



1785

The University of Georgia

Spring 2011

Interdisciplinary Toxicology Program
DIGEST

Toxicology (from the Greek words τοξικός - toxicos “poisonous” and logos) is a branch of biology, chemistry, and medicine concerned with the study of the adverse effects of chemicals on living organisms. It is the study of symptoms, mechanisms, treatments and detection of poisoning, especially the poisoning of people.

An excerpt from a recent letter to the Washington Post from the Society of Toxicology President, Michael P. Holsapple, Ph.D. :

“As a scientifically integrated discipline, toxicology uses the tools of molecular and cellular biology, cancer biology, neuroscience, reproductive and developmental biology, and other fields to determine how drugs and chemicals can be used safely.

Toxicologists help to address the challenges of translating data from the molecular and cellular level into a better understanding of health risks from exposure to contaminants in air, water, and food.

SOT members helped write the 2008 National Academies of Science “Vision for Toxicology in the 21st Century,” which articulates a vision for moving toxicity testing from an observational science to one incorporating the latest advances in cellular and molecular biology. Toxicologists are well-positioned to advance this new paradigm, which will enhance the protection of human health and the environment, and urge all scientists to work collectively to meet that goal.”

www.toxicology.uga.edu

Dear Colleagues,

It is hard to believe that the year is drawing to a close so quickly; and what an eventful year it has been! It began with the departure of our former Director Dr. Jeff Fisher. Dr. Fisher served as Director since 2006, and departed the University of Georgia in the summer of 2010 for his next great adventure at the National Center for Toxicology Research in Little Rock, Arkansas. We wish Dr. Fisher well in his new position and his new home. With the change in ITP leadership, Dr. Brian Cummings took over the reins as Graduate Coordinator and is doing a superb job! Fall 2010 also marked our first official semester in our new curriculum. I would like to thank the ITP curriculum committee and the many faculty who worked tirelessly over the past couple of years to bring this to fruition. Kudos to all of you for such a great job! Although we are still in somewhat of a transition period, and there are still a few 'kinks' to work out, it is our goal to provide a flexible and dynamic curriculum that is both relevant and forward-looking.

I wish to express my sincere gratitude to Dr. Ron Riley (USDA) for leading the development and completion of our 5-year Strategic Plan document which was submitted to the Graduate School at the end of May 2010. This was our first ever strategic plan and it was quite a challenge to manage all of the subcommittees and complete it in such a timely fashion. We all know that trying to direct a group of faculty can be a bit like herding cats, but Dr. Riley proved that he was definitely up to the challenge! Now that it is in place, I will be recruiting many of you to help implement it.

The Fall and Spring semesters proved quite busy for ITP students and faculty. Fall began with our annual 'Welcome Back' event organized by the ITP Student Liaison Committee, with head chef Dr. Bringolf doing an awesome job at the grill. We welcomed five new students and a great time was had by all! Our students continued to be active with several presenting their research at local, regional and national meetings. Dr. Cummings was instrumental in bringing the SESOT regional meeting back to Athens in October, and it was a huge success. The meeting was attended by numerous faculty and students from around the southeast. Several ITP students presented at SESOT and Shuo Xiao received the 'First Place Award' in the student poster presentation competition. Congratulations Shuo! ITP students also presented at the annual SETAC meeting held in Portland, OR in November, and at the Society of Toxicology meeting in Washington, DC in March 2011. This is just a small snapshot of our students' efforts. A list of all of their activities and awards can be found on pages 10-11. Keep up the great work! This spring, the ITP held its first student research proposal competition. Thirteen student proposals were submitted and reviewed by ITP faculty. Eight of these were selected to receive research funds. Thank you to all of the students who submitted proposals, and for those not selected this year, you are encouraged to try again!

This was also the inaugural year for UGATOX, the newly formed toxicology graduate student organization. UGATOX is open to both graduates and undergraduates interested in toxicology, and the group sponsored several seminars/socials for students during their first year. Special thanks go to Pete Hazelton (President), Kwaku Agyekum, (Vice-President), Shuo Xiao, (Treasurer), and Xiaoling Zhang, (Secretary), for their leadership in getting this important organization off the ground and running.

As an interdisciplinary program it is important that we encourage the recruitment of new faculty who broaden our perspectives in toxicology. This year please join me in welcoming three new faculty members Dr. Steve Stice, Dr. Maria Viverios, and Dr. Rabin DeLaFuente. We look forward to working with them as we pursue collaborative efforts and mutual interests in the coming year.

