



Biology Newsletter 2010

Pre-health student service trip to Belize (summer 2010) led by Dr. Mandy Peak



ON THE INSIDE

The “Junior” Faculty First

Dr. Phillip Harries - 2
Dr. Mandy Peak - 3
Dr. Xiaolu Wu - 4

From the Rest of Us

Dr. Joe Arruda - 6
Dr. Peter Chung - 7
Dr. James Dawson, Chair - 8
Dr. Cindy Ford - 9
Dr. Steve Ford - 10
Dr. Dave Gordon - 11
Dr. Hermann Nonnenmacher - 12
Dr. Virginia Rider - 12
Dr. Neal Schmidt - 13
Dr. Dixie Smith - 14
Dr. Stephen L. Timme - 15
Dr. James R. Triplett - 16

Other News

Delia Lister, Nature Reach
Director - 17
Belize Service Trip - 18
Student Organizations - 22
Rock Climbing - 22

Obituaries

Dr. Dean Bishop - 24
Dr. Chet Twitchell - 24

Links to Biology Students, Alumni, and Faculty in the news

This Was 2010 – The Year That Was

2010 was a big year. Biology majors were up to over 500 for only the second time in our history, Fall 2010 introductory classes filled to overflowing, and the Biology Bowl celebrated its 35th anniversary.

We are squeezed for faculty office and research space – but help is on the way. The main biology office was remodeled and new faculty offices are being constructed. The office conference room (as a student you may have taken a make-up exam in there) is being divided into two faculty offices and Dr. Zurek’s second floor office (the old library) is being divided into two offices.

We await the completion of PSU’s master planning process, but we are hoping to get space in the adjacent Hartmann Hall for the Sperry Herbarium and zoological collections to make more research lab space in Heckert-Wells.

While we plan for expansion, we also experience loss. Two of our retired colleagues – Dean Bishop and Chet Twitchell – passed in 2010. They were good folks and they are missed. The obituaries are found on page 24 of this Newsletter.

As always, we depend immeasurably on Kelly Borden, Administrative Assistant, and Donna Lair, Storekeeper, to keep this place afloat. They never want to write anything for the newsletter, but you need to know that they make this place work!

The sequence of newsletter notes is presented differently this year. We’ve placed the more junior faculty first. They are the beginning of our future in the health and cell and molecular areas as the Biology Department gets ready to start another round of retirements in the field biology area in a few short years.

THE “JUNIOR” FACULTY FIRST

From Dr. Phil Harries



Greetings to Pitt State Biology family and friends! I am currently in my 3rd semester here at PSU and it has definitely been a busy one. I am teaching Principles of Biology 1 and am covering both Cell Biology and

Advanced Cell and Molecular Biology for Dr. Zurek while he is away. It has been a lot of fun getting to teach these upper level classes and I am definitely looking forward to teaching Cell Biology again in the spring along with another upper level course on the Biology of Cancer. In addition to teaching, Dr. Dawson has entrusted me with caring for the department greenhouse so I have been spending quite a bit of time up on the roof of Heckert-Wells this semester trying to keep our botanical collection alive and well.



Kelsey Knisley and Ryan Woodruff, undergraduate researchers

My research program has gotten rolling this year with the help of a graduate student and two capable undergraduates. We are studying how plant viruses hijack host cell machinery and use it

to move around from cell to cell during an infection. In addition to trying to identify some detailed mechanisms for a few specific viruses, we would like to make some general comparisons of virus movement between higher plants and more primitive land plants like mosses. This past summer, I convinced my graduate student to travel with me to the Noble Foundation in Ardmore, Oklahoma. This is an agricultural research institute and we spent several weeks there using some of their powerful microscopes to visualize viruses in infected plant cells. We got some exciting results that I think will lay the foundation for some future work!

Outside of the classroom and lab, this year I became the faculty advisor for the PSU rock climbing club (the president of this club is senior biology major Eric Hunn). I have had a blast getting involved with this group which climbs twice a week on a rock wall at Pittsburg High School. I accompanied the club on a trip to Horseshoe Canyon in Arkansas this fall and got my first taste of outdoor climbing. It definitely won't be my last! Also, my wife, Kimberly, is now working in the Music department at PSU in a secretarial position so in a little over a year we have become a full-fledged Pitt State Family!



Dr. Phil Harries (pharries@pittstate.edu)

From Dr. Mandy Peak



Hello, Gorilla alumni and friends!

2009-2010 was a busy school year! Genetics and Principles of Biology 1 went well and Phil Harries and I taught General Biology during

the summer. I will be updating Nancy Brooker's Genetics Lab Manual during Summer 2011 with the support of a PSU Teaching Enhancement grant. In addition, the biology department had a busy service year. We represented the biology department in two Rumble in the Jungles, Junior Jungle Day, Pre-Physical Therapy Day and the Biology Bowl.

This past summer I worked in my Ph.D. lab at the University of Oklahoma purifying proteins for my research. My research lab is beginning to take shape. Brett Siegle, my K-INBRE scholar, and I study the molecular interactions involved in V(D)J recombination. We will present a small poster at the K-INBRE conference in January. Currently, I am looking for another bright and enthusiastic student that is interested in biological research.

This year I became the faculty advisor for Pitt State's "Up'til Dawn", an organization that raises money for St. Jude Children's Research Hospital. In July, Nicole Wilt (PSU Biology senior) and I attended the 2010 St. Jude Collegiate Leadership Seminar in Memphis, TN. We attended networking, fundraising and leadership workshops. In November, the Pitt State Up 'til Dawn chapter hosted the annual letter writing campaign in the Alumni Center to raise funds for St. Jude.

I also led a study abroad program to Belize in May 2010 with the great help of Vicki Webber, Physicians Assistant at the PSU Student Health Center. In hot (104°F!!) and humid conditions, twenty pre-health students, including Drue Barton,

Esther Campbell, Megan Carlson, Gerald Diskin, Chris Eastman, Kristen Espinosa, Lesli Gilbert, Danielle Hall, Dave Heins, Eric Huun, Zach Krumsick, Kyle Marcotte, Mary Marquardt, Andrea Peterson, Dave Ramsey, Erin Richmond, Kortney Schippers, Nicole Wilt, Josh Wormington and Olivia J. Wright journeyed through the Toledo District in Southern Belize.

The communities they visited include: Punta Gorda, Otoxha, Sunday Wood, Barronco and Bladen. The students traveled on daylong excursions to set-up health clinics in these villages.

This was a fantastic trip; the Pitt State students developed new medical skills and had a cultural experience of a lifetime. Both Vicki and I are proud of these Pitt State biology students. Great job! Find more of the story and pictures in a later article.



Dr. Peak with some young friends in Belize.

