Volume 1, Issue 2

TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

Winter 2011/Spring 2012

Pharmacology News

Inside this issue:

A Message from the Chairman

As I enter my second year at Tulane University, I am amazed at the progress that we have made and I have to thank everyone for their help. The majority of the laboratories and offices in the department have been renovated and the remainder will be renovated during the next year. We continue to have outstanding students in our Ph.D. and M.S. programs. Furthermore, several energetic, new faculty members (Drs. Prasad Katakam, Steven Braun, and Jean-Pyo Lee) joined us in 2010-2011. Since January, the Department of Pharmacology has recruited two new tenure track faculty members at the Assistant Professor level and a faculty member at the Research Professor level. We expect to hire two or three new faculty members in the next year.

New Faculty in 2012

Dr. Milton Hamblin

Dr. Milton H. Hamblin received his undergraduate degree from Dartmouth College, his M.A. from Boston University, and his Ph.D. from Meharry Medical College. His post-doctoral fellowship was with Dr. Eugene Chen at the University of Michigan Medical Center and he joined Tulane University on January 1, 2012. Dr. Hamblin's research focuses on the role and molecular regulation of vascular smooth muscle micro RNAs in abdominal aortic aneurysms.

Dr. Sarah Lindsey received her undergraduate degree from the University of Mississippi-Oxford, her M.S. from the University of Memphis, and her Ph.D. from LSUHSC. She completed a post-doctoral fellowship with Dr. Mark Chappell at the Hypertension and Vascular Research Center at Wake Forest University Health Sciences Center where she held the rank of Instructor. Dr. Lindsey joined the Pharmacology Department on April 1, 2012. Dr. Lindsey's research focuses on the role of the estrogen receptor GPR30 in angiotensin II-dependent hypertension and she is supported by a NIH K99 award.

Dr. Sarah Lindsey

Dr. Howard Mielke was appointed as a Research Professor in March, 2012. Dr. Mielke studies environmental signaling and human health. In particular, he researches and evaluates the status of the urban environment especially in terms of lead and other heavy metals on human health and disease. His research is supported by a grant from the Department of Housing and Urban Administration.

Dr. Howard Mielke

The Biomedical Sciences Retreat

Pharmacology graduate students had the opportunity to present their current research in October at the 2011 BMS Retreat held at the Audubon Zoo. The event began with breakfast followed by a welcome address from Dr. Robert Garry, Assistant Dean of Biomedical Sciences. Students gave either a platform or a poster presentation on their research. Aaron Miscenich, President of the New Orleans continued on page 2

Amrita Datta

Pharmacology News is the departmental newsletter and is published quarterly.

Dr. David Busija–Chair

Debbie Sanders, MA–Office Admin

Nancy Busija, MA–Dept. Editor

Biomedical Sciences Retreat

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Christine Bulot

BioInnovation Center, Inc., culminated the retreat with a speech entitled, "Taking Steps Toward Commercializing Your Research: Finding the Resources to Succeed."

"I really enjoy the retreats," said Christine Bulot, Pharmacology Ph.D. candidate. "It helps me develop confidence in this kind of forum and my ability to speak publicly. It also allows us to learn about the research that students in other departments are working on." She, along with Amrita Datta, Aditi Mathur, Brittni Scruggs, and Shijia Zhang each presented their research. Brittni won the award for "Best Presentation" for the session in which she participated.

The main objective of the BMS Retreat is to help graduate students develop skills in presenting scientific data and their participation in the retreat is a requirement of the curriculum. For all of the Department of Pharmacology participants, "Congratulations and job well done!"

Dr. Bunnell's Lab (l to r): Amy Lin, Brittni Scruggs, Ryan Bonvillain [postdoc], & Shijia Zhang

Graduate Spotlight: Dr. Raj Patel

"...my time with the Department of Pharmacology's wonderful faculty expanded my perspective on research science as a whole. I became a more analytical thinker—a scientist."

