photo taken after we released it”
I was able to participate this year in the Colorado State Engineering and Science Fair as a judge for high school projects in the category of environmental science. I was part of a group of 6 judges who had varied science and occupational backgrounds. As a team we looked at each project board, interviewed the students about their projects, and decided the awards.

I was absolutely amazed at the talent of some of the students. I don’t recall seeing projects in my high school science fair that were as high of a caliber as these students. Projects ranged from using tamarisk (invasive species) to make a new charcoal to quantifying the disturbance of birds on trails with varying numbers of people and dogs, studying the effects of MgCl on Euglena as a proxy for how plants are impacted by road salt in the winter, measuring flow rates and modeling stream flows to determine what type of rock slows the current the best and provides a better habitat for fish, to determining the shape of an irrigation canal that best reduces evaporation. Even the sample designs were impressive in order to control for outside variables.

The students explained their project designs and results and you could see all the hard work they had put into these projects. Being a judge was a great opportunity for me to help younger students understand the scientific process and hopefully increase their interest in ecology. I would definitely volunteer to be a judge again next year and I wouldn’t be surprised to see one of these students in GDPE or another ecology graduate program some day, and maybe sitting in on one of their talks at ESA.

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Ute Olsson is the 2007 GDPE Distinguished Alumna. She is currently the Chief Naturalist at the Eagle River Nature Center in Eagle River, Alaska. She holds a Master of Forestry from Duke University and a Master of Science from the Graduate Degree Program in Ecology at Colorado State University. She has extensive experience in laboratory work and fieldwork in topics ranging from forests and soils to snow and water quality. Ute will visit with us during the week of October 31. Stay tuned for details!

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**GDPE Students Judge Science Fair**

By Megan Steinweg

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**Best Scene**

*Front Range Student Ecology Symposium*

*Photo Contest 2007*

Charlie Blackburn

“Alpine day at the Pingree Park Campus. Looking back towards Fort Collins from the Mummy Range”
Having a baby two weeks after receiving my M.S. in ecology didn't seem like a great career move at the time. But thanks to the solid academic foundation GDPE provided, and the thing or two the program taught me about juggling important projects and working independently, I wasn't marooned. Now I am gradually building myself a career by writing books about Colorado's natural history. *Northern Colorado Plants* is one of several book projects I have undertaken since I finished my degree, and it is the first to make it to press. By writing these books, I hope to improve public awareness and appreciation of Colorado's natural diversity. I have maintained connections with faculty from several CSU departments as well as staff from the CSU Herbarium, Colorado Natural Heritage Program, and the Cooperative Extension. I have also stayed connected by volunteering for the Colorado Natural Areas Program and Partners for Colorado Native Plants.

**Northern Colorado Plants:**
*A Field Guide to the Flora of the Northern Front Range Urban Corridor*  
*By Alix Gadd*

Northern Colorado Plants presents over 200 plant species, including wildflowers, grasses, weeds, shrubs, and trees. It showcases the common and conspicuous plants that grow in Colorado's northern Front Range urban corridor, which includes the cities of Loveland, Fort Collins, Windsor, and Greeley, and the small towns and rural areas that surround them. The book's beautiful color photographs, detailed descriptions, and fully illustrated glossary make plant identification easy for beginners and experts alike.  
ISBN-10: 0-9639842-1-7  
alix.gadd@travertinepress.com

**Alumni News**

**In Memoriam:**  
**Dr. Elizabeth Sulzman**

Elizabeth Sulzman died unexpectedly on June 10, 2007. An award-winning professor and scientist in the Department of Crop and Soil Sciences at Oregon State University, she is remembered for her enthusiasm for teaching and research. A Celebration of Life was held on June 18 (see http://cropandsoil.oregonstate.edu/people/faculty.php?ID=41). Below is an article written before her death, about her work at Oregon State University.