In conclusion, the Pitt State Biology study abroad program is returning to Peru in May 2011. Currently, we are accepting student applications for the Peru trip and planning fundraisers.

Dr. Mandy Peak (mpeak@pittstate.edu)

From Dr. Xiaolu Wu



Hello everyone!

I have been teaching biology at Pittsburg State University for three years now! My subjects include General Microbiology,

General Virology, and Pathogen-host Interactions. I am grateful for the opportunity to share my knowledge and expertise with students in a broad context of introductory as well as upper-level courses in specialized topics. For the first time in my teaching career, I prepared everything for the General Virology course from scratch, including the choice of textbook. For the second year of teaching this course, I carefully considered previous student feedback and optimized teaching materials to make the course more fully developed. My students seemed to be very satisfied with my thorough and systematic introduction to the field of virology.

For the fall semester, 2010, I opened a new upper-division course: Pathogen-host Interaction. In order to provide my students with the latest information on the subject, I prepared teaching materials based on over 150 reviews, all published in prestigious peer-review journals between 2009 and 2010. Preparations were challenging, but the hard work paid off. Students seemed to enjoy the class and were inspired to investigate the dynamic pathogen-host interaction from the different perspectives. They were amazed by the fast growth and ever-changing nature of biological research, and I believe they developed a deeper understanding of the field. As for myself, I enjoyed the preparation process and considered it a great way to "recharge" my own knowledge for instructional and research purposes.

Exciting progress has been made in the influenza virus research program in my lab. During 2010, four students, (Haley Ruther, Whitney Baldrige, graduate student Myron Perry, and Amy Pervin --

recipient of K-INBRE summer scholar award this year) worked with me to learn cell culture techniques. I believe they learned a lot about critical thinking, trouble shooting, persistence, accurate recording, experimental design, and the analysis of data...as well as presentation skills.

In June, 2010, Haley Ruther and I attended the 3rd Biennial National IDeA Symposium in Bethesda, Maryland, to present our poster. It was a wonderful opportunity to get feedback about our research project and to learn updated information about the progress in the field and grant-writing skills. As the recipient of a K-INBRE summer scholar award, Haley has worked with me since 2009. She joined the cell culture program after she came back from a Summer Research Program for Undergraduates in Biology at the University of Wisconsin, Madison. Whitney Baldrige was selected as ARRA scholar this year. I believe the research experience provided in my courses will positively support their application(s) for admission to graduate school, and I am immensely proud of them all. It is great to see our student research program help students build a passion for biological research!



Dr. Wu's students: Amy Pervin, Whitney Baldrige, Myron Perry, and Haley Ruther

At the invitation of Dr. Rider, I gave a presentation about viruses to the Sunrise Rotary Club of Pittsburg last September. I thank her very much for that opportunity, and I consider it a great honor to share my knowledge with the Rotary

Club. Its members are actively involved in community-service projects under the motto "Service Above Self." The feedback from that occasion was wonderful, even though except for Dr. Rider Rotary members come from a mixed background in everything except biology. I also participated in the Rumble in the Jungle this

year...a real fun experience! Finally, I would like to thank all my colleagues for their tremendous support and help in 2010!

- Dr. Xiaolu Wu (xwu55@yahoo.com)



Natural History Programs



Nature Reach is an outreach program of Pittsburg State University's Biology Department and is part of the Department's Life Science Education Program. Nature Reach is supported by fees, grants, and donations.

Our mission is to help educate residents of the four state region about the natural history of this area, as well as local and global environmental issues.

To accomplish this, we provide outreach programs to surrounding schools and communities, and campus tours of our natural history collections.

In addition, we conduct teacher in-service workshops using nationally recognized materials from Project WILD, Project WILD Aquatic, Project Learning Tree, and Project WET, or we can customize a workshop for your group or site.



Bearded Dragon

Find out more about Nature Reach at <http://www.pittstate.edu/departement/naturereach/>.

THE REST OF US

From Dr. Joe Arruda

On the Instructional side, I taught Principles of Ecology in Spring 2010 for the first time in a long time. Ecology is a scientific endeavor and well as an avocation for many.

I once again offered Environmental Life Science (our non-major biology course) on-line during summer 2010. The students do perform labs on their own using some supplies that the Department provides and some that they provide. It works out pretty well. I have quite a few distance students – in China, in Turkey, and even in the strange and mysterious “Kansas City”.

On the scholarly side, I presented a poster on my land snail collections to the Kansas Natural Resources Conference last January. I received some interest ... mostly “why land snails”? I continued to collect during the year and maintained a culture of several species, including the Western Whitelip, the Flat Bladetooth, and the Flamed Tiger Snail.



Mating pair of Western Whitelip

I've been lucky to have several undergraduate student do projects. In Spring 2010, Perry Morrow sampled water quality in stormwater runoff within the City of Pittsburg. Sarah Wolfe measured the growth of land snails among different soils at the Monahan Outdoor Education Center. We have a poster prepared on this snail work for presentation during 2011.



Flamed Tiger Snail eggs and hatchlings

In addition, I supported two departmental honors projects (Ashley Moore and Amada Young) on the effect of food type on growth of two land snails (Flamed Tiger Snail and the Western Whitelip).

In Fall 2010, Ken Gouvion collected water quality samples documenting the current state of runoff from the north side of the Monahan Outdoor Education Center. There is some acid seepage from the north slope that impacts water quality in the immediate drainage. Ken's work shows that are no further downstream impacts.

On the “taking care of business” side, I continue to track our Senior's results on the Major Field Test. This test, required of all seniors, is used as an external source of assessment of our program. Our students continue to do well. I also track freshmen progress. We start with the incoming freshmen class and monitor how they do in their biology courses for the first three semesters. The data allow us to track students and to relate progress to background information about each student – ACT score and other information.

Dr. Joe Arruda (jarruda@pittstate.edu)

**Look for the Biology Department
on Facebook!**

From Dr. Peter Chung



Greetings from the Biology Department! I hope our 2010 Newsletter finds you all well and enjoying life! What a year it has been so far! It is hard to believe I have started my

seventh year back at Pitt, but here we are! The bumper crop of freshmen Biology majors from last year has now invaded General Microbiology, and our class sizes have swelled slightly to accommodate this increase in numbers. But we are gradually trucking along; Donna in the prep lab has certainly had a busy time staying ahead of us! Thank you Donna!

My upper division classes have now made it back on track (Pathogenic Microbiology in the fall, Immunology and Microbial Physiology in the spring); hopefully, it grants some stability in course choices for our many majors in the pre-health and microbiological sciences.