Unfortunately, space does not permit me to recognize all of the many achievements and activities of our diverse group, but please know that your efforts are greatly appreciated. We continue to be a healthy and robust program because of your efforts and the continued support of our participating colleges and schools. I thank all of you for another successful year for the ITP!

Lastly, I would be remiss if I did not take the opportunity to recognize the tireless efforts of Joanne Mauro, who keeps this program moving on a daily basis and often goes that extra mile to help students and faculty alike. I encourage all of you to express your gratitude to Joanne the next time you see her! Thanks, Joanne!

Looking forward to the next year! Have a great summer!

Dr. Julie Coffield
Director, ITP
UGA

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2010 - 2011



Femi Adetona



Kwaku Agyekum



Adwoa Agyepong



John Finger



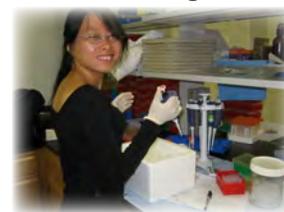
Cory Gresham



Peter Hazelton



Kristen Kellock



Rong Li



Zhoumeng Lin



Liyun Liu



Lisa Luo



Madhusudhanan
M. Keralapurath



Dean Meyer



Mandana Nisanian



Guoqing Qian



Emily Roberts



Sethi Pankaj



Gideon St. Helen



Shuo Xiao



Fei Zhao



Xiaoling Zhang

SESOT 2011

SOUTHEASTERN REGIONAL MEETING OF THE SOCIETY OF TOXICOLOGY

ITP Graduate Coordinator, Dr. Brian Cummings is the President of the Southeastern Regional Society of Toxicology. The Society met on October 11/12 2011 in Athens. ITP students participated in the Poster and Oral Presentations. Plans for the Fall 2011 meeting are underway.

ITP STUDENTS

X. ZHANG “The Synergistic Effect of Sodium Chlorite and Bromochloroacetic Acid on Bromate-induced Renal Cell Death”, X. Zhang, R.J. Bull, J.A. Cotruvo, J. Fisher and B.S. Cummings
Dept. of Pharm. and Biomed. Sci., Univ. of Georgia, Athens, GA, MoBull Consulting, Richland, WA, Joseph Cotruvo & Associates, LLC, Washington, DC and National Center for Toxicological Research FDA Jefferson, AR

RONG LI “Spatiotemporal Expression and Regulation of Gpr128 and Olfm1 in Mouse Uterus”, Rong Li, Honglu Diao, Shuo Xiao, Fei Zhao, and Xiaoqin Ye
Department of Physiology and Pharmacology, College of Veterinary Medicine; 2. Interdisciplinary Toxicology Program, University of Georgia, Athens, GA

FEI ZHAO “Mechanism Study of Methoxychlor (MXC) on Embryo Implantation”, Fei Zhao, Honglu Diao, Shuo Xiao, Rong Li, and Xiaoqin Ye
Department of Physiology and Pharmacology, College of Veterinary Medicine; University of Georgia, Athens, GA

EMILY R. ROBERTS “Reproductive Effects in *Ceriodaphnia dubia* Following Chronic Exposure to Multi-Walled Carbon Nanotubes”, Emily R. Roberts and Marsha C. Black
Department of Environmental Health Science, University of Georgia Athens, GA

ZHOUMENG LIN “Adverse Effects of Atrazine and Its Main Metabolite Diaminochlorotriazine on Differentiating N27 Dopaminergic Cells”, Zhoumeng Lin, Celia A. Dodd, Irina I. Georgieva, and Nikolay M. Filipov
Department of Physiology and Pharmacology, College of Veterinary Medicine, University of Georgia, Athens, GA

GUOQING QIAN “Modulation of Oxidative DNA Damage Biomarker, 8-Hydroxyguanosine in Postmenopausal Women by Green Tea Polyphenols and Tai Chi”, Guoqing Qian, Lili Tang, Siyu Xue, Franklin Wang, Leslie Shen, Jia-Sheng Wang
Department of Environmental Health Science, University of Georgia, Athens, GA; Department of Pathology, Texas Tech University Health Sciences Center, Lubbock, Texas

SHUO XIAO won **First Place** with his poster presentation, “Pre-implantation Bisphenol A (BPA) exposure adversely affects uterine receptivity in mice.”
Department of Physiology and Pharmacology, College of Veterinary Medicine, University of Georgia, Athens, GA

POSTDOCTORAL ABSTRACT:

CELIA A. DODD “Sustained Potentiation of Inflammatory Cytokine Output in Activated Microglia by Manganese: Role of HO-1”, Celia A. Dodd, Irina I. Georgieva, and Nikolay M. Filipov
Department of Physiology and Pharmacology, University of Georgia, Athens, GA.

