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Department of Biology
Pittsburg State University
1701 S. Broadway
Pittsburg, KS 66762
voice: 620.235.4732
fax: 620.235.4194
e-mail:
<mailto:biology@pittstate.edu>
<http://www.pittstate.edu/department/biology/>



From The Chair's Desk

Nov. 27, 2013: The day before Thanksgiving is such a quiet day in the Biology Department and across campus. There are no classes, so faculty have no teaching duties, and there are no students in the halls. A few people have chores to take care of, some meetings that couldn't be scheduled at any other time, papers to grade, etc. so there is a little traffic. I have George Winter playing in my office, it is peaceful, and therefore a perfect day to gather some thoughts to share with you.



One great starting point is that this fall I have the privilege of introducing our new botanist, Dr. Neil Snow. Neil comes to us from Montana, and he brings us his enthusiasm for working with students and a commitment to improving community and student access to our herbarium. Oh yes, and he brings his violin, too. His family hasn't moved here yet, but we hope to be able to welcome them to Kansas very soon. I'll stop now and let him tell his own story. Please look for his piece in this newsletter to fill you in on his busy first semester here at PSU. We are very happy to have him here.

Neil's arrival marks the beginning of a wave of retirements and subsequent new faculty hires that will occur over the next several years. I have wondered from time to time if so many new names will change the way our newsletter is received. Reading news from our alma mater makes us reminisce about people and places that we once knew very well and we read to catch up with some of those people from our past. As the names in those familiar "by-lines" change in the next few years, I suspect that some people might be tempted to skip over the notes telling about important work that is happening under new, unfamiliar

- continued on next page

names. While that is understandable, and we all appreciate your loyalty, I am really hoping that most of you will take the time to read about the newer faculty members, as well. They are bringing new projects, new research, and new accomplishments of many kinds into our department. I know that if you start following them that you'll be pleased to get to know them, too.

This is my third year as Chair of Biology, and one would think that there are lots of opportunities to be a leader in this role. However, I learned (in one of the several leadership workshops I've attended) that there is a difference between being a leader and a manager. I have found that there are so many minutiae to deal with on a daily basis that being able to accomplish much beyond "managing" is ambitious on many days. However, I have had one opportunity this year to join a leadership group on campus that is exploring Open Educational Resources (OER).

I became interested in OER a few years ago when I learned that nearly 25% of my General Biology students were not buying the textbook, even though we used it literally on a daily basis. Last spring, PSU had the opportunity to join a group that is working with resources that are free to students and distributed online for use in a variety of types of courses (<http://www.lumenlearning.com/lumen>).

As chair, I still teach General Biology frequently, and I agreed to try the resources out in my lecture next spring (2014). It turns out that Dr. Neil Snow agreed to also use these resources in his sections of General Biology as he started out this fall, so he got a head-start on me (so much for being "the leader"). This link explains more about OER: <http://bit.ly/1fdYhOD>. There are arguments both for and against the use of these types of resources, and OER will never be the right answer for every course. While the jury is still out on whether we will use OER resources beyond this academic year, I think the experiment is worth trying and the data that is collected from our sections this year will be interesting to see. And yes, having opportunities to learn and to try out new strategies is part of why I like my job. If it turns out that I find I can support OER, I may even get the chance to be a leader in the use of these new resources on our campus.

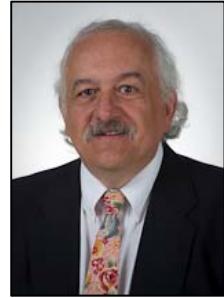
Well, by the time you get this, Thanksgiving will be long over and I hope that this newsletter finds you warm and safe. Please do read on; we've had several nice surprises this year but I want the faculty to tell you about their various good news items. Let us hear from

you from time to time. You are important to us, and I mean that more with every passing year.

Sincerely,

Dixie Smith (dsmith@pittstate.edu)

From Dr. Joe Arruda



Greetings from my little patch of green on the third floor of Heckert-Wells Hall.

Teaching has been busy ... among the highlights: (1) Principles of Biology II each semester (team-teaching the lab component with Dr. Dawson), (2) my last turn at Principles of Conservation in the spring – it is being turned over to some youth, Dr. Hermann Nonnenmacher, (3) on-line courses including Environment Health in the spring, Environmental Life Science labs (Dr. Mandy Peak did the "lecture") and Ecology in the summer, and for the first time, Evolution in the fall, and best of all, (4) Stream Ecology and Principles of Ecology Lab in the fall.

Some administrative work is always there for all faculty. For me it was chairing a department committee that revised the Departments guidelines for Tenure and Promotion, and for criteria for Annual Performance Appraisals. Sound exciting huh? I was lucky to have Dr. Rider and Dr. Peak as committee members and I think we worked well together to get the job done in short order. I continue to collect and process assessment data – on "zero-hour" freshmen success and over all student performance s seniors through their scores on a biology "exit" exam, called the Major Field Test. I also respond to data requests along the way.

I was also invited to serve on the University's e-Learning Academy Steering Committee. We helped develop a plan to assess the quality of on-line courses, were trained to assess them, and, during the summer, assessed our own courses. This is a thoughtful and rigorous process, but it will result in a pathway for continuous improvement of all online courses.

This fall (and next spring) I am chairing the search committee for a new fish biologist – a replacement for

the unreplaceable Dr. Jim Triplett. Times are starting to change here as the field faculty retirements begin.

Ken Gouvier graduated with his master's last Spring and is now working for Burns and MacDonnell, an engineering consulting company out of Kansas City. Ken is my 15th master's graduate in 24 years of doing this.

I continue to expand the survey of land snails and have begun aquatic snails. I attended The World Congress of Malacology that was held in the Azores July 21-26 and presented a poster on the land snails of abandoned mine lands in Southeast Kansas. Recently published is a "Checklist to the Land Snails of Kansas" published by the Kansas School Naturalist of Emporia State University.

I'll leave you with some images of students doing field work in the Stream Ecology or Ecology lab ... the best time is when you're in the field. Like "they" say, a bad day in the field is better than a good day in the office (unless it's thundering and lightening ... well, maybe not).

jarruda@pittstate.edu
<http://faculty.pittstate.edu/~jarruda/>



From Dr. Peter Chung



Greetings, Salutations, and Happy Holidays from PSU Biology! It is hard to imagine, but this year marks my 10th year at Pitt! How fast time has flown by! And as the year draws to a close, nostalgia reigns supreme as Donna Lair has announced her retirement. What a great run we have had. Thank you

Donna, for all of your years of service. Our department, me in particular, will miss you greatly! Especially with the Prep Lab move due to HVAC renovations that should take place late next spring through the summer months of 2014.

Microbiology continues to keep me busy, along with robust enrollments in Pathogenic Microbiology and Immunology. The process of settling back into my routine of teaching after a year as Faculty Senate President has taken a bit of adjustment, although I have enjoyed every moment of it. I have definitely enjoyed turning my focus 100% back onto my teaching and research. It has been a bit of a slow year on research. However, our lab will be getting new student researchers, starting with Maria, who will be joining Si-Jing, our lab's new graduate student. As the spring semester progresses, we will be looking to add a couple more students to the lab. Exciting times are ahead as part of the lab focus will switch back to molecular microbiology and parasitology. We look forward to attending the KINBRE conference in Kansas City, Missouri, this coming January. Stay tuned!

As we have seen in the last few years, the number of prospective students interested in professional school continues to increase. Of note, our medical technology program is slowly gaining popularity among our freshmen and sophomores. We currently have two Pitt State med tech majors attending their clinical year at Mercy Health in Joplin, Missouri, with one more Pitt med tech major starting at St. Luke's Hospital in Kansas City, Missouri, next June.

We continue to assist the Biology Club with Science Day. This March, we had over 500 high school students attend the Science Day festivities (Biology Bowl, Chemistry Capers and Physics Frolics). Kudos to the Biology Club and its leadership for a job well done! And many thanks to all the faculty and staff that were an immense help!