My research lab continues to stay active and busy. My ever-popular, do-everything, graduate student Jenny, is wrapping up her research on tumorigenic cell line marker differentiation and looks to defend in the spring of 2011. My other grad student, Matthew, decided to pursue a career in health services in Kansas City, Kansas; we were sad to see him go and wish him the best. Jana Gannaway has joined my research lab as a graduate student this fall and will be working on a project focusing on forensic identification using bacterial communities.

Alissa Becknell and Elizabeth Kester, both undergraduate K-INBRE research scholars, along with Daniel Haines, K-INBRE scholar-in-training, will be presenting a poster at the annual regional K-INBRE conference in January of 2011. We are excited with all of our new additions and look forward to their progress in the lab!

As the number of Biology majors increases, we are seeing more and more students interested in physical therapy. The 2010 Physical Therapy Open House was once again a success, with students meeting with the regional physical therapy schools: University of Kansas, Wichita State University, Rockhurst University and Missouri State University. Many thanks go to the various representatives from the physical therapy schools and our Pre-PT advisors: Drs. Cindy Ford, Mandy Peak, Hermann Nonnenmacher, and Neal Schmidt.



2010 Pre-PT Open House

Our recruiting efforts through the 2010 Rumble in the Jungle were also a great success. Thanks to the enthusiasm and volunteerism of our junior faculty, we met over 75 high school students interested in Biology! Not surprisingly, Delia's snake was a big hit! Student visits are still high, and though busy, it is extremely fulfilling to meet and greet with prospective students and their parents. Many thanks to Kelly for sorting them out so all of their needs are met with our availability.

Finally, our Med Tech program is growing in interest and success. Currently, we have 3 majors undergoing their clinical year at St. John's Regional Medical Center in Joplin, Missouri. They will be wrapping up their degrees within the year.

In wrapping up my yearly contribution, I am painfully aware there are countless little stories I

am maybe forgetting to share. Our numbers in the Biology Club are way up, thanks to the tireless efforts of past-president Emily Derfelt and current president Holly Hrabik. I was to serve as co-advisor to Omicron Delta Kappa Leadership and Honor Society, as well as president-elect of the Honor Society of Phi Kappa Phi. It is indeed an honor and privilege! My previous advisees in professional schools are all doing well; good luck to all of you this year! Don't be strangers; stay in contact, keep in touch and stop by and visit if you are in town. Here is to a fantastic year! Cheers!

Always at your service,

Dr. Peter Chung (pchung@pittstate.edu)

From Dr. James Dawson, Chair



Hello to all.

First some departmental news. This has been a somewhat troublesome year for the

department, with budget cuts and all. The department has fared rather well actually. We have two excellent young faculty members in Drs. Harries and Peak, we hope to retain them for many years. We have replaced the microscopes in microbiology lab with new binocular scopes, the old one came with the building in 1984!! We added an industrial size pure water system, Type 1 in fact, to the prep room. We are in the midst of searching for a new, tenure earning faculty member and have started to renovate the department to add two new faculty offices. We will also begin an internal search in the spring for a new chair. All this while modifying a number of degree tracks to bring them more in line with the expectations of potential employers!!

Second some more personal news. I continue to travel to the University of Texas at Austin to be an instructor in the Culture Center for Algae, UTEX,

Workshops on the Culturing of Algae. This workshop takes me away about 10 times per year. It is primarily for those interested in grow algae for food, fuel or other mass uses.

In January, I traveled to Lexington Kentucky to meet with scientist in the Center for Applied Energy Research, CAER. This trip lead to a grant to survey more than 100 strains of algae for growth under specific regimes of pH and temperature as would be expected using flue gas from coal fired plants as a carbon dioxide source. They are currently working with several 8500 L photobioreactors (see example below) using algae which passed the test here at PSU.



As a result of the grant I was able to support Tyler Shouse, Biology '10 grad, as a Research Assistant this year. In fact, Tyler attended the last workshop at UTEX. I have been approached by four other companies about potential research projects, but I really don't have the time or space at the moment to complete their projects.

At the end of September I travelled to Washington DC to make a presentation about the ecology and growth of algae to congressional staffers. While there, I was able to meet and talk with the Vice-President of Worldwatch and numerous other officials in a number of similar efforts to save the world's wildlife, both plants and animals.

On the student side, Misook Rissler, a 2006 graduate, was admitted to UMKC Dental School for the 2011 year. Some of you might remember

my son David; he is in his second year of residency of Internal Medicine and is beginning to think about where he will practice at the end of the third year.

Dr. James Dawson (jdawson@pittstate.edu)

From Dr. Cindy Ford



Academically speaking, the department is blessed with a bevy of students. I am still teaching non-biology majors in the Environmental Life Science general

education classes. With student numbers up on campus, the large Environmental Life Science classes have become even larger this year. Four lecture sections accommodate approximately 450 students. We continually strive to provide a personal approach to classes, so the group is divided into 14 labs. Believe me, it is a challenge getting students to our Natural History Reserve, but they do enjoy the birds of prey that they view there. For a while anyway, these numbers of students may be the norm.

Delia Lister, Director of Nature Reach, and I co-hosted a field trip to Sapelo Island in June last summer. This was one of the most enjoyable groups I have hosted. The group of folks who camped and studied natural history on Sapelo Island, an island off the coast of Georgia, were subjected to record hot temperatures and high humidity without complaint.

The Sapelo experience was my – hmmm, let me see – maybe 6th time going to the island. The island beauty never pales and the ocean is entrancing. Our group becomes quite possessive of the small island where we camp and resents anyone “foreign” walking on “our” beach. It is one of those places that most people want to return.

This fall I am working with two graduate students, Eric Row and Craig Corpstein. Both are progressing on their projects involving parasitology and prairie ecosystems respectively. They are looking for completion of their Master’s Degrees next year.



Talk about an exotic trail from camp to the beach!! The group of island campers frequently get side-tracked by natural discoveries.



Sapelo Island version of the final exam. The group displays beach invertebrates

This semester I and several students have been traveling the region learning about interpretive centers as a part of my occasionally taught Natural History Interpretation class. We have had many interesting field trips, slide presentations, hands-on programs, and exhibits throughout the

semester. This class brings back in touch with the applications of environmental education.

Dr. Cindy Ford (cford@pittstate.edu)

From Dr. Steve Ford



Greetings!

Hope things are going well for you, especially in these rather lean economic times. When the economy declines it tends to send people

into schools, so the Biology Department has been pretty busy. Summer school employment takes a hit however, so my services were not required last summer. Actually the forced temporary retirement was kind of nice, even without summer income. It was so darn hot and humid though, that it was tough working much outside.