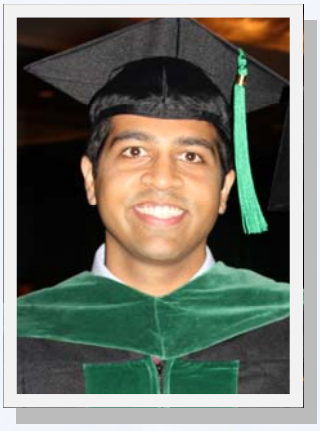
As a transitional year intern preparing for residency in Ophthalmology, I can say without any hesitation that much of my success thus far in my medical career is due to the Department of Pharmacology. Before I arrived in the fall of 2006 to begin the masters program, I thought two things: (1) I knew that Tulane had the reputation for being a very friendly and open learning environment, and (2) I knew that living in New Orleans would be unlike anything I had ever experienced before. I could never have imagined how right I would be—on both counts.

Immediately upon my arrival I was blown away by the warmth of the environment I had entered. This was nothing like college. This department was like family. Professors were approachable. They kept their doors open. They welcomed questions and were always happy to go the extra mile to relay a teaching point using new methods and technology whenever possible...and I think their enthusiasm was infectious. Drs. Agrawal, Clarkson, Beckman, Kadowitz, and Mondal motivated all of us to really work and master the material. It was these formative study habits that I developed during this year that allowed me to not lose a step when I made the jump to medical school the following year. I was readily able to manage a diverse, extensive course load and assimilate it into one cohesive knowledge bank without much difficulty.

Furthermore, my time with the Department of Pharmacology's wonderful faculty expanded my perspective on research science. I became a more analytical thinker—a scientist. The opportunity to examine everything from the formulation of viable drug targets to work that goes into rolling out the next "Pfizer riser" was staggering. It was this systematic examination of research science that made the transition to doing clinical research as a busy medical student possible, thus making the application and match process a one.

Beyond my more obvious scholastic gains, I also happened across one of the most distinct, engaging groups of people I had ever met. Spending that year with my classmates in the astonishingly quirky city of New Orleans made for a time in my life that I will never forget; an experience I wouldn't trade for any other. My profound thanks to all of you who make the Tulane University Master of Science in Pharmacology the wonderful program that it is .

Dr. Raj Patel



Celebrating Our Students

A good time was had by all at the department's Winter Celebration. Everyone gathered to celebrate our students and a successful year at The Columns on St. Charles Avenue. The air was filled with conversation and laughter; not to mention the aroma of delicious fare.

The gala was a pleasant culmination to a successful first semester.

Student Spotlight—Class of 2012

Departmental Mission Statement:

We will educate and train medical and graduate students in the principles of pharmacology using modern techniques and will conduct state-of-the-art research in pharmacology-related fields in order to expand the frontiers of science and medicine.

This year the Masters of Science in Pharmacology Program admitted 23 students. Here are brief bios on 6 of our students.

Lucas Chan, Los Angeles, CA, graduated from Univ. of California, Irvine. He currently works with Dr. Beckman researching cancer and ceramide compounds. He enjoys cooking and wants to learn to cook southern food. Lucas will be working with Habitat for Humanity soon.

Patrick Ward, Pensacola, FL, graduated from St. Louis Univ. He enjoys swimming, playing music and reading. He is an advocate for Big Brothers of America, where he volunteered in St. Louis.

Jaclyn Kapilow, Pacific Palisades, CA, studied at USC. She previously worked in a neuroscience lab studying autism. She also worked on a diabetes prevention program in Mexico. Some of her favorite pastimes include traveling, spending time with family, and USC football. Jaclyn currently volunteers at the CHNOLA dialysis center and will soon be working with Habitat for Humanity.

Kelly Giardina, Gretna, LA, received a BS in Biology from the Tulane. Kelly is interested in research regarding pulmonary pharmacology. She enjoys spending time with family and friends, the festivals in New Orleans, drawing, and traveling. She volunteers as an after-school teacher in New Orleans as well as at Children's Hospital.

(l to r): Patrick, Jaclyn, Mohamed, Kelly and Lucas

Sean Meeks, Baton Rouge, LA, graduated from LSU. He is interested in cancer research. Sean enjoys all sports and outdoors activities. He recently helped build a house in New Orleans with Habitat for Humanity and will continue to work with the organization in the future.

