A Message from the Director

Welcome to the 2013-2014 GDPE Newsletter in which we celebrate yet another successful and productive year.

Stepping back into the role of director after a year away on sabbatical brought home to me just what a great program we have in GDPE. Outstanding students, engaged faculty, dedicated staff, all served up with a big dose of bon ami. Ours is an exceptional program to be very proud of indeed!

It is perhaps hard to believe we have a current enrollment is 57 M.S. and 117 Ph.D. students. We have accepted another 27 new students next fall, balanced against an expected 22 who will graduate this spring or summer. These graduations will add to our current 323 alumni who have graduated from GDPE since 1995.

(continued on page 2)
Despite our increasing size in the last few years, we continue to prosper. Certainly an important part of this is our growing faculty enrolment in GDPE – currently we have about 130 CSU faculty (from across 19 departments and 6 colleges) involved in the program and another 30+ non-CSU faculty mostly federal science and management agencies. This abundance and diversity of faculty mentors affords our students exceptional educational training and professional opportunities.

With our growth has come increased budget support from the upper administration. We have been able to staff an important new position, the Graduate Academic Advisor, who acts as a direct liaison with students and faculty on matters academic. Jennifer Neuwald has done an excellent job in this role this past year, and we certainly look forward to her continuing contributions. (Please see her message to GDPE below.)

We have also been able to enhance the graduate student experience. In the last year we enabled 22 students to travel to professional scientific meetings to present their research in oral or poster presentations. We also awarded small research grants to 10 students in a competitive review process that involved review of proposals by several faculty. These are valuable, core activities that we expect to continue into the future.

The social fabric of GDPE also remains strong and is growing. For example we had a very successful Annual Fall Meeting last August where 150+ faculty and students attended and feasted on picnic food and drink. The Grad Student Forum grew in participation in its second year, with several evening meetings a semester to discuss a wide range of student interests and aspirations in diverse formats. The student-organized Front Range Student Ecology Symposium was highly successful (again!) and involved the participation of many students and faculty (see article in following pages). As a capstone, we will host a reception for graduating students in a few days. With family members in attendance we expect a crowd of up to 60!

If there is any “big” news for GDPE this year, it would be that we are transitioning our administrative structure from a long co-hosting by the Colleges of Natural Resources and Natural Sciences to the Graduate School. We will become a university-approved Special Academic Unit (SAU), and the formal change to occur on July 1, 2014. Thus our journey as a bottom-up, cross-departmental and cross-college interdisciplinary program (dating back to the mid-1980s and formally approved as GDPE in 1995) will turn a new page. We will have administrative oversight from the Dean of the Graduate School, and the deans of CNS, CAS and WCNR. This move will enhance our programmatic and budgetary stability, without making much difference in the day-to-day administration of the program. GDPE students will still receive M.S. and Ph.D. degrees in Ecology and our alumni rolls will continue to grow. So, let’s celebrate the new as we continue to be proud of our legacy as the largest and oldest interdisciplinary degree-granting program at CSU.

Have a happy and productive summer. I look forward to seeing you at the Annual Fall Meeting (picnic) in August!

Dr. Jennifer Neuwald started as our GDPE Graduate Academic Advisor in September 2013. She is currently a Research Associate IV in Biology and a member of our GDPE faculty. In addition to her roles with GDPE and teaching for Biology, she has recently collaborated with both the NWRC and the USGS on population genetic and genomic research questions pertaining to metapopulation dynamics in vampire bats and avian conservation genomics, respectively. Jennifer is looking forward to expanding her research program over the next year. We are also excited to announce that Jennifer will be continuing her role with GDPE for the up-coming 2014-2015 academic year.

One of her favorite things about being part of GDPE has been helping students identify how to get the most out of their graduate careers. Observing the breadth of fantastic research that the students are engaged in and their dynamic transitions from one stage to the next has been highly rewarding. Jennifer is looking forward to future academic and scientific interactions with the GDPE community.
Program News

Graduate Student Forum remains popular

The GDPE Graduate Student Forum finished up its second year of monthly meetings with presentations on the conservation of native Colorado plants in active gas development areas, and a symposium on open science. The forum is a casual, self-organized meeting where GDPE students can learn from each other, explore new research ideas, practice presenting, and socialize, all within an enervating, supportive environment. Students Dave Hoover and Kelly Hopping founded the forum in 2012 to provide a place where students could interact in a welcoming, scientific environment composed solely of their peers. It started strong and continues to build momentum with 25-50 students attending each meeting this year. In addition to the regular research, theory, and travel based presentations we started to hold some thematic meetings, one where senior students taught new ones the ropes of graduate school, another where students practiced the emerging style of short-format “Ignite” talks, and a science communication workshop with local comedians who taught us how to keep cool and connect with audience members during formal and informal interactions. Most recently, with a set of presentations on open science, speakers gave instructions for using open notebooks and DIY electronics, described experiences publishing in open access journals, and discussed the requirements and benefits of data sharing.

Presentations frequently lead to open discussion of research issues and ideas and the forum has been a great way for GDPE students scattered across the university’s departments to keep up with one another and build new connections. We look forward to another great year starting in the Fall as Sam Dunn and Kevin Wilcox take the helm of organizing the meetings. And we are grateful for the support the GDPE provides for us to rent off-campus space for our meetings at Avogadro’s Number.

- Paul Brewer and Jenny Soong, grad forum coordinators

Sasha Victor gave a talk about her research titled “Restoring two Threatened Physaria species in the Piceance Basin of northwestern Colorado”

Stacy Endriss, Peter Leipzig-Scott, Graham Tuttle, and Lindsay Ringer catching up during a break in the presentations.

Clint Leach introduced students to free programs that are available for maintaining open lab notebooks as part of the forum on open science and reproducible research
In 2014 the graduate students of Colorado State University put on the 20th annual Front Range Student Ecology Symposium (FRSES). The symposium has been completely student led since its inception in 1994. The symposium has grown from being a one room event with maybe 20 presenters to a two-day affair where over 70 students presented their work. Most were graduate students, but 14 undergraduates and an elementary school class from Bella Romero Elementary presented their research as well. Students from other Front Range colleges also made the trip to CSU for this year’s symposium.

Submissions for this year’s photo contest were at an all-time high, with nearly 30 entries ranging from yawning foxes to close-ups of endangered flowers. GDPE student Kelly Hopping again stole the show with her spectacular image of a Tibetan yak.

Presentations represented a wide variety of research topics. The awardee for best graduate oral presentation spoke about how evolution can be successfully taught to seventh graders through hands on experience, while the winning graduate student poster was on quantifying litter decomposition.

This year’s symposium drew over 200 attendees for both the keynote address and student presentations. The lunchtime IGNITE talks introduced this year also proved quite popular, drawing nearly 70 hungry viewers. These short talks were one of the highlights of this year’s symposium, and sparked many thoughtful conversations on ecology and conservation.

A big thanks to all of the students who made FRSES possible this year!

- the FRSES 2014 Executive Committee
Front Range Student Ecology Symposium

**Graduate Oral Presentation Winners:**

First Place: Dale Broder, GDPE, Colorado State University
Second Place: Courtney Larson, GDPE, Colorado State University
Third Place (tie):
Keziah Katz and Mike Koontz
GDPE, Colorado State University

**Undergraduate Oral Presentation Winners:**

First Place: Tessa Behnke, Colorado State University

**Graduate Poster Presentation Winners:**

First Place: Jenny Soong, GDPE, Colorado State University
Second Place: Carolina Gutierrez, GDPE, Colorado State University
Third Place: Lindsay Ringer, GDPE, Colorado State University

**Undergraduate Poster Presentation Winners:**

First Place: Chris Kopack, Western State Colorado University
Second Place: Gary Olds, Colorado State University
Third Place: Salazar Monk Letitia, Metropolitan State University of Denver

**Photo Awards**:  
Best Overall: Kelly Hopping, GDPE, Colorado State University  
Best Study Organism: Adam Dillon, GDPE, Colorado State University  
Best Research-in-Action: Aaron Sidder, GDPE, Colorado State University  
Best Landscape: Rachel Harrington, GDPE, Colorado State University

*Photos found throughout the newsletter*

Students and faculty filled the ballroom for this year’s lunch-time presentation featuring Ignite talks by invited speakers from the CSU community.

