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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: biology@pittstate.edu

http://www.pittstate.edu/department/biology/

From The Chair's Desk

Greetings from the Biology Chair:

This year has been a roller coaster of activity, sometimes slow and often speeding, but always moving. I recently had a family Thanksgiving dinner in New York, an event that I could never have anticipated a year ago. It really makes me wonder what 2016 is going to bring, at the national level, on campus and in our department, as well as in my personal life. The only thing that is sure is that as we encounter unpredicted change. It is a chance to grow and learn.

I have to begin with a big change this spring that will happen as Dr. Steve Ford and Dr. Cindy Ford retire from their work on campus. Steve and Cindy (informal because it is confusing to say Dr. Ford and Dr. Ford) have mentored many students in their time in our department and have represented this department across the state and region. It goes without saying that they will be missed. However, I don't think they are going too far away so we may get to see them every once In a while. I know they enjoy some of the restaurants in Parsons!

This time last year, Kelly and I were moving back into Heckert Wells as the work on the HVAC system was winding down. Notice I didn't say finished. Several unpredictable events for our department to contend with involved unresolved issues related to that renovation. One of the most notable is that, due to ventilation problems in the building basement, it had to be completely cleared. Yes, the basement that many of you will remember as impassable is now completely cleaned and cleared. We have some items to move back into it this spring, but it is a very different space now.

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Another building project related to this renovation is remodeling of our rooftop greenhouse cooling system, which is soon to be completed. These and other challenges associated with our building have caused faculty and staff to seek out alternate activities, but as the remaining contracted work on the building is gradually completed we all hope to have fewer building issues in the next several years.

As we were settling back into Heckert-Wells Hall in the spring, we also hosted the Kansas Academy of Science on our campus. For these meetings we used the new Bicknell Family Center for the Arts. Supporters of programming at the Bicknell Center funded a National Geographic speaker on Friday evening, and one of our own alumni, Dr. Gabe Bever was the keynote on Saturday. The presentations and the speakers were terrific, the setting was beautiful, and I think we represented PSU well, but I would be remiss if I underestimated the work that many of our faculty members put into the meeting. It was no small accomplishment to pull it off coming off of the disruptions of the previous year.

We have some new faces in the department. This fall we were pleased to have Dr. Anurada Ghosh join our faculty. She is our new Environmental Health professor and comes to us from Kansas State. Her research involves disease vectors of different types, and she is already involving our students in collecting environmental data in the community. She taught some of our introductory biology courses this fall, and has developed courses for spring in her area of expertise.

This spring, Dr. James Whitney will dive right into ichthyology and ecology. Dr. Whitney is a fish biologist coming from a postdoctoral position at the University of Missouri In Columbia. He has been settling into his office, getting his courses set up for January, and getting to meet some of his soon-to-be students. We are very happy to welcome these new colleagues.

In view of the fact that the Dr.'s Ford are moving on, we have also been approved to search for two faculty positions. That alone would mean another busy spring. Other faculty letters will fill you in on upcoming events, but I want to mention two exciting projects on the horizon at our field sites.

The Surface Mining Division is planning a project at the Monahan Field Site to address remaining acid mine drainage on the site. This project has a great deal of potential for research at both the undergraduate and graduate levels, as well as internships and other field experiences for our students over the next several years. But wait! There's more!

At the Research Reserve they are also planning to fill in part of a strip pit lake that is currently too close to the road. As they work to remodel the area near the pit, we are anticipating improved access to that area and increased utility. While we do not have a time table for these projects, some of the onsite work is planned to begin in the near future. It will indeed be interesting to see what changes are in store for us next year. As a ways, thanks so much for your continued interest in the department.

Sincerely,

http://www.pittstate.edu/faculty-staff/dixie-l-smith

Biology Club in Action

The Biology Club executive committee judged a local science fair at Lakeside Elementary in Pittsburg. A good time was had by all.

Bio Club (1st row: Trista Dugan, David Schlee; 2nd row: Abigail Weins, Hannah Thomas, Yegor Pashchenko)

Welcome to Our New Faculty

Ed. note: Dr. Ghosh joined us in August 2015 with a specialty in environmental health. Dr. James Whitney will start in January 2016, but he has been on campus for a few weeks and we invited him to make a contribution. While Dr. Ghosh has an official headshot, Dr. Whitney hasn't received one yet, but I really like this one.

From Dr. Anuradha Ghosh

Greetings to everyone!

I am a new faculty member in the department with a specialty in Environmental Health. Fall 2015 was my first semester at Pitt State. This is a good opportunity to introduce myself to the alumni and friends of the Biology department. I received a Ph.D. degree in environmental microbiology/microbial diversity from the Institute of Microbial Technology, Chandigarh, India. Thereafter, I spent about seven years at Kansas State University in the microbial ecology lab as a postdoctoral research associate and research assistant professor. Kansas has become a second home to me and my family, so we are glad to move to Pittsburg and stay in touch with our old friends in Manhattan.

My major projects focused on the ecology and epidemiology of antibiotic-resistant bacteria in various environmental niches including agricultural and urban environments, veterinary hospitals, and in wildlife. Other projects included the risk assessment and mitigation of Shiga toxin-carrying *Escherichia coli* (STEC) in the beef chain and gut microbial ecology of pet animals.

This fall, I taught two General Education courses - Environmental Life Science (lecture and lab) and General Biology lab. The first semester had so far been a great learning and teaching experience. I enjoyed every opportunity to interact with undergraduate students in the classroom and labs. Also, it was very stimulating to meet with the GTAs every week for organizing various sections of the General Biology labs. I highly appreciate the guidance and support provided by my senior colleagues in the department throughout the semester. In the end, the most rewarding thing was to learn that the students enjoyed the semester.

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From Dr. James Whitney

Happy New Year! As a new year and new semester begins, I am excited to begin my new career as an assistant professor in the Department of Biology at Pittsburg State University. My position as a fish biologist at Pittsburg State provides a great opportunity, as it allows me to return to my home state, and has numerous possibilities for teaching and research in the Pittsburg area. I am looking forward to the years ahead in the PSU Biology Department, and if my interactions with faculty and students thus far are any indication, I will very much enjoy working at Pittsburg State University.

Excluding a year spent in Missouri, Kansas has been my home for my entire life. I grew up in the heart of the Flint Hills in the Strong City/Cottonwood Falls area, and attended Chase County public schools for my pre-collegiate education. Following high school I attended Emporia State University, where my interest in aquatic biology and ecology was kindled.

My growing interest in aquatic sciences resulted in my pursuit of graduate studies at Kansas State University, where I received both my Master's and PhD degrees. Although my graduate work was based in Manhattan, KS, much of my graduate research was completed in the Gila River of southwestern New Mexico, where I studied relationships between native and nonnative fishes and the effects of catastrophic megafires on aquatic ecosystems. My 1 year hiatus from Kansas followed my graduate work, as a postdoctoral research project took me to the University of Missouri in Columbia. My postdoctoral research focused on synthesizing the documented effects of climate change on inland fish and fisheries in North America. My interests in nonnative species, climate change, and other forms of broad-scale human disturbances on aquatic ecosystems will continue to shape my research at Pittsburg State.

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- more from Dr. Ghosh

I spent some time setting up my research lab. My current research is focused on various aspects of Environmental Health. I would like to include sustainability as a component to my research and involve the ungraduated and graduate students in the research activities. One of the projects is to study the microbial ecology of the un-reclaimed and reclaimed soil in a mining area. This will be a long-term project with application in bioremediation and will involve graduate students. The second study will deal with the spread of antibiotic resistance genes in the environment including household and food production facilities. I will engage undergraduate students in the second project and emphasize on antibiotic stewardship program. Also, I envision to participate in collaborative food safety initiatives in near future.

It is worthwhile to mention my participation in the recruitment program 'Rumble in the Jungle'. It was a wonderful experience to interact with prospect students and their family and I hope to do so in future as well. Advising Biology major students was another challenging as well as learning opportunity for me. The new faculty orientation programs and workshops organized by the university was very useful all through the semester and that was the place to get to know other faculty from across campus.