Advising continues to be a top priority for us. This year's PT Open House on April 11, 2013, was co-sponsored by the Pre-PT Club and the Exercise Science program; it was a tremendous success. We also held our bi-annual Pre-PT Student Orientation on October 22, 2013. Many thanks to the Pre-PT Club and the faculty (Drs. Harries, Nonnenmacher, Peak and Schmidt), who are always so willing to contribute their time, enthusiasm and support. The 2014 PT Open House will take place on April 10, 2014.

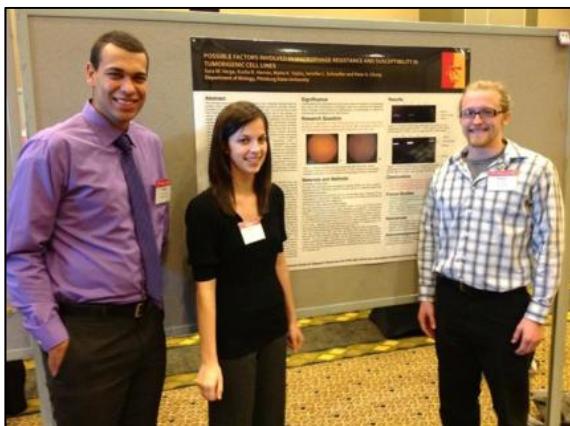
Some final thoughts:

- 1) Donna, thank you for being a great colleague, mentor, and mother hen over the years. I am really going to miss you!
- 2) To all my advisees that are starting professional school next summer or fall...Congratulations! I am so very proud of you!
- 3) To all my previous advisees currently in professional school, keep up the good work and good luck with your studies; and thank you for reminding me every so often, why I do what I do...
- 4) Science Day 2014 (February 27, 2014)
- 5) Pitt State 2014 PT Open House (April 10, 2014)

And to all our graduates, colleagues and friends...don't be strangers; stay in contact, keep in touch, and do stop by and visit if you are in town.

Regards,

pchung@pittstate.edu



Myles Taylor, Sara Verga, and Kurt Herron (Biology undergrads from the 2013 K-INBRE Conference, Dr. Chung's students)



The Pathogenic Bacteriology class went on a field trip to the microbiology lab at Cox Health South Hospital in Springfield, Mo. Thanks much to Doug Hubbard, Lab Director, and Ms. Myria Boyer, Medical Technologist.

From Dr. James Dawson



This has been another busy year for me. Three active graduate students are currently in my lab. One should graduate in May, another in August, and the last in December. I completed the third and final year of the grant from the University of Kentucky's Center for Applied Energy Research. I hope to present the results next September at the ABO meeting. I was involved with a number of workshops at the Culture Collection of Algae, UTEX, at the University of Texas at Austin. The workshops will continue to some indeterminate time in the future. I hope to be on sabbatical at UTEX the fall of 2014 but have not received final approval yet.

My wife and I became grandparents with the birth of Iris the first child of David (04,05) and Valerie.

jdawson@pittstate.edu

The Sperry Herbarium and the Kansas and Regional Reference Collection

With generous start-up support from the Kansas Idea Network of Biomedical Research Excellence (K-INBRE), Dr. Neil Snow has been able to expand curatorial activities in the T.M. Sperry Herbarium. Located on the third floor of Heckert-Wells, the Sperry Herbarium is an important collection of dried plants used in teaching, research, and outreach.



Funds from K-INBRE enabled the purchase of two 3-volume sets of *Flora of Missouri*, which allows us to identify nearly all plant species in our region, plus all volumes thus far published of *Flora of North America*, and other important regional and recently published identification sources such as *Flora of Nebraska*, *Flora of Virginia*, and the *Jepson Manual*. Important printed botanical references acquired include *Mabberly's Plant Book* and *Hortus Third*. We have purchased several thousand new acid-free genus folders and species covers, and three new AmScore HL 150-AY dual goose-neck halogen illuminators for dissecting microscopes.

With the assistance of undergraduate students Samantha Young and Susan Martin, three areas have been targeted for improvement, including creating the Kansas and Regional Reference Collection, establishing a system to data base specimens, and updating the taxonomic organization of the herbarium. The Kansas and Regional Reference Collection (KRRC) is a stand-apart collection of all native and introduced plants in Kansas and the Gorilla Nation region of adjacent Missouri, Oklahoma, and Arkansas.

Approximately new 500 specimens have been added to the collections and nearly 2,000 have been “annotated”, meaning their identifications updated or

corrected to reflect newer taxonomic concepts. Preliminary statistical analyses of specimen holdings suggest that approximately 40% of the total holdings are specimens from Kansas, and of these roughly 40% are from Crawford County.

We are excited because the addition of the KRRC will make the Herbarium more useful to stakeholders both on and off campus. Having one specimen of each plant housed closely together in the KRRC will expedite the process of correctly identifying plants, because herbarium users will not need to return frequently to the main collections. The KRRC is available to anyone who wants to look at native plants or confirm plant identifications.

nsnow@pittstate.edu



American Bittersweet (*Celastrus scandens* L.)

From Dr. Cindy Ford



I have to admit that the semesters go faster every year. It seems that there is so much to be accomplished at the beginning of a term, but the topics build quickly to the summation. As I write this, next week we need to draw all classes to a close. It is encouraging to watch some students in a class discover the usefulness of a class

toward their career or surprise themselves to think that the topic is more interesting than they anticipated. Teaching can have its bright moments.

I am fortunate to be able to work with a cross-section of students—biology majors, non-biology majors, undergrads, grad students, and occasionally the general public each semester. This is good for my creative needs and there are always stories.



Creativity has blossomed among some of our students who have taken my Biological Illustration class. Judge for yourself with this pen & ink rendering by Amber

Woodward. Stop by the department to view the gallery of illustrations on second floor.

I particularly enjoy working closely with students in my Regional Natural History classes where there is a concentration of field trips during the semester. Getting someone outdoors brings out a different student. Our department has offered unique field trip and travel opportunities for our students. There are plenty of interesting students and stories that come out of Environmental Life Science (ELS) classes. Has it been over 20 years that I have been teaching this class? Unbelievable. New graduate students serving as Teaching Assistants get a new perspective of academia each semester through teaching ELS lab sessions. (I smile and think that it is good experience for them.) Especially rewarding is working with motivated graduate students like Craig Corpstein who will have

Master's work published in the Spring 2014 edition of *Great Plains Research*. Congratulations, Craig.

The department's new Field Biology curriculum is working out well with our students. They have a chance to take a broad academic array or narrow down to terrestrial or aquatic areas of study. They mention that they appreciate getting into field courses earlier in their time here at PSU. During the past year, I have run into several people from our program who have careers around Kansas and the region. They still ask about our department and faculty members who were here when they were. It is like a family.

cford@pittstate.edu

From Dr. Steve Ford



Greetings

Hope you had a great year. My years seem to fly by, so I guess I'm having fun! I'm still enjoying teaching wildlife and anatomy classes, still doing anatomy demonstrations for mostly community college and high-school groups, still active in Hunter Education programs and in Audubon (we just made 50 bluebird houses to be available at the annual birdseed sale). The Art Department does an exhibit every two years of work by members of the University community. I was pleased to be one of four Biology Department folks to have work exhibited (with Dixie Smith, Dave Gordon, and Suzanne Arruda).

Also in association with the Art Department, I gave a presentation focused on the landscape of coal mining in southeast Kansas. I have to say the preparation for this seemingly straightforward subject was considerably more than I bargained for, and included crawling over a lot of geography taking pictures, spending many pleasurable hours digesting Dr. Bill Powell's Ph.D. dissertation on mining in this area, and conversing with lots of interesting folks associated with past and present mining activities. Jim Triplett and Xiaolu Wu also offered interesting presentations on some different topics at this "art" seminar. As you can see, the Biology Department has been well-represented in Art Department-sponsored activities.



I was involved in demolishing the old shack, "Swayback," behind the Sperry-Galligar house on College Street, as it had deteriorated

beyond repairing, and was becoming unsafe and perhaps a target of vandalism. We found an old newspaper in the walls that had been used as insulation dated 1916. We hired a contractor to stabilize the chimney.