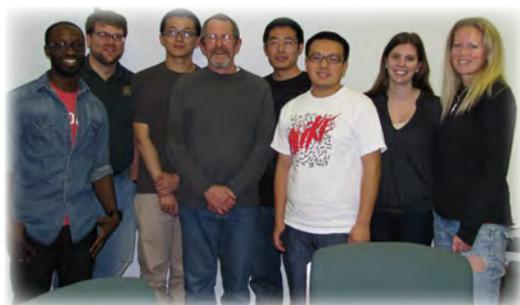
TOXICOLOGY SEMINARS



Dr. Nony discussed emergency response roles for Toxicologists



Dr. Wen Xie shares lunch and discusses his research with students.



Dr. Riley discussed job opportunities with ITP students.



Dr. Rebecca Haynie gives her presentation to UGATOX.

The ITP and UGATOX sponsored a series of seminars over the past year, delivered by accomplished researchers from across the country. Seminar topics captured important current and emerging issues in toxicology. Receptions were hosted by the program after each seminar, and students and faculty took advantage of the opportunity to chat with the presenters in a more casual setting.

/// **DR. PAUL NONY**, Manager of Toxicology, Center of Toxicology & Environmental Health, (CTEH), Little Rock, AR, “Reporting from the Front Lines: Uncommon Roles for Toxicology in Public Health and Chemical Emergency Response”, Fall 2010.

/// **DR. RON RILEY**, Research Pharmacologist with the USDA-ARS Toxicology & Mycotoxin Research Unit, Athens, GA “Working for the US Dept. of Agriculture and Researching the Mechanism of Action of Commercially Important Mycotoxins”, Spring 2011.

/// **DR. WEN XIE**, Associate Professor with Tenure, Center for Pharmacogenetics, Department of Pharmaceutical Sciences, University of Pittsburgh School of Pharmacy. “The Xeno- and Endobiotic Functions of Orphan Nuclear Receptors”, Spring 2011.

/// **DR. REBECCA HAYNIE**, Research Associate, Nuisance Aquatic Species & Algae Laboratory, Warnell School of Forestry & Natural Resources, UGA. “A Tale of Two Toxins: Beta-Methylamino-L-alanine (BMAA) and the Mysterious Case of Avian Vacuolar Myelinopathy (AVM)”, Spring 2011



UGATOX

Many thanks to our UGATOX inaugural year officers:
Peter Hazelton, Kwaku Agyekum, Shirley Zhang, and Shuo Xiao.
WELL DONE!!

Welcome to the 2011-2012 Officers. Pictured, L to R:
Kwaku Agyekum, President; Adwoa Agyepong, Vice President;
Shuo Xiao, Treasurer; Guoqing Qian, Secretary.

NEW FACULTY

DR. STEVEN STICE

Dr. Stice is a Professor in the Department of Animal and Dairy Sciences, and a Georgia Research Alliance Eminent Scholar. He is also the Director of the Regenerative Bioscience Center at UGA. His laboratory conducts research on pluripotent and adult stem cells in the areas of neurogenesis, toxicology, and regenerative medicine. Major research interests of his group include using stem cell biotechnology to find new treatments for neurodegenerative diseases such as Parkinson's and Alzheimer's, spinal cord injuries and cardiovascular disease. Dr. Stice is highly collaborative across campus, and around the country. His research group works with the Navy using human stem cell derived neurons as biosensors for environmental toxins. He leads one of five NIH stem cell training centers. He has developed collaborations with several ITP faculty. Dr. Stice is also a world renowned expert in cloning and while at UGA his group has successfully cloned calves and pigs. His work with animal cells and cloning has broad interdisciplinary applications that benefit human and veterinary medicine as well as agriculture.



DR. MARIA VIVEIROS

Research in my laboratory focuses on mammalian germ cell and early embryonic development, with a major emphasis on the regulation of meiotic division in oocytes. We use various cellular and molecular biology approaches as well as unique genetic mouse models in current research projects to address the mechanisms that (1) regulate meiotic spindle assembly, and (2) monitor accurate chromosome attachment to spindle microtubules, as well as (3) assessing how these processes may be compromised with increasing maternal age and exposure to environmental toxins.

DR. RABINDRANATH DE LA FUENTE

Chromatin configuration in the nucleus or germinal vesicle (GV) of mammalian oocytes undergoes dynamic epigenetic modifications during oocyte growth. A crucial developmental transition at the culmination of oogenesis, large-scale chromatin remodeling in the GV is essential to confer the female gamete with meiotic and developmental potential. Using several models for the experimental manipulation of chromatin structure and function in combination with cell and molecular biology approaches our current work seeks to determine the cellular pathways and factors that are involved in remodeling chromatin in the mammalian oocyte genome.