Finally, I wish my students all the success and a great year ahead. I extend my heartfelt gratitude to my mentors, colleagues, and supporting staff in the department for creating such a collegial ambience for a new member. My family thoroughly enjoyed being part of the biology fall picnic, the football games, and the Christmas holiday party. Happy New Year and best wishes to you and your family!

http://www.pittstate.edu/faculty-staff/anuradha-ghosh

- more from Dr. Whitney

During the spring 2016 semester I will be teaching Principles of Ecology as well as Ichthyology. Although I gained valuable teaching experience as a teaching assistant during my time as a graduate student, this will be the first time I have developed and taught an entire class. As such, both the students and I will be learning this semester, as the students learn about ecology and ichthyology, and I learn effective methods for teaching these subjects. For what I lack in teaching experience I plan to make up for with energy and enthusiasm, and hope that the students will enjoy these courses as much as I did when I took them as an undergraduate.

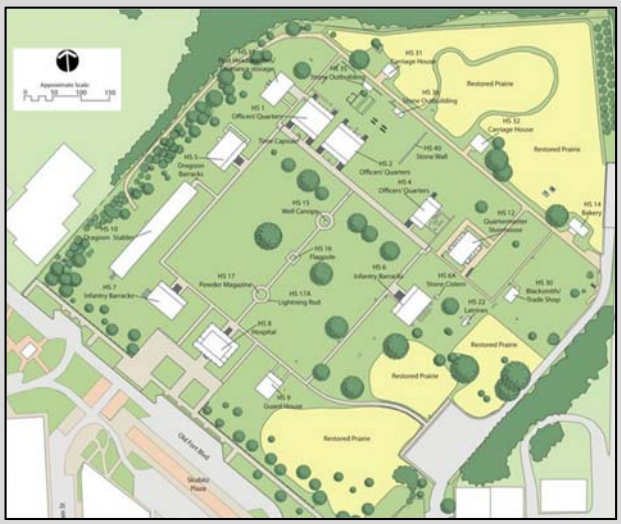
I hope everyone has a great academic year, and good luck during the spring 2016 semester!

http://www.pittstate.edu/faculty-staff/james-whitney
http://jamesewhitney.weebly.com/

Charles E. Bessey Award for the Best Natural Sciences Article

Our recent master's graduate, Craig Corpstein had the manuscript version of his thesis accepted in the widely respected journal "Great Plains Research". In May, he was notified that the paper had won the Charles E. Bessey Award for the best natural sciences paper: "An Assessment of Prairie Restoration at Fort Scott National Historic Site". The award featured a cash prize of $250. Craig traveled to Lincoln, Nebraska to receive the award at the Annual Fellows Luncheon hosted by the Center for Great Plains Studies.

The study described and assessed the current condition of the restored prairie at Fort Scott National Historic Site and compared it a tallgrass prairie remnant. [2014. Corpstein, C., Arruda, J., Ford, C., and Jayawardhana, A. 2014. An Assessment of Prairie Restoration at Fort Scott National Historic Site. Great Plains Research. 24:79–99.]



From Dr. Joe Arruda

Greetings to all of our alumni and friends.

Where to start?? Coursework is a good place. I teach Principles of Biology II each semester with Dr. Neil Snow. We each now do our own lecture sections, but split the labs by discipline. I taught Ecology both semesters to cover the retirement of Dr. Gordon (I miss you Dave). Stream Ecology came up in the fall, a course I alternate with Limnology.

In the spring, I taught Environmental Health for the last time. This was one of the new courses I started soon after I came to the department, but it now belongs to our new faculty member Dr. Ghosh, whom we hired for her expertise in environmental health. I have long wanted such a person in the mix for us and I am very happy it finally happened.

I am also a founding member of the University's e-Learning Committee. We evaluate our online course offerings using a rubric called "Quality Matters". I am actually one of the first two people (Dr. Jan Smith is the other) to teach online courses at PSU, back in 2007.

On the research side, a very wet and "thunderous" spring and early summer hampering collections to document the distribution and abundance of aquatic snails. This is poorest year I have had. A "Checklist of the Aquatic Snails of Kansas" was published in the Kansas School Naturalist. It's a companion to the previous year's land snail checklist – see them both at https://www.emporia.edu/ksn/. The list really needed a key and I had great help assembling a key with undergraduate student Hannah Thomas. She put the material together, checked it running specimens through the key and suggesting changes. At the end of it all, she prepared a poster ("Aquatic snails of Southeast Kansas") for the PSU Graduate Colloquium in April 2015.

Two other undergraduates, Tommy Westerhaus and Jesse Moreland, also presented a poster ("A Comparison of Water Quality in the Spring River and its Tributaries,") at the Colloquium. The assembled and assessed water quality data had been collected at 7 sites in the Spring River watershed. The data were collected by students (including Tommy and Jesse) in my field classes from Spring and Fall 2014.

Dione Freil, a secondary school teacher and my 16th graduate student, finished up her Master's Report titled "Designing a Science Curriculum for the Southeast Kansas Nature Center, Galena, Kansas." It included two booklets for patron or student use: a Junior Naturalist Booklet and a Junior Aquatic Biologist Booklet. She did a great job.

I gave poster presentations at two conferences: at the Freshwater Mollusk Conservation Society Symposium in St. Charles, MO with "A Preliminary Checklist of the Aquatic Gastropods of Kansas" and at the Kansas Natural Resources Conference in Wichita, KS with "Observations from a 54-year Old Collection of Gastropods." In 2014, Emporia State was cleaning out a lab space for a new program in clinical lab sciences and they found long-forgotten boxes of snails that had been collected in 1960 by a faculty member who had been there maybe 3-4 years. I authenticated the collection and archived into the PSU Museum.

For the Department, I continue to wrangle this newsletter, our Facebook page, and run department assessment numbers for administration. I also served, with Dr. Mandy Peak, as co-mentors for Dr. Anu Ghosh, our newest faculty member. I also chaired the Fish Biologist Search committee. Dr. James Whitney will be starting here in January although he's already hanging around and getting ready. I am currently chairing the Wildlife Biologist Search Committee.

One of the big tasks in the Spring was the KAS meeting. I had done two of these before, so I was no newbie to the process. I ran all the registrations (done online for the first time thanks to Donna Sue Pintar!) and abstract submissions, paper and poster scheduling, and prepared the Program and Abstract booklet. I'll also give a shout-out to Dr. Nonnemacher who had what I always thought was the hardest job – running the judging of student posters and papers. He did great in a job that – believe me - no one wants.

Lastly, the losing and gaining of colleagues continues. It is wonderful to welcome new faces (younger faces) with their newer experiences and perspectives. But the retirements do come at a cost. Experience, perspective, and wisdom are lost. The groove that existed for so

long in the field area will be gone. It was a good groove with great experiences and great students. But - new people will establish their own groove and it will be a good. I hope all of our new faculty come to appreciate the gift that this department and university is to them, to the students, and the region. We are very lucky here to have what we have.

My best to all,

http://www.pittstate.edu/faculty-staff/joseph-a-arruda

From Dr. Peter Chung

Greetings and Happy Holidays from us to you as another busy year draws to a close. If I could use these few words to summarize our year, I would say, "We are back!" We kicked off the spring semester with a bit of normalcy, as microbiology labs were once again held in 310 Heckert-Wells. And although there may be some grumbles, sighs and a bit of arm waving and grimacing from time to time, as a result of flaws and imperfections from the HVAC renovation, we can categorically say we are happy to be fully back on the 3rd floor of Heckert-Wells.

That said, classes continue to chug right along. The prep lab's 3 autoclaves continue to do their thing…making sure the students get sterile media and maintain my sanity. I give daily thanks for the team we have in the prep lab, as Kim and her student assistant Chyna continue to meet the ever increasing demands of high lab enrollment. To better manage lab classroom space, we have shuttled a couple of senior labs into 318 Heckert-Wells. That has allowed us to manage multiple labs a bit more efficiently. Thanks Jim.

In the summer, I also managed to move my research lab out of 316 into a corner strip in 318 (the Physiology lab). As always, the Physical Plant was gracious to assist with electrical, carpentry, and moving just to name a few. We are now officially sharing a teaching space with both the plant and microbial physiology students (someone has to keep an eye on them). We hope the space will give the lab's 3 graduate students plenty of space to work on their research and hopefully, defend and graduate in a timely manner.

