"On The Move" Newsletter

FALL 2013

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Regional SOT Meeting

The Lone Star Regional Chapter of the Society of Toxicology will hold its annual meeting at the Overton Hotel and Conference Center in Lubbock on October 17th and 18th. Dr. Weimin Gao is the 2013-2014 President of the regional chapter and our department is hosting the meeting. Dr. K.P. Singh is a member of the meeting planning committee and ENTX graduate students Meghan Cromie and Chuanwen Lu are members of the LSSOT Board.

Faculty News

Jaclyn Cañas-Carrell received continued funding for an NSF STEM project on the integration of outreach and education. The 5th year of funding was contingent upon progress during the previous 4 years.

Seshadri Ramkumar's cotton research appeared in an American Chemical Society (ACS) podcast series on Global Challenges/Chemistry Solutions (GC/CS). The research, led by Ph.D. student Vinitkumar Singh, included some of the first scientific data on unprocessed raw cotton's use in crude oil spills. The research appeared in the ACS journal, *Industrial & Engineering Chemistry Research*.

Jaclyn Cañas-Carrell was featured in a recent American Chemical Society (ACS) newsletter with Stephanie Pleasant, a rising senior at Texas Tech University. Stephanie was a former Bridges student with Jaclyn who spent the summer participating in the U.S. Department of Energy Summer Undergraduate Laboratory Internship program at Pacific Northwest National Laboratory (PNNL).

Congratulations to ENTX faculty **Seshadri Ramkumar** and **Jonathan Maul**. Effective September 1st, Dr. Ramkumar was promoted to Full Professor and Dr. Maul was promoted to Associate Professor (with tenure).

Chris Salice spent part of the summer at the Baltimore Ecosystem Study LTER working with Dr. Chris Swan on some NSF-funded research in urban ecology.

More Faculty News

The Plains Bridges to The Baccalaureate (PBB) Program, funded by NIH, was successful in obtaining competitive renewal funding ($1.1 million) for another 5 years! To date, 39 "Bridges" students have transferred to Texas Tech University and 11 students have earned BS degrees in science-related fields from Texas Tech. **Jaclyn Cañas-Carrell** is the Program Director, and senior personnel include **Kamaleshwar Singh**, Zenaida Aguirre-Muñoz (Engineering), Patrick Hughes, Juan Muñoz, and several South Plains College faculty.

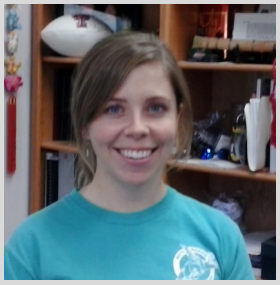
In the first 5 years of funding, a total of 54 students were supported. 71% have transferred to a four-year university, and 31% have completed their bachelor's degree in a biomedical-related field. This transfer rate is significant given that in the most recent SPC performance report, the transfer rate was reported as 39.5%, the state peer group comparison was 36.4% and the overall state transfer rate of community colleges was a mere 29.0%.

Ron Kendall and **Steve Presley** both received awards totaling about $133,000 from the non-profit organization Park Cities Quail for research on the recent rapid decline in Texas' quail population. Kendall's project is looking at how fungal toxins may impact the birds, while Presley's group will expand work on a parasitic eye worm found infesting bobwhites.

Seshadri Ramkumar is serving as the co-chair for an international conference on "Advances in Fibers, Finishes, Technical Textiles and Nonwovens", organized by the American Association of Textile Chemists and Colorists (AATCC). The conference will be held in Mumbai, India on October 1st and 2nd. Dr. Ramkumar has been instrumental in the development of this conference and is also serving as the Chair of the technical steering committee.

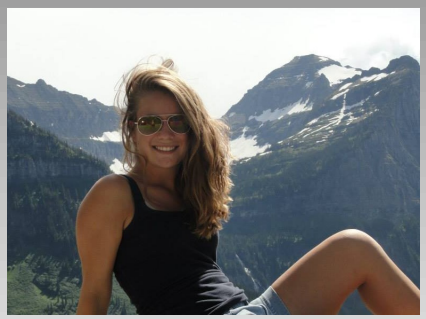
Alumni News

As was reported in previous newsletters, we asked our alums to consider donating money for two alumni scholarships for incoming M.S. and Ph.D. students. Because of their generosity, we were able to give two $500 scholarships this year. The winners of the 2013-2014 TIEHH Alumni Scholarship are Heather Lanza (B.S. from Pacific University) and Kimberly Smelker (M.S. from Southeastern Louisiana). Obviously, we want to continue the alumni scholarship, so if you are an alum receiving this newsletter or simply a friend of the program, please consider donating this year.