Last summer Cindy and I visited relatives in Indianapolis (including a 92 year-old uncle who was the captain of a bomber in World War II) and had the pleasure of staying with Nancy Brooker for a couple of days. Many will recall Nancy was a student at PSU and eventually returned to teach genetics for several years, and to do agricultural research (soybeans). She then spent several years in Belgium, and only recently returned for a position with Dow Chemical in Indianapolis as the Global Lab Certification Leader. She was as gracious in her hospitality and cuisine as always, and was excited to settle in at her new position. We really enjoyed our visit.

Meagan Duffy will have finished her Master's by the time you read this. She's done some fine taxidermy work and nature photography and videos in association with her degree, and anticipates a position with a nature center in the future. Her newly acquired skills should look impressive on her resume. Fabio Giacomelli, from Brazil, who was here for two semesters a year ago, is back to start a Master's project assessing small mammals in unclaimed coal mined areas. He's a teaching assistant, and is enjoying hunting deer and squirrels.

All the best in the coming year.

sford@pittstate.edu

[Editor's note: You can read more about the Art show at <http://psucollege.com/2013/01/uniting-artists/> and about the Sperry Home at <http://www.pittstate.edu/department/sperry/>]

From Dr. Dave Gordon



It has been a good year. In addition to my regular teaching duties, I mentored two students: Ali Hroobi, a graduate student from Saudi Arabia who will begin a survey of ticks in southeast Kansas next summer, and Samantha Young, an undergraduate who has been conducting research on sand flies for the past three years.

We continued to investigate sand flies in collaboration with Marcelo Romalho-Ortigao at Kansas State University and were awarded several grants to support the project.

Ali, Samantha and I presented posters at regional and national conferences and, as president of the Kansas Entomological Society, I hosted the 89th annual meeting at Pittstate. The three of us also attended the national Meeting of the Entomological Society of America in Austin, TX and presented posters. During the year, Samantha presented four posters on her sand fly research including one in Topeka at the Kansas Legislature Research Day. Samantha will be graduating in December 2013, and is planning to pursue a Ph.D.

The following grants were awarded:

- KINBRE semester scholarship to Samantha Young for sand fly research in 2013.
- undergraduate support for Samantha Young from the Pittstate Dean of Graduate and Continuing Studies to produce a poster and travel to the ESA meeting.
- Summer Research Opportunity Program (SUROP) to Samantha Young, from Kansas State University.
- Undergraduate Research Infrastructure grant for supplies to continue the sand fly trapping from the Pittstate Dean of Graduate and Continuing Studies.
- The local Dillons store provided dry ice to bait sand fly traps.

dgordon@pittstate.edu
<http://faculty.pittstate.edu/~dgordon/>

KINBRE at PSU

Twenty-eight students attended the 11th annual Kansas Idea Network for Biomedical Research Excellence (K-INBRE) meeting in Manhattan, KS this past January (2013). The K-INBRE consists of research scientists from across the State of Kansas. Support for the K-INBRE comes from the National Institutes of Health and its purpose is to improve biomedical research at all universities across the State.



K-INBRE attendees from Biology and Chemistry at the 2013 Conference. Starting on the left side, front to back:

Column 1: Dr. Dave Gordon, Whitney Baldridge, Dr. James McAfee, Colten Caldwell
Column 2: Boya Abudu, Sarah Base, Kaleb Nickell, Michael Noble, Christopher Ward
Column 3: Dr. Irene Zegar, Emily Rausch, Josh Wormington, Austin Price
Column 4: Samantha Young, Sierra Foster, Dr. Virginia Rider, Kurt Herron, Miles Crowley
Column 5: Dr. Dan Zurek, Lauren Renner, Sara Verga, Dr. Karl Kunkel, Dr. Phil Harries
Column 6: Dr. Xiaolu Wu, Joshua Yoemans, Dr. Peter Chung, Ryan Woodruff
Column 7: Zarna Marfatia, Kristopher Parker, Johnna oster, Ryan Wier
Column 8: Megan Kramer, Ella Conley, Kelley Knisley, Bradley Aubin
Column 9: Margaret Cook, Trevor Harris



Cytoskeleton: Hijacking Cellular Pathways to Enable Virus Spread".

Christopher Ward (Dr. Peak, mentor) received the very prestigious "Star Trainee Award" to fund his undergraduate research over his senior year and to help pay for tuition for the first year at a graduate school of his choice. Five undergraduate students: Boya Abudu (Dr. Peak, mentor), Trevor Harris (Dr. Wu, mentor), Austin Price (Dr. Rider, mentor), Josh Yeomans (Dr. Harries, mentor) and Samantha Young (Dr. Gordon, mentor) received Summer Scholar Awards to conduct research over the summer. Semester Scholar Awardees included: Blaze Heckert (Dr. Santra, mentor), Tayita Abudu (Dr. Peak, mentor), Brady Steinbock (Dr. Rider, mentor), Jayden Bowen (Dr. Zurek, mentor), Hannah Devries (Dr. Harries, mentor), Trista Dugan (Dr. Harries, mentor).

In addition, Dr. Jody Neff (Chemistry) and Dr. Neil Snow (Biology) received "start-up" packages to fund supplies and equipment necessary for undergraduate research projects in their laboratories.

Compiled with information from Dr. Virginia Rider and PSU Graduate School

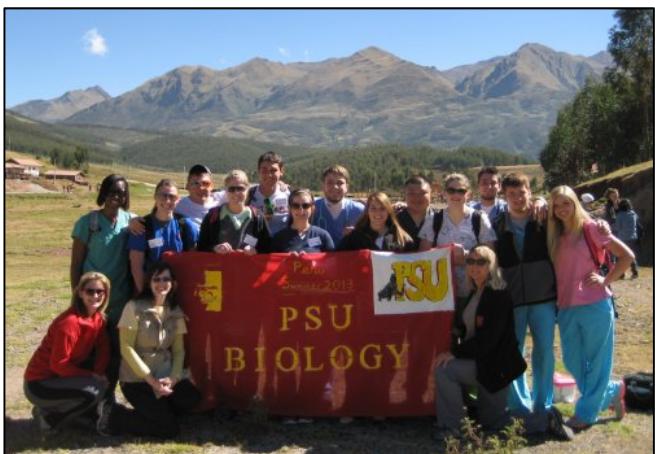


The Kansas Entomological Society held their 89th annual meeting here in April. The meeting was sponsored by Society President, Dr. Dave Gordon.

2013 Pre-Health Volunteer Study Abroad to Peru – Dr. Mandy Peak

In May 2013, Vicki Webber and I led the Pitt State pre-health volunteer group to the Sacred Valley in Southern Peru. The fourteen pre-health students were Boya Abudu, Tyler Elmore, Jen Gallon, Catherine Geiger, Ashlee Miller, Conner Paustian, Buster Reddick, Josiah Rhodes, David Schlee, Alyssa Snow, Emily Sommer, Leigha Swigart, Jenni Thurston, and Chris Ward.

To prepare for this trip, students attended a required preparation class during the Spring semester that covered clinic operations, physical exams, cultural diversity, and Peruvian history. We also gathered medical supplies, diagnostic equipment, and medications for our clinics, as well as requested items for a local Peruvian orphanage.



We bused to small villages including: Ttio, Pampaconga, Colcabamba, Cconchacalla, and Coramba, and set up health clinics. The students assisted numerous medical providers including Dr. Mike Schneeberger and Dr. Adam Beckett; Vicki Webber, PA; Marsha Schneeberger, RN; and two dentists, Dr. Linda Ngo and Dr. Paul Crowley with routine health and dental exams, well child check-ups and dental extractions; and also educated the village children on proper dental hygiene. The team triaged and treated 758 medical patients, 76 dental patients, extracted 90 teeth, and filled 1,076 prescriptions in five days.