I chaired the Biology Environmental Health search committee this past spring and, working alongside Drs. Peak and Harries - and with the input of the faculty, I am happy to welcome Dr. Anuradha Ghosh to the Department. Her blurb will do due diligence in introducing herself to you all. She is an amazing addition to our Department and we are fortunate to have her here. This Fall, I am working with Drs. Arruda and Snow to search for a wildlife biologist. If you are reading this and are interested in applying, let one of us know!

Science Day 2015 came and went in a blur, at least that is the feeling after hosting close to 800 high school students for the annual Science Day event, organized by the PSU Biology Club with the support and assistance of everyone in the Department, along with Physics and Chemistry. Special thanks to Trista Dugan, David Schlee and members of the Biology Club executive team for making it happen.

A few more thoughts….

I am still running out to Topeka once a month, as I was asked/volunteered to serve on the Kansas Board of Regents Transfer and Articulation Council.
I am still meeting with prospective students interested in our Department. Contact me if there is someone you would like us to meet with.
I am still marshalling at graduation ceremonies, so if you ever make it back…
Congrats to our May graduates who got accepted into professional school or Med Tech clinicals. Good luck to everyone still waiting to hear. We wish you the very best.

Upcoming in Spring 2016 are some dates to keep an eye on for Science Day (3/24/16), PrePT Open House and Student Orientation (4/7/16), the Department end of the year picnic and, looking even further ahead, Spring Commencement (5/6-7/16).

There is always more to be said, but I leave you with my usual farewell: To all our graduates, colleagues and friends, don't be strangers; stay in contact, keep in touch, and do stop by and visit if and when you are in town.

Regards,

http://www.pittstate.edu/faculty-staff/peter-a-chung

The Sperry Home

The Biology Department has many valuable resources – its students, staff, and faculty are certainly uppermost. But of the brick-and-mortar type of resource, the property known as Sperry Home is among the top.

Dr. Ted Sperry was an early leader in restoration ecology. Under the auspices of Aldo Leopold, he was given sixty acres of old farm land near the University of Wisconsin Madison campus. With a small crew of CCC workers and long-handled shovels, he was famously told to "go make a prairie". Dr. Sperry considered his work and research at the now-famous Curtis Prairie his greatest professional achievement.

Married in 1935 to Dr. Gladys C. Galligar, Ted took a position at PSU in 1946. He retired in 1974 to become Professor Emeritus and a very active retiree until his death in 1995. Dr. Sperry was curator of the herbarium that now bears his name until 1992.

Dr. Galligar designed Lyrrose, their residence on Paradocs, the couple's name for the one-acre lot that they had purchased in 1949. Paradocs was donated to Pittsburg State University after Dr. Sperry's death. The location – both the home and the land - honors the contributions and memory of Dr. Sperry and Dr. Galligar. The ashes of both Drs. Sperry and Galligar were spread over the property.






Read more about this interesting couple and the property at http://www.pittstate.edu/department/sperry/.

From Dr. James Dawson

Spring semester saw my return from sabbatical at UT, Austin. With three courses I was really busy. The mycology class was larger than I had seen in many years, and it looks like the algae class this coming spring will be very large as well. Doing new labs in ELS and General Biology kept me busy. All of the classes did well at the end of the semester. I did have a chance to instruct in one of the workshops at UT Austin during the spring as well.

The first half of summer was spent in Kentucky with relatives. The remainder of the summer was spent working around the house. Fall semester saw three courses again. We dissected the fetal pig in General Biology, this was a real hit!! General Biology was a learning community course and it certainly seems to have worked!! They were a very cohesive group by the end of the semester.

http://www.pittstate.edu/faculty-staff/james-t-dawson

From Dr. Cindy Ford

After years of collaborating with colleagues, guiding students, and preparing teaching materials, next year will be a new chapter for me. I am retiring in May. I have truly enjoyed teaching in the Biology Department and will take many memories with me.

As a field biologist at heart, I have particularly encouraged students to get experiences in the outdoors. Fieldtrips have been a major part of my course designs. The numerous spring break fieldtrips and the summer Atlantic barrier island fieldtrips were my favorites. Living outdoors for a week gives a different perspective of biology for students and the instructors who led the trips.

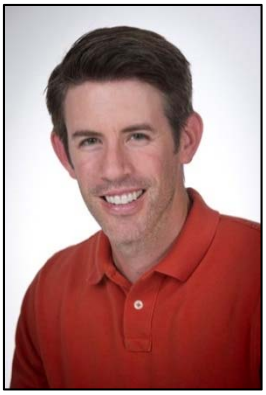
I will continue doing fieldtrips—on our "wildlife preserve" farm west of the campus. I look forward to exploring all corners of our property on a regular basis to find small biological wonders. Steve and I discovered long ago that we cannot get bored attending to 200 acres of management challenges every year. As a break we intend to travel a bit. One of our goals is to visit as many national parks as we can—with our senior National Park Pass, of course.

http://www.pittstate.edu/faculty-staff/cynthia-s-ford

Biology Bowl - Biology Club in Action

Then came the premiere event of the year – Science Day and the Biology Bowl. As is the custom, the Biology Club sponsors the entire three-department event. This year, the Club was represented by all the volunteers – students and faculty – with the organization's leaders: President - David Schlee, Vice-President - Trista Dugan, Secretary - Hannah Thomas, Treasurer - Yegor Pashchenko, and Event Coordinator - Abigail Wiens. Dr. Peter Chung is the Faculty Advisor for the Club. The big event of all the events is the Oral Competition and the winners were: 1st place - St. Mary's Colgan High School, 2nd place - Kickapoo High School, and 3rd place - Central High School.

From Dr. Phil Harries



Greetings from Heckert-Wells! It's been a fun but busy year for me here in the Biology Department.

In the classroom I've been teaching Principles of Biology I, Introduction to Research, Senior Seminar, Biology of Cancer and Bioethics. I've really been enjoying teaching and was surprised and honored to be a recipient of one of the PSU outstanding faculty awards earlier in the year. It was a great feeling to be recognized by the students!

In the research lab, six undergrads have been working on various projects exploring gene function in the bryophyte *Physcomitrella patens*. Newcomer Anthony Diskin has been helping out with odds and ends. Hannah Devries and Trista Dugan have been studying the calreticulin gene. Calreticulin is involved with many cellular processes but we have been focused on its ability to change the aperture of plasmodesmatal openings (the channels connecting plant cells). Cassidy Barnard, Garrett Harmon, and Josh Yeomans have been working on a gene called SOS3 that regulates cytoskeletal organization and is believed to be important for salt tolerance in plants.

Graduate student Brendan Coulter has also been putting the finishing touches on a cytology project exploring the use of fluorescence in-situ-hybridization probes to look for correlations between deletions in the PTEN gene and prostate cancer in clinical samples.

On a personal note, we took a family Cruise to the Bahamas over the summer. We sailed out of Baltimore and made three different stops in the islands. This was our first cruise and we really had a great time! We got to do some kayaking and snorkeling and just generally relaxed and over-ate the entire time. As winter moves in, I'll definitely be reminiscing about those warmer days.

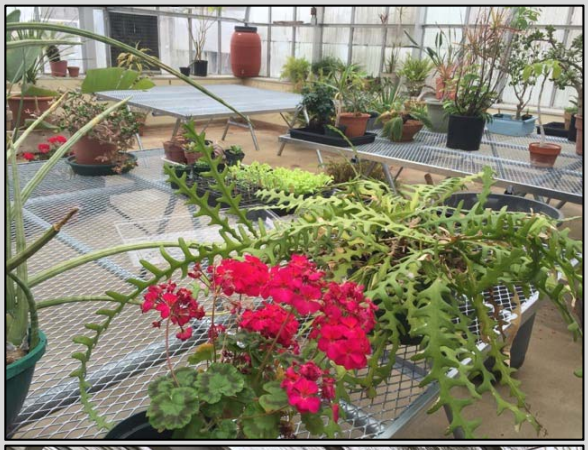
Best wishes to all for a healthy and happy year!

http://www.pittstate.edu/faculty-staff/phillip-a-harries

Undergraduate researchers (left to right): Cassidy Barnard, Anthony Diskin, Hannah DeVries, Trista Dugan, Garrett Harmon, Josh Yeomans.