Excellence in graduate education is fostered by offering a dynamic, forward-looking, interdisciplinary curriculum taught by a nationally and internationally respected faculty. A stimulating and challenging learning environment provides inspiration and encouragement for achieving the highest level of student success.

We welcome these new faculty members!

FACULTY RESEARCH HIGHLIGHTS

DR. MARSHA BLACK



Dr. Black is a Professor and Assistant Dean in Environmental Health Sciences, College of Public Health. She has published groundbreaking research on the impact of pharmaceutical drugs on the ecological health of our waterways, and her work is helping to connect the dots regarding the impact of industrial sites on downstream pollution. “What is the joint effect of all these chemicals we’re putting in the water?” This is the question Dr. Black is answering through methodical studies, sifting through her research and data to find those tiny threats to our water supplies. Dr. Black and her team have discovered that minute accumulations of Prozac and Zoloft were making their way through wastewater treatment facilities and into the water. The initial tests were conducted on water fleas, and they didn’t reveal any worrisome signs. Likewise, tests on mosquito fish yielded results that were expected in that the fish grew lethargic under heavy dosage. However, when the focus shifted to the African clawed frog, Black found that the presence of even the smallest amounts of anti-depressants had the potential to undermine the ecosystem. The frogs simply ate less and, because they ate less, they were significantly smaller. Another study offered a glimpse of a possible connection between land use and river contamination. Long regarded as one of the cleanest water systems in the region, the Altamaha River recently drew the interest of state regulators in Georgia after the system’s mussel population, once very robust, began to decline. The data gathered from those experiments proved invaluable to the Georgia Environmental Protection Division, and one of her upcoming projects promises to offer more vital information to policymakers. Working with other researchers, Black has obtained funding from the Georgia Sea Grant Program to examine the state’s coastal waters and the influence of leaking septic tanks on water quality.

DR. ROBERT BRINGOLF

Dr. Robert Bringolf is a fish biologist and an aquatic toxicologist in the Warnell School of Forestry and Natural Resources. Dr. Bringolf received a Ph.D. from Iowa State University and worked as a post doc at the University of Wyoming and North Carolina State University before coming to UGA in 2007. Among other things, Dr. Bringolf and his students are interested in the effects of contaminants of emerging concern (CEC) on aquatic organisms. Dr. Bringolf has recently published findings that the active ingredient in the antidepressant Prozac causes alterations in host fish attraction behaviors of freshwater mussels and induces abortion of mussel larvae. ITP PhD student Peter Hazelton is continuing this line of research with investigations of the effects of CECs on freshwater mussels. Peter’s approach is novel in that he has developed a mussel partial life-cycle assay that facilitates evaluation of a wide variety of biochemical, reproductive and behavioral endpoints. Data generated from the assay also lends itself to stage-based matrix models to predict contaminant effects at the population level. In 2011, Peter will be performing field studies with mussels located near known sources of CECs, including perfluorinated compounds. Recent reports of intersex (eggs in testes) in fish in the Southeast, including sites in Georgia, inspired Dr. Bringolf and ITP PhD student Kristen Kellock to begin a project to more accurately describe the occurrence and severity of the intersex condition and to identify possible causative factors. Intersex has been commonly described in fish collected near municipal wastewater effluents and has been associated with exposure to estrogens and estrogen-mimicking chemicals. In 2010, Kristen sampled fish from rivers, lakes and ponds across Georgia. A high incidence of intersex fish was identified from some sites, but incidence was consistently greatest in waters where intersex was least expected. Fish sampling will continue in 2011 and lab experiments will seek to explain some of the surprising trends that have been identified in the field. Stay tuned- there’s surely more to come about these intriguing findings.



FACULTY PUBLICATIONS

Please visit our website for a complete list of faculty publications during the last year.
<http://www.toxicology.uga.edu/2010%20Faculty%20Publications.pdf>

FACULTY GRANTS

DR. RON RILEY: Selected for funding – National Institute of Environmental Health Sciences Special Emphasis Panel R21 Exploratory Research Grant Award “Food Insecurity, Fumonisin, Sphingolipid Biomarkers and Risk for Birth Defects” total \$354,775, \$70,000 USDA, CIENSA \$100,000, PI (5% time) 9/2010 to 9/2012
Awarded National Institute of Health \$2,715,667 in support of a collaborative effort between investigators at Creighton University, Duke University, the Centro de Investigaciones en Nutricion y Salud in Guatemala and the USDA-ARS. The research proposed by the team was in response to the NIH Director’s Opportunity for Research in Five Thematic Areas, specifically, Thematic Area #4: Focusing on Global Health. The award was issued under the American Recovery and Reinvestment Act of 2009 and the project specifically addresses the possible role of fungal toxins in birth defects worldwide but particularly in countries where corn is consumed in large amounts and is likely to be contaminated with the fungal toxin fumonisin B1 (FB1). Co-Investigator (5% time) 9/2010 to 9/2013.