This was a fantastic trip; the Pitt State students developed new medical skills and had a cultural experience of a lifetime, including a visit to Machu Picchu. We are very proud of these Pitt State pre-health students. Great job! In May 2014, we are heading back to Peru!



From Dr. Phil Harries



I hope this newsletter finds everyone well! My year started off with a kind invitation from the K-INBRE (Kansas Idea Network for Biomedical Research Excellence) group to give a presentation at their annual meeting in Manhattan, KS in January. It was really an honor (and slightly intimidating) to get to talk about some of my plant biology

work with a distinguished group of biomedical research experts. PSU had a large group of students attend which was really a tribute to the strong undergraduate research program in the Biology department at PSU. This research has largely been made possible by K-INBRE funding and the leadership of Dr. Virginia Rider.

In my research lab, I saw a big turnover this year as four undergraduate researchers graduated and moved on to the next phase in their careers. Ryan Woodruff and Kelsey Knisley are both pursuing medical careers while Kristopher Parker and Pamella Conley started graduate programs in Biology. In addition, graduate student Kaleb Nickell concluded his research project and is in the process of finishing his Master's thesis. These departures meant time for new faces in the lab and I am excited to have three excellent students (Joshua Yoemans, Hannah Devries and Trista Dugan) start projects this fall. All three are working on identifying and knocking out genes in bryophytes that are believed to be involved with either salt tolerance and/or organization of the cytoskeleton.

In the classroom, I'm still teaching Principles of Biology I, Biology of Cancer, and Introduction to Research. I was also able to offer Plant Pathology for the first time this year which was a lot of fun. This was a small class of only six students so it was discussion based and very interactive. Over the summer I taught a hybrid version of Principles of Biology I with an online lecture and a lab that met twice a week. This was my first foray into online teaching and I definitely enjoyed it although I know I still have a lot to learn!

On a personal note, highlights from this past year included having some of my photography displayed in a new restaurant in town, a family trip to the Delaware shore, and some spectacular rock climbing/exploring

trips to the mountains in Northwestern Arkansas. Best wishes to all for a healthy and happy year!

pharries@pittstate.edu

Dr. Harries web site: <http://bit.ly/1djf0xS>

From Dr. Hermann Nonnenmacher



During the break between semesters in December 2012 and January 2013, I spent three weeks in southwest Missouri and southeast Kansas completing a systematic search of public access areas for various kinds of overwintering insects. One species turns out to be not so easy to locate, and this information will be added to my current work on the silk

moths of this area. Spring appeared to bring warmer temperatures somewhat later than usual in 2013, which kept flowering plants on the slow side of blooming.

Students who joined me to study various tallgrass prairie sites after spring classes ended included Cori Brown and Jacob Bowman. In addition, one of our past graduate students, Craig Corpstein, joined us often to collect data on two species, one being *Hypoxis hirsuta*, or Yellow Star Grass, and the other, *Asclepias meadii*, or Mead's Milkweed.



In 2012, our research species, Mead's milkweed, had completed its reproductive presentations by the first week of May while all investigators were still teaching. In 2013, Mead's milkweed blooms were not seen until

mid-June. Usually the species is blooming by June first. *Hypoxis hirsuta* and its close relatives, are being studied by the Bernhardt-Meyer lab, at Saint Louis University, and some of their colleagues in China, chiefly in their pollination biology as understory components in woodland edges.

Our students are beginning their work on the species in tallgrass prairie remnants which are managed as “meadow hay” fields. Although there is no direct collaboration between our labs, we are each working to understand how this species and close relatives, attract floral visitors and effect outcrossing in habitats with many other floral rewards available to pollinators, and blooming so early in the spring that insect populations are still low.

Another project involved rearing *Hyalophora cecropia*, or Cecropia Moth to obtain cocoons and pupae for extracting DNA non-invasively. After the moths emerge, a collaborator and I will determine the usefulness of the shed larval skins for recovering small amounts of DNA. If our approach works, we will use samples collected from field sites in a bid to analyze genetic diversity without relying on sampling directly from larvae or moths, either of which are often tougher to locate than cocoons which, even if “empty”, contain the shed “skins” of larvae and pupae, which have been mostly protected from environmental degradation.

In the fall, four students began their own investigations into pollination ecology. Samantha Young, Cori Brown, Jacob Bowman, and Allison Hullinger found themselves faced with the challenge of trying to identify a suitable flowering species and then locate sizeable populations to observe. Their readings in various field techniques provided them with ample approaches to collecting data for developing a report of their work. They all collected co-blooming species’ pollens for reference to pollens carried by insects, performed pollen washes and exine staining, used light microscopy often and took photographs of their pollen washes, collected and processed insects that were foraging, made various wind-borne pollen sticky traps and insert cages, and made protective exclosures of tulle and hardware cloth to prevent foraging.

hnonnenmacher@pittstate.edu

The PSU Research Colloquium

The annual Pittsburg State University Research Colloquium was held April 15, 2013 and included 32 oral presentations and 31 poster presentations. Congratulations to the Biology student winners at the PSU 2013 Research Colloquium!

Research Oral Presentation (Primarily Science and Technology)

- 1st Place Graduate Student – Ken Gouvion (mentor: Dr. Joe Arruda)
- 1st Place Undergraduate Student – Samantha Young (mentor: Dr. Dave Gordon)



Dr. Arruda and Ken Gouvion

Research Poster Presentation (Primarily Science and Technology)

- 1st Place Undergraduate Poster – Brady Steinbock and Samantha Meneely (mentor: Dr. Virginia Rider)
- 2nd Place Undergraduate Poster – Sierra Foster and Josh Wormington (mentor: Dr. Virginia Rider).



Josh Wormington, Brady Stenbock, Samantha Meneely, and Sierra Foster of Dr. Rider’s Lab.

From Dr. Mandy Peak



Hello, Gorilla alumni and friends! 2013 was a very busy and eventful year; I led my fourth study abroad trip and taught Genetics Lecture and Lab, Genetics of Human Disease, Immunology Lab, and Environmental Life Science, which was my first experience teaching an online class. For this online class, I attended a few eLearning

Academy classes offered by PSU. Also, I wrote a number of recommendation letters to professional schools for our undergraduate students and enrolled the incoming freshman at Pitt CARES.

My undergraduate research students Boya Abudu and Chris Ward had a busy and eventful year. Boya spent her summer at Harvard participating in an undergraduate research program at Brigham and Woman's Hospital with Dr. Eva Gombos. Chris was awarded the \$10,000

Kansas INBRE Network of Biomedical Research Excellence (K-INBRE) Star Trainee to work in my lab this year. Both students presented their research a few times in 2013. Boya presented "RAG-1 and RSS Interactions in Lymphoid Tissue During V(D)J Recombination" at the K-

INBRE conference in Manhattan, KS. Chris presented "Utilization of Bioinformatics in Characterization of Recombination Activation Gene Mutations" at the K-INBRE conference in Manhattan, KS and at the PSU Undergraduate Research Symposium. In addition, Chris presented his research at the Capitol Undergraduate Research Day in Topeka. Both Chris and Boya have applied to medical school for Fall 2014.

This past May, I led a study abroad program to Peru with Vicki Webber, Physician's Assistant. Fourteen pre-health students traveled to the Sacred Valley to assist medical professionals with routine health and dental exams. Additional information about this fantastic trip is found in this newsletter (see page 8).



Next year, the Pitt State pre-health study abroad program is returning to Peru in May 2014.

In addition, eight former study abroad students and I presented to the PSU Foundation Board of Trustees in September.

We discussed student benefits and outcomes from the previous trips to Belize, Peru, and Romania, including clinical experience in providing health care to underserved populations; interacting with interpreters; working with medical professionals; enhancing the student's application to medical, physician's assistant, nursing, or dental school; and the global impact of interacting with ~2,400 patients in three different countries. This presentation was well received and we acquired fantastic feedback from the community.