Elizabeth Sulzman, a soil scientist at Oregon State University, studied soil beneath the towering forests of Oregon's Cascade Mountains. Her work was vital to the understanding of carbon dynamics, the only research of its kind being conducted in conifer forests. There she found that the conifer needles that rain down onto the forest floor stimulate soil microbes to digest both the newly added carbon in the needles and the older stores of carbon in the soil. That means that these soils are storing less carbon than previously thought and exhaling more carbon dioxide into the atmosphere.

"It goes against conventional wisdom," said Sulzman, who worked with a team of scientists at the HJ Andrews Experimental Forest, two hours southeast of the Corvallis campus. "These findings are causing us to rethink our understanding of soil biology and carbon sequestration."

If Sulzman's laboratory was in a mountain forest, her classroom was sometimes in a pit. A 2006 recipient of OSU's Faculty Teaching Excellence Award, Sulzman encouraged her students to get their hands dirty. She introduced them to the colors, textures, history, and life that are visible in layers of soil. In soil pits dug especially for OSU's soils classes, Sulzman's students would roll clay noodles with their hands, rub mud in their palms, and match a rainbow of earth tones to a Munsell soil color chart. Eventually a history of the landscape above would emerge from the layers of soil below.

"Elizabeth brought soil science to life for her students," said Russ Karow, head of OSU Crop and Soil Sciences Department. "Her collegiality, dynamic personality, and infectious enthusiasm for active learning and scientific inquiry were her hallmarks."

From a childhood of tumbling rocks in the basement and dreaming of becoming "Jaquette Cousteau," Sulzman had always been in love with the outdoors. She worked for a time with the Peace Corps in the Central African Republic, helping villagers build a dam.

"It was quite a challenge," Sulzman recalled. "I had no knowledge of the local trade language and the people I worked with had little knowledge of engineering or hydrology." Yet, by the end of her stay, Sulzman and the villagers had completed 80 ponds to provide a source of protein for the people in the area.
Sulzman enlivened her class lectures with stories from Africa, the Andrews forest, and many other places where she had worked and studied soils. It was in Africa where she learned the value of using creative, unorthodox ways of communicating ideas that she applied to her university teaching. For example, rather than the traditional recitation class where students work on quantitative assignments and exams, Sulzman designed a curriculum that was lively and interactive. It was not unusual to see a rousing game of Pictionary going on in Sulzman’s class, as students went to all lengths to get team members to say the word “actinomycetes” from several quickly drawn lines and some squiggles. “My goal as a teacher is to make my courses challenging, useful, and enjoyable,” said Sulzman. Even in her largest classes, she knew all her students by name. “I know that the impact I have on students will influence their long-term goals and attitudes, and I take that challenge very seriously.”

By Peg Herring
From Oregon’s Agricultural Progress magazine, summer 2007

Kevin Gurney (PhD 2004) continues to do research on the global carbon cycle, highlighted recently by a paper in Science (June 2007) which suggests smaller carbon uptake in the northern terrestrial systems and lessened net emission in the tropics. Gurney’s group has grown to 8 students/postdocs/researchers and is also working on deforestation policy, fossil fuel CO₂ emissions, and carbon pricing. The biggest news for Gurney this year is the emergence of the Hestia Project. The goal is to place the world’s fossil fuel CO₂ emissions onto a Google Earth-like platform with emissions resolved at < 1 km/hourly with complete process connections between economic activity and greenhouse gas emissions. This multi-institutional effort will be supported through a Consortium directed by Gurney.

“I coordinate their NSF GK-12 program and work for the KBS-LTER. This summer, I also conducted research on effects of prairie dogs on non-native plant invasion in urban and rural areas in partnership with the City of Fort Collins and the Shortgrass Steppe LTER. Finally, I have been collaborating with the Smithsonian Natural History Museum to evaluate curriculum related to recent exhibits in their Forces of Change series.”