Toward the end of the summer we did embark on a landscaping project at home that has been hanging for many years. Over a decade ago we managed to acquire quite a stock of large cut rocks from an old bridge abutment and a dilapidated stone barn. We hired a guy who has turned out to be a real magician with a bobcat loader to help us build some terraces, walls, benches, and a little waterfall. It has been fun, especially since we are not doing the heavy lifting (not much anyway).

I am pleased to have taken on a new grad student, Ms. Kacey Mayer, who is planning to assess the value of old strip mined areas for productivity of prothonotary warblers, and possibly some other lowland cavity-nesting birds. The fish and wildlife community in southeast Kansas is fortunate to have such a large amount of this interesting, and often rather beautiful, habitat. Kacey has recently helped Rick Laas and I count gray bats in Pittsburg. Some of you may know several species of bats, starting with northeastern

populations, have fallen victim to a devastating fungal disease called white-nose syndrome.

Our local population of the Federally Endangered gray bat has declined by some 90%, down to only three or four hundred from several thousand just a few years ago. We may be able to get an infrared movie camera to count our beleaguered local population more accurately than before, but of course we would just be documenting their decline, not actually helping them recover, which no-one knows how to do.



Gray Bat (source: USFWS)

I continue to be active in the local Sperry-Galligar Audubon chapter. It's gratifying to be able to bring interesting conservation-oriented speakers to the Pittsburg community. For example, Ms. Pat Silovsky recently gave a great presentation on the reintroduction of the federally endangered black-footed-ferret in western Kansas. Some may recall that Pat received her Master's from PSU in 1986, and went on to be the first (and still the only) director of the Milford Nature Center, near the Milford Fish Hatchery. Both the biology and politics of ferret reintroduction is fascinating and frustrating (especially frustrating is the politics).

I'm still teaching wildlife classes and anatomy classes. Cindy and I will lead a Spring Break trip to one of our favorite places, Big Bend National Park, this March. We were thinking about going to a new location, the Louisiana coast, to visit our friend and former student, Jack Bohannon, a Federal Wildlife Refuge Manager, but a certain oil

spill caused us to have second thoughts. Sorry, Jack, but maybe in a couple of years!?! Let me know wha's up my homies.

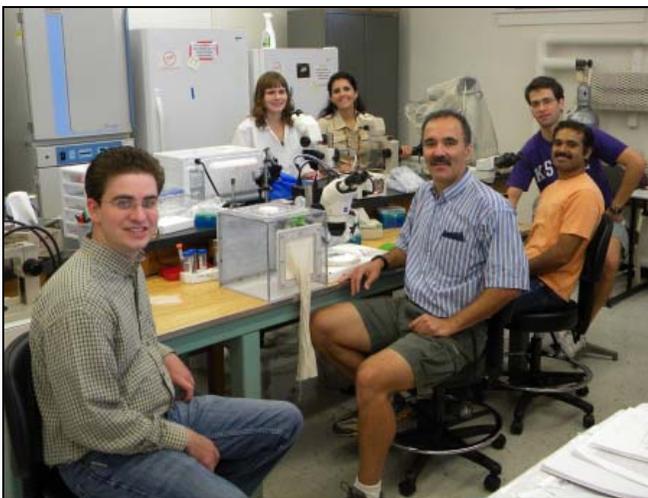
Dr. Steve Ford (sford@pittstate.edu)

From Dr. David Gordon



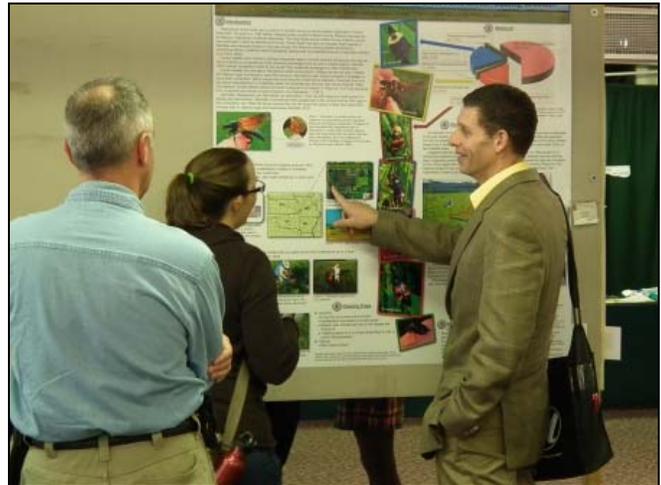
It was an interesting and challenging year. Four graduate students have been conducting surveys of a variety of insects, we have attended and presented posters at several conferences, and I have assisted with workshops on bees and pollinator conservation.

In collaboration with Dr. Marcelo Romalho-Ortigao at Kansas State, PittState students are receiving vector biology training in labs at both institutions. Nathan Elliot and Emma Hayes completed a summer internship in Dr. Ortigao's lab learning molecular techniques to study pathogen-vector interactions.



Nathan Elliot (left) with Dr. Ortigao (in shorts) and Emma Hayes (left rear)

Nick Crownover has completed a survey of Prairie Mole crickets in Prairie State Park and is now writing his thesis. Zane Dye completed a survey of the carrion beetles at Prairie State Park and presented his results in a poster that was well received at the Natural Areas Association national meeting.



Zane Dye with his poster at NAA

Nathan Elliot has been surveying to determine if sandflies that are potential vectors of canine visceral Leishmaniasis are in Kansas. Nathan and Zane also presented posters at the Central States Entomological Society's annual meeting. Matt Clay is designing a survey of bees and potential pollinating insects at the Wildcat Glades Nature Reserve in Joplin and he and I are part of a group that is organizing an outdoor classroom at the new South Joplin Middle School campus.

I have also been taking microscopic and macroscopic photos and videos of insects for research, teaching, workshops, and for display in the biology department and public venues. I am looking forward to editing videos and presenting a poster at the Entomological Society of America's national meeting in San Diego this December.

Dr. David Gordon (dgordon@pittstate.edu)

From Dr. Hermann Nonnenmacher



Hello everyone, I am happy to be back in our biology department for the 2010-2011 academic year at PSU! I have spent some time

away in the last few years in and out of our department teaching biology, pursuing a graduate education in English to Speakers of Other Languages (ESOL) and maintaining Kansas secondary education licensure. Getting back to a full-time schedule with PSU is great and I have had a tremendous semester. In August, I rolled up my sleeves on a data collection trip with Drs. Smith and Triplett. Along with a band of ardent students, we ended up in the water for several hours, working until dark. Our timing was uncanny. The Neosho River collecting conditions were ideal when we sampled, and within a couple of days, rain changed everything.