DR. JIM BRUCKNER: Pyrethroid Working Group, “Determination of In Vitro Parameters for Input into PBPK Models, entire project period – \$137,700, 6/1/10 – 4/30/11, Principal Investigator.

DR. ROBERT BRINGOLF: Received funding from USGS project titled ‘Assessment of contaminants and impacts in the Upper Conasauga River.’ The grant is \$200,000 over 4 years. Co-authored by Dr. Sayed Hassan (ITP, Crop & Soil Science) and Dr. Pete Lasier (PI, USGS)

DR. XIAOQIN YE: Received National Institute of Health award of \$371,250, for a project titled, “Luminal epithelial microenvironment in Lpar3(-/-) peri-implantation uterus.” 09/01/2010 – 08/31/2013

DR. QINGGUO “JACK” HUANG: Received an Award from DoD SERDP for a proposal entitled “Remediation of Perfluoroalkyl Contaminated Aquifer using an In-situ Two-Layer Barrier: Laboratory Batch and Column Study”, \$150k, April, 2011- Oct, 2012

DR. RABINDRANATH DE LA FUENTE: His lab received an award from the Georgia Cancer Coalition. Project title: Global epigenetic modifications and changes in large-scale chromatin remodeling associated with cellular senescence and malignant neoplastic transformation in mammalian cells.

Note from Dr. Brian Cummings

Seven new students will be joining ITP in the Summer and Fall 2011 semesters. These students will be joining laboratories in the departments of Environmental Health Sciences, Pharmaceutical and Biomedical Sciences and Animal and Dairy Sciences. The average GRE of this incoming class is 1317 and the average GPA is 3.5. These new students will come from China (Peking, Anhui and Taiwan), Korea (Kyungpook), Indian (Bangalore), and from places closer to home such as New York (Long Island), Ohio (Cincinnati) and right here in Georgia (Georgia Tech). Please come to the Fall 2011 ITP Welcome Back Picnic to welcome these students to UGA. Thank you to the Graduate Admission Committee for your hard work and to the entire faculty for their help in recruiting.

2010 - 2011 GRADUATES

WHERE ARE THEY GOING NEXT?

SUYANG LIU, M.S., remains at UGA, working in the labs at the Environmental Health Science department.

SHEPPARD MARTIN, PH.D., accepted a position with the EPA at their National Health and Environmental Effects Research Laboratory, Office of Research and Development, in Research Triangle Park, NC.

ARENA RICHARDSON, PH.D., is finishing a Post Doc in the Food Science Technology Department at UGA. Her research concerns the contamination of tomatoes during transport from the farm to the market.

BIN SUN, PH.D., accepted a position with The Hamner Institute, in Durham, NC.

DENITA WILLIAMS, PH.D., won an ORISE Fellowship with CDC, Atlanta, GA.

XIAOLING (SHIRLEY) ZHANG, PH.D., who became a mother this year of Hannah, is seeking a Post Doc position in North Carolina to be near her husband - Bin Sun.

SUSAN XU, PHD, is completing a Post Doctoral, at the Department of Head and Neck Surgery, University of Texas MD Anderson Cancer Center, Houston, TX.

CONGRATULATIONS!!!

ALUMNI UPDATES

WHAT ARE THEY DOING NOW?

MATTHEW TAYLOR, (PhD 2008) has begun a new career in regulatory toxicology at Ashland, Inc. In his new position, he plays a vital role in attaining REACH compliance. Additionally, he is involved in GHS classification, product stewardship, and responsible care activities. His position takes him to the EU for about two weeks each quarter to visit Ashland plants, meet with EU personnel, and further Ashland's EU regulatory compliance plans. Prior to his position at Ashland, Matt completed a two year postdoctoral position with the Dow Chemical Company. During that time, he developed a prototype in vitro developmental neurotoxicity screening assay using the human NT2/D1 cell line. Matt is currently putting the finishing touches on a pair of publications resulting from that postdoctoral project, and presented a poster with his final results at the 2010 SOT annual meeting.