So, that leads to a few shout outs to my study abroad students that are either currently attending or have been recently accepted to professional schools this past year, including Austin Osborn to the University of Oklahoma Law school; Zach Krumsick, Andrea Petersen, Miles Crowley, Austin Price, Carly Twarog, and Ryan Woodruff to KU med; Rachel Jerome to Wichita State University PA program; Erin (Richmond) Reagan and Ashlee Miller to dental hygiene schools; Kyle Orr and Drue Barton to ATSU-Missouri School of Dentistry and Oral Health; and Alyssa Snow to Creighton University School of Dentistry. In addition, there are several students with pending interviews; my fingers are crossed for all them.

Happy New Year and best wishes to you and your family!

mpeak@pittstate.edu

From Dr. Virginia Rider



Greetings to all friends of the Biology Department. Once again the Biology Department has been filled with hard working, successful students. The students who were accepted to professional schools this year are: Mitch Ayers, KU; Miles Crowley, KU; Tristan Doane, OU; Rachel Jerome, PA School, Wichita; Zach Krumsick,

KU; Kyle Orr, AT Still School of Dental Medicine; Andrea Petersen, KU; Lauren Porter, KU; Trenton Roth, Logan College Chiropractic Medicine; Kyle Renner, KU; Sara Verga, KU; Ryan Weir, KU. If someone has inadvertently been left off this list, please let me know as we always enjoy hearing about your successes.

Two new graduate students, Samantha Meneely and Anuradha Bhusri, began working in the laboratory this year. Both of these students are working on the lupus project. We experienced a slowing of research with the retirement of our colleague Dr. Abdou at KU.

However, we are now gearing up for a more productive time than ever with the addition of Dr. Julian Magadan, a rheumatologist at KU Medical Center, to the research team. Dr. Magadan follows approximately 350 lupus patients and he is interested in joining a research effort that seeks to understand the underlying causes of the strong gender bias of this disease. Our research has been supported by The National Institutes of Health since 2001 and we have a renewal pending. We hope to have some ground breaking news to report next year so stay tuned.

Interviews are in full swing to a variety of medical, dental and other professional schools. Dr. Odgers, a physician in Pittsburg, continues to help our students prepare for a successful interview by conducting mock interviews. The mock interview helps the students hone their skills for the real interview. Three of our applicants were accepted early decision to KU, Austin Price, Carly Twarog and Ryan Woodruff. Ann Hutchison has been accepted to the University of Alabama medical school. Based on these early returns, it looks like a banner year (2014) on the horizon.

The Free Clinic closed its doors this year. The patient need was just not there and it didn't make sense for the

clinic to continue to operate. The last Free Clinic co-directors, Sierra Foster and Olivia Wright, worked out an arrangement with the Crawford County Health Department to set up a program called "Gorilla Docs" through the County Health Department. Thus far, the program is extremely popular with the students and we have no complaints from the Health Department. Dr. Garner's program called Premeds with Promise is also in full swing and provides our students with additional opportunities to gain experience in a medical practice.

The number of students in the freshman level Premedical Orientation classes continues to be strong with between 70 and 80 students every fall semester. I am grateful to all of the health care professionals who participate in this class and help educate our students about options in health care careers.

Summer 2013 saw two gorillas return to Pittsburg to set up practice. Dr. Brett Dunbar is a surgeon and Dr. Michael Fenech specializes in OB/GYN. Both of these fine young physicians are back in the classroom one morning this fall semester to help teach students the clinical relevance of physiology. I cannot express the joy and pride I have in these two doctors as the "circle of knowledge" continues through their mentorship to the next crop of health care professionals.

It is always such a pleasure to hear about our graduates. Please stop in and see us if you find yourself in the Pittsburg Area. Sending you my best wishes for continued success and happiness in the pursuit of your passions.

vrider@pittstate.edu

Congratulations to Dr. Virginia Rider for being selected for the rank of "University Professor" along with several colleagues across campus.

The rank of University Professor recognizes those faculty who have made outstanding contributions to their field of specialization (by peers on and off campus) and to the campus with outstanding contributions to the education program of the university.

Dr. Rider and her research laboratory was also the subject of a local TV news story. See at <http://bit.ly/1bsLhD5>

Nature Reach Summer Camps 2013



In 2013, Nature Reach held a summer camp for kids. The camp was held at the PSU Natural History Reserve and was for students who just completed or were getting ready to the fifth grade.

Delia Lister, PSU's Nature Reach coordinator, organized and ran the camp in order to help expose young kids to nature –from plants to animals to weather.



See the video at
<http://www.youtube.com/watch?v=5dbknBnikbs>.

Austin Osborne Outstanding Senior 2013

"We found out that we won on a Wednesday, and I starting putting together my speech that weekend," Osborn said. "It's a big responsibility to stand up there in front of so many people and represent the senior class. I wanted to make sure I gave myself the proper time to do it right."

"Osborn said he pulled from a lot of his own experiences at PSU while preparing his speech.

"I wanted to reflect a lot upon my time here and use those memories to help me get my message across," he said.

"This is so much different than any speech or paper I've ever written because of the variety of people who will be there listening. You can't just tailor it to one particular group of people. My time at PSU has involved so many different people, and I want to make sure my speech reflects that."



Outstanding Seniors Austin Osborn and Jessica Berberich (English major).

[Modified from PSU Press and Media. Read more at <http://bit.ly/1jFcxCH>.]

Editor's note: Holly Hrabik and Zachary Krumsick were PSU's 2012 Outstanding Seniors

From Dr. Neil Schmidt



I hope our 2013 newsletter finds you well and enjoying life! I feel fortunate that I have managed to make it through another year and see so many students matriculate successfully through the biology department. I have been keeping busy with the Anatomy and Physiology lecture and lab courses this semester and I am teaching a Pathophysiology course again this term.

Another upper division class that I have been involved with is Immunology lecture and I will continue to assist Drs. Chung and Peak with the Immunology course next semester. Hopefully, these upper division courses will provide improved educational experiences for our majors in the pre-health and biosciences.

A graduate student research opportunity came my way last year and I began to work with Myron Perry investigating Vitamin D, its distribution, various forms, and dosages in the outpatient and inpatient settings. Myron and I stayed active and busy with those endeavors throughout the year. Myron graduated in May and is now teaching at Seward Community College.

I continue to assist in the healthcare community through the provision of pharmaceutical care and consulting. I hope to continue in this capacity as new opportunities come my way.

I attended the Human Anatomy and Physiology Society (HAPS) annual meeting in May in Las Vegas, Nevada. While at the conference, I was afforded the opportunity to continue to serve on the safety committee. This organization allows me to network with colleagues, learn new approaches to optimize teaching effectiveness, and improve my knowledge base.

My wife, Tammy, and I are staying busy outside of academia and healthcare as our children, Ben and Olivia, continue to become more involved in various activities. Olivia is five years old and is involved with gymnastics, dance, and church youth group. Ben is seven years old and is involved in football, soccer, gymnastics, baseball, Cub Scouts and the Rangers

church youth group. Both children attend George Nettles Elementary School. Both seem to have Tammy's smarts...thank goodness!

Congratulations to all my advisees that have moved on to professional school or the work place and to my students for their solid efforts in my courses over the last year. Keep moving forward and continue the strong work! Thanks to all that returned to campus to say hello! As always, I am grateful for the opportunities to work with our students and biology faculty and appreciate all the support I have received over the past year.

Have a great holiday season!

nschmidt@pittstate.edu



From Dr. Neil Snow

Greetings everyone: It is an honor and pleasure to be the newest faculty member in the Biology Department at Pittsburg State University.

It is wonderful to return to the classroom after several years outside of the academic fold, working in research and administrative positions. There is no greater job in the world in my view than working with enthusiastic college students. This first semester I am teaching two sections of General Biology.

Shortly before coming to PSU I taught botany for three weeks to a gifted/talented program in Montana. That was my first teaching experience with Grades 2-5. Learning is always a two-way street between instructor and students. Indeed: El Professor learned a thing or two about native Montana plants from third graders. Who would have thought ...?