In October, our department hosted another successful Pre-Physical Therapy Orientation and Open House. Thanks to the organizational skill of Dr. Peter Chung, we had a terrific guest speaker as well as representatives from several PT graduate programs. The participation of the Pre-PT advisors, Pre-PT club, and staff served Pre-PT students well. In addition to this important event, our department made a strong contribution to the organized recruiting efforts of PSU at Rumble in the Jungle I and II in October and November. Looking forward to next semester, I anticipate more rewards from our students as we work together to make Biology Bowl and other endeavors a success.

Dr. Hermann Nonnenmacher
(hnonnenm@pittstate.edu)

From Dr. Virginia Rider



I send a hearty hello 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 listed in the table on the next page. Congratulations to all of them! If someone has inadvertently been left off this list, please let me know as we always enjoy hearing about your successes.

Alex Talbott has joined my laboratory as a graduate student this fall semester. His project is investigating how the sex hormones estrogen and progesterone control cell proliferation and differentiation. Julie Ward and Guannan Xiao are wrapping up their research projects and plan to graduate in the spring. Julie has investigated how estrogen alters calcium signaling in lupus T cells. Guannan has developed a technique to look at the synthesis of estrogen receptors in T cells. Her results will help us understand if the regulation of estrogen receptors is different in SLE compared with normal T cells. Their research projects are funded through The National Institutes of Health. Julie and Guannan will present their research at the Kansas Idea Network of Biomedical Research Excellence (K-INBRE) meeting to be held this January in Kansas City.

K-INBRE is an award from the National Institutes of Health to improve biomedical research at all of the universities in the State of Kansas. Emily

Walters, who was a Star Trainee funded by K-INBRE, has entered the MD/PhD program at the School of Medicine in Rochester, New York. Emily's research as a Star Trainee was published in *Clinical Immunology* (Walters et al. *Clinical Immunology* 133, 428–436, 2009). Her research results identified several signaling pathways that are that are altered by estrogen in lupus T cells but not in normal T cells.

- Garrett Barton, West Virginia School of Osteopathic Medicine
- Rebecca Bryon, KU School of Medicine
- Caleb Burrows, Oklahoma State University School of Osteopathic Medicine
- Shelly Compton, University of Oklahoma School of Medicine
- Afrita Davis, Edward Via Virginia College of Osteopathic Medicine Bridge Program
- Grant DePoy, Oklahoma State University College of Osteopathic Medicine
- Dustin Graham, University of Oklahoma School of Medicine
- John Johnson, Northeastern Oklahoma School of Optometry
- Kyle Marcott, Kirksville College of Osteopathic Medicine
- Brandon Mendez, Nebraska School of Dental Medicine
- Katie Merando, KU School of Medicine
- Cassie Shaw, KU School of Medicine (early decision)
- Melissa Roush, KU School of Medicine (early decision)
- Anthony Truong, KU School of Medicine
- Roxanne Wallace, Oklahoma State University School of Veterinary Medicine.

We already have several students beginning to interview for positions at medical schools for next year. I am very grateful to Dr. Odgers who always comes and puts the students through their paces in preparation for the real interviews. Dr. Sandness and her colleagues remain strong supporters of our

students at the Free Clinic. Dr. Garner's program called Premeds with Promise is in full swing and provides our students with additional opportunities to gain experience in a medical setting.

The number of students in the 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 the class and help educate our students about their professions. Most rewardingly, former students are now returning to Southeast Kansas as superb health care providers. It is a thrill to see former students speak with current freshman. Please stop in and see me if you find yourself in the Pittsburg Area. It is always a pleasure to see former students and catch up on your news. Sending you my best wishes for continued success and happiness.

Dr. Virginia Rider (vrider@pittstate.edu)

From Dr. Neal Schmidt



I am very pleased to have been a member of the Biology Department at Pittsburg State University for going on six years. I have been keeping busy with the Anatomy and Physiology lecture and lab courses this semester. I also began teaching an upper division Pathophysiology course this Fall. My hope is that my knowledge and clinical experience will serve to enrich the educational experiences of my students taking these courses.

I attended a seminar last winter in Los Angeles to improve my presentation effectiveness. I was also able to attend the Human Anatomy and Physiology Society annual meeting last spring in Denver. Both afforded me the opportunity to network with colleagues, learn new approaches to

optimize teaching effectiveness, and improve my knowledge base.

My wife, Tammy, and I have assisted with the Pittsburg Free Clinic through the provision of pharmaceutical services and medications and hope to be even more involved in the future. Our children, Ben and Olivia, are keeping us very busy. Olivia is two years old and is involved with gymnastics (and being ornery). Ben is four years old and still attends the Little Gorillas Preschool at the University and is also involved in karate, gymnastics, and Rainbows youth group.

I am extremely pleased with the efforts of my students over the last year and am grateful for the opportunity to work with the Biology faculty and appreciate all the support I have received over the past year.

Dr. Neal Schmidt (nschmidt@pittstate.edu)

From Dr. Dixie L. Smith



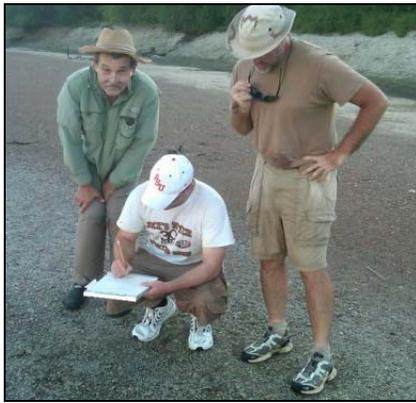
It has been an interesting year, with new experiences for me in teaching and professional life. Needless to say, it has been another busy one. We produced ten more Biology Teachers and assisted four Chemistry Teachers from our on-campus BSED program, as well as two Alternative Licensure teachers in Kansas City, Kansas. Seeing these new teachers move on into their first jobs continues to be one of the highlights of my job.

Last June, we completed the No Child Left Behind grant that was supported by the Kansas Board of Regents. We had two cohorts of 14 teachers that took a series of four science classes in order to prepare to obtain their Middle Level Science Praxis content examination. Two of their courses were offered by the Physics Department, while Steve Timme and I taught the other two courses from our Biology Department. The participants all came from communities in Southeast Kansas, and judging from the positive comments from ending surveys, was a successful outreach to area teachers.

Two years ago, I made a commitment to spend July of 2010 teaching General Biology in Paraguay. I had always wanted to have the experience of working in another country and getting to know it in a way other than just being a tourist. I have to admit that when I said I wanted to do it two years ago, the two year delay was a bit of a comfort, but my knees were quaking a bit in the days before I flew south.

It turned out that I traveled to the center of South America to live at a guest house filled with kind, generous, and thoughtful people that took great care of me and made me feel so very welcome in their country. I went alone, and that was the most difficult part of the traveling. I hope to be able to return with colleagues or students the next time.