Mohamed El-Ounsi, New Fairfield, CT, attended the Univ. of Massachusetts-Amherst for undergraduate studies. He currently works in Dr. Kalueff's lab studying the neuro-pharmacological affects of drugs of abuse on zebra fish. He enjoys riding his motorcycle and working out at the gym. He volunteers with Habitat for Humanity and MedArt at Children's Hospital.

Noteworthy News

Dr. McLachlan presented a talk, "Developmental Estrogenization Syndrome: environment and women's reproductive health" at the invitation only workshop on The Environment and Women's Reproductive Health at the National Institute of Environmental Health Sciences/NIH (January 20, 2012). Dr McLachlan will deliver one of the Keynote Lectures at the Symposium on the Consequences Connecting Environmental and Human Health at Duke University, Durham, NC on April 20, 2012. The title of his presentation is "Environmental Signaling and Gene Expression: Integrating the Outside with the Inside."

Dr. Mielke was invited to make a presentation at the National Library of Medicine Environmental Health Information Partnership (EnHIP) meeting in March 2012. The topic was Children's Health and the Environment, and the title of his talk was "Lessons from New Orleans on the Role of Environment in Children's Health Disparities." In connection with his research interest on the environment as a basis for chemical signaling and health, he conducted laboratory research for USA TODAY on a contaminated residential communities project. The USA Today articles were published in late March 2012.

Dr. Mondal was invited to speak at the following seminars:

- December 2011—"Nelfinavir (Viracept) induced endothelial dysfunctions in AIDS, and it's repositioning as a cancer chemosensitizer." Institute of Translational Research, Ochsner Hospital, Jefferson, LA.
- February 2012—"Tissue resident mesenchymal stem cells (MSCs): a novel HIV-1 reservoir and sanctuary site." Dept. of Pharmacology, LSUMC, New Orleans, LA.
- March 2012—"Drug-efflux transporters in facilitating a sanctuary site for HIV-1." Stem Cell Interest group. Pennington Biomedical Research Center, Baton Rouge, LA.

Dr. Mondal also has two patents pending: Somatostatin Analogs and Their Uses as Anti-HIV Therapeutics and PLGA Micro Scaffolds and Applications for Stem Cell Differentiation. In addition, Dr. Mondal, in conjunction with Dr. Asim Abdel-Mageed, Department of Urology, was awarded two grants: DOD; Synergy Award—Stem cell-based therapeutic targeting of prostate cancer residual androgens in African Americans, and NIH U01 (NCI); Estrogen ER-beta axis in health disparity of Prostate Cancer.

Dr. Katakam (and **Dr. Busija**) gave a platform presentation at the International Stroke Conference held on February 1-3, 2012 at Tulane University. The title was "Mitochondrial Depolarization without Reactive Oxygen Species Production leads to Augmented Cerebral Vascular Relaxation via Diverse Calcium-related events in Smooth Muscle and Endothelium." They also presented a poster at the same conference entitled, "Dynamin-related Protein 1 Independent Apoptosis in Neurons Following Oxygen-glucose Deprivation" with **Dr. Edina Wappler** (Tulane, Department of Pharmacology) and Dr. Adam Institoris (University of Szeged, Department of Physiology, Szeged, Hungary).

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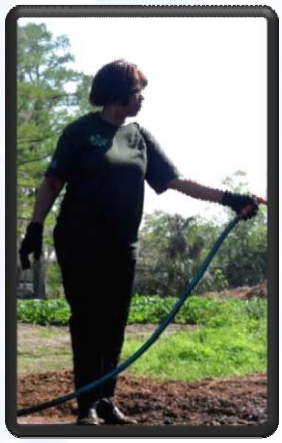
Pharmacology Gives Back

Tulane University has a longstanding commitment to community service and the Dept. of Pharmacology continues to do its part in adhering to that commitment.

Staff and students participated in separate volunteer activities throughout the winter and spring seasons. Debbie hosed compost and Sewann harvested arugula at the Grow Dat Youth Farm on City Park's grounds.

Several students in the MS Pharmacology program presented a lab and assisted 7th and 8th graders in St. Bernard Parish.