GDPE students gathered for lunch with keynote speaker Dr. Terry Chapin on the first day of the Symposium.
Kurt Fausch
GDPE Resident Ecologist

Kurt Fausch is a Professor in the Department of Fish, Wildlife, and Conservation Biology at Colorado State University, where he has worked for 31 years. He has taught courses in population and community ecology, fish ecology, fisheries science, and ichthyology, and is currently teaching courses in fish conservation and sustaining river hydroecosystems. His collaborative research has taken him throughout Colorado, the West, and worldwide, including to Hokkaido in northern Japan where he worked with colleagues over a 15-year period. These experiences were chronicled in the documentary film RiverWebs, which has been broadcast to >100 million homes in the U.S. on PBS. He has received several awards for his research and outreach, including the first International Fisheries Science Prize from the World Council of Fisheries Societies (2008) and two Awards of Excellence from the American Fisheries Society (2010). He was named an ISI Highly Cited Researcher in 2010. He serves on the Independent Science Advisory Board of the Northwest Power and Conservation Council, which advises managers and policy makers in the Columbia River basin about fish and wildlife conservation. During 2012-13, Kurt was Acting Director of the Graduate Degree Program in Ecology.

Most of Kurt’s research has been collaborative with graduate students and colleagues, and has focused on the effects of nonnative trout and salmon on stream fish and stream-riparian ecosystems, management and restoration of stream fishes and their habitat at local to riverscape scales, and linkages between stream and riparian food webs. His talk, titled “Crossing boundaries to explore the hidden mysteries of linked stream-riparian ecosystems,” was extremely well-attended.

Serita Frey
GDPE Honor Alumna

Serita Frey graduated with a Ph.D. from GDPE in 1999. She joined the faculty in the Department of Natural Resources & the Environment at the University of New Hampshire in 2002. Dr. Frey chairs the Natural Resources and Earth Systems Science (NRESS) Ph.D. program at UNH and teaches several soils courses (Studio Soils, Soil Ecology).

Her research focuses on how anthropogenic stressors (e.g., climate change, nitrogen deposition, agricultural management, invasive species) affect the composition and diversity of soil microbial communities and microbial-mediated carbon and nitrogen cycles. While at CSU, Serita gave a talk titled “Linking Soil Microbial Communities and Ecosystem Function: A Coming of Age Story”. She also took time to meet with students and discuss how she successfully established her research collaborations.

Dr. Fausch

LeRoy Poff presents Serita Frey with a plaque to commemorate her award.

The Distinguished Ecologist Series brings top ecologists to CSU for presentations and discussions with faculty and students. All presentations can be streamed from our website, or accessed directly with the link below:
http://vimeo.com/colostategdpe/videos
2014 Spring Distinguished Ecologists

Jim Estes

Jim Estes is an internationally known expert on marine mammals and a specialist in the critical role of apex predators in the marine environment. He has conducted field research in Alaska, California, Canada, Mexico, New Zealand, and Russia. He has published more than 150 scientific articles, several books and monographs, and has served on the editorial boards for a variety of professional societies. Jim's most recent book, published by Island Press in 2010, is a co-edited volume with John Terborgh entitled Trophic Cascades: Predators, Prey and the Changing Dynamics of Nature. Jim is a Pew Fellow in marine conservation and a Fellow of the California Academy of Sciences. He received the Western Society of Naturalist's Lifetime Achievement Award in 2011 and the American Society of Mammalogists' C. Hart Merriam Award in 2012. After retiring from federal service in 2007, Jim took a part time faculty position with the Department of Ecology and Evolutionary Biology at the University of California at Santa Cruz, where he currently resides.

Jim gave two talks while at CSU. The first, titled “Sea otters and kelp forests: an ecological history of the North Pacific Ocean,” summarized the culmination of many integrated studies spanning his whole career. The second talk, titled “A role for large predators in the fabric of nature,” placed this work in the broader context of trophic cascades that have been observed in other aquatic and terrestrial ecosystems.

Scott Collins

Scott Collins received his PhD from the University of Oklahoma in 1981. Following a postdoc appointment at Rutgers University, he returned to the University of Oklahoma where he was an Assistant and then Associate Professor of Botany. In 1992 he moved to the National Science Foundation where he served as a Program Director in the Division of Environmental Biology for various programs. Collins was the original NSF Program Director for the National Ecological Observatory Network. In 2003 he moved to the University of New Mexico where he is now Regent's Professor of Biology, the Loren Potter Chair of Plant Ecology, Chair of the US Long-term Ecological Research (LTER) Network Executive Board and Science Council, lead PI on the Sevilleta LTER Program and Deputy Director of the Sevilleta Field Station. His research focuses on the interactive effects of fire, grazing and climate variability on grassland ecosystems.

Collins has worked extensively on climate change impacts on desert grasslands in New Mexico and in tallgrass prairie as part of the Konza Prairie LTER Program. He also has worked in South Africa as part of the Ecosystem Convergence project comparing fire, climate and herbivore effects on savanna grasslands in North America and Kruger National Park, South Africa. In addition to his research, Collins is the lead PI on the Sevilleta LTER Summer REU Program, which supports independent research by undergraduate ecology and fine arts students each summer at the Sevilleta Field Station. Scott’s talks at CSU were titled “Patterns and controls of community structure in South African and North American grasslands: convergence and contingency” and “Precipitation variability, alternative stable states and vegetation dynamics in the northern Chihuahuan Desert”.

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Winsor Lowe was selected as this year’s Rising Star Ecologist. He received a B.A. from Middlebury College in 1994 and a M.S. from The University of Montana in 1997, where he worked on the thermal ecology of stream insects. Winsor’s dissertation at Dartmouth College and postdoc at The Cary Institute of Ecosystem Studies focused on the spatial ecology of salamanders in headwater stream networks. Winsor has been at The University of Montana since 2005, where he is a member of the programs in Organismal Biology and Ecology and Wildlife Biology.

Along with an amazing group of students and collaborators, Winsor studies how dispersal affects the evolution, population biology, and community ecology of stream animals. He is especially interested in the ecological and evolutionary drivers of individual dispersal patterns (e.g., stay v. leave, go short v. go long) and how these proximal drivers influence emergent population and community dynamics. Winsor tries to make his research relevant to large-scale management and conservation challenges facing stream ecosystems, such as climate change, timber harvest, and headwater fragmentation. He also just really enjoys walking along small streams and seeing what is under rocks.

Clockwise from upper left: Students Laura Maebe, Peter Leipzig-Scott, Michael Koontz, and Magda Garbowski wait with notebooks ready for Winsor Lowe’s first talk; Scott Collins and Cini Brown amidst a crowd at the evening reception; Scott Collins discusses his research with student Amy Birtwistle; and students and faculty chat while waiting for a seminar to begin.
GDPE students excel at more than just science

For many GDPE students, time away from the lab or office is often spent playing intramural sports. Softball has become exceptionally popular, and there are currently three teams in the Fort Collins City League led by GDPE students: The Runs, The Prebles, and The Hands of John Stamos. All teams include a mix of GDPE students, alumni, and their friends. “Softball is a great reason to get together with friends on a Wednesday night. The season runs from March through October, so some days are beautiful, and some days it snows, but we always have fun”, says GDPE alumna Emma Lynch, who plays for The Prebles.

The Runs, a team that includes GDPE students Jenny Soong, Kate Wilkins, Adam Dillon, Andrea Borkenhaugen, Kevin Wilcox, Aaron Sidder, Christina McKernan, and alums Derek Schook and Jeremy Sultenfuss have won the Fort Collins City League Championship two years in a row.