My students were hard working and did very well: Keep in mind that they were covering six chapters of biology each week. They are lively, interested and engaging young people and I really hope that our paths will cross again in the future. In fact, several of them were KU students that had traveled back to their home country for the summer and took care of a general education requirement with my class. Several others of them will be arriving on our campus in January 2011, so I hope to get to meet them again next semester. I think that the PSU in Paraguay Program is really an asset to our university. Personally, it was an adventure, a rich experience that allowed me to cross something off my “bucket list”.



Dr. Triplett (left) and Dr. Nonnenmacher (right)

This fall a team of field students joined Dr. Jim Triplett, Dr. Hermann Nonnenmacher and me to complete our final Madtom Catfish sampling trip to the Neosho River. We've been sampling this same stretch of the river for six years now, and the numbers of Madtoms are small enough that we are always excited to find them. This year our raw count was nine Madtoms, a variety of other fish and benthic species, a soft shelled turtle, and a chert piece that had been worked into a beautiful point. This has been an interesting and valuable service project for Neosho County, and it gave around 24 of our field students an opportunity to make a contribution to their community. It was also fun.

Dr. Dixie Smith (dsmith@pittstate.edu)

From Dr. Stephen L. Timme



Another year has quickly gone by and we're about to approach a new one - a year closer to retirement (summer 2012). I don't plan to go completely away. I'll maintain an office in the herbarium and continue as director for at least a few years and will continue working on a number of research projects.

Micah and Heather Nash (undergraduates with an enthusiastic interest in botany) have done some work in the herbarium, mostly sifting through and separating specimens. They are approaching their last year of undergraduate work and look forward to conducting studies at the graduate level. Martha Baskett is still with us and hopes to complete her master's thesis sometime in 2011. Amelia Bristow will begin her graduate studies in January.

My work with the liverworts and hornworts of the Interior Highlands continues. I am getting closer to completing a manuscript on the species of the area and their distribution within it. Since my last entry for the newsletter, I published a field guide to the common wildflowers of Southeast Kansas. I also have been selected to serve on the Missouri State University Biology Board to provide input on how the department can improve in the areas of teaching and research. Unfortunately, I did not teach on Dauphin Island this past summer but hope to the summer of 2011.



Aneura pinguis, a liverwort

A new required course for field biology majors will be offered for the first time in the fall of 2011. It is designed to get students interested in field biology experiences in the field early in their academic career. I will be working closely with Dr. Joe Arruda to develop the course.

Dr. Stephen L. Timme
(botanydoctor@hotmail.com)

From Dr. Jim Triplett



Although not being Department Chair has been a great experience, I do miss some of the opportunities to visit with alums and steer the ship. The additional teaching load does add

a lot of effort and time, but I have enjoyed the classes. For the first time in several years, the fish collection has received some attention, and we are getting through the piles of buckets, sorting catalog specimens from teaching specimens and replacing worn out fluid and leaking jars. The project has provided part-time employment for three undergraduates.

Dr. Drew and I went back to Paraguay for a month this spring. She taught Speech Communication as part of the Paraguay Partners program again. I went to establish a study abroad component that uses the service learning format, and received the kind support of the International Academic Affairs Committee, the Dean, the Provost, and the President to cover the cost of my trip. While there, I met with four of the largest NGO's that deal with environmental issues (GEAM, CIRD, AVINA and GURYA). They are very interested in the project, and it looks like we will get one of our first efforts underway next fall. Dr. Drew was on sabbatical, but I carried my full teaching load by teaching one class through Tegrity, an on-line lecture program through Angel. Ichthyology was covered by my GA, I hired Delia to cover ELS and Dr. Dawson picked up Senior Seminar for me. I am still trying to get caught up.

Little has changed in my service work with watersheds. In addition to serving as the Chair of the Neosho Basin Advisory Committee and Vice-chair of the Council of Basin Chairs, I am on the Board of Directors of the Grand Lake O' Cherokees Watershed Alliance Foundation, the Four State Collaborative, the Lower Shoal Creek Watershed Partnership and the Spring River

Watershed Restoration and Protection project. The majority of this work is in the Grand River drainage basin, which covers over 10,000 square miles in four states and 2 EPA regions. As I pointed out before, the jurisdictional issues totally confound the already complicated and demanding challenges in this watershed, but we made progress this year, with EPA Region 6 and Region 7 working together to direct and finance a watershed-wide assessment.

My efforts with sustainable activities and resource conservation, got a big boost this year, as Dr. Scott established a new University Goal of Sustainability. The University Committee for Energy and Resource Conservation is now the University Sustainability Committee, with stronger university-wide membership and a greater presence in the planning process. I am still on the Governor's Solid Waste Grants Advisory Committee, and I chair the Crawford County Solid Waste Advisory Committee and the Board of Directors of Southeast Kansas Recycling, Incorporated. SEKRI completed its grants from the State, to develop a regional pilot E-Waste collection program and Household Hazardous Waste Program. Other new projects include the opening of a reuse, resale shop, and a proposed Bag-it program.



Dr. Smith and I completed our 6th and final sampling year on the "Impact of Bendway Weirs on Neosho Madtom populations in the Neosho River" (image above). This semester I am teaching the Fisheries Management course, but only ended up with 2 students.

Regards, Dr. Jim Triplett (jtriplett@pittstate.edu)

OTHER NEWS

From Delia Lister, Director of Nature Reach



I am pleased to say that even in this current economic state, Nature Reach continues to thrive. We were VERY lucky to receive an anonymous \$15,000.00 donation for the 2010-2011 school year which

allows us to give free programming to area schools. The Nature Reach Endowment continues to grow slowly, and we hope you will continue to send funding our way. This not only helps us feed animals, but also allows continuing updates to cages, enrichment for the animals, purchase of teaching specimens, and the potential for future free programming. Our most recent excitement has been the addition of an American Crow to the program. "Otis" is doing quite well, and is turning out to be a fine program animal.

Last summer we held our second Nature Reach summer day camp at the Natural History Reserve. This year's crop of first graders were quite the group to handle, but once again exceeded all of my expectations. The camp is becoming so popular that we are going to expand the camp

from one week to two weeks next summer. Thank you again to the Sperry-Galligar Audubon Society for their contribution in both dollars and volunteers. Dr. Cindy Ford and I also took another group to Sapelo Island Georgia in June. The group had a wonderful time and there is talk about taking a group to the Appalachians or the Colorado Rockies in the future. So if you are up for camping with us please let Dr. Ford or I know. It is a great way to see nature at its best.

I am continuing to teach two lecture classes of Environmental Life Science to the non-majors each semester, as well as a Freshmen Experience course in the fall. This schedule keeps me on my toes, but my job is never boring. I still have a good crop of animal caretakers this year who show some excellent potential in the field of natural history interpretation. I appreciate their help very much as it allows me to continue to expand the program.