Koren Nydick (PhD 2002), is currently Director of Research and Education at the Mountain Studies Institute, and proudly announces the birth of Owen Nydick Brandewie on June 22. John Bradford (PhD 2004), Research Scientist with the Forest Service, and Floye Wells Bradford (MS 2005) have just announced the birth of Mae Ann Bradford on July 27, 2007, in Grand Rapids, Minnesota. Talk about productive alumni! Congratulations!!

Priscilla Baker (MS 2007) writes: “I am a research associate with the Hoffman Environmental Research Institute at Western Kentucky University. I am responsible for coordinating project activities with the China Environmental Health Project, an ambitious project, with support from USAID, that seeks to improve water quality and availability in Southern China’s karst regions. Air quality monitoring is also a significant part of the project. Additionally, I perform field and lab work and write reports on water quality and hydrogeological investigations including dye tracing.”

John Freeman (MS 2006) is now working as an Ecologist for the US Forest Service, Pacific Northwest Research Station. He is working for the Forest Inventory and Monitoring (FIA) program, and lives in Mount Shasta, CA.

Laurel Hartley (PhD 2006) writes: “I am doing a post-doc with Phil Robertson at Michigan State University’s Kellogg Biological Station.

Send us your news and contact information!
As a new member of the Poff Lab, I’m excited to examine how landscape topology and fragmentation affect stream and riparian biota. I hope to help develop models that integrate metapopulation dynamics with geomorphological and hydrological data to predict focal areas for freshwater conservation.

Ryan Busby

I will be studying the relationship between neighboring plants and common mycorrhizal networks and how this interaction affects plant establishment. My advisor is Mark Paschke.

Sharon Baruch-Mordo

My Ph.D. research is a collaborative effort between Colorado State University, USDA-WS-National Wildlife Research Center, and the Colorado Division of Wildlife to better understand urban black bear ecology. Using detailed GPS data at 30-minute intervals, my main objectives are to investigate resource selection and movements by bears in the urban environment and to evaluate the efficacy of education in reducing the availability of anthropogenic food sources for bears. My advisor is Ken Wilson.

Kirstin Holfelder

I am interested in soil biogeochemistry and plant species composition. Currently, I am working at the Aurora Reservoir to investigate the effect of sewage sludge application on biogeochemical processes. Eventually, I hope to test some weed management ideas at this site. My advisor is Indy Burke.

Eric Carlson

I completed my undergraduate degrees in Plant Biology and Geography at Michigan State in 2006. I am a first year MS student in GDPE working under Dr. Brian Bledsoe who is also an advisor in Civil Engineering. I was brought in to work on a project with the US Forest Service to help create a manual that will assist forest and land managers with conducting riparian assessments. The challenge will be to make the manual applicable across the Western US. This effort requires knowledge of the ecology of riparian systems, fluvial geomorphology and a lot of GIS. I am looking forward to creating some protocols that can be tested in the field next summer. In my spare time, I race on the CSU Rams Cycling team.

Stay tuned for more introductions in the Spring Newsletter!
Emily Kachergis

I am interested in how a mosaic of land use and management practices influence conservation of biodiversity as well as people’s livelihoods. I am working with Maria Fernandez-Gimenez and Monique Rocca to model plant community change on rangelands in northwestern Colorado and identify sustainable range management practices.

Julie Kray

Julie is a new Master’s student working with David Cooper and John Sanderson (The Nature Conservancy) to study water use by native vegetation in the San Luis Valley, Colorado. Specifically, she is interested in how evapotranspiration rates vary over a gradient of water table depths, when plants utilize groundwater versus soil water during a growing season, and how response to water stress varies between species. When she has the time, she also enjoys gardening, exploring mountainscapes, baking cookies, playing ultimate frisbee, and plucking around on the guitar.

Sara Brown

I will be working toward my PhD under Dr. Indy Burke. My research will be broadly focused on understanding the effect global climate change has on wildland fire. Specifically, I will be investigating the role carbon plays in climate and fire. I have spent the past eleven summers working for the USDA Forest Service in various aspects of fire management. I enjoy traveling, running and generally being outdoors.