SOOKWANG LI, (PhD 2007) went to Pacific Northwest National Laboratory (PNNL) in Washington state for post-doctoral training. He returned to Georgia in 2010 to work for Southeast Regional Laboratory (SRL) of FDA in Atlanta under the FDA Commissioner's Fellowship Program.

STUDENT AWARDS

CONGRATULATIONS TO THIS YEARS' ITP RESEARCH AWARD WINNERS

1. **EMILY ROBERTS.** Advisor: Marsha Black. *“A study of the reproductive effects and accumulation of multi-walled carbon nanotubes in a marine invertebrate, Americamysis bahia.”*
2. **MAGGIE LIU.** Advisor: Julie Coffield. *“A study to investigate the mechanisms of BoNT/A induced neurite outgrowth.”*
3. **PETER HAZELTON.** Advisor: Robert Bringolf. *“Determination of immune toxicity of perfluorooctane sulfonate in fish using leukocyte flow cytometry and its relevance to freshwater mussel conservation.”*
4. **GUOQING QIAN.** Advisor: J.S. Wang. *“A study validating a non-antibody method for detecting serum aflatoxin B1-lysine adduct in Fischer 344 rat.”*
5. **SHUO XIAO.** Advisor: Xiaoqin Ye. *“Effects of pre-implantation bisphenol-A (BPA) exposure on oviduct and uterus gene expression and epigenetic changes in mice.”*
6. **MADHU M. KERALAPURATH.** Advisor: John Wagner. *“A study to investigate the persistent effects of minor stressors on the neuroendocrinological properties of hippocampus.”*
7. **KRISTEN KELLOCK.** Advisor: Robert Bringolf. *“A study to determine the effect of water temperature during early developmental stages on sensitivity to estrogen exposures later in life for fathead minnows (Pimephales promelas).”*
8. **GIDEON ST. HELEN.** Advisor: Luke Naehrer. *“Biomarkers of exposure to and acute oxidative stress and pulmonary injury from secondhand smoke exposure outside restaurants and bars in downtown Athens, Georgia.”*

OTHER AWARDS

ZHOUMENG LIN a second year PhD student in the ITP, has been invited to present his research this summer at the southern Medical University, Guangzhou, China. **Advisor: Dr. Nikolay Filipov**

SHUO XIAO a third year PhD student in the ITP, received a \$5000 scholarship to attend the Frontiers in Reproduction (FIR). The FIR is an intensive 6 weeks laboratory and lecture course for scientists-in-training in reproductive sciences. It is held each summer at the Marine Biological Laboratory (MBL) in Woods Hole, Massachusetts, which is a world-famous training ground for Experimental Biologists. This training program is very competitive and accepts only 20 people from all over the world each year. Shuo is the first UGA student to win this scholarship. **Advisor: Dr. Xiaoqin Ye**

GIDEON ST. HELEN received an American Industrial Hygiene Foundation (AIHF) 2010 scholarship, an AIHce2010 Biological Monitoring Committee Award and the AIHce 2010 Best Student Poster. **Advisor: Dr. Luke Naehrer**

KRISTEN KELLOCK won Best Student Platform Presentation Award at the Georgia Water Resources Conference, April 2011. **Advisor: Dr. Robert Bringolf**

STUDENT RESEARCH

UGA-COLLEGE OF VETERINARY MEDICINE RESEARCH DAY, ATHENS, GA. OCTOBER 2010

Zhoumeng Lin Physiologically based pharmacokinetic model for oral exposure to the herbicide atrazine in the adult male C57BL/6 mouse. Lin, Z., Fisher, J.W., Ross, M.K., Filipov, N.M.

Shuo Xiao Preimplantation Bisphenol-A (BPA) Exposure Adversely Affects Uterine Receptivity in Mice. Shuo Xiao, Honglu Diao, Fei Zhao, Rong Li, and Xiaoqin Ye

Fei Zhao Mechanism of MXC on embryo implantation. Zhao, F., Diao, H., Xiao, S., Li, R., Ye, X.

SOUTHERN DIVISION OF AMERICAN FISHERIES SOCIETY, TAMPA FL. JANUARY 2011

Peter Hazelton Use of a partial life-cycle assay to determine effects of contaminants on freshwater mussel populations. "Freshwater Mussel Conservation Symposium"

SOCIETY FOR THE STUDY OF REPRODUCTION, PORTLAND, OR. JULY 2011

Fei Zhao Effects of Zearalenone (ZEA) on Embryo Implantation in Mice Zhao, F., Diao, H., Xiao, S., Li, R., Ye, X.