Greenhouse Update

Up on the rooftop, we've seen some significant changes in the greenhouse. The majority of the original wooden benches have been torn out and replaced with shiny new stainless steel. The evaporative cooling system was determined to be leaking into building below and is in the process of being replaced. The old system has been removed and the support wall capped with metal. The new system should be installed over the winter so that we can be ready for another hot Kansas summer.



- Dr. Phil Harries

From Dr. Hermann Nonnenmacher

During the spring, 2015 semester, as part of his thesis committee, I helped Fabio Giacomelli develop a research poster about thesis work he is completing in southeast Kansas on small mammals in pre-reclamation strip-mine habitats. In March he presented it at the 2015 Annual Meeting of the Kansas Academy of Science. In April, he presented his work as a research talk at the 2015 PSU student research colloquium.

After the spring semester concluded, Fabio and I took several trips together to his research sites to do follow up plant identification and improved mapping work to add to his thesis.

In addition to our courses and student interactions, we had many opportunities to help those considering PSU as their choice for a quality higher education. Several of us in the department assisted by meeting many visiting families through our Majors Fair and also the popular PSU Rumble events, as well as individualized meetings between prospective students and faculty advisors across all emphasis areas we offer.

During the Fall semester, I added general entomology to my more established courses. Our class engaged in weekly collecting field trips, where we visited several disturbed, reclaimed and managed areas. We learned about insect ecology and natural history, and we became more confident in predicting which kinds of insects could be sought relative to various terrestrial and aquatic habitats.

One of the highlights was observation of a well-established, underground nest of native yellow jackets. We counted individuals leaving the nest for a set amount of time, and then we counted individuals returning to the nest. From these counts we gained a better appreciation for the working ratio of individuals coming and going, and the observations generated interest in predicting the population of adults working the colony. The nest was active up until November 25th. A few days of rain and a week of lower temperatures brought wasp activity to an end. The nest was excavated and removed safely on December 5th.

The semester remained warm enough for the class to collect nearly each week, and the weekly attention to collecting and specimen preparation procedures resulted in nice collections by the students.

In my lab, Karen Stoehr worked diligently to complete her honors project as an addition to her normal work in general entomology. She studied foragers of Tall Thistle, *Cirsium altissimum* in Cherokee and Montgomery Counties, Kansas. Her work will be developed into a research poster for presentation at the 2016 Annual Meeting of the Kansas Academy of Science and the 2016 PSU Student Research Colloquium. Her work is a valuable addition to work previously completed by Sam Young (Fall 2013) and Trevor Burrows (Fall 2014).

http://www.pittstate.edu/faculty-staff/hermann-f-nonnenmacher

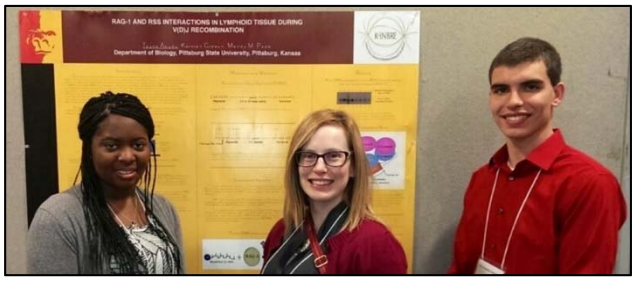
From Dr. Mandy Peak Bryan

Happy New Year Gorillas! In 2015, I taught Genetics Lecture and Lab, Immunology Lab, Multiculturalism in Medicine-Mexico, Epidemiology (online in the summer and face to face in the Fall) and led a study abroad trip to Mexico. Also, I was promoted to Associate Professor and was inducted into Omricon Delta Kappa in September (along with Dr. Harries).

Drs. Peak and Harries inducted into ODK with several Biology majors.

My research students presented two posters at conferences this year. Tayita Abudu and Karsten Creech presented "RAG1 and RSS Interactions in Lymphoid Tissue During V(D)J Recombination" at the K-INBRE conference in Topeka. They also presented "The Conservation of Nucleotides May Effect the Efficiency of V(D)J Recombination" at the PSU undergraduate research symposium. At the PSU symposium, Tayita and Karsten was awarded first place for their poster presentation. Great job!

Tayita Abudu and Karsten Creech awarded first place poster at the PSU Colloquium



Tayita Abudu, Dr. Peak and Karsten Creech at K-INBRE

This past May, I led a study abroad program to Puerto Escondido, Mexico. The students had the opportunity to assist four medical physicians and a handful of dentists with routine medical and dental exams; run triage; and work with interpreters. We also visited Laguna Manialtepec on a bird and nature tour. We viewed several species of birds including: tricolor heron, green heron, ring kingfisher, American anhinga, and white fronted parrots.

Next year, the Pitt State pre-health study abroad program is traveling back to Peru in May 2016. I have

an eager group of pre-med and pre-dental students excited for this fantastic experience!

So, this 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 Jace Erwin, Trista Dugan, Tyler Elmore, Kelsie Goins, and Cate Dunn to KU med; Carly Lallemand, Conner Paustian, and Samantha Thomas to UMKC Dental School; and Josiah Rhodes to KU Physical Therapy School. Also, a huge congrats to Rachel Jerome Miles for graduating from the Wichita State University PA program and Eric Hunn for graduating KU med and for his surgery residency position in Wichita, KS.

http://www.pittstate.edu/faculty-staff/mandy-m-peak-bryan

Dr. Peak in Mexico with local children.

The 147th Annual Meeting of the Kansas Academy of Kansas

Each year the annual meeting of Kansas Academy of Science is held at one of the colleges and universities in Kansas. In 2015, the annual meeting – the 147th - was sponsored by the Biology Department. Over 115 faculty and students participated in the meeting – one of the first events held at the new Bicknell Family Performing Center for the Arts (the Overman Student Center was closed for renovations and expansion). It was a great venue and we appreciated the help of the PAC staff, including Joe Firman. Great meeting, great venue.

Presentations included 36 oral papers and 40 posters. The 16th Annual Paleonotology Symposium was also a part of the events. The evening guest speaker was Dr. Albert Yu-Min Lin (Chasing Ancient Mysteries: A Digital Expedition), a National Geographic Emerging Explorer. Dr. Gabe Bever, post-doctoral research fellow in the Division of Paleontology at the American Museum of Natural History, spoke at the luncheon. He is graduate of PSU from the Biology Department and received his master's from Fort Hays in 2000.

Local Organizers included: General Chairperson Dr. Dixie Smith; Organizing Committee of Drs. Joe Arruda, Steve Ford, Cindy Ford, Hermann Nonnenmacher, and Xiaolu Wu; and for the Bicknell Performing Arts Center, Joe Firman.

Over 90 people attended the lunch following the plenary session with Dr. Bever. Photo credit: Joe Firnman.

From Dr. Virginia Rider

Greetings to all friends of the Biology Department. I am pleased to report another year of success for students who applied to a variety of professional schools. Those accepted to KU School of Medicine are: Dustin Bonzo, Crystal Brown, Cate Dunn, Jace Erwin, Christopher Simwinga. Those accepted to Cleveland College of Chiropractic Medicine: Grace Brown, Dalton Brunner, Sophia Chang; those accepted to dental school: Avery Beard (Case Western), Blaze Heckert (UMKC), Carly Lallemand (UMKC), Conner Paustian (UMKC), Samantha Thomas (UMKC); those accepted into Physician Assistant programs: Zach Caldwell (Springfield, MO), Lauren Simmons (Wichita), and Optometry school, Grace Anderson.

Congratulations to you all. If I have overlooked anyone, please let me know as we enjoy following you and your career successes. Two of our best students have been accepted to KU Medical School early decision. Congratulation to Trista Dugan and Tyler Elmore. Those of us who know you are not surprised but we know what a relief it is for you to be accepted to medical school even before the application deadline.

The 13th annual K-INBRE symposium was held in Topeka, Kansas in January 2015. The following PSU students received cash prizes for their presentations: Blaze Heckert, senior in biology, "Inhibitor-induced combination therapy of K-RAS driven NSCLC" – poster presentation; Rachel Miller, junior in biology, "Determining Public Awareness about the Highly Pathogenic Avian Influenza Virus, H5N1, in the United States" – oral presentation; Kalee Woody, junior in biology, "PSMA-receptor targeting magnetic nanoprobes: Novel nanotheranostics for the treatment of prostate carcinomas" – poster presentation.