If you are in the area and would like to see the many changes to the Nature Reach Program please feel free to drop by or give me a call. Check out our website for a list of our programs, our brochures, and photos of programs.

Delia Lister (naturereach@pittstate.edu)

Kansas IDeA Network of Biomedical Research Excellence at Pittsburg State University



Pittsburg State faculty and students are involved in a federally-funded effort to enhance biomedical research and training. The National Center for Research Resources (NCRR) in the National Institutes of Health (NIH) provides Institutional Development Awards (IDeA) to foster research within states that traditionally have not received significant levels of competitive funding from the NIH. Currently, 7 students and 5 biology faculty are involved. Learn more: <http://www.pittstate.edu/departments/biomed/>.

Pre-health Student Service Trip to Belize

Dr. Mandy Peak and Vicki Webber, Physicians Assistant at the PSU Student Health Center, led 20 pre-health Biology majors on a study abroad program to Belize in May 2010.

The group left Tulsa and traveled through Dallas arriving at Belize City in Belize.

The Belizean communities visited are in the Toledo District, about 200 miles from Belize City. Punta Gorda is the main town in the Toledo district and was where the group stayed.

The group set-up day clinics and provided healthcare in Punta Gorda, Otoxha, Sunday Wood, Barranco and Bladen.

Sunday Wood and Barranco are villages a part of the Sarstoon Temash Institute for Indigenous Management (SATIIM) - a community based indigenous environmental organization working in this area, the far south of Belize (source: SATIIM).

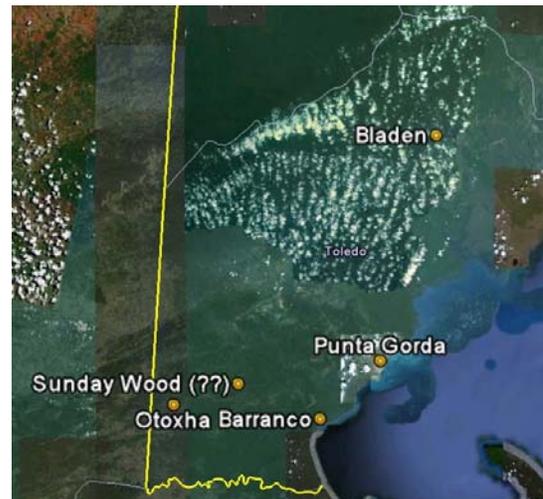
Sunday Wood has a population of about 250 persons, and 39 families. Villagers are of the Q'eqchi Maya cultural group. Barranco was established about 150 years ago. It is the southernmost Garifuna community in Belize. The population is about 150-200 people (source: SATIIM).

The PSU students assisted with routine exams, home visits, elementary student health education and instructed children on proper dental hygiene. They developed new medical skills and had a cultural experience of a lifetime.

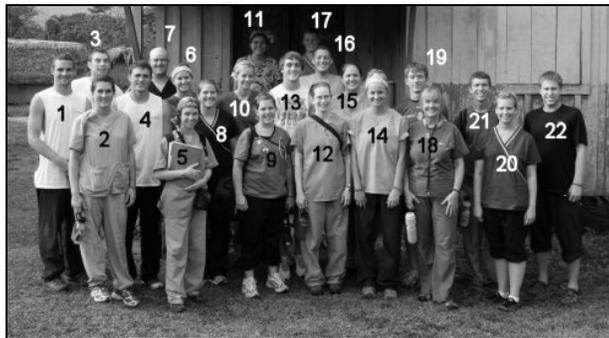
Additional trip pictures trip are found in the next 3 pages.



Location of Belize near the Yucatan



Locations of the communities visited



1 Dave Ramsey
 2 Danielle Hall
 3 Drue Barton
 4 Gerald Diskin
 5 Olivia J. Wright
 6 Erin Richmond

7 Dave Heins
 8 Megan Carlson
 9 Nicole Wilt
 10 Kortney Schippers
 11 Kristen Espinosa
 12 Dr. Mandy Peak

13 Zach Krumsick
 14 Mary Marquardt
 15 Esther Campbell
 16 Kyle Marcotte
 17 Lesli Gilbert
 18 Vicki Webber

19 Chris Eastman
 20 Andrea Peterson
 21 Eric Hunn
 22 Josh Wormington





Student Organizations

The **Biology Club** was very active again, topping it off with the 2010 Biology Bowl. Led by President Emily Derfelt (front row, right side), the Club did a great job. It was the 35th Anniversary of the Biology Bowl, as well.



A trip to the Oklahoma Aquarium in Jenks, OK was on the agenda of some Bio Club members after a lot of hard work at the Biology Bowl. Pictured are (in back) Kurt Herron, Dr. Peter Chung, Ryan Woodruff, (in front) Emily Derfelt, Alex Peterson, Stephanie Eckert, and Holly Hrabik.



Biology Club (psubiologyclub@gmail.com)

The **Pre-Med Club** continues their good work and fundraising for the Free Clinic. Most recently, they received an \$800 grant from the Rita J.

Bicknell Women's Health Fund. The health fund was established by through the Community Foundation of Southeast Kansas to address health issues related to women. A women's health night at the free clinic, which is offered every Tuesday at Wesley House, will be supported by the grant.

The other student groups are the Pre-Physical Therapy Club, Pre-Vet Club and Pre-Physician's Assistant Club.

Rock Climbing

A prospective Pre-med/ Biology student, interested in Pittsburg State University might ask oneself, will I have free time with this chosen degree, and what could I do with that free time?

Well, three years ago I asked myself that very question. Now that I am a senior at PSU, and waiting to get into medical school, I feel, I have some advice for students in this situation. Biology/ Pre-med is a demanding major; however, with good study habits and determination, it is achievable with time to spare.

With my spare time, I got involved in the Pitt State Rock Climbing Club. The club met a couple times a week, in the Pittsburg High School Gymnasium, on a small plywood rock wall. Immediately, I became addicted to the physical and problem-solving characteristics of the sport.

Thankfully, I had a fellow student that was equally enthusiastic about climbing, Alex White. Alex, a PSU alum now, was the former president of the club, who graduated with a dual major in Mechanical Engineering and Plastics. Alex and I have climbed together in a total of five different states. Our most involving endeavor, was a month long trip to Yosemite National Park, California, where we spent a month in the park. At Yosemite, we scaled the Nose of El Capitan in a three day and three night ascent of the 3500 foot granite monster.