SOUTH EAST NEUROSCIENCE CONFERENCE, ST. AUGUSTINE, FL. MARCH 2011

Madhu M. Keralapurath Persisting Effects of Intermittent, Minor Stressors on Long-Term Potentiation in the CA1 region of Dorsal and Ventral Hippocampal Slices'. M. M. Keralapurath, Jason K. Clark, Sherri Hammond, John J. Wagner

GEORGIA RESEARCH ALLIANCE - CENTER FOR FOOD SAFETY, ATLANTA GA. MARCH 2011

Kwaku Agyekum **First Place** Characterization of Probiotic Inhibition of *Listeria monocytogenes* Growth In vitro. A. Kwaku Agyekum, Karin Sheenan, Kendra Edwards and Mary Alice Smith

SOCIETY OF TOXICOLOGY 2011 ANNUAL MEETING, WASHINGTON D.C. MARCH 2011

Zhoumeng Lin Effects of atrazine and its metabolite diaminochlorotriazine on undifferentiated and differentiating N27 dopaminergic cells. Lin, Z., Dodd, C.A., Georgieva, I.I., Filipov, N.M. (Poster)

Guoqing Qian Combinative Toxicity of Mycotoxin Mixture in Animal and Human Cells. Guoqing Qian, Lili Tang and Jia-Sheng Wang

Xiaoling Zhang The Synergistic Effect of Sodium Chlorate and Bromochloroacetic Acid on Bromate-induced Renal Cell Death. Xiaoling Zhang, Richard J. Bull, Jeffery Fisher, Joseph A. Cotruvo and Brian S. Cummings.

SOCIETY FOR ENVIRONMENTAL TOXICOLOGY & CHEMISTRY, PORTLAND, OR. NOV 2010

Peter Hazelton Effects of Fluoxetine in Acute Chronic and Partial Life-Cycle Tests with Fresh Water Mussels

Kristen Kellock Temperature-influenced Endocrine Disruption with 17-Estradiol and Re-challenged Effects in Fathead Minnows (*Pimephales promelas*). Kristen Kellock and Robert Bringolf.

Emily Roberts Accretion and Reproductive Effects in *Ceriodaphnia dubia* Following Chronic Exposure to Multi-Walled Carbon Nanotubes. Emily R. Roberts and Marsha C. Black.

GEORGIA WATER RESOURCES CONFERENCE, ATHENS, GA APRIL 2011

Kristen Kellock **Best Student Platform Presentation Award.** 'Assessment of Endocrine Disruption in Fish and Estrogenic Potency of Waters in Georgia'. Coauthored by Dr. Robert Bringolf

THE TERATOLOGY SOCIETY, CORONADO, CA. JUNE 2011

Kwaku Agyekum Probiotics Reduce Pathogen Invasion in Fetal and Neonatal Tissue. A. Kwaku Agyekum, Karin Sheenan, Kendra Edwards and Mary Alice Smith

TOXICOLOGY SNAPSHOTS



TOXICOLOGY SNAPSHOTS



Support the Interdisciplinary Toxicology Program

We would like to take this opportunity to invite you to make a financial contribution to the UGA Toxicology Program. You can make a secure credit card contribution online (www.toxicology.uga.edu/contact.asp). When doing so, please type Toxicology Program in the form where it says "Specify other/multiple gift areas and dollar amounts benefiting each." Doing so will ensure that your gift is directed to the Toxicology Program.

The Interdisciplinary Program in Toxicology Fund is a University of Georgia Foundation discretionary account supporting the activities of the Interdisciplinary Toxicology Program. It enables the Program to host internationally recognized speakers, hold conferences and workshops and provide support for graduate students to attend national meetings and present scientific results.

If you prefer to make a donation the old-fashioned way, please fill out our form on the opposite page, print it and mail it to:

**Interdisciplinary Toxicology Program
Physiology and Pharmacology Dept.,
College of Veterinary Medicine
The University of Georgia
Athens, GA 30602**

Thank you!!

Interdisciplinary Toxicology Program



Name: _____

Address: _____

Phone: _____

Email: _____

I would like to contribute to the University of Georgia Foundation. My gift will be designated for the Interdisciplinary Program in Toxicology Fund.

The Interdisciplinary Program in Toxicology Fund is a University of Georgia Foundation discretionary account supporting the activities of the Interdisciplinary Toxicology Program. It enables the Program to host internationally recognized speakers, hold conferences and workshops and provide support for graduate students to attend national meetings and present scientific results.

Funds of this type are essential to the expansion and success of this campus-wide interdisciplinary training program.