Congratulations to these three students for their outstanding research. This year we have 18 student Scholars: four are Summer/Semester Scholars and twelve are university Scholars. Of special merit are the two Star Trainees, Jayden Bowen and Tyler Shelby. These two competed for the Star Trainee Awards among a tough group of contenders consisting of students from all of the higher educational institutions in Kansas. We are so proud of them and their mentors, Dr. Zurek and Dr. Santra.

Samantha Meneely and Anuradha Bhusri, both graduate students in my research laboratory for the last two years, defended their theses in May. I am on sabbatical this semester and enjoying my own research time. I plan to visit K-STATE and work on a publication with Dr. Sue Brown, the director of the bioinformatics core of the K-INBRE. I still enjoy working in the laboratory, reading scientific papers and trying to get data pulled together for publications. Along this line, I would like to acknowledge the continued support of Malcolm Turner at PSU who helps me with generating publication quality figures.

Interview invitations are in full swing from a variety of medical, dental and other professional schools. Dr. Garner's program called Premeds with Promise is in full swing and continues to provide PittState students with additional opportunities to gain experience in a medical practice. I am grateful to all of the health care professionals who participate in a variety of classes on campus and help educate our students about options in health care careers.

Dr. Brett Dunbar (surgery), Dr. Michael Fenech (OB/GYN) and Dr. Jesse Niederklein (anesthesiology) are graduates of our program and have rejoined the medical community at Via Christi. Dr. Megan Clarkin is a hospitalist at Mercy in Joplin. Dr. Kathleen Sandness is the medical director at the Bryant Student Health Center and has brought her energy and interest in education back to campus after twenty five years in private practice.

These physicians are helping Pittstate students gain experience about careers in medicine. The circle of knowledge continues as they give a leg up 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. My best wishes for continued success and happiness in the pursuit of your passions.

http://www.pittstate.edu/faculty-staff/virginia-c-rider

Spring 2015 Picnic/Awards

A good time was had by all at the Gorilla Village for the umpteenth annual Biology Spring Picnic. As has become our new tradition, awards in several categories were given to undergraduates by nomination and a vote by the faculty. The winners were:

Academic Excellence in Cellular/Molecular Biology Award to *Josiah Rhodes*. Academic Excellence in Field Biology Award to *Jesse Morland*. Research Excellence in Cellular/Molecular Biology Award to *Kalee Woody*. Research Excellence in Field Biology Award to *Thomas Westerhaus*. Outstanding Freshman Award to *September Numata*. Best Employee Award to *Tyler Dubin*. Mr. Congeniality Award to *Tom Myers*. Ms. Congeniality Award to *Ali Blanchard*. Award for Most Vocal Student to *David Schlee*. Award for Most Organized Student to *Ali Blanchard*.

Dr. Dave Gordon Retires

After 14 years of service, Dr. Dave Gordon retired and headed out to the Pacific northwest. We wish him a long and happy retirement.






From Dr. Neil Snow

Hello from the electronic pages of Biology. 2015 has been productive from all quarters.

First and foremost: Congratulations to all our 2015 graduates in the Department of Biology. Kudos also to Biology collectively for hosting the annual Kansas Academy of Sciences at Pittsburg State University.

Sam Young, MS student, has now collected nearly 6,000 specimens of plants for her thesis work documenting plant diversity in Cherokee and Crawford counties.

Natalia Agostini Schneider commenced work on her MS degree working on the herpetological collections at PSU, working also with "retired" Dr. James Triplett. Natalia has taken great initiative to perform triage on specimens in need of urgent curatorial care, and has transferred all herps to newer jars with more appropriate preservatives.

Three students helped collect plants for a plant survey along parcels held by the Grand River Dam Authority along the Neosho River near Miami, OK. Additional survey work will be carried out in 2016.

Three curatorial-related independent study courses were inaugurated in 2015, including specimen preparation, data basing, and digital imaging. Ten students have been involved in these, which gives them hands-on work and doubles to help faculty involved with curation. Over 1500 specimens were data based and about 1200 digitally imaged in 2015, mostly by students, and most of these records are now accessible via the Northern Great Plains Herbarium portal and other data aggregators (e.g., Global Biodiversity Information Facility).

Herbarium and Curations Activities

The Natural History Collections Curation Club began in Fall 2015, with several students. Faculty advisors are Drs. Snow and Triplett (retired).

A group of international visitors toured the herbarium in 2015.

2015 also saw the inauguration of a new upper division/graduate course entitled "Invasive Species Management". Non-native species are seen by most ecologists as being second only to habitat conversion as a collective risk to native biodiversity. Students learned about the theory underpinning this relatively young field, and each wrote detailed management plans for hypothetical situations, involving limited budgets, stakeholders, management objectives, and of course the non-native species themselves.

I co-authored several papers in 2015. One, with coauthors from France and Switzerland, described 17 new species of *Eugenia* from Madagascar, and was

featured on Science Daily (http://bit.ly/1VqPDV8). A second addressed nomenclatural and type specimens from India. A third discussed nomenclatural issues of *Syzygium* from Madagascar. A fourth paper in press, which includes student Sam Young, describes a new plant species from New Caledonia.

Five weeks this summer were spent in Paris to studying the remarkable biodiversity of New Caledonia, as represented by herbarium specimens at the Muséum National d'Histoire Naturelle. I thank the Graduate School for support of this travel. I viewed approximately 1200 specimens and determined that approximately 45 additional species new to science need to be described. The first paper summarizing five species is in press and another is nearing submission

I resumed duties as book review editor for *Systematic Botany* after a 2-year hiatus, and wrote reviews for several volumes. I carried out formal peer-reviewed for several articles for other journals. Additionally, writing continues on a long manuscript of the grass genus *Diplachne*, which included visits to herbaria in Oklahoma.

Finally, a highlight was the keynote address by Dr. Gabe Bever at the Kansas Academy of Sciences, a PSU Biology graduate now at the American Museum of Natural History. His presentation on the evolution of turtles was among the most outstanding professional presentations I have had the pleasure to hear.

Go Gorillas!

http://www.pittstate.edu/faculty-staff/neil-w-snow
http://www.pittstate.edu/department/herbarium

From Dr. Xiaolu Wu

Hello, everyone.

In 2015, I taught General Microbiology (lecture and lab), General Virology and multiple sessions of General Biology. How to engage non-major students that comprise General Biology classes in active learning continues to pose a challenge.

I tried a new teaching method this year by incorporating a webpage design project as a complementary assignment besides other regular assignments, including homework for each chapter and five lecture exams. The scenario is to provide an opportunity for non-major students to personalize learning by building a webpage about any biology-related topic of their own interests. Furthermore, this assignment potentially may adapt to different learning styles of students by giving students options to work in teams or independently as well as minimizing the test anxiety situation as an outside-classroom project.

The assignment with a grading rubrics and model samples was given at the beginning of the semester to allow students to have ample time to work on this project. Particularity, students were required to make clear connections to the course materials to indicate how this biology course helped them understand the topic better. I am excited with students' work that is creative and informative.

This project broadened students' horizon of knowledge and reinforce the course materials. The problems include that some students procrastinate and started the project till a few days before the deadline and some students showed lack of experience to work as a team. Overall, this experience provides valuable ideas for me to modify the teaching method in the future.

Rachel Miller, the undergraduate research student who has worked in my lab since 2014, was selected to give an oral presentation in the K-INBRE 2015 symposium, titled "Determining Public Awareness about the Highly Pathogenic Avian Influenza Virus, H5N1, in the United States". Her presentation was based on the results of the survey we conducted over the summer 2015 aiming to find out the general public awareness of the highly pathogenic H5N1 virus. Rachel did a

great job with the presentation. Moreover, four new undergraduate students joined the lab in Fall 2015, and they are Deanna Bingham, Aubrey Vena, Haley Northcutt, and Erika Carson.

I have been actively involved in service activities, including the committees at the department and college levels. I continued to serve as the graduate coordinator of the department to process the master program applications. Another exciting service is to participate in the Friends helping friends to volunteer as a community mentor to meet with a lovely girl in the elementary school each week.