An important part of my appointment at PSU is being Director of the Theodore M. Sperry Herbarium. This facility is on the third floor of Heckert-Wells Hall, and houses approximately 60,000 specimens of dried plants used in teaching and research. For example, we just sent a loan of specimens to a researcher at Iowa State University who is studying blackberries and related plants. I have already received four loans of specimens (from TX, MO, and AZ) for my research.

We are also updating many aspects of the plant classification system based ongoing studies of the Angiosperm Phylogeny Group (APG). The science of systematics has progressed significantly the past few decades and the Herbarium is beginning to reflect these changes. Undergraduate students Samantha Young and Susan Martin are providing excellent assistance with this process.

The Sperry Herbarium will continue to be an important regional resource for plants and information about plants. The first major priority of the Herbarium is creating the Kansas and Regional Reference Collection. (See Sperry/KRRC article on page 6.)

My research focuses on the grass and myrtle families. I published a monograph on the grass genus *Disakisperma* in September with colleagues from the Smithsonian Institution and the Ukraine. We hope to submit another paper within the next year on *Diplachne*, which includes a species native to Kansas. I also am continuing research on *Eugenia* in the myrtle family. While not native to Kansas – its nearest native occurrences are in southern Florida – it is one largest and most poorly known plant genera in the world. My focus presently is on species from Madagascar. Research with myrtles involves work at the Missouri Botanical Garden in St. Louis and with colleagues in Australia and the United Kingdom.

As a new arrival I'll share a bit of personal information. My wife Suzanne and I have two daughters, ages 9 and 10. I was born and raised in Seattle but have hung my hat in a number of places over the years, including two years in Brisbane, Australia, where Sue was born and raised. When not busy on campus or with family activities I enjoy time with friends, hiking, trout fishing in the Rockies, reading, and music (classical, jazz, Western Swing, bluegrass, and the best of the 60s and 70s). A friend from Kansas City and I attended the 2013 Walnut Valley Festival in Winfield. Wow...Kansas can take some pride in hosting such a world-class acoustic music festival.

I heartfelt thanks to the many, particularly other faculty members and their spouses, who have been so kind and helpful since my arrival in Pittsburg. Come by and introduce yourself. Let's have a great year.

nsnow@pittstate.edu

Biology Bowl 2013

As always, the Biology Club leadership and the volunteers put together a great Science Day, including the Biology Bowl. About 25 schools and 700 students participated. The work of the Club leaders, volunteers, and faculty judges is much appreciated.



See the video at <http://bit.ly/1cwP7fz> - see Bio Club President Ali Blanchard and faculty advisor Dr. Peter Chung.

Picnics – 2013

While the Spring picnic was delayed a week by rain, the Fall picnic went on as scheduled at the Shelter houses on the shore of College lake. The Spring picnic ended up being held (we lost the shelters) to the front of Heckert-Wells, facing the Oval. It was an interesting venue.



For the second year in a row, special student awards were given during the Spring picnic. They included:

Academic excellence (cell and molecular): Kelsey Knisley and Sara Verga

Academic Excellence (field): John Crandon

Research Excellence (cell and molecular): Sierra Foster

Research excellence (field): Samantha Young

Outstanding Freshman: Trista Dugan and Hannah Devries

Mr. Congeniality: Ryan Woodruff

Ms. Congeniality: Kelsey Knisley

Most Spirit: Miles Crowley

Most Vocal: Mitch Ayers

Most organized: Olivia J. Wright

Good crowds were present for both events and Dr. Hugh Campbell (retired) graced us all with his cooking skills and special mix of seasonings.



From Dr. Jim Triplett



Gee, guess this is the last newsletter from me, as I will retire at the end of the spring semester, May 2014. At 70 ½ then, it does not seem that the time I have left is best spent in the class room.

The question asked most frequently is what will you do when you retire? Most of the time I just say, "look for a job". Actually, I already have a part time gig next October teaching ELS in Paraguay and am part of a collaboration between the Grand River Dam Authority, the University of Oklahoma, Oklahoma State University and Pittsburg State University. This also includes Dr. Arruda and Dr. Alicia Mason from Communication. We submitted a grant to the NSF Watershed Sustainability and Climate program in September, but have yet to hear if we were successful. Of course, I intend to stay active in my volunteer work as Chair of the Neosho Basing Advisory Committee, President of the Grand Lake Watershed Alliance Foundation and President of the Southeast Kansas Recycling Center.

If my Emeritus status is approved, I would like to continue contributing to the sustainability program, which has about 20 majors this semester. Dr. Hooey, Dr. Mason and I packed up 6 of our majors and attended the International Symposium on Society and Resource Management (sound familiar?) in Estes Park in June (before it was flooded). Dr. Mason and I each gave papers and Krystal Davis gave a poster presentation. The Planetarians (our campus sustainability club which Dr. Hooey and I co-sponsor) continues to grow and be active. In addition to hosting a table on the oval for Earth Day, Campus Activities Day and Campus Sustainability Day, they set up a Move Out Madness project last spring to collect items of value left behind when students move out in the Spring. We had a sale at the Recycle Center and made nearly \$800 for the organization. This fall, the set up a Move In Mayhem project to collect the cardboard that was pitched when students move in and collected about 3,600 pounds for the Recycle Center.

Herpetology class last spring semester went well, but the Spring Break trip to Big Bend was canceled so all they had was the weekend trip to the Quachitas. It

went well and the weather cooperated more than in the previous years. We did not flood out any vehicles or have to stay in motels.

This fall, I have 9 students in Fisheries Management, and they are getting a workout. The gear was in pretty bad shape, so they had a lot of repair work. Those who got their lakes done early had some decent weather, but fish collections were pretty low. They now understand why it is a 5 hour class.

This spring semester, I will offer Ichthyology again and am vacillating between the Padre trip, which is up in turn or the Dauphin Island trip which we did last time. The Padre trip is very diverse and exposes students to a wider variety of habitats and species (depending on the weather), but we move a lot which is more work and offers less time for students to key out fish. The Dauphin Island trip offers a great base of operations where students can key out fish as they go. Plus the Estuarium and trawler experiences are a favorite - tough choice.

Best wishes to all of you. It was great to hear from everyone during the year. Keep in touch.

jtriplett@pittstate.edu

From Dr. Xiaolu Wu



Hello, everyone. In 2013, I taught General Microbiology, General Virology, Principles of Biology I, Pathogen-Host Interactions and General Biology (online). This was the first time that General Biology was offered online in the Department of Biology. Finishing this online course within four weeks in summer posed a big challenge for both the students and me, but the course turned out to be a success. Many thanks go to Dr. Joe Arruda and Susan Dellasega from CTLT for their great technical support.

The avian influenza virus H5N1 research project in my laboratory has made good progress in 2013. The most exciting news is that Whitney Baldridge successfully defended her thesis titled "Screening compounds for effective inhibition of highly pathogenic avian influenza, H5N1" and earned her Master's Degree in

May, 2013. I am very proud of her. Her dedication on the influenza project in the past three years as undergraduate and graduate student has led to many awards, including two-time winner in oral presentation at PSU Research Colloquiums, Graduate Student Excellence-in-Research Award, being selected for oral presentation at the 10th Annual Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) Symposium, and recipient of K-INBRE ARRA scholarship. I wish her all the best in her future endeavors.

I have been actively involved in service activities, including the committees at the department and college levels, Botany Faculty Search Committee, Rumble in the Jungle, Junior Jungle day, as well as the Friends of Pittsburg Public Library Board. I continued to participate in the Interdisciplinary Lecture Series hosted by the Art Department at PSU and gave a presentation titled "Bioremediation and beyond". I have always been enjoying this learning experience by listening to different perspectives of people from other departments or areas. It is also exciting when some Art students told me that they thought bacteria are awesome after listening to my talk about how bacteria have been helping people to clean up environmental messes and further enabling us not to make more messes.