The Prebles (officially titled Poudre River Prebles) have been together for the last 5 or 6 years. The team name pays homage to the Preble's meadow jumping mouse, which is endemic to northern Colorado and is on the list of threatened and endangered species. The team membership has evolved over time, but has at all points contained at least one GDPE student or alum.

The Hands of John Stamos has been around for 4 or 5 years now, and the name is something of a mystery. “I think the name came from a malapropism - where the new team was brainstorming names for themselves and "The Hands of John Stamos" was misheard in the place of another name”, says GDPE student Ashley Shaw. Student Greg Wann remembers it differently: “We were all pretty into Full House at the time. [Alumna] Melanie Davis may or may not have had a weird dream involving John Stamos and his persistent (and extremely creepy) hands”. Either way, the name stuck.

“We are definitely in the league to have fun - more to hang out and have beers together than to win games - although the occasional home run still gets everyone on their feet, cheering! We are always looking to add new players!” says Ashley Shaw.

All three teams play in the Fort Collins City League, and despite technically competing they often practice together. “We have the most fun playing other teams affiliated with GDPE. I'd say our relationship is best defined as a friendly rivalry”, says Emma Lynch.

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Sports participation among GDPE students is not limited to softball. Students Jenny Soong, Kevin Wilcox, Jocelyn Lavallee, Amber Childress, Carlyn Perovich, Justin Dohn, Jared Stabach and alumni Dave Hoover and Derek Schook all played on a flag football team called “The 85 Bears”. Andrea Borkenhagen plays on a women’s league soccer team named “Pepsi” that also includes GDPE student Jess Salo, along with several other CSU students and postdocs. “We are undefeated and just won our first of three playoff games,” says Andrea.
New Students Fall 2013

Jordan Allen - MS

Jordan graduated from Savannah State University, with a B.S. in Environmental Science. He has gained a wide range of research experience in programs such as Summer Undergraduate Research Program (SURP), UNAVCO’s Research Experiences in Solid Earth Sciences for Students (RESESS), NASA’s Undergraduate Student Research Program (USRP) and Woods Hole Partnership Education Program (PEP). His research interests include developing and improving environmentally sustainable communities that support basic lifestyles, understanding climate change influenced by natural and anthropogenic factors. Aside from research, Jordan likes to travel, read, listen to music, and spend time with his family. In the fall, he will be matriculating into the M.S. program in Ecology, working under the guidance of Scott Denning.

Allison Cartwright - PhD

I am a PhD student working with Tom Hobbs on the population estimation of elk in Rocky Mountain National Park. My research involves aiding transition from annual aerial surveys to ground count methods. I have a Bachelor’s of Fine Arts in photography from the Art Institute of Boston at Lesley University (2003) and worked as a freelance photographer for nearly a decade in New York City. Towards the end of my time in New York, I discovered a passion for quantitative methods while taking courses at Hunter College, City University of New York. I earned an MS, Statistics from Colorado State University in 2013 and am pursuing a PhD to explore applied methods in environmental statistics.

Gericke Cook - PhD

Gericke Cook is a returning PhD student working with Melinda Laituri and Paul Evangelista to finish her doctorate in ecology. Her prior research focused on African savanna ecology dynamics and historical changes to the Seronera woodlands in Serengeti National Park. Gericke left GDPE in 2006 to pursue federal employment in the fields of GIS and natural resource management. Her educational training from CSU has served her well and she is currently a geographer with the USDA Animal and Plant Health Inspection Service. She combines GIS science, statistics, and quantitative ecology to produce risk models for addressing plant health and disease issues.

Jeff Carroll – PhD

I am a new Ph.D. student working with Alan Knapp and Patrick Martin, and my research is going to focus on the ecophysiological adaptations of Rocky Mountain conifers to climate change. I moved to Fort Collins during the summer of 2012 and love Colorado. Since moving here, I’ve been working for CSU as a Research Associate in the Biology department, managing the establishment of a long-term multi-state experiment on the effects of drought on grasslands. I moved to Fort Collins from Connecticut, where I received a Master of Forest Science degree from the Yale School of Forestry and Environmental Studies. Before that I received a Bachelor of Arts degree in Environmental Studies and International Studies from Colby College. To unwind, I enjoy ultimate frisbee, hiking, skiing, and rock climbing.

Cooper Farr - MS

I am a new MS student working with Liba Pejchar and Sarah Reed. Originally from Lawrence, KS, I received my undergraduate degree from the University of Colorado at Boulder. After graduating, I spent several years working for a variety of wildlife research projects, including a Rafinesque’s big-eared bat project in Kentucky, a sage grouse study in Wyoming, and several projects in Fort Bragg, North Carolina investigating the effect of prescribed fire on wildlife habitat selection, diet, and movement. I will be studying how conservation development subdivisions influence bird and mammal composition and abundance.
Lauren Hargis - MS

I am originally from Louisiana, but have called Colorado my home for over ten years now. I completed my B.S. here at CSU and am now working on a M.S. with Dr. Will Clements in the Department of Fish, Wildlife and Conservation Biology. My research interests have included looking at trophic dynamics in lentic and lotic systems and the affects of environmental contaminants in systems. I will be working closely with my colleagues at the US Geological Survey throughout my M.S. research and am thankful for their amazing support. Outside of my career I enjoy spending time with my family and all of the outdoor sports and live music that Colorado has to offer.

Magda Garbowski - MS

I am a masters student working with Cini Brown and Danielle Johnston to study the effects of super absorbent polymers in restoration. Since receiving a BA in Ecology and Environmental Studies from CU Boulder in 2010, I have been exploring the fields of plant ecology and restoration in the summers and teaching ski school in the winters. After hopping around the west, I am excited to spend the coming years conducting research, studying, and living back on the Front Range.

Erika Foster - PhD

Growing up in Portland, OR in sixth grade I spent a week with my class at Outdoor School studying the natural world. Since this time my passion for soil and plant science grew. I pursued my interests at the University of Montana in the College of Forestry, receiving a BA in Environmental Studies, a BS in Resource Conservation and a minor in Wilderness Studies. After taking a year to work in Alaska as a naturalist guide, pick up a little Spanish in Central America, and overwinter on the ski slopes of the West, I am joining the GDPE and working under Francesca Cotrufo of Soil and Crop Sciences. My overarching interests in soil and plant science, climate change, forest restoration and sustainable agriculture perfectly intersect in the study of biochar. I will be assisting Francesca with an ongoing project looking at the effect of biochar soil amendments on plant growth and in the future will study the effects and feasibility of biochar application on a widespread scale.

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May Gamboa - PhD

I am a new PhD student co-advised by Cameron Ghalambor and Chris Funk. I obtained my BS from UC Berkeley in Integrative Biology and Environmental Sciences, Policy, and Management. After receiving my undergraduate degree, I continued working with Dr. Steve Beissinger exploring interspecific interactions among rails in small, isolated wetlands as well as aiding in other ornithological projects. I am broadly interested in understanding morphological and behavioral adaptive variation among populations. By disentangling the primary factors influencing population dynamics and adaptive variation, I aim to help inform conservation decisions regarding species and populations of concern. My work will focus on the Channel Island Song Sparrow, a species restricted to a few islands off the coast of southern California.
Adam Herdrich - MS
I received my B. S. in Fish, Wildlife, and Conservation Biology from Colorado State University in the spring of 2012. During my undergrad years, I worked on two separate research projects 1) possible synergistic effects of multiple heavy metal contamination on stream macroinvertebrate communities in Dr. Will Clements’ lab and 2) the thermal tolerance of the stonecat, a species of special concern in Colorado, in Dr. Chris Myrick’s lab. These two projects solidified my career path into aquatic ecology research, with an emphasis in stream restoration. After working at Colorado Parks and Wildlife as an aquatic technician I returned to CSU in the Colorado Coop Unit, working with Dr. Dana Winkelman, to earn a master’s degree in ecology with my research focusing on what effects large in-stream woody debris has on eastern slope Rocky Mountain trout populations.