Finally, I would like to thank all the people who have given me support and help in 2015 and I wish you all a happy and joyful 2016.

http://www.pittstate.edu/faculty-staff/xiaolu-wu

Nature Reach – Delia Lister

Greetings from Nature Reach!

As usual, things are really moving along here. As everyone else did, we survived the move back into Heckert-Wells. I have to say it is good to be "home," and we certainly hit the ground running. In the last academic year we provided 154 programs, reaching close to 5,000 students and community members in 26 communities in the SEK Region. We will likely hit that number again as the program requests keep coming.

We also had a near record-breaking year in fundraising. Our donors provided funding for new custom-built snake cages, a student summer intern, a teaching garden, and of course free programs for area schools. I am always grateful for the support we receive from the community. We certainly wouldn't survive without help from donors!

During the Spring 15 semester I hosted another teacher workshop with the Kansas Association for Conservation and Environmental Education. I really love the enthusiasm of the teachers that come for a workshop. I know they leave excited to share what they learned with their students. I also had the opportunity to complete the official National Association for Interpretation (NAI) Certified Interpretive Guide training along with student Ashten Hall. This Fall I will be complete the Certified Interpretive Guide Trainer course which allow me to provide a 4 year certification to students who wish to join the field of Interpretation or work in state or national parks. It will be a huge leg up in the competition for seasonal and/or permanent jobs.

This summer after a wonderful trip to Yellowstone National Park, I was able to provide a summer day camp for 15 1st-3rd grade campers. Although the week was a little rainy, the campers were still able to dig potatoes out of the new garden, chase insects, bird watch, and look for signs of life around the Natural History Reserve. I was grateful to have members of the Sperry-Galligar Audubon Society volunteer to help with camp along with some former campers. They were a huge help! The rest of my summer was working on big projects such as the new teaching garden at the still new caretaker house. Things are really shaping up at the Reserve, so the next time you are in town feel free to call and I'll do my best to show you around!

http://www.pittstate.edu/faculty-staff/delia-a-lister
http://www.pittstate.edu/department/naturereach/

From the Prep Room – Kim Grissom

Happy New year from the Prep Lab! This year looks like it will be another busy one for the Prep lab, as we have added one class and will be offering others that are new to me. The Department has expanded a little and now have some offices and a couple of classrooms in Hartman Hall along with the herpetology collections. I would also like to welcome our two new Biology faculty members. One joined us for the fall semester and we will welcome another this spring semester. I look forward to working with them to make the transition as smooth as possible. I am excited about the new year and the new opportunities we will be experiencing. May your New Year be filled with blessings!

http://www.pittstate.edu/faculty-staff/kim-grissom

Our Outstanding Faculty Award Winner

Dr. Phil Harries was honored as one of the three Distinguished Faculty at the 2015 Apple Day commemoration. Great going Dr. H. and thanks to those students who nominated him! Dr. Harries joins previous department winners Dr. Joe Arruda (1990), Dr. Dan Zurek (2002, 2008), and Dr. Virginia Rider (2011).

Any student may nominate one faculty member or any registered student organization may nominate two faculty members by completing the nomination form. The nominations are submitted to a committee led by the Academic Affairs Director. This committee then selects and notifies the three finalists, who receive medallions at Apple Day Convocation.

There was a great interview with Dr. Harries (see it at http://bit.ly/1N9h69s)

More story online at: http://bit.ly/1QPzMs

Student Advisory Council

Trista Dugan (5th from left), Biology major and Biology Club President was our Department's representative to the 2015-16 College of Arts and Sciences Student Advisory Council.

Biology Students at 2015 KINBRE Research Conference

The 13th annual Kansas Institutional Development Award Network of Biomedical Research Excellence (K-INBRE) symposium was held Jan. 17-18, 2015 in Topeka, KS. Several biology majors were honored for their scientific research presentations (oral or posters). They include:

- Rachel Miller, junior in biology, "Determining Public Awareness about the Highly Pathogenic Avian Influenza Virus, H5N1, in the United States" – oral presentation. [mentor: Dr. Xiaolu Wu]
- Blaze Heckert, senior in biology, "Inhibitor-induced combination therapy of K-RAS driven NSCLC" – poster presentation. [mentor: Dr. Santra in Chemistry]
- Kalee Woody, junior in biology, "PSMA-receptor targeting magnetic nanoprobes: Novel nanotheranostics for the treatment of prostate carcinomas" – poster presentation. [mentor: Dr. Santra in Chemistry]

K-INBRE funding to students and faculty is designed, in part, to lead promising college science students into careers in biomedical research in Kansas, as well as maintain or grow biomedical research capabilities in the supported departments through support of students and faculty. Related stories at: http://bit.ly/1vGUekn and http://bit.ly/1j5rX7E

KINBRE meeting, January 2015

First Row, Left to right: Dr. Xiaolu Wu, Anuradha Bhusri, Lindsey Oneal, Dr. Irene Zegar, Dr. Tuhina Santra, Dr. Santi Santra, Samantha Meneely, Kalee Woody, Rachel Miller, Ashley Jimenez, Dr. Mandy Peak, Hannah Devries
Second Row, Left to right: Dr. Jody Neef, Deaven Thompson, Trista Dugan, David Schlee, Tayita Abudu, Maria Newmaster, Ali Hroobi
Third Row, Left to right: Dr. Dave Gordon, Ram Raghaven, Nelson Elbers, Dr. Virginia Rider, John Candler, Josh Yeomans, Dr. Peter Chung
Fourth Row, Left to right: Blaze Heckert, Dr. James McAfee, Dr. Phil Harries, Jayden Bowen, Karsten Kreech, Raymond Westby, Evan Noel

The PSU Research Colloquium

Over 100 undergraduate and graduate students participated in the PSU Research Colloquium on April 8, 2015 at the Bicknell Family Center for the Arts. Thirty-four oral presentations and 54 research posters were presented. Several biology students - undergrad and graduate – participated in oral or poster presentations. Awards were presented at the 2015 Graduate School and Research Awards Banquet held on April 15, 2015. Among the winners of awards were these Biology students:

Category A (Science & Technology): Graduate Poster 2nd Place: Samantha Meneely. Undergraduate Poster 1st Place: Blaze Heckert; 2nd Place: Deaven Thompson;
Category D (Topical Literature Review Poster): Graduate Poster 1st Place: Grace Anderson. Undergraduate Poster 1st Place: Karsten Creech and Tayita Abudu.

Biology student participants were:

Undergraduate

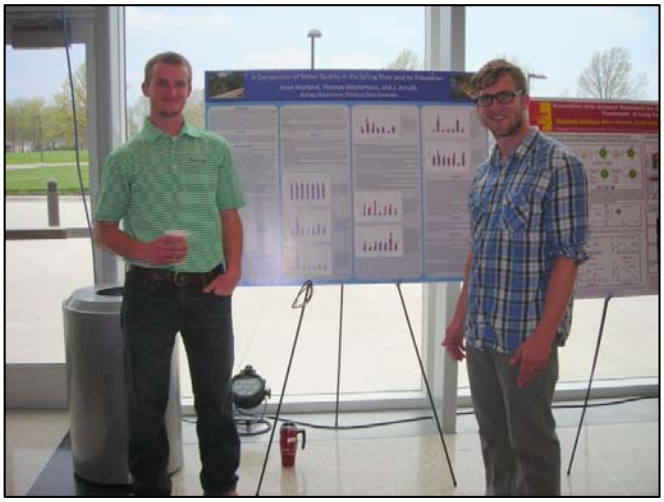
Tayita Abudo, Karsten Creech (poster). "The Conservation of Nucleotides May Effect the Efficiency of V(D)J Recombination." [Mentor: Dr. Mandy Peak]
Hannah Thomas (poster). "Preliminary Key to Identification of Aquatic Snails in Kansas." [Mentor: Dr. Joe Arruda]
Thomas Westerhaus, Jesse Morland (poster). "A Comparison of Water Quality in the Spring River and its Tributaries." [Mentor: Dr. Joe Arruda]
Raymond B. Westby (poster). "Biosensor Studies with Copolymers from Vinylferrocene and 4-Vinylpyridinium" [Mentor: Dr. Jody Neef, Chemistry]
Karen Stoehr (poster). "Non-native Plant Species of Ottawa County, Oklahoma." [Mentor: Dr. Neil Snow]
Deaven Thompson (oral and poster). "Functional Magnetic Nanoprobes: Novel Nanotheranostics for the Treatment of Prostate Carcinomas." [Mentor: Dr. Santimukul Santra, Chemistry]
Blaze Heckert (oral and poster). "Inhibitor-Induced Combination Therapy of K-Ras Driven NSCLC." [Mentor: Dr. Santimukul Santra, Chemistry]