New Students

We graduated quite a few students this past year, so recruiting new ones was a priority. We were very successful in our efforts, especially for those prospective students who visited and had the opportunity to see our facilities and meet our people. Welcome to the Fall 2013 class!



Mary Hayden

B.S., Middle Tennessee

Logeswari Ponnusamy

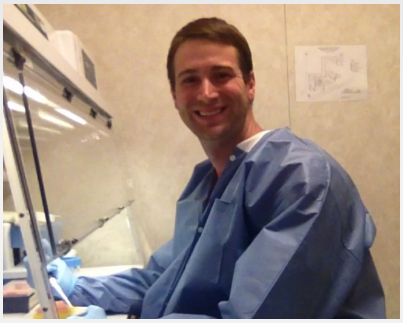
M.V.Sc., Kerala University

Andrew East

B.S., Northland College

Bridgette Fidder

B.S., University of Dubuque



Jeremy Wilkinson

M.S., Oklahoma State

Rebecca Cochran

B.S., Berry College

Kimberly Smelker

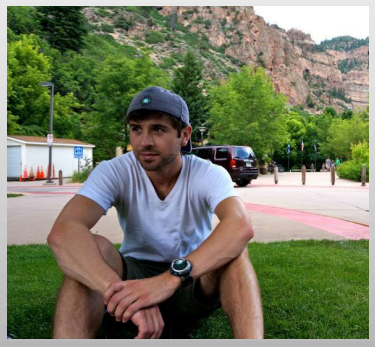
M.S., Southeastern Louisiana

Kara Minton

B.S., Ashland University

Kristina Kohl

B.S., Pacific University



Thomas Bilbo

B.S., Denison University

Heather Lanza

B.S., Pacific University

Shanoy Anderson

M.S., Prairie View A&M

Misty Moriarty

M.S., Texas Tech

Student News

Song Tang, a Ph.D. student in Dr. Greg Mayer's lab, was the recipient of the 2013 Texas Tech University Outstanding Dissertation Award. Song is off to Canada to do a postdoc at the University of Saskatchewan.

Adric Olson, a Ph.D. student in Dr. Chris Salice's lab, received a travel grant from SETAC to attend the 34th Annual Meeting in Nashville, TN this November.

Jessica Oates received a $1,000 Texas Tech Parent's Association Scholarship for 2013-2014.

Shuangying Yu won the SSAR student poster competition in the Evolution, Genetics, and Systematics category at the 2013 Joint meeting of Ichthyologists and Herpetologists in Albuquerque, NM this past July. In addition, Ying has also recently published 2 journal articles on her amphibian research with fungicides (*Environmental Pollution* 181:329-334 and *Environmental Toxicology and Chemistry* 32: 2056-2064.).

Kristina Kohl, a new Ph.D. student in Jaclyn Cañas-Carrell's lab, and **Mary Hayden,** a new M.S. student in Céline Godard-Codding's lab received Talkington Graduate Fellowships from the Graduate School.

Morgan Willming, a Ph.D. student in Dr. Jonathan Maul's lab, received an Achievement Rewards for College Scientists (ARCS) Scholarship for 2013-2014.

Meghan Cromie has returned after a summer in China on an NSF East Asia and Pacific Summer Institutes (EAPSI) fellowship. Her host was Dr. Shou-Lin Wang at the Nanjing Medical University, School of Public Health. Meghan also attended a reception in Shanghai for the 237th Independence Day hosted by the United States Consul General, Mr. Robert Griffiths.

Brie Sherwin will publish a law review article entitled: "The Lizard, the Scientist, and the Lawmaker: An Analysis of the Trending Fight over the Use of Science under the Endangered Species Act and How to Address It" in the spring 2014 symposium volume of Lewis & Clark Law School's *Animal Law Review Journal.*

Institute News

Dr. K.P. Singh's lab hosted 2 visiting scientists in July: Dr. James DuMond, Dean of the School of Science at Marist College (Poughkeepsie, NY) and Allison Smith, a junior at Spackenkill High School in Poughkeepsie. While in K.P.'s lab, Allie conducted cell proliferation, real-time gene expression, and MTT assays. In addition, she examined perturbations of the cell cycle through flow cytometry.