Another exciting event is that a series of presentations I organized that aim to help biology students to learn about graduate programs is now under way. Dr. Town Peterson and Dr. Stuart Macdonald from KU gave the first joint presentation about graduate school application on November 19, 2013. They thoroughly introduced the graduate programs both in molecular biosciences and in ecology and evolutionary biology, and shared great insights about the screening process and their research career paths. Several students told me that they really enjoyed this informative presentation which helped them to consider different academic opportunities. Thanks to Dr. Virginia Rider who spared one session of her pre-health orientation class for this presentation.

The next two speakers to give presentations are: Tanya Honderick from KU to talk about Master of public health program on February 11, 2014, and Dr.T.H. Lee Williams from OU to talk about graduate programs on April 21, 2014. Meanwhile, I would like to invite people from different areas to talk about the job market for Biology students, such as biological companies, State and federal agencies (e.g. public health, wildlife

management, environmental quality...), biology law firms, consulting firms, hospitals, pharmaceutical companies, national parks or nature centers, museums, biology journals or publishing companies, etc. If you or someone you know in those fields is interested to talk to our students, please contact me at xwu@pittstate.edu or call at 620-2354036, and I will greatly appreciate your help.

Finally, I would like to thank all the people who have given me support and help in 2013, and I wish you all a happy and joyful 2014.

xwu@pittstate.edu

From Dr. Dan Zurek



Hello everybody!

It's been a while since I contributed to the newsletter: in case you were wondering I am still alive and still at Pitt (if those aren't contradictions in terms). I am still doing the solo parent gig during the school year, with my son Hadrian in Little Gorillas Preschool right here on campus and Avery my daughter (hopefully) to follow next year, assuming the potty training continues to go well.

I have new faces in the lab! Grace Anderson came here this fall from Montana Tech to pursue graduate studies in my lab, working on testing charcoal rot resistant soybeans. Sierra Foster (who graduated this past May) and I generated that DNA construct, which we took to MU for insertion into soybeans. We have a grant from the Kansas Soybean Commission (thank you Kansas soybean farmers!) to pursue this, and have been testing our plants to try and identify which ones are transgenic. We put our initial negative results down a dying thermocycler, and purchased a new one with the help of Arvest Bank selecting us for a Walton Family Foundation grant: thanks to both organizations and the people in them! It has turned out to not be that simple, but we are still optimistic, and with the aid of this marvelous new piece of equipment and Grace's hard work we hope to be running real tests very soon now.

Jayden Bowen, a sophomore in my lab who has been working with me for the past year has also been working on this project. Additionally he has been trying to get our favorite transgene into tomato, which should be something we can transform in the lab, in case the soybean project hits a roadblock. We're screening those plants now. Tyler Egbert, a Biology senior who joined my lab also this fall, is pursuing a similar transformation project in tomato, trying to knock out an auxin-responsive kinase we think may be central in plant hormone responses, using an RNAi approach. The idea here is to knock the gene out and then see what these plants can't do any more as a way to figure out what this gene normally does. We will see what happens: there is always the possibility in these projects that what we are doing will turn out to be lethal to the plants, in which case it's back to the drawing board. Well so, that's science.

Oh, and in my free time, I am leading another study abroad trip, this time to Belize. Since I and my spouse Emily Walters (2009 Outstanding Senior Woman) led the first one six years ago, the program has become a major part of the education of many of our prehealth students, and continues to deliver substantial rewards for them personally and professionally. Right now I have 20 people signed on for Belize this spring, right after finals (May 10-24). If any of you former PSU grads who are medical care professionals now want to go, I have a spot for another leader as of today, where you would only have to pay airfare. Donations of course are always welcome ;)

That's all for now: I have some children to go tickle, a Cell test to grade, then there's this grant funded research I need to do ... Send me an email to let me know what you are up to, I love to hear from all of you wonderful people who graced my life here. Hope this finds you well and happy.

dzurek@pittstate.edu

Nature Reach – Delia Lister

We are pleased to announce that Nature Reach received a \$28,000 donation to cover programming costs. With that funding, we provided approximately 137 free presentations reaching just over about 5,100 students in 23 communities in Southeast Kansas, Northeast Oklahoma, and Southwest Missouri. I can't say enough how important it is, and how thankful I am,

to have community and University support for this program.

During the Spring '13 semester I taught a new topics course called Animal Care and Interpretation. It was a full class, and I plan on teaching it again in the future. Many thanks again to Biology Alumni Pat Silovsky for a great tour of the Milford Nature Center!



This summer we provided both a second grade and a fifth grade day camp. Both sessions were full, and as usual, these youngsters were eager to learn about the food they eat, their environment, wildlife, and the great outdoors. A big thank you goes out to the Sperry-Galligar Audubon Society for co-sponsoring the camps. I also team taught a Project WILD two-day workshop with Teaching and Leadership faculty member Dr. Kathy Spillman. We had a total of seven teachers come from the region.

Finally, I want to give a warm welcome to the newest natural history educator in this end of the state. Ms. Jenn Rader is now the Director of the SEK Nature Center at Schermerhorn Park in Galena, KS. The center is now managed by the Kansas Dept. of Wildlife, Parks, and Tourism, and we will likely partner up on a few projects in the future. If you have yet to visit Schermerhorn Park, I highly encourage you to visit this unique piece of Southeast Kansas.

naturereach@pittstate.edu



From the Prep Room - Donna Lair to Retire

Well hello everyone the end of a wonderful year, with lots of exciting changes coming up. I have made this my last year at Pittsburg State University. I have been here for 25 years and loved every day of it. Not many people can say they love coming to work every day and have wonderful people to work with. I will miss every one: students, teachers and staff. I'm looking forward to lots of time fishing and boating at Grand Lake. I love quilting and have lots of great projects started ... looking forward to spending more time with grandchildren and 7 great grandchildren. I will keep in touch with you and the great things coming to the biology department.



Editor - Donna has managed our microbiology prep room for just short of 19 of her 25 years at PSU. We are all going to miss Donna – for the great work she does but, more importantly, for the great person she is and the friendship she has brought (and coffee and mints) over the years. Good luck, Donna!

Dr. Dan Zurek and Charcoal Rot

Dr. Dan Zurek, PSU Biology Professor, has received a research grant from the Kansas Soybean Commission for \$26,676 for the project, Developing Charcoal Rot Resistant Soybeans. According to the grant abstract, the initial objective of the project is to create soybeans partially or completely resistant to Charcoal Rot fungus, with the ultimate goal of producing a transgenic soybean strain able to thrive in Kansas and other locations where Charcoal Rot is endemic and unavoidable. This disease costs Kansas farmers 50-60 million dollars each year. Dr. Zurek's laboratory has planted nine separate strains of transgenic plants, transformed using genetic construct created in his lab

that he hopes will be charcoal rot resistant. The objectives of the research project are: 1. analyze the current set of plants to see that they in fact have the glucanase genetic construct, and are producing protein from it through-out the plant; 2. Determine whether this protein retains antibiotic/antifungal activity in these plants; and 3. Analyze the transgenic plants for charcoal

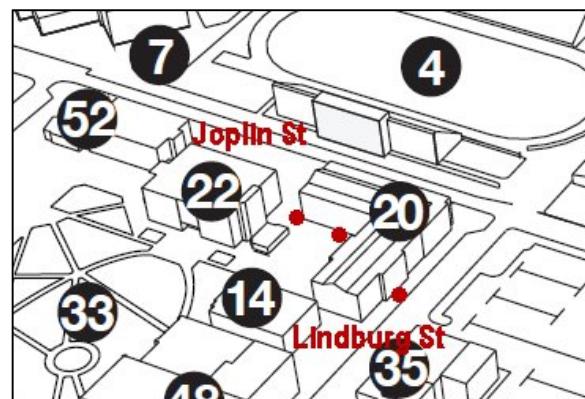
[Source: PittState's "Grants and Research Review" at <http://bit.ly/1hIPIUN>]

The Temporary Move to Hartmann Hall

If you were thinking of dropping by the department this summer (or between late April and early September) to say "Hi", you will have to look for us over at Hartman Hall.

Remember that big red-brick building to the south of Heckert-Wells? That's our temporary home. Heckert-Wells will be receiving a much needed overhaul of fume hoods and HVAC systems.