Graduate

Grace H. Anderson (poster). "Inducible Expression of Trangenes for Charcoal Rot Resistance in Soybeans." [Advisor: Dr. Dan Zurek]
Anuradha Bhusri (oral and poster). "Dead End Homologue (DND1) Protein and its Target mRNA is Influenced by Age and Estradiol in Normal and Systemic Lupus Erythematosus (SLE) T Cells." [Advisor: Dr. Virginia Rider]
Fabio Giacomelli (oral and poster). "Small Mammals From Three Different Habitats In Mined-Land Wildlife Area In Crawford and Cherokee Counties, Kansas." [Advisor: Dr. Steven Ford]
Jacob Heil (oral). "Comparing Changes in Plant Functional Diversity Over 31 Years of Community Development." [Advisor: Dixie Smith]
Samantha Meneely (poster). "Changes in Estrogen Receptor Alph (ERa) Phosphorylation in Human T Cells." [Advisor: Dr. Virginia Rider]
Natalia Agostini Schneider and Fabio Giacomelli (poster). "Diversity and Nesting Success of Cavity-Nesting Birds." [Mentor: Dr. Steven Ford]
Brady Steinbock (poster). "Endocrine Control of Homeoboxa10 (Hoxa10) Gene Restricts Pattern Formation of Uterine Decidual Cells." [Advisor: Dr. Virginia Rider]

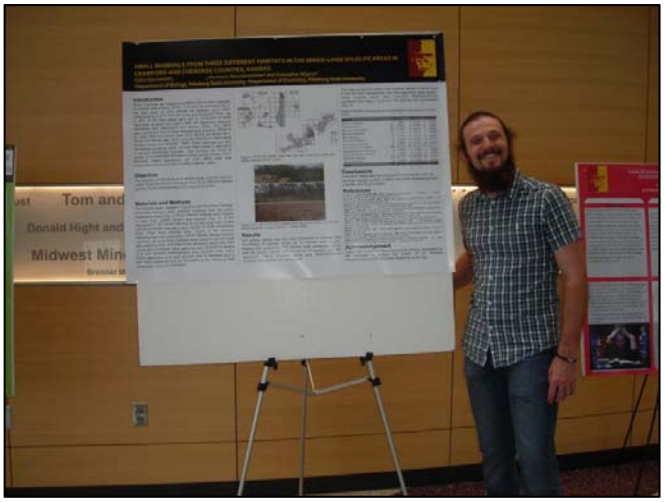
Biology Students at the 2015 PSU Research Colloquium

Hannah Thomas

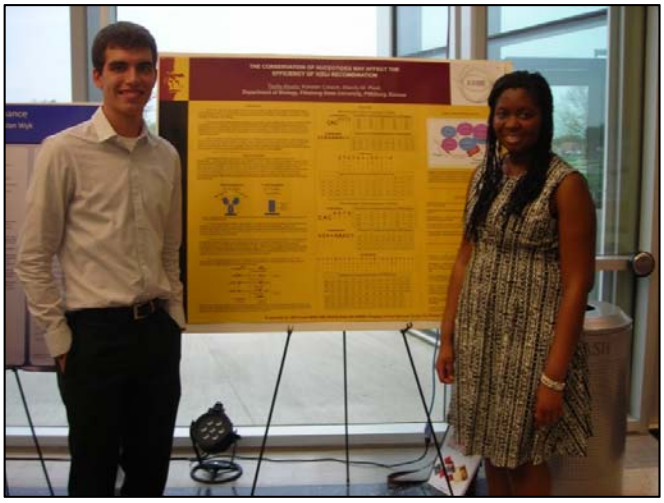


Jesse Morland and Thomas Westerhaus

Karen Stoehr



Fabio Giacomelli



Karsten Creech and Tayita Abudo

Grace H. Anderson

PSU Graduate Student Profile: Ali Hroobi

[Source: "Researcher attracts ticks – on purpose" from PSU Media, April 30, 2015- http://bit.ly/1LXfuOt]

Most folks in the Four-State region go to great lengths to repel ticks and other summer pests. Ali Hroobi works even harder to attract them. Hroobi, a graduate student at Pittsburg State University, has been doing research on ticks in southeast Kansas and, it turns out, this is a pretty good place to find them.

Hroobi, who came to PSU from Saudi Arabia, began his research on ticks under the direction of David Gordon, an associate professor of entomology in PSU's Department of Biology. Gordon said there is currently a high interest in tick research because of the diseases they carry that can infect humans. According to the CDC, ticks can transmit more than a dozen pathogens that can cause human disease, including Lyme Disease, Tularemia and Ehrlichiosis.

Beginning last summer, Gordon helped Hroobi develop a new cost-effective method of collecting ticks in order to determine their prevalence in southeast Kansas and what pathogens the ticks are carrying. Hroobi's data is part of a larger study overseen by Ram K. Raghavan, an assistant professor in Kansas State University's College of Veterinary Medicine. "I was surprised at the density of ticks in this area," Hroobi said.

Gordon said that the previous method of sampling was too labor intensive and costly. "The standard method of sampling ticks is to drag," Gordon said. "A drag is a three by three-foot piece of white flannel with a chain at the bottom and you just drag it over the brush. Two people carry it and you stop and you pick all the ticks off. You get covered with ticks and it takes an hour to collect a sample."

Gordon wanted to find a way to attract ticks to a central location where they could be easily collected, so he turned to CO_2 traps that use dry ice to generate carbon dioxide that attracts the ticks. Gordon said CO2 traps previously devised were either expensive or difficult to work with. To come up with practical alternatives, Gordon relied on childhood lessons. "My dad was a fixit man. He did everything," Gordon said. "I learned a lot from him."

Gordon designed a trap made from inexpensive PVC pipe, a piece of wood, a plastic container from the delicatessen and a piece of carpet padding for insulation. "For $2 to $3 we could make these traps," Gordon said. "We put them out and it worked! That's the best part." Hroobi set the traps in three residential locations near Pittsburg between May and August last year. In each location, he divided the traps between grassy areas and forest. "We wanted to look at grass and forest," Gordon said, "and places where houses are and where deer come into the yard." The ticks found the traps irresistible.

"The $C0_2$ was quite attractive and ticks began moving towards the traps soon after they were baited," Hroobi wrote in a poster presentation of his work. "As many as 100 ticks were on the trap container, the wood block or surrounding soil and vegetation the following morning. Ticks surrounding the traps were quickly gathered, dropped into the quart container that was sealed and stored on ice before processing in the lab. Within a two-hour period, large numbers of ticks were easily collected from 60 locations. This sampling technique generated sample sizes that are large enough to enable statistical comparisons of habitat preferences, windows of activity and other ecological and behavioral characteristics of ticks."

In his study, Hroobi found the Lone Star Tick to be the most common tick at the sites he sampled by an overwhelming margin. The American Dog Tick or Wood Tick was next and the Deer Tick or Blacklegged Tick was a distant third. He also found the most ticks to be in the forest, not the grass.

Gordon said Hroobi's research needs to be followed up with additional studies to get a clearer picture of tick diversity and distribution over a wider region. Hroobi's research and others like it are important, he said, because understanding the tick biodiversity in the region, the distribution of the species and their habitat preferences is basic to assessing the human risks for acquiring tick-borne illnesses and developing strategies for preventing those illnesses.

Since he conducted his early research, Hroobi has continued to work with Raghavan at KSU and he expects to begin a Ph.D. program there this fall. Gordon said Hroobi's experience is an example of the way that student research not only helps students learn and grow in their discipline, but also has the potential to offer meaningful contributions to broader research efforts that may affect the health and wellbeing of people around the world.

Alumnus Spotlight: Dr. Michael Farris

[Source: Kya Rodgers in "Honorable Mentions", Spring 2015, a publication of the PSU Honors College Public Relations Committee. Thanks to their faculty advisor, Dr. Craig Fuchs for permission to use the story.]