Ava Hoffman - PhD
While working at the University of Virginia and Virginia Commonwealth University, I became fascinated by ecology, in particular ecological genetics and its importance to grassland ecosystems and agriculture. At the University of Virginia, I earned my B.S. with a focus on agricultural genetics. After also working in the biotechnology industry, I am very excited to begin my PhD work with Dr. Melinda Smith this fall. My research will focus on gene expression in natural grassland species at the beautiful Konza Prairie site in Kansas. I hope to integrate my findings with the critically important agricultural and biofuel industries.

Anna Mangan - MS
For my undergraduate degree in Business Administration, I moved from my hometown of Golden, Colorado to Fort Collins to attend CSU and have enjoyed making this area my home. To develop new skills, I studied Natural Resources and Forestry at Front Range Community College. After working on research projects with the US Forest Service, Colorado Parks and Wildlife and currently, the National Wildlife Research Center, I knew I needed to follow my passion for the environment. As a master's student in Liba Pejchar's lab, I am looking forward to pursuing my research interests on the functional significance of avian behavior and biological characteristics as these concepts apply to conservation and human-wildlife in-

Clifton McKee - PhD
I was born in Ohio, but I adopted Pittsburgh as my hometown after attending high school and college in western Pennsylvania. I received my BS in Ecology and Evolution from the University of Pittsburgh in 2011. After taking a class in ornithology, I became fascinated with birds. This led me to join a number of projects studying behavioral ecology, endocrinology, and disease transmission in wild birds. I am making a slight transition at CSU from feathers to fur in order to study disease dynamics and evolution in bats with Colleen Webb.

John Kronberger - PhD
I'm a native of North Georgia, where in 2010 I received my bachelor's degree in biology from Berry College. Since graduating I've spent my time traveling and building an eclectic research background - including studies of longleaf pine restoration ecology, eco-evo feedback loops, avian cooperative breeding, and habitat corridors. As a master's student I am joining the labs of Drs. Lisa Angeloni and Chris Funk to investigate the effects of gene flow between distinct populations of Trinidadian guppies on adaptive male coloration. Namely, does a certain amount of gene flow increase individual fitness via genetic rescue or diminish reproductive success by introducing maladaptive alleles? This question illustrates my longstanding fascination with evolution and my desire to apply evolutionary theory to conservation biology. I'm excited to become a part of the GDPE community and to explore all that Fort Collins and the beautiful Rocky Mountains have to offer.
### Zhongqi Miao - MS

I am a new Master's degree student with Randall Boone. I come from China and got my undergraduate degree in Environmental Engineering from Southeast University, Nanjing. During my last five years, all what I have studied was how to make the environment better for us to live but recently I start to wonder is it allright for us to change the environment on purpose? I still haven't decided which project to study in but I am sure I am so interested in studies on the relationships between human and the natural world and ecosystem modeling. Since Mr. Boone has lots of interesting projects, soon I will have my study field decided.

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### Andrew Pantell - PhD

I grew up on the southern edge of the Boreal Forest near the confluence of the North and South Saskatchewan Rivers. My passion for ecology comes from countless hours of fishing, hunting, and canoeing with two great naturalists, my father and grandfather. The pursuit of a career in Ecology led to completion of a MSc in Range-land Ecology from the University of Saskatchewan. My wife, Heather, and I moved to British Columbia in 2005 where I was employed as a Range Practices Specialist with the BC Forest Service. While with the Forest Service I was given the opportunity to take a sabbatical to teach Environmental Monitoring at Northlands College in La Ronge, Saskatchewan. While in LA - the colder, buggier, Canadian version, I began to think about a return to academics and with Heather's encouragement I applied to the GDPE at CSU. I am very grateful for the opportunity to work toward a PhD with Dr. David Cooper and Andrea Borkenhagen (fellow PhD candidate) on vascular plant establishment on the Fen Restoration Project in northern Alberta. My career goals include being a cracker jack in Boreal Forest ecology, an aficionado of the ecology of Carex spp., and an expert in restoring Boreal Forest ecosystems following human disturbance. Heather and I are looking forward to camping, fishing, and hiking throughout Colorado. As well, I enjoy skiing during, any and all, spare winter hours.

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### Lindsay Ringer - MS

I graduated in 2009 with a B.A. in Landscape Architecture and concentration in Land Rehabilitation from Cal Poly, San Luis Obispo. Since that time, I've worked for the Water Quality Control Board in San Luis Obispo, Bureau of Land Management in San Simeon and National Parks Service in Golden Gate National Recreational Area. Originally from Santa Clara, CA I know I'll miss the beaches and coastal species of home but am eager to join Cini Brown's lab and the GDPE research community. I'll be looking at long-term competition between native and invasive species in managed habitats in Rocky Mountain National Park. One specific project will target how changes in water holding capacity, nitrogen cycling, and other functions of disturbed roadside soils affect long-term restoration success.

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### Rekha Warrier - PhD

I am a PhD student in Dr Barry Noon's lab. While my primary training has been in Veterinary medicine, following the completion of my masters degree in wildlife biology I have been involved in ecology projects dealing with organisms as varied as centipedes and birds. Most recently I was engaged with WWF-India in a project addressing the landscape ecology of large mammals in the Indian terai. Ever since I have been fascinated by the conservation challenges associated with protected areas embedded within agricultural landscapes. Besides ecology my other interests include birding, reading, hiking and traveling.
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<tr>
<th>Name</th>
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<tr>
<td>Shayla Burnett</td>
<td>PhD</td>
<td>I am an incoming PhD student to <strong>Alan Knapp’s</strong> lab. I originally hail from southern Texas and received my BS in Environmental Science from Oklahoma State University. In December 2013, I completed my MS in Agronomy at the University of Wyoming researching management techniques for cheatgrass in the Thunder Basin Grassland and working with other weeds and invasive species across the state. My interests lie in human impacts and uses of grassland ecosystems especially invasive species. I am thrilled to move to a warmer climate and explore the outdoors.</td>
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<tr>
<td>Lauren Baur</td>
<td>MS</td>
<td>I am originally from Boulder, CO, and got my BS in Biology from the University of Washington in Seattle. I spent five years working for the National Park Service doing invasive plant management and vegetation monitoring in several national park units in the Rockies and northern great plains. I’ve been a research associate at CSU since April 2013, working on research conducted by Dr. Melinda Smith and Dr. Alan Knapp investigating the effects of drought and other climate extremes, grazing and fire on grassland plant communities. As a master's student in <strong>Melinda Smith's</strong> lab, I plan to study the relationship between grassland plant communities and large grazers such as bison and cattle.</td>
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<td>Sara Bombaci</td>
<td>PhD</td>
<td>I am a new PhD student working with Dr. <strong>Liba Pejchar</strong>. I am currently completing an M.S. in Fish, Wildlife, and Conservation Biology at CSU while conducting research on the consequences of mule deer habitat improvements in the Piceance Basin for songbird and small mammal assemblages. I am originally from Albuquerque, NM, but I moved to Durango, CO in 2005 to pursue a bachelor’s degree in Environmental Biology from Fort Lewis College. Upon completion of my degree, I worked as a field technician on a variety of projects across Colorado before committing to pursue graduate studies. My PhD research will focus on evaluating the consequences of changes in frugivore diversity and abundance for seed dispersal services in tropical ecosystems. I plan to pursue an academic career that integrates my diverse research interests in conservation biology, invasion biology, restoration and reintroduction biology, plant-animal interactions, and the implications of species loss or species restoration for ecosystem functioning. Other professional interests include environmental education and minority student mentoring, and my recreational interests include mountain biking, hiking, backpacking, climbing, snowboarding, art and photography.</td>
</tr>
<tr>
<td>Anita Kennedy</td>
<td>MS</td>
<td>Anita Kennedy grew up on a farm in southeastern Kentucky, which drove her interest in the natural world. After obtaining a degree in Environmental Studies: Sustainable Forestry from Warren Wilson College in Asheville, NC she gained research experience through several seasonal positions across the west before settling in at The Nature Conservancy’s South Puget Sound Prairie Program in Olympia, Washington. There she developed a program for the research and production of native plant materials for restoration of shortgrass prairies. Here at CSU she is looking at the physiological affects of climate change on several native forb and grass species with range faculty <strong>Troy Ocheltree</strong>.</td>
</tr>
<tr>
<td>Eric Knuston</td>
<td>PhD</td>
<td>I am a new Ph.D. student from Minnesota advised by <strong>Boris Kondratieff</strong>. After completing my BS in Biology from North Dakota State University, I then worked for the USGS in Jamestown, ND. Later, I received a MS in Agricultural Biology from New Mexico State University. Recently I served as an entomologist in Kuwait for the Army Medical Corp. I am broadly interested in understanding habitat choice and population dynamics. My current work involves investigating spider distribution and adaptations to the development of the Great Plains. For this study, I will be focusing on life history of shrub dwelling spiders in the North American grassland ecoregions. This research is intended to contribute to the knowledge base of spider biodiversity and their ecological dynamics within grassland systems. Recreational interests include biking, travel, hiking, swimming, art and live music.</td>
</tr>
</tbody>
</table>
Lee O’Brien - PhD