Most of us will move offices and some labs to the second floor for the duration, while some of the research labs will move out to the Polymer Research Center, out in east campus.



22 is HW, 20 is Hartmann, on the corner of Joplin and Lindburg. Dots are entrances.

One of Top 10 New Species Discoveries for 2013

I'm sure that none of us on the Biology faculty have described a new species and certainly very sure that none have had such a species selected as one of the top 10 new species for 2013 (or any year, for that matter). Well, at least until now. Our newest faculty member, Dr. Neil Snow, has and here is the story from the Fall 2013 PSU Graduate School Newsletter:



Neil Snow is one of the thousands of scientists who are racing -- against time, against climate change, against the destruction of fragile ecosystems -- to identify our planet's still poorly understood bio-diversity. Snow, a member of the faculty in Pittsburg State University's Department of Biology, and others like him are identifying and cataloging a surprising number of new plant and animal species every year. By his own count, Snow has described more than five dozen new plant species within the Myrtle family.

This year, one of his discoveries received special recognition. The International Institute for Species Exploration selected one of Snow's finds as one of the top 10 new species of 2013. Snow's *Eugenia petrikensis*, a small woody plant from Madagascar, joined a charming monkey from the Congo, a tiny frog (the world's smallest vertebrate), and a cockroach that glows in the dark on the annual list of top finds. "It was really exciting and professionally satisfying, Snow said of the work that went into identifying the new species. It is time consuming and, some would say, tedious work that can focus on small patches of real estate. In the case of *Eugenia petrikensis*, it was a coastal region in Southeastern Madagascar. "We're talking about an area maybe the distance between Fort Scott and Pittsburg," Snow said, "and we've described eight new species from that one small area."

Because the Missouri Botanical Garden has had a long-running research presence in Madagascar, Snow said,

he was able to work with local botanists and researchers to match photographs with dried specimens and thereby determine that *Eugenia petrikensis* was a species that had not been identified previously. It isn't as if no one knows these plants and animals exist, Snow said. "The local people know them and know what they can be used for," Snow said. "They have their own names for them." Identifying and cataloging new species makes it possible for researchers to add new pieces to Earth's biological jig saw puzzle, Snow said. It also allows them to send up warning flags when species are threatened.

According to Snow's paper, *Eugenia petrikensis* is considered endangered and can be found only in the specialized humid forest that grows on sandy substrate with-in kilometers of the shoreline in southeastern Madagascar. Snow, who holds a Ph.D. from Washington University in St. Louis, joined the PSU Department of Biology this fall. He said one of the things that excited him about coming to PSU was the opportunity to serve as director of PSU's Sperry Herbarium.

[source: PSU Graduate School Newsletter Vol. 2 Issue 3, another link on the story: <http://bit.ly/1bScnGC>]

PittCares – Summer 2013

PittCares freshmen pre-enrollment was very busy last summer. Our Biology enrollment total was 108 - the 5th time we've hit over 100 freshmen in the past 16 years of record-keeping. Thanks to all of those new bio majors for being patient as we worked through finding open sections - they look like a great bunch of students. Thanks also to Drs. Chung, Harries, Peak, Smith, Wu, and Arruda for helping with PittCares this summer.



Rumble in the Jungle

It's a long day or set-up and take-down, meet-and-greet, but well worth the effort. The loyal Biology crew ran the table, meeting and greeting the crowds at Rumble. At the table are Dr. Chung, Delia Lister, and Drs. Nonnenmacher, Harries, and Wu. Dr. Snow also participated (in second picture, lower right) in his first "rumble".



Alumni Return to Area

Three Biology graduates in premed have returned to the area. Dr. Brett Dunbar and Dr. Michael Fenech are at Via Christi. Dr. Scott Stringer is a dentist for the Community Health Center of Southeast Kansas. It's nice to have these talented folks back. [Two nice articles in the Pittsburg Morning Sun: read <http://bit.ly/lbrxLMB> for Drs. Dunbar and Fenech and read <http://bit.ly/IBxkcf> for Dr. Stringer]

Scholarships

We want to thank everyone that donates to the Biology Department. They also enhance the funding that we have available for scholarships.

We are awarding \$22,450 from 14 scholarships to 49 students in the 2013-2014 academic year. Your contributions and the earnings from them make a difference.

If you have been thinking about joining our donors, you can easily do so online at this link:
<http://bit.ly/1dufJMU>.

It is easy to add to a scholarship by name or by interest area, or contribute to our Biology Alumni account. You can also contact Kelly Borden in the Biology Office for further assistance.

Your donation to the department is always needed and appreciated.

One of the 2013 Outstanding Alumni is a Biology Grad



Gabe Bever is one of our own, graduating in 1996 in field biology. He gave a great seminar for on his paleontological work to the campus.

More stories can be found at PSU Press and Media (<http://bit.ly/J8htT4>), the Pittstate Youtube channel has a nice story (<http://bit.ly/1bryoFQ>), and the Pittsburg Morning Sun (<http://bit.ly/1ktzOFi>).

Biology Graduate Student Member of Graduate Student Advisory Council

Torrie Epperson (graduate student in Biology) is a member of the 2013-2014 Graduate Student Advisory Council. Last year, our Ken Gouvier was a member.

Biology Faculty (Fall 2013)

Joseph A. Arruda, Professor of Environmental Biology. [Ph.D., Kansas State University]

Specialties: limnology, water quality and biological monitoring and assessment, gastropods

Peter Chung, Associate Professor of Microbiology. [Ph.D., Kansas State University]

Specialties: microbiology, molecular biology (nucleic acid manipulation and protein expression systems in microbes and coccidia), tissue culture

James T. Dawson, Professor of Botany [Ph.D., University of Kentucky]

Specialties: algology, plant physiology, medical mycology

Cynthia S. Ford, Professor of Biology. [Ph.D., Kansas State University]

Specialties: natural history, parasitology, environmental education, biological illustration

Steven D. Ford, Professor of Zoology. [Ph.D., Purdue University]

Specialties: vertebrate zoology, mammalogy, ornithology, ecology, wildlife management, anatomy

David M. Gordon, Associate Professor of Entomology. [Ph.D., University of California at Davis]

Specialties: Ecology of Bees: native bee faunas; medical entomology: phlebotomine sand flies

Phillip Harries, Assistant Professor of Biology. [Ph.D. Washington University]

Specialties: plant viruses, cellular and molecular biology of plants

Hermann Nonnenmacher, Assistant Professor of Biology. [Ph.D., Saint Louis University]

Specialties: plant ecology, entomology

Mandy Peak, Assistant Professor of Biology. [Ph.D., Oklahoma Health Sciences Center]

Specialties: molecular and cellular biology, biochemistry

Virginia Rider, Professor of Zoology. [Ph.D., Arizona State University]

Specialties: gene regulation, reproductive physiology, implantation, mammalian oocyte maturation

Neal Schmidt, Instructor. [Pharm.D, University of Colorado Health Sciences Center]

Specialties: anatomy and physiology

Dixie L. Smith, Associate Professor of Biology, Chairperson. [Ph.D., Kansas State University]

Specialties: soil ecology, grassland ecology, woodland expansion, science education

Neil Snow, Assistant Professor of Botany and Director, T. M. Sperry Herbarium. [Ph.D., Washington University in St. Louis]

Specialties: plant systematics, plant identification, herbarium management

James R. Triplett, University Professor. [Ph.D., University of Kansas]

Specialties: ichthyology, limnology, fisheries management, aquaculture;

Xiaolu Wu, Assistant Professor of Biology. [Ph.D., University of Illinois at Chicago]

Specialties: cell and molecular biology, virology

Daniel Zurek, Professor of Biology. [Ph.D., University of California - San Diego]

Specialties: cellular and molecular biology, biotechnology, and plant molecular physiology.

Biology Staff (Fall 2013)

Kelly Borden, Administrative Specialist

Donna Lair, Storekeeper

Delia Lister, Director, Nature Reach

Suzanne Arruda, Instructor