Dr. Michael Farris is an alumnus who graduated from Pittsburg State University in 1996 and a former Honors College member who has been making a living in the area of medicine. He finished his time here at Pittsburg State with a Bachelor of Arts degree in biology as well as a minor in chemistry. Once Farris completed his degree at PSU, he then decided to go to medical school, choosing the University of Kansas School of Medicine, which he later graduated from in 2000.

Putting his medical degree to good use, Farris has spent the last decade working as a family practitioner. He is currently working for Labette Health, specifically as a part of the Emergency Department in the Labette County Medical Center located in Parsons, Kansas.

Dr. Farris is a major supporter of the Honors College, seen especially in his generous contributions. As thanks for his support and donations, he was recognized as Donor of the Year at the previous Honors College banquet that was held this past April.

When discussing the ways in which the Honors College provided him help and support throughout class as well as after graduating, Dr. Farris commented, "I think the value of the Honors College is the community you form immediately. The community not just of the professors but of the fellow students, because it was incredible having a friend who was a subject matter in any topic I wanted. The Honors College really forms that tight-knit feeling by having us meet a week before class, and the honors classes. It just helps to create that community of students. That was hugely helpful."

Dr. Michael Farris currently lives in Altamont, Kansas, with a family consisting of his wife, three children, and two stepchildren.

"Having people who believe in me has made all the difference"

[Source: Graduate: 'Having people who believe in me has made all the difference'. PSU Media, May 7, 2015 -http://bit.ly/1O9dOlc]

"Having people who believe in me has made all the difference," said David Schlee, his voice filling with emotion. Schlee will walk with his fellow students in Pittsburg State University's College of Arts and Sciences on Friday to receive a bachelor's degree in biology. He will return on Saturday to walk with the College of Education to receive his degree in exercise science. He also has a minor in chemistry.

"Having people who believe in me has made all the difference," said David Schlee, his voice filling with emotion. Schlee will walk with his fellow students in Pittsburg State University's College of Arts and Sciences on Friday to receive a bachelor's degree in biology. He will return on Saturday to walk with the College of Education to receive his degree in exercise science. He also has a minor in chemistry.

This is a day, Schlee said, that seemed unimaginable not long ago. "Never in a million years," Schlee said of his prospects of becoming a college graduate.

For most of his childhood, Schlee was on a very different path than he is today. He grew up in the inner city in Kansas City, Mo., and although both of his parents were college-educated professionals, Schlee never had much interest in school.

"I was always the guy who was smart, but never applied himself," Schlee said. "I was a very apathetic person."
As a young teen, he hung out with the wrong crowd. There were suspensions and the daily grind of high school became increasingly intolerable. Midway through his sophomore year, Schlee dropped out.
To earn money, Schlee got a job in a restaurant. He found the business interesting and even imagined going to culinary school, but soon discovered that without a high school diploma, his life was going to be a series of dead-end jobs.

It was economics that initially drove Schlee to earn his GED and then to explore the possibility of going on to earn a college degree. He attended a PITT CARES advisement and enrollment session at PSU, his father's alma mater, and left thinking PSU might be the right choice. He made the decision on the ride home.
"I figured I needed to get out of my comfort zone and do something new," Schlee said. "It seemed like a way to make a fresh start."

Initially, Schlee was interested in something related to physical education or even physical therapy. He settled on the new exercise science program because he had always had an interest in science. Well on his way to earning that degree, Schlee discovered a new passion in a general biology course."I was just blown away by this stuff," Schlee said. Then came an anatomy and physiology course. "I was learning about all of these tiny physiological things," Schlee said. "This was really cool stuff I was learning. I thought that it was amazing!"

Virginia Rider, Schlee's adviser in the Biology Department, said it was clear Schlee had found his special interest.

"He got interested in the material," Rider said. "He was one of the best students I had in Development and it's a really hard class." Schlee had discovered the joy of learning. Something else was happening, too. "I've changed a lot in school," Schlee said. "I was not an outgoing person. I've figured out I really like people and I like helping people. Maybe it is a little more maturity."

One of the Pitt State experiences that had a big impact on Schlee was accompanying PSU Biology Professor Mandy Peak on a trip to work in a clinic in Peru in the summer of 2013. Seeing the children in the orphanage was like a slap in the face, said Schlee, who was born in Korea and adopted by his American parents when he was just a few months old. "I was an orphan," Schlee said. "I could have been left in the street. I cried a lot there in the orphanage."

Schlee has been accepted into the master's in public health program at the University of Kansas and hopes to earn admission to medical school. Wherever life takes him, he said, he knows he wants to return to the inner city to make a difference in the lives of kids just like him.

As he prepares to leave campus, which, Schlee said, is harder than he expected it would be, he has a lot of people to thank. "All the support I've had here on campus has been amazing," Schlee said. "I can't begin to thank everyone. The faculty have been great."

As he imagines walking across the stage to receive his diploma, Schlee feels an emotion that for most of his life was absent. "I worry that I've disappointed my parents sometimes," Schlee said, pausing for long seconds. "I'm amazed to be here and I'm so proud of myself. Never in a million years..."

[Source: May 07, 2015. "Graduate: 'Having people who believe in me has made all the difference'" from PSU Media. May 7, 2015 http://bit.ly/1O9dOlc]

Scholarships

We want to thank everyone that donates to the Biology Department. Those contributions make student travel and attendance at professional meetings possible. They also enhance the funding that we have available for scholarships. If you have been thinking about joining our donors, you can easily do so online at this link: http://bit.ly/1BSpf94. 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.

We are awarding $15,300 from 13 scholarship funds to 57 students in the 2015-2016 academic year. This total is less than last year, but we didn't have as many students meeting the financial assistance requirements of some of the scholarships.

Pre-Health Service Trip to Mexico

In May 2015, Mandy Peak led the Pitt State pre-health volunteer group to Puerto Escondido, Mexico. The fifteen pre-health students were Tayita Abudu, Ashley Eichleberger, Tyler Elmore, Kelsie Goins, Garrett Harmon, Arli Hendrix, Jacki Huse, Brandee Main, Kiralyn Mosier, Morgan Needham, Ginger Pond, Sierra Schupbach, Lauren Tapp, and Josh Yeomans.

To prepare for this trip, students attended a required preparation class during the spring semester that covered clinic operations, physical exams, cultural diversity, and Mexican culture and history. We also gathered medical supplies, diagnostic equipment, and medications for our clinics.

We traveled on daylong excursions to organize health clinics near Puerto Escondido. The students assisted physicians and dentists (specialties in: OB/GYN, Emergency Medicine, Family Medicine, and Internal Medicine), with routine health and dental exams, well child check-ups, and dental extractions. The team triaged and treated 619 medical patients, over 500 dental patients, and filled 870 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! In May 2016, we are heading back to Peru!

Physicians, students, community leaders, and interpreters at the end of clinic day #1.

Kiralyn Mosier working with Dr. Gayle Cheatwood extracting a tooth.

Brandee Main and Jacki Huse with the OB/GYN Dr. Froilan Mendez in clinic.

Garrett Harmon working triage.

Students helping educate women on breast cancer health.

Ashley Eichleberger viewing the nasal cavity under the supervision of Dr. Bryan.

Tyler Elmore and Sierra Schupbach remove built-up earwax in clinic.

PSU students and Dr. Peak at clinic

Patients check-in at the clinic in Puerto Escondido.

PSU participants and the interpreters last night of the trip.

Biology Faculty (January 2016)

Joseph A. Arruda, Professor of 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
Anuradha Ghosh, Assistant Professor of Environmental Health [Ph.D. Institute of Microbial Technology, CSIR-Chandigarh, India]
Specialties: environmental health, bacteriology
Phillip Harries, Associate 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, Associate 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, Professor Emeritus. [Ph.D., University of Kansas]
Specialties: natural resource conflict resolution, ichthyology, fisheries management
James E. Whitney, Assistant Professor of Biology [Ph.D. Kansas State University]
Specialties: fish ecology, ichthyology, aquatic biology
Xiaolu Wu, Associate 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 (January 2016)

Kelly Borden, Administrative Specialist
Delia Lister, Director, Nature Reach
Kim Grissom, Storekeeper