I'm returning to CSU to pursue a Ph.D. working with Dr. Paul Evangelista. I'm currently employed by the U.S. Fish & Wildlife Service, Inventory & Monitoring Program. The USFWS has asked me to develop a national plan for conserving "functional landscapes" capable of supporting self-sustaining populations of fish, wildlife and plants, using a surrogate species approach to determine what type, how much, and where habitat is required and the necessary configuration within landscapes. I will also propose ways that wildlife refuges can contribute to conserving functional landscapes. I received a B.S. in Wildlife Biology and an M.S. in Ecology from CSU, after starting out as a Philosophy student at U.C. Davis. I've done spatially explicit wildlife conservation planning for about 19 years, working on projects in Colorado, California, Utah, Idaho, Alaska and regionally in the Southwest, Central Hardwoods and Yellowstone. I'm originally from St. Louis, MO. I first moved to Fort Collins in 1989 and have moved away and back several times... this time I'm here to stay!

Crystal Tipton - MS

I am a current MS student working with Maria Fernandez-Gimenez. I earned my BA in Environmental Studies from Washington University in St. Louis, and I have since been working in various management capacities in nonprofit and local government. I want to improve the relevance and accessibility of ecological research to land managers. At CSU, I belong to an interdisciplinary team of ecologists, wildlife biologists, economists, land managers, and producers to build state-and-transition models of sagebrush steppe systems. I am interested in what makes plant communities vulnerable or resilient to disturbance, and in the mechanisms that drive hysteretic (i.e. "tipping point") events in ecosystems.

GDPE student Tony Vorster dunks his head in St. Louis Creek to cool down after a long day of hiking and sampling at Fraser Experimental Forest.

Photo Credit: Aaron Sidder
Winner of Best Research-In-Action Photo at the 2014 Front Range Student Ecology Symposium

Water isn’t always refreshing—and rain can necessitate desperate measures when electronics are required for field work.

Photo Credit: Jeremy Dertien
<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
<th>Research Interests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greg Aplet</td>
<td>The Wilderness Society</td>
<td>My research interests are wide and varied but focus generally on topics relevant to the application of ecosystem management and the conservation of biological diversity and forest ecosystem health. I have conducted field work on the dynamics of Rocky Mountain and Hawaiian forests, the ecology of biological invasions, and endangered plant population biology. More recently, my work has focused on wilderness philosophy and management, the ecology and management of wildland fire, forest restoration, and climate change adaptation.</td>
</tr>
<tr>
<td>Meena Balgopal</td>
<td>School of Education</td>
<td>I study the impact of curriculum and instructional interventions on student learning outcomes around biological and environmental concepts. I conduct my research in both K-8th grade and in college (science and non-science majors) science classrooms. In particular, I study science writing and argumentation strategies to help students learn how to make evidence-based science claims about environmental or biological issues.</td>
</tr>
<tr>
<td>Michael Battaglia</td>
<td>Rocky Mountain Research Station; Dept. Forest and Rangeland Stewardship</td>
<td>I am interested in developing and implementing innovative management strategies that address the challenges and issues faced by forest managers. These research interests include forest restoration, fuel hazard mitigation, and increasing forest resilience to disturbance across multiple spatial scales. Because of the uncertainty in climate change impacts to our forests, research is needed to determine the effects of various management alternatives and silvicultural strategies.</td>
</tr>
<tr>
<td>Erin Berryman</td>
<td>Dept. of Forest and Rangeland Stewardship</td>
<td>Broadly, I am an ecosystem ecologist. I focus on carbon and nutrient dynamics from a soil-based perspective. My current research encompasses two areas: hydrological interactions with forest soil respiration and disturbance effects on soil carbon and nitrogen cycling, considering feedbacks involving vegetation.</td>
</tr>
<tr>
<td>Michael Gooseff</td>
<td>Dept. of Civil and Environmental Engineering</td>
<td>My research group studies the processes by which hydrology, hydraulics, and solute transport and fate influence watersheds, streams, and ecosystems. We conduct research related to stream-groundwater interactions, hyporheic exchange, stream and hyporheic restoration, and climate change in polar and temperate regions. Our research group utilizes both field experiments/monitoring and numerical modeling to uncover new knowledge about how natural systems function and how they respond to change.</td>
</tr>
<tr>
<td>Lars Eisen</td>
<td>Dept. of Microbiology, Immunology, and Pathology</td>
<td>Research interests include: Mosquito and tick biology, ecology and epidemiology of vector-borne diseases, spatial risk models for vectors and vector-borne diseases, and decision support systems for prevention and control of vector-borne diseases.</td>
</tr>
<tr>
<td>Troy Ochletree</td>
<td>Dept. of Forest and Rangeland Stewardship</td>
<td>I am broadly interested in structure and function relationships in plants; trying to understand how anatomical and morphological traits affect physiological and ecological performance. My recent research has focused on investigating the relationship between leaf hydraulic architecture and drought tolerance in grasses. On larger spatial scales, I’m interested in how the timing of drought and heat waves affect ecosystem productivity. I’m working on developing numerical methods to identify periods of ecosystem sensitivity to heat waves and drought in order to better understand temporal patterns of productivity across temperature and precipitation gradients.</td>
</tr>
<tr>
<td>Name</td>
<td>Department</td>
<td>Bio</td>
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<td>---------------------------</td>
<td>-------------------------------------------------</td>
<td>---------------------------------------------------------------------</td>
</tr>
<tr>
<td>Francisco Olea-Popelka</td>
<td>Clinical Sciences</td>
<td>During my career as a veterinary epidemiologist, rather than focusing only on one animal species, I have chosen to study diseases at the interface of livestock, wildlife, and humans in different environments. An important component of my research philosophy is an integrated multidisciplinary approach in which many factors, such as environmental, socio-economical, cultural, and political components are considered in conjunction with the disease causal agent when addressing challenges posed by different diseases.</td>
</tr>
<tr>
<td>Sara Oyler-McCance</td>
<td>Dept. of Ecosystem Science and Sustainability; USGS</td>
<td>I have used molecular genetic techniques to address wildlife management issues including assessing taxonomic uncertainty, documenting population structure, investigating landscape genetic variation, and using DNA as an individual tag for mark-recapture studies. I have studied numerous taxa and have worked extensively on grouse genetics.</td>
</tr>
<tr>
<td>Kim Pepin</td>
<td>Animal/Plant Health Inspection Service, USDA; Dept. of Biology</td>
<td>Dr. Kim Pepin is a quantitative biologist focused on developing models for assisting the implementation of wildlife management and disease surveillance/control strategies. The quantitative approaches used involve parameter estimation from data, statistical forecasting and mechanistic mathematical models developed with data. Dr. Pepin aims to identify drivers of disease transmission, predict disease dynamics in wildlife and livestock populations and assess disease risk at the wildlife-human and wildlife-livestock interfaces. She is also interested in developing mechanistic population models for adaptive management of wildlife populations.</td>
</tr>
<tr>
<td>Meagan Schipanski</td>
<td>Dept. of Soil and Crop Sciences</td>
<td>Our agroecology research group applies concepts from ecology and biogeochemistry to study nutrient cycling and soil organic matter dynamics within cropping systems from rhizosphere to global scales using on-farm, experiment station, greenhouse, and modeling experiments. Through multi-disciplinary collaborations and by placing this research within broader social and economic contexts, our goal is the development of more sustainable food systems.</td>
</tr>
<tr>
<td>Courtney Schultz</td>
<td>Dept. of Forest and Rangeland Stewardship</td>
<td>I am an assistant professor of natural resource and forest policy, and my broad interests are in the areas of adaptive governance, policy learning, and science-policy studies. I have conducted research on the intersection of science, policy and law in several major areas, including large-scale wildlife conservation planning and the development of monitoring and adaptive management plans by federal agencies in various contexts. Currently I'm studying landscape-scale, forest restoration projects and am interested in whether and how learning, innovation, and policy change take place. In this context, my graduate students and I are looking at how monitoring/adaptive management programs are designed, how science is used to inform restoration programs, and how federal agencies and local communities work together to accomplish large-scale, collaborative, and adaptive planning and implementation.</td>
</tr>
<tr>
<td>Dan Sloan</td>
<td>Dept. of Biology</td>
<td>I am interested in evolutionary processes at the genomic level, particularly in the context of intimate symbiotic relationships, including interactions between organelles and the nucleus in eukaryotic cells and between insects and their endosymbiotic bacteria.</td>
</tr>
</tbody>
</table>
## Summer 2013 Graduates