Megan Steinweg

Megan Steinweg is a first year doctoral student in ecology. Megan completed her BS in Biology at Appalachian State University, NC in 2005. She recently completed her Masters in ecology here at CSU working with Dr. Rich Conant and Dr. Eldor Paul, researching the effects of temperature change on soil microbial substrate utilization patterns and enzyme activity. While here, she has participated in a large number of GDPE activities, in addition to judging for the state science fair (see related article). For her PhD she will be looking at the interacting effects of alterations in temperature, precipitation, and CO2 concentrations on soil microbial communities and carbon cycling in the United States.

Aaron Berdanier

I’m a new PhD student with Dr. Julia Klein. We are starting a project to look at how precipitation seasonality influences Colorado alpine plant communities and ecosystem processes. We’ll be doing research at a network of mountain sites throughout the state.

I’m broadly interested in climatic and environmental influences on ecosystem functioning. I am here with an NSF Graduate Research Fellowship and I was able to start some preliminary field research this summer. I also like distance running and good music.

Christopher Mayack

As a first year Ph.D. student working with Dhruba Naug in the Zoology department, I am interested in studying disease transmission within a social network using a honeybee colony as a model. More specifically, I would like to investigate the behavioral modifications due to parasite-host interactions on the individual level and learn the impacts of these changed behaviors on disease transmission in the rest of the colony (a social network). In my free time I enjoy playing tennis and video games as well as going hiking, camping, and any kind of fishing.
**Don’t Miss the Annual Fall Kickoff Party and Pigroast!**

Be sure to come to the Annual Fall Kickoff Party on Saturday, August 18! There will be an orientation beginning at 2:30 for new students, followed by an all-GDPE dinner and party at 4:00, including music, food, drink and fun.

We will have fresh, home-raised pork and beverages, as well as a bluegrass band. Please bring a dish to share, sufficient in size for 3-4 people. Bring instruments to jam along! And lawn chairs if you would like. Feel free to bring family.

Place: The Co-Directors’ home, 1035 Stove Prairie Rd, Bellvue, CO.

From Fort Collins:
West on Rist Canyon Rd. to the Stove Prairie Intersection (Stove Prairie School). Turn left (towards the Buckhorn). Go 2.6 miles, turn right on Fire Route 15 (dirt road, mailboxes present, ignore mean signs). Go 1.4 miles to intersection of Fire Route 15S and 15N; take a LEFT onto 15S (south). Bear right until you reach the house at the end of the meadow.

From S. Fort Collins:
From Masonville, turn West up the Buckhorn. Go 10.9 miles to Pennock Pass/Stove Prairie Intersection. Turn right, towards Stove Prairie. Go 1.15 miles, to Fire Route 15, on your left, and follow directions above.

RSVP to indy.burke@colostate.edu or 970-484-7716. Call this number if you get lost!

**No pets, please**

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**Would you like to support the Graduate Degree Program in Ecology?**

If you would like to do so electronically, go to [https://advancing.colostate.edu/CNR/SUPPORT](https://advancing.colostate.edu/CNR/SUPPORT), and click on “Gift Information” to find the Graduate Degree Program in Ecology. If you would like to designate your gift to Student Scholarships, the Front Range Student Ecology Symposium, or the Visiting Distinguished Ecologist Series, please let us know in a separate email to ecology@colostate.edu.

Otherwise, fill out this form and mail to the address above:

- _____ Gift Amount.
- _____ Check Enclosed
- _____ Charge my MasterCard/VISA # ____________________ Exp. Date ______
- _____ I would like for my donation to support the program in whatever way it can; or
- _____ Student Scholarships
- _____ Front Range Student Ecology Symposium
- _____ Visiting Distinguished Ecologist Series

Full Name(s): _______________________________________________________________________________________________________

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