Noteworthy News continued from page 4

Dr. **David Busija**, Regents Professor and Chairman of Pharmacology, presented a "state of the art" lecture entitled "Mitochondrial Mechanisms in the Cerebral Vasculature in Health and Disease" at the 75th Anniversary Celebration of Albert Szent-Györgyi's Nobel Prize Award at the University of Szeged, in Szeged, Hungary, on 22-25 March, 2012. The program included lectures by nine Nobel Laureates. Dr. Szent-Györgyi, was a Professor and Dean of the Medical School, and later became Rector of the University of Szeged. He received the Nobel Prize in 1937 for his isolation of vitamin C and for research on the Krebs cycle. Dr. Busija has a long standing relationship with the University of Szeged Medical School (formerly Albert Szent-Györgyi Medical School) and was awarded the Doctorem Medicinae Honoris Causa in 2009 for his scientific and educational contributions to the university.

"Science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world. Science is the highest personification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence. "

Louis Pasteur

The 2012 James W. Fisher and Fred Schuler Distinguished Lectureships

Dr. William C. Sessa

The Department of Pharmacology held its 14th Annual James W. Fisher Distinguished Lectureship on December 2, 2011. The featured speaker was William C. Sessa, Ph.D., who is the Alfred Gilman Professor and Vice Chairman of the Department of Pharmacology and Director of the Vascular Biology and Therapeutics Program at Yale University School of Medicine. Dr. Sessa is an internationally recognized investigator in the field of vascular biology and nitric oxide synthase regulation; the title of his presentation was "New insights into the control of vascular function." The Fisher Distinguished Lectureship was established in recognition of Dr. Fisher's important contributions to science for the development of research into erythropoietin as well as his contributions to the Department of Pharmacology and Tulane University School of Medicine as departmental chairman from 1968 to 1996.

The Department of Pharmacology held it 40th Annual Fred Schueler Distinguished Lectureship on March 9, 2012. The featured speaker was Keith R. Yamamoto who is the Vice Chancellor for Research as well as Vice Dean of the School of Medicine at the University of California at San Francisco. Dr. Yamamoto is an internationally recognized scientist whose research has focused on signaling and transcriptional regulation by intracellular receptors. The title of his presentation was "Cell-, Gene- and Physiology-Specific Regulation by the Glucocorticoid Receptor." The Schueler Distinguished Lectureship was established by Dr. James Fisher, a previous chair of the department, to honor Dr. Schueler who was Chairman of Pharmacology from 1956-1964. In addition to a being a gifted scientist who pioneered research on hemicholiniums, which proved to be a valuable tool in the study of acetylcholine synthesis and cholinergic neurotransmission, Dr. Schueler was a renaissance man because of his multiple interests including mathematics and music. Of the 40 previous Schueler Lecturers, 12 received Nobel Prizes and 80%, including Dr. Yamamoto, became members of the National Academy of Sciences.

Dr. Keith Yamamoto

Publications

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Espandar, L., **Bunnell, B.A.**, Wang, G.Y., Gregory, P., McBride, C., Moshirfar, M. (2012) Adipose-derived stem cells on hyaluronic acid-derived scaffold: a new horizon in bioengineered cornea. Arch of Ophthal, 130:202-208. PMID: 22332213

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Mielke, H.W., Zahran, S. The urban rise and fall of air lead (Pb) and the latent surge and retreat of societal violence. Environment International. DOI: 10.1016/j.envint.2012.03.005

*This list of publications was the most accurate list available at time of our newsletter publication. Any omissions will be included in the following issue.

Pharmacology Seminar Series April 2012

APRIL

Apr 5 **Johnathan Tune, PhD**—Assoc. Professor—Indiana University School of Medicine—Indianapolis, IN
12 pm "Heart of the Matter: Coronary Dysfunction in Metabolic Syndrome"

Apr 13 **Kurt Varner, PhD**—Chairman—Pharmacology and Experimental Medicine—LSU Health Sciences—New Orleans, LA
12 pm "Cardiac Toxicity of Environmentally Persistent Free Radicals: Just When You Thought It Was Safe To Breath "

Apr 20 **Arnold Kriegstein, MD, PhD**—Director—Ely & Edythe Broad Center of Regeneration Medicine & Stem Cell Research—San Francisco, CA
12 pm "Development and Evolution of the Human Neocortex "