<table>
<thead>
<tr>
<th>Name</th>
<th>Deg</th>
<th>Thesis or Dissertation</th>
<th>Advisor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarah Bisbing</td>
<td>PhD</td>
<td>From genes to landscapes: The distribution of western conifers</td>
<td>David Cooper</td>
</tr>
<tr>
<td>Erica Goad</td>
<td>MS</td>
<td>Mammalian habitat use along a residential development gradient in Northern Colorado</td>
<td>Liba Pejchar and Richard Knight</td>
</tr>
<tr>
<td>Steven Hasstedt</td>
<td>PhD</td>
<td>Forest structure in unroaded old-growth: Understanding the influence of soils on variability of long-term vegetation dynamics and fire history</td>
<td>Daniel Binkley</td>
</tr>
<tr>
<td>Caroline Melle</td>
<td>MS</td>
<td>Nutrient limitation of microbial decomposition in Arctic Tussack Tundra</td>
<td>Matthew Wallenstein</td>
</tr>
<tr>
<td>Elizabeth Shaw</td>
<td>MS</td>
<td>Fire management effects on carbon flow from root litter to the soil community in a tallgrass prairie</td>
<td>Diana Wall</td>
</tr>
<tr>
<td>Gloria Sumay</td>
<td>MS</td>
<td>Photovoice as a technique to understand perception of local people neighboring Tarangire National Park in Tanzania on risks caused by migration</td>
<td>Randall Boone and Gillian Bowser</td>
</tr>
<tr>
<td>Zachary Sylvain</td>
<td>PhD</td>
<td>The influence of moisture availability on terrestrial ecosystems: Effects on soil animal communities along a regional/global scale climate gradient</td>
<td>Diana Wall</td>
</tr>
</tbody>
</table>

Left to right: Zach Sylvain, Diana Wall, Melannie Hartman, Kurt Fausch, Jill Baron, Cynthia Brown, Sheryl Atkinson, Steven Hasstedt
### Fall 2013 Graduates

<table>
<thead>
<tr>
<th>Name</th>
<th>Deg</th>
<th>Thesis or Dissertation</th>
<th>Advisor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel Auerbach</td>
<td>PhD</td>
<td>Modeling riparian vegetation responses to flow alteration by dams and climate change</td>
<td>LeRoy Poff</td>
</tr>
<tr>
<td>Hannah Birge</td>
<td>MS</td>
<td>What happens during soil incubations? Exploring microbial biomass, carbon availability and temperature constraints on soil respiration</td>
<td>Richard Conant and Matthew Wallenstein</td>
</tr>
<tr>
<td>Erin Borgman</td>
<td>MS</td>
<td>Examining maternal effects and genetic differentiation in <em>P. flexilis</em> and <em>P. Aristata</em> to improve success of conservation effort</td>
<td>Ruth Hufbauer and Anna Schoettle</td>
</tr>
<tr>
<td>Amber Childress</td>
<td>MS</td>
<td>Managing resources in a dynamic landscape: analysis of institution, society and the environment of elk management in Northern Colorado</td>
<td>Dennis Ojima</td>
</tr>
<tr>
<td>Emma Lynch</td>
<td>MS</td>
<td>The use of acoustic collars for studying landscape effects on animal behavior</td>
<td>Lisa Angeloni and George Wittemyer</td>
</tr>
<tr>
<td>Heather Scott</td>
<td>MS</td>
<td>Forest respiration from eddy covariance and chamber measurements under high turbulence and a bark beetle epidemic</td>
<td>Michael Ryan and William Parton</td>
</tr>
<tr>
<td>Syed Shah</td>
<td>PhD</td>
<td>Valuation of freshwater resources and sustainable management in poverty dominated areas</td>
<td>Dana Hoag</td>
</tr>
</tbody>
</table>

Farewell lunch for fall graduates and advisors. Left to right: LeRoy Poff, Alan Knapp, Dave Hoover, Dennis Ojima, Amber Childress, Anna Schoettle, Erin Borgman, Melinda Smith, and Jeri Morgan.
### Spring 2014 Graduates

<table>
<thead>
<tr>
<th>Name</th>
<th>Deg</th>
<th>Thesis or Dissertation</th>
<th>Advisor(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catherine Cumberland</td>
<td>MS</td>
<td>Interactions between <em>Bromus tectorum</em>, grasshoppers, and native plants in sagebrush steppe communities</td>
<td>Mark Paschke</td>
</tr>
<tr>
<td>Garrett Stephens</td>
<td>MS</td>
<td>Understory responses to mechanical removal of pinyon-juniper overstory</td>
<td>Mark Paschke and Danielle Johnston</td>
</tr>
<tr>
<td>David Hoover</td>
<td>PhD</td>
<td>Ecological responses to climate extremes in a mesic grassland</td>
<td>Alan Knapp</td>
</tr>
<tr>
<td>Amber Shanklin</td>
<td>MS</td>
<td>Experimental exploration treatments for burn pile fire scars in conifer forests of the Front Range, Colorado</td>
<td>Mark Paschke and Chuck Rhoades</td>
</tr>
<tr>
<td>Chris Geremia</td>
<td>PhD</td>
<td>Hierarchical models provide insight into wildlife and disease management</td>
<td>Tom Hobbs</td>
</tr>
<tr>
<td>Andrea Borkenhagen</td>
<td>MS</td>
<td>Recreating peatland initiation conditions: methods for reclaiming peatlands in Alberta's oil sands region</td>
<td>David Cooper</td>
</tr>
<tr>
<td>Ben Wilson</td>
<td>MS</td>
<td>Evaluating the effects of wildfire in pinyon-juniper woodlands on bighorn sheep habitat and vegetation composition</td>
<td>Randall Boone</td>
</tr>
</tbody>
</table>

Labmates Andrew Pantel, Ed Gage, recent graduate Andrea Borkenhagen, Derek Fedak, and Jeremy Shaw awaiting the start of Kurt Fausch’s Distinguished Ecologist talk.