Construction of the biological safety level three (BSL-3) containment laboratory at TIEHH is complete, and is designated as the Biothreat Research Laboratory (BRL). Because of the extensive physical and biological security requirements for the safe operation of a BSL-3 select agent laboratory, the new lab is essentially a stand-alone facility within Building 555, with highly restricted access, and separate and redundant electrical, water and air-handling mechanical services. The BRL will provide a high containment lab suite for both applied and basic research related to biological pathogens and toxins. The BRL is a much needed research enhancement resource for Texas Tech University, and will significantly expand the scope of opportunities that can be applied for by researchers, and will improve the competitiveness of research grant proposals. The process of registering the facility with the National Select Agent Registry through the United States Centers for Disease Control and Prevention, Division of Select Agents and Toxins (CDC-DSAT) is underway, and was inspected by a CDC-DSAT team this August. Currently researchers at TIEHH are actively conducting sponsored research that requires handling and screening of environmental and tissue specimens for the presence of disease-causing agents and toxins. The completion and CDC-DSAT registration of our new BRL will significantly improve and expand the capabilities and scope of human and animal health related research. For further information on the function and capabilities of the new BRL please contact Dr. Steve Presley, Laboratory Director (806-885-4567 extension 236).

Dr. Piyush Malaviya, Senior Assistant Professor in the Department of Environmental Sciences at the University of Jammu , is spending 6 months at TIEHH as a visiting scientist. Dr. Malaviya has expertise in microbiology and bioremediation.

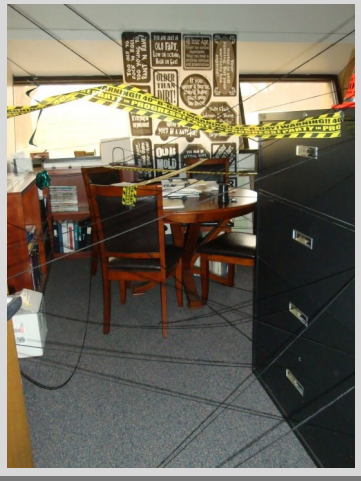
Greg Mayer Lab

Below are some of the activities going on in Dr. Greg Mayer's lab. Greg is a candidate for promotion and tenure this Fall, so we thought some of you who don't know Greg and his research well might enjoy finding out a little bit more.

The Mayer laboratory is bidding a bittersweet farewell to Song Tang. Amongst many other achievements, Song has recently authored three manuscripts regarding the toxicity of quantum-confined nanoparticles in zebrafish, zebrafish cell lines, and *Daphnia pulex*. The first manuscript is currently available online at *Toxicology and Applied Pharmacology*, the second at *Metallomics*, and the third has recently been submitted to *Aquatic Toxicology*. These works and others comprised Song's award –winning dissertation (see Student News).

Meanwhile the rest of the lab is still slaving away trying to understand how environmental stressors affect organisms in near-shore environments. Kaylyn Germ (far left) is working from the ground up to determine how xenobiotics such as cyclical aromatic compounds and heavy metals induce DNA adducts and other types of DNA damage in killifish and also how these chemicals alter DNA repair processes. Cait Ryan (far right) is delving into similar questions regarding toxicity of heavy metals and PAHs in the euryhaline killifish. Cait is taking a top down view of how environmental stressors affect organisms, not by investigating the killifish itself, but by asking what role the myriad of bacteria that inhabit the guts of these fish play in determining toxicity of xenobiotics, and if particular assemblages of microorganisms in the gut can either ameliorate or exacerbate toxicity in the host.

The lab has actually grown a bit this year with the additions of Dr. David Snow and Mr. Jeremy Wilkinson to the laboratory. David, a new post-doc in the lab, comes to us from a private company that specializes in massively-parallel, high-throughput nucleic acid sequencing. He will be working on the interactions of bacterial biofilms and plaque formation in blood vessels. Jeremy is a new graduate student this year who is embarking on a Ph.D. He is interested in host/symbiont relationships and will be using his expertise in genomics to ask questions related to how commensal microorganisms contribute the overall health of the holobiont.



When not conducting research, Greg's students like to help redecorate his office.

Clinical Microbiology Workshop

In August, the TIEHH Bioterrorism Response Laboratory conducted an intermediate level workshop designed for technicians working in clinical microbiology laboratories. Placing emphasis on safety implications of handling suspected biological threat organisms in clinical isolates and cultures, the workshop provided an overview of the clinical lab's role in the presumptive identification of primary agents of bioterrorism including: anthrax, plague, tularemia, *Brucella*, *Burkholderia*, and smallpox. Laboratory demonstrations outlined the microbiology of these agents so that participants can recognize the culture, staining, and biochemical characteristics. Additional educational programs in biosafety, biosecurity, and BSL-3 containment practices are in development.

For more information, please contact:
Steve Presley, Laboratory Director and Principal Investigator at steve.presley@ttu.edu or
Anna Gibson, BT Response Coordinator at anna.gibson@ttu.edu

That is a whole lot of doctors, new and "older"!! From the August 2013 graduation ceremony (left to right): David Kimberly (new), Stephanie Plautz (new), Chris Salice (old?), Richard Erickson (new), Stephen Cox (old?), Justin Treas (new), and Kamaleshwar Singh (old?).

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