Eric Hunn with Alex White on the nose of El Capitan

Climbing is a great stress reliever, an escape from the books, and it has also taught me some great life lessons that correlate directly to my degree. I have learned that with preparation and self-determination, anything is achievable.

I am the current president of the Pitt State Rock Climbing Club with Dr. Phillip Harries of the Biology Department as the advisor. We climb twice a week at PHS gym and take frequent trips to Arkansas to climb in the Ozark Mountains. For more information on the PSRCC email me at the address below.



Dr. Phil Harries, Faculty Advisor

PSRCC (psurockclimbingclub@pittstate.edu)

Sign Up **PittState Gorilla Biology Department is on Facebook**
 Sign up for Facebook to connect with PittState Gorilla Biology Department.



The Biology Dept. supports advanced research in human

PittState Gorilla Biology Department Like

[Wall](#) [Info](#) [Photos](#) [Events](#)

[PittState Gorilla Biology Department + Others](#)
Just PittState Gorilla Biology Department Just Others

PittState Gorilla Biology Department In another day, Thanksgiving Break will be here. To our students and faculty: Here's wishing you all a great break and and hope you come back energized for a successful end to the semester! To alumni and other friends, here's hoping you get to spend some quality time with friends and family.

Yes, The Biology Department is on Facebook.

Sign-up and see what's happening back here in Pittsburg.

OBITUARIES

Dean Stewart Bishop



Dr. Dean Bishop, 78, passed away on April 5, 2010 at Via Christi Hospital. He was born December 2, 1931 at Axtell, Kansas, to Charles and Stella (Percival) Bishop. He graduated from Axtell High School, from the University of Nebraska with a bachelor of

science, and later from Kansas State University with a M.S. and Ph.D. Dr. Bishop was an instructor at Wheeling College in Wheeling, West Virginia from 1961 to 1964. He then moved to Pittsburg, where he was a professor at Pittsburg State University for 30 years, retiring in 1994. Dr. Bishop was also the co-owner, with his wife, Margaret, of Rainbow Color Print. He served in the Air Force during the Korean Conflict from 1951 to 1952.

On June 18, 1952, he was united in marriage to Margaret Peschel at St. Michael's Catholic Church in Axtell, Kansas. After the couple moved into their new home in the country, Dr. Bishop wanted a red barn. Even though he was almost completely blind, he built the red barn, fulfill a dream he had of having a red barn on his property. Mrs. Bishop survives at the family home. Dr. Bishop was a member of Our Lady of Lourdes Catholic Church, where he had been a member of the church choir. He was also a Boy Scout Leader, Win-or-Bust 4-H Club Leader, Collegiate 4-H Leader and Co-Sponsor Lambda Sigma. In addition to his wife, he is survived by three sons, Patrick S. Bishop and wife, Cathy of Ft. Scott, KS, Timothy L. Bishop and wife, Melinda of Louisburg, KS, Michael L. Bishop and wife, Kathleen of Pittsburg; two

daughters, Colleen R. Renn and husband Gary, of Pittsburg and Michele K. Bishop of Aurora, CO; fourteen grandchildren and twelve great-grandchildren. Mass of Christian burial was held April 10 at the Our Lady of Lourdes Catholic Church and burial followed in the Garden of Memories Cemetery in Pittsburg. Dr. Bishop was cremated.

Chester G. Twitchell



Dr. Chet Twitchell passed away September 29, 2010 at Ponca City Medical Center. He came to Pittsburg State University in 1988 and retired as Professor of Biology in 1999, having served as the lead pre-med advisor. After retirement, he moved back to Coffeyville.

Dr. Twitchell attended Coffeyville schools, received his Bachelor and Masters degrees at the Kansas State College of Pittsburg and Ph.D. at Oklahoma University in Norman, Oklahoma. He taught school in Derby, Kansas and was a Professor at Southeast Missouri State University in Cape Girardeau, Missouri before coming to Pittsburg State.

He was born to Sam and Alma Twitchell on Dec. 14, 1938. He is survived by a brother Richard Twitchell and sisters Iva Ruth Twitchell and June Little. He is also survived by many nieces and nephews, loving friends, and wonderful neighbors.

(information for both from newspaper and family sources)

Web Links to News and Stories Involving Biology Faculty, Students, and Alumni

Go to the link provided to find these archived stories involving Biology Faculty, Staff, Students, and Alumni.

Students and Alumni

Melissa Roush

Cadet honored with rare military awards

[<http://www.pittstate.edu/press-media/detail.dot?id=192278>]

James Clark

Pittsburg vet uses lasers to help animals

[<http://www.morningsun.net/featured/x289810040/ANIMAL-CARE>]

Brian Foreman

PSU grad to take Meadowlark reins

[<http://www.morningsun.net/topstories/x1381037608/PSU-grad-to-take-Meadowlark-reins>]

Pre-Med Club

Pre-Med club gets grant for women's health

[<http://www.morningsun.net/newsnow/x1615404076/Pre-Med-club-gets-grant-for-women-s-health>]

Olivia Wright

Pre-medicine

[<http://www.pittstate.edu/stories/detail.dot?id=258814>]

Faculty

Dr. Virginia Rider

Rider named one of 15 most influential women

[http://www.pittstate.edu/press-media/magazine/detail.dot?id=227263&utm_source=newsletter_227242&utm_medium=email&utm_campaign=Faculty-Staff+Newsletter]

Cindy Ford & Delia Lister

Outstanding work in environmental education

[<http://www.pittstate.edu/stories/detail.dot?id=196471>]

Dr. Steve Ford

Prehistoric marine lizard has permanent home at Pitt State

[<http://www.morningsun.net/featured/x718559819/Longtime-resident>]

Dr. Jim Dawson

Bursting With Color - Pitt State Trees Displaying Fall Looks

[<http://www.morningsun.net/news/x290097866/BURSTING-WITH-COLOR>]

PSU Faculty and Staff (Fall 2010)

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

Specialties: limnology, water quality and biological monitoring and assessment, land snails

Peter Chung, Assistant 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, Chairperson. [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 Gordon, Associate Professor of Biology. [Ph.D., University of California at Davis]

Specialties: entomology, ecology

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

Specialties: plant viruses, cellular and molecular biology of plants

Hermann Nonnenmacher, Instructor. [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. [D. Pharmacy, University of Colorado Health Sciences Center]

Specialties: anatomy and physiology

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

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

Stephen L. Timme, Professor of Botany, Director, T. M. Sperry Herbarium. [Ph.D., Mississippi State University] Specialties: bryology, biosystematics, tropical biology

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

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

During 2010-2011, Dr. Zurek is on leave from PSU during the 2010-2011 academic year.

Staff

Kelly Borden, Administrative Specialist

Donna Lair, Storekeeper

Delia Lister, Director, Nature Reach