GDPE student and grad forum organizer Paul Brewer with recent graduate John Lovell.
Spotlight on Alumni

Molly Cavaleri (Ph.D. 2007)
Assistant Professor of Tree Physiology
Michigan Technological University, Houghton, MI

Launching a career: GDPE professor Mike Ryan reflects on Molly’s success as a PhD student in GDPE; Molly describes the challenges of transitioning to a faculty member and independent researcher with grad students of her own.

Mike Ryan: Molly came to GDPE in 2003 to work on a fun and challenging project: our goal was the first comprehensive look at the structure and function of a tropical forest canopy. David Clark at the La Selva Biological Station had the crazy notion that we could repeatedly put up and take down a 35 m scaffold tower at random locations at La Selva and do vertical quadrat sampling from the ground to the canopy top. I had an equally crazy notion that if they were going to all of that trouble for canopy access, we also had to measure leaf and wood physiology. Without ever having been in the tropics or taken measurements from a tower (“Trust your safety harness and lean out a little more for that sample, Molly”), she embraced the project with all of its challenges! Deadly poisonous snakes, sucking mud, rain and more rain, learning Spanish to work with the Tico crew, hauling $30K equipment up the tower, juggling thousands of samples, getting those samples back to the US through the Ag Inspection, and of course, bullet ants (because that is what it feels like if you are stung).

Sometime around halfway through her PhD, Molly made the switch from student to independent scientist—she really caught the science bug, and started to assert her own vision. This switch came when she was analyzing the data for her first two thesis papers: “No, Mike, we are going to use a model-based framework for analyzing the data, because it clearly shows the trends, and (she was probably thinking) it is light-years better than the ancient procedure you suggested!” Her crowning achievement was to combine all of our leaf thickness data with data from the light environment and height in the canopy (~2000 samples) to test an idea about ‘sun’ and ‘shade’ leaves that had been in the literature for decades. Molly showed that, contrary to this sun versus shade idea, how high a leaf was attached on a tree mattered more to leaf thickness than the light environment. Since photosynthetic and respiration rates vary strongly with leaf thickness, this was a pretty big deal. After two rejections and three review cycles, it was finally accepted in Ecology.

Molly is now an assistant professor teaching and mentoring graduate and undergraduate students, and has developed a strong research program on canopy ecophysiology—and, Michigan Tech now has a canopy-access zip line! Molly returns to CSU this spring to co-lead a Powell Center Workshop on using models to predict the response of tropical forests to warming to help inform the tropical forest warming experiment. Her daughter Lilia Beth also turns three in April! Molly represents an excellent example of how GDPE grads pursue their future.

Molly’s Perspective: I had the very good fortune of being selected for a Ph.D. research position in GDPE under the co-advising (dream) team of Dr. Michael Ryan and Dr. Daniel Binkley. I honestly didn’t know what “ecophysiology” meant before interviewing for this Ph.D. position, but since that first time in the tower (“I can’t believe I get paid for doing this!”), I have built a career on finding new ways to get back up into the canopy. Along the way, I’ve been able to work in the most beautiful places, including Hawaii, Brazil, Panama, and Puerto Rico. I am currently a tenure-track Assistant Professor of Tree Physiology at the School of Forest Resources & Environmental Science at Michigan Technological University, and I can honestly say this is my dream job.

(continued on page 23)
Spotlight on Alumni

(continued from page 22)

There are always a million things that need doing, and the whole concept of ever being “caught up” is a myth. However, when I step back from the daily grind of students and paperwork, I realize that I love to teach, I love to mentor grad students, and whenever I can, I try to get back up into the canopy, even if it’s just as field tech to my own grad students!

Understanding how plants interact with their environment at the physiological scale is critical if we want to understand how ecosystems are responding to climate change. Here in Upper Peninsula Michigan, my students investigate responses of leaf structure and function to canopy micro-climate, the effects of experimental warming on tree transpiration, and within-canopy variability in photosynthetic-temperature response. In addition to this domestic research, my colleagues and I have been working tirelessly to get a project off the ground to investigate the effects of climate change on tropical rainforests. I am proud to say that this year we finally got funding from the USDA Forest Service International Institute of Tropical Forestry to begin construction on a field warming experiment in Puerto Rico, where we will study plant and soil processes critical to carbon cycling. This project, located in Luquillo Experimental Forest, will be the first field warming experiment of its kind anywhere in the tropics.

Of course none of this would have been possible without the mentorship and support of my GDPE advisors, Mike Ryan and Dan Binkley. They both held me to the highest of standards, which, while often uncomfortable, is absolutely necessary for growth. I have absorbed this mentorship style and it has propelled my students to great success as well. Mike Ryan also taught me to think big, and essentially taught me how to think like a scientist. Early on in my graduate program, Mike once told me a parable about filling up a cup with big rocks first, then sand, then water. If you fill the cup with sand and water first (i.e., urgent but not important things), you will not have room for the Big Rocks. I’ve had to change my work habits significantly since grad school, as large un-interrupted blocks of time are a thing of the past. Now, I try to find 1 hour blocks of time every day or so to keep the Big Rocks going, even if it is just to open a document and try to remember where my brain was.

Dan Binkley has been one of the most influential people in my life, especially when it comes to work ethic. Dan came to Michigan Tech to visit during a particularly sensitive time in my early days of pre-tenure when things seemed to be coming apart at the seams both personally and professionally. We were having dinner, and after I told him a bit about what was going on in my life, he suggested that I let go of the guilt. It was such a simple thing, but in many ways that conversation got me through the trying first years as a newbie assistant professor. He recommended this statement: “I’m sorry I dropped the ball. That was not my intention. Let’s make a plan to move forward.” I have used this again and again, always to great success, as guilt is an impediment to my productivity and progress.

I had a baby in my second year here at Tech, and I think motherhood has helped me to be more efficient with my time and better at saying no—both necessary for success in a tenure-track position. I find great joy in being a mentor to my female grad and undergrad students. There are so many barriers to retention for female research professors, that sometimes it is nearly impossible for students to consider it a desirable path unless they see someone actually doing it, and doing it happily. I love my job and I love motherhood, but some days just fall apart. I have a loving and supportive network of friends and family to help me get through those times. I am doing what I love, and I hope my daughter never sees me as a workaholic, but rather as someone who works hard doing what she loves. I would respect anyone’s decision to leave academia. It is not a path that everyone would enjoy. I’m still figuring things out myself. I try to remember that some balls just get dropped (people forgive you). You can’t do everything 100%. But that’s ok! Nobody can. I now run my own research lab where my students are climbing trees, zip-lining through canopies, and taking measurements off of towers both in the temperate deciduous forests of Michigan and tropical forests of Puerto Rico. I still sometimes can’t quite believe I get paid for this.
Sarah Bisbing (2013) began a new position as Assistant Professor in the Department of Natural Resources Management & Environmental Sciences at California Polytechnic State University.

Amy Blair (2008) has been recommended for tenure and promotion to Associate Professor at St. Ambrose University in Davenport, IA, where she is a faculty member in the Biology Department.

Peter Bruss (2012) recent moved to Israel with his wife, where he has been able to engage in a discourse on global climate change with people of likeminded interest. He is currently working towards developing a relationship with Haifa University and the Technion.

Dave Gammon (2004) is currently an associate professor at Elon University in NC. For his sabbatical in Fall 2013 he completed a graduate certificate program in ecological economics at University of Vermont.

Angie Moline (2007) and her colleagues received a large grant from the Doris Duke Charitable Foundation to support undergraduate education and research in conservation biology. The Doris Duke Conservation Scholars program at Northern Arizona University "serves to strengthen the conservation profession by training students who can make significant contributions to broadening the field of conservation." The program creates opportunities for undergraduate students to participate in mentored research activities in conservation biology and other disciplines relevant to land, water, and wildlife conservation.

Meg Steinweg (2011) recently began an Assistant Professor position at the Oregon Institute of Technology.

Karl Wyant (2008) will graduate with his doctoral degree from Arizona State University in May 2014. He also served as head editor, project lead, and author of two chapters for a book published in July 2013 by Oxford University Press. The book is titled “Phosphorus, Food, and our Future”.