Enclosed is my gift for \$ _____

Signature: _____

Please send this form with your check, made payable to the University of Georgia Foundation, to the Interdisciplinary Toxicology Program, Physiology and Pharmacology Dept., College of Veterinary Medicine, 501 DW Brooks Dr., Athens, GA 30602.

You may also make a secure credit card donation via our website at

<http://www.toxicology.uga.edu>.

Thank you for your support of the program!

INTERDISCIPLINARY TOXICOLOGY PROGRAM ALUMNI

1997
Kelley Ann Boyle Van Vreede, M.S.

1998
Ilho Cho, M.S.
Nikolay Miltchev Filipov, Ph.D.
Slawomir Jacek Rzucidlo, Ph.D.
Jeannie Lee Stephenson, M.S.
Masashi Tsunoda, Ph.D.
Robert Wesley Wentworth, Ph.D.

1999
Judy S. Mathew, M.S.
Christopher Lee Peredney, M.S.
Karen Marie Zepp, M.S.

2000
Beverly Schleppe Arnold-Hall, Ph.D.
Kevin Anthony Holloman, Ph.D.
Carrie Hamilton Marr, M.S.

2001
Taras K. Oleksyk, Ph.D.
Suparna Ajoy Sarkar, Ph.D.

2002
Windy Ann Boyd, Ph.D.
Gregory Patrick Dooley, M.S.
Neera Vintra Gopee, Ph.D.
Ofia B. Hodoh, M.S.
Vic Johnson, Ph.D.

2002 continued:
Michael Harrison Lumpkin, Ph.D.
Jay Paul Overmyer, Ph.D.
Sarah Suzanne Rentz, M.S.
Patricia Lynn Shaw-Allen, Ph.D.
Lonnie Dwayne Williams, M.S.

2003
Jason Lamar Boyd, Ph.D.
Russell David Cole, M.S.
James Claude Cumbee Jr., M.S.
Shashank Dravid, Ph.D.
Kristi Manning Folden, M.S.
Sang Hyun Kim, Ph.D.
Audrey Jean Majeske, M.S.
Bradley David Reinhart, M.S.

2004
Tara Lynn Almekinder, M.S.
Heather A Brant, M.S.
Jerry Lamar Campbell Jr., Ph.D.
Deanna Erin Conners, Ph.D.
Amber Lynn Graves, M.S.
Xianglu Han, M.S.
Quanren He, Ph.D.
Jiyoun Kim, Ph.D.
Elizabeth Ann Richardson, M.S.
Emily Dawn Rogers, M.S.
Olga Vasyilivna Tsyusko, Ph.D.
Jason M. Unrine, Ph.D.

2004 continued:
Angel K. Wall, M.S.
Neera Chhabra Young, M.S.

2005
Kathy Dietzel, M.S.
Ryan Richard Holem, M.S.
Catherine J King, M.S.
Brad Konwick, M.S.
Gregory N Quinn, M.S.
Tonita Marie Parrott, Ph.D.
Jennifer Hoffman Peterson, M.S.
Neelesh Sharma, Ph.D.

2006
William Matthew Henderson, Ph.D.
Carey C Hines, Ph.D.
Molly Catherine Visser, M.S.
Denita Williams, M.S.
Lonnie Dwayne Williams, Ph.D.

2007
Elizabeth Irvin, Ph.D.
Deborah Iwanowicz, Ph.D.
Kristen Kellock, M.S.
Kyu-Bong Kim, Ph.D.
Sookwang Lee, Ph.D.
Paul Melstrom, Ph.D.
Brianna Peterson, Ph.D.
Glenn Tillman, M.S.
Aswani Vunnava, M.S.

2008
Brooks McPhail, Ph.D.
Tantiana Donata Burns, Ph.D.
Curtis Andrew Harris, Ph.D.
Elizabeth Irvin, Ph.D.
Lakshmi Kelamangalath, Ph.D.
Michelle Warner Norris, M.S.
Junshun Qiu, Ph.D.
David Robert Rouse, M.S.
Matthew Aaron Taylor, Ph.D.
William Shoults-Wilson, Ph.D.

2009
Susan Baird, M.S.
Suzy Ritger Crowell, Ph.D.
Hongbo Ma, Ph.D.
Leenal Malayil, M.S.

2010
Ghanashyam Joshi, M.S.
Suyang Liu, M.S.
Sheppard Martin, Ph.D.
Arena Richardson, Ph.D.
Bin Sun, Ph.D.
Denita Williams, Ph.D.
Li Xu, Ph.D.

2011
Shirley Zhang, Ph.D.



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