Sarah Evans (2012) accepted a tenure-track faculty position at Kellogg Biological Station, Michigan State University. She will start in August 2014.

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A prescribed burn at the Konza Prairie, where many students and faculty conduct research.

Photo Credit: Ava Hoffman

GDPE students A.J. Horton and Jenny Soong with their advisor Francesca Cotrufo after finishing a 3-year litter decomposition study at Konza.
Student Awards and Honors 2013-2014

Four GDPE Students Receive NSF Fellowships

Graduate Research Fellows:
- **Maybellene Gamboa** is using genomic approaches to understand how fine-scale climatic variation influences morphology and physiology in Song Sparrow populations across the California Channel Islands. Her project is titled “The effect of climate and gene flow on local adaptation in an island bird”.

- **Annie Kellner** is studying disease ecology of North American felids. She is investigating the role of domestic cats as a reservoir for pathogen transmission to bobcats and pumas, and examining whether anthropogenic landscape change may facilitate interspecific transmission. Her project is titled "The role of anthropogenic landscape change in the spread of a recently discovered multi-host feline pathogen".

Postdoctoral Fellows:
- **John Lovell** studies the genetic basis of physiological diversity in plants. His fellowship project, entitled “Determining the genomic basis of heterosis and apomixis in Panicum grasses” will assess the genes that underlie hybrid vigor (heterosis) and asexual seed production (apomixis) in an important biofuel crop.

- **Andrew Tredennick** aims to increase our mechanistic understanding of temporal stability in natural ecological communities by considering how population dynamics “add-up” to produce observed stability and how coexistence among species mediates those population dynamics. His project is titled “Diversity-stability relationships and coexistence: new theory and empirical tests” and he will be working with GDPE alum Peter Adler at Utah State University and Fred Adler at the University of Utah.

- **Paul Brewer** was awarded a two-year pre-doctoral fellowship from the USDA Agriculture and Food Research Initiative NIFA Fellowships Grant Program. Paul’s project is titled “Uncovering the mechanisms of reduced tillage effects on nutrient cycles and greenhouse gas flux: how anoxic microsites and other soil structures mediate critical cycles in agriculture.”

- **Mindy Clarke** received a Fulbright Scholarship to conduct dissertation research on interactions of human health and conservation around protected areas in Indonesia. Her research is also supported by a grant from the American Institute for Indonesian Studies.

- **Stacy Endriss** and **Peter Leipzig-Scott** both received funding from the Larimer County Open Lands’ Grant for Community Partnering program to study the effects of common mullein on surrounding native plant communities.

- **Christa Fettig** received the College of Agricultural Sciences Charles N. Shepardson Graduate Student Teaching Award in April of 2013.

- **John Lovell** was awarded the 2013 R. Ralph Baker Graduate Student Award for Research Excellence from the Department of BioAgricultural Sciences and Pest Management at CSU.

- **Katie Langin** received an AAAS Mass Media Science and Engineering Fellowship that will allow her to work as a science-journalist intern at National Geographic this summer.

(continued on page 26)
• **Matthew Luizza** received the Natural Resource Ecology Laboratory’s James E. Ellis Memorial Scholarship. He was also awarded a GDPE small grant for graduate research.

• **Danny Martin** received research funding from the U.S. Fish and Wildlife Service for his project titled “Conservation of Native Reptiles in a Changing Environment”. This project will help resource managers anticipate and address climate change impacts by designing and testing a volunteer-based reptile monitoring program that assesses essential habitats and evaluates climate-related risk factors.

• **Katie Renwick** received a NASA-MSU professional development award to attend the 2014 US-IALE meeting. Her presentation at the 2013 annual symposium won honorable mention for best graduate student presentation.

**Global Sustainability Leadership Fellows**

Nine GDPE students were selected as part of the 2013-2014 cohort of Sustainability Leadership Fellows: Chubashini Suntharalingam, Timothy Assal, Matthew W. Luizza, Paul Brewer, David Hoover, Clinton Leach, Ryan McShane, Mónica Páez, and Katie Renwick. Fellows receive training on science communication that helps them to effectively address global environmental challenges in a landscape of increasing digitalization and information accessibility. All of this year’s fellows have contributed blog posts to the SoGES blog HUMANnature. You can read more about their research at: blog.sustainability.colostate.edu/

**ESA Policy Fellows**

Two GDPE students, **Amber Childress** and **Drew Bingham**, received ESA’s 2014 Graduate Student Policy Award. They traveled to Washington, DC in April to participate in policy training sessions as well as meetings with decision-makers on Capitol Hill. Amber and Drew represent two out of just five students selected for this prestigious award.

**Matt Luizza teaching an invasive species science and collaborative conservation field course for the 2013 SoGES Pre-College Summer Sustainability Program**
Brian Bledsoe won the 2013 Faculty Award for Excellence in Teaching from the Department of Civil and Environmental Engineering at CSU. He is also Co-PI on a new EPA center established to demonstrate sustainable solutions for reduction of nutrient pollution in the nation's waterways.

Gregory Florant was awarded a Fulbright Fellowship to teach and do research in Austria during the spring of 2014.

Kathy Galvin and GDPE alumna Joana Roque de Pinho received the Jean Rouch Award for Collaborative Filmmaking from the American Anthropological Association for their film “Maasai Voices on Climate Change”.

Linda Joyce and her research team received a 2013 Chief’s Award for their work developing and delivering scientific information and facilitating the use of that scientific information in the development of adaptation strategies and actions in National Forests across western and north-central United States.

Melinda Laituri was selected as a 2014 Jefferson Science Fellow. The Jefferson Science Fellows program was established to strengthen the role of science, technology, and engineering in the development of U.S. government policy. Fellows spend one year on assignment at the U.S. Department of State or USAID as science advisors on foreign policy issues.

Chester Moore received the American Mosquito Control Association’s Medal of Honor, their highest award.

LeRoy Poff, Chris Funk, Boris Kondratieff, and Alex Flecker were awarded a grant from the NSF RAPID program to test the effects of the September 2013 floods in the Colorado Front Range on stream insect biodiversity. The project, titled “Effects of an Extreme Disturbance Event on Genomic Variation and Community Organization of Stream Insects”, utilizes pre-flood data collected as part of the NSF-funded EvoTRAC project.

Courtney Schultz was awarded two grants from the U.S. Forest Service for projects focusing on forest restoration, monitoring, and adaptive management.

Diana Wall was elected into the American Academy of Arts and Sciences, one of the nation’s most prestigious honorary societies. She was also inducted into the Colorado Women’s Hall of Fame.

Matthew Wallenstein was a 2013 National Science Foundation BREAD Ideas Challenge winner. This program draws attention to under-studied scientific challenges facing smallholder farmers in the developing world. Matt also received a NSF CAREER award for his proposal titled “Microbial Allocation of Assimilated Carbon: Interactions between Temperature, Substrate Quality, and Microbial Physiology Determine the Efficiency of Arctic Soil Carbon Cycling”. Another project titled “Understanding litter input controls on soil organic matter turnover and formation are essential for improving carbon-climate feedback predictions for Arctic, tundra ecosystems” was funded by the DOE. Matt was also elected president of the Soil Ecology Society and received the Jack Cermak Advising award from CSU in recognition of his outstanding graduate advis-
Representative Student Publications

**Bold** letters denote GDPE Faculty or Students. **Italic** denotes GDPE alumni.


Representative Faculty Publications

**Bold** letters denote GDPE Faculty or Students. *Italics* denotes GDPE alumni.


**Fausch, K. D.** in press. A historical perspective on drift foraging models for stream salmonids. *Environmental Biology of Fishes*.


**Kumar, S., J. Graham, A. West and P. Evangelista In Press.** Using district-level occurrences in MaxEnt for predicting the invasion potential of an exotic insect pest in India. *Computers and Electronics in Agriculture*, DOI: 10.1016/j.compag.2014.02.007.


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