

# Pharmacology News

Volume 5, Issue 1  
Fall, 2015

TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

## Message from the Chair Dr. David Busija

At the end of this year I will have been Chair for 5 years. The time has gone by very quickly and it is easy to forget how much we have done, but I would like to emphasize the major accomplishments. **First**, we have renovated much of the departmental space, including the main office, faculty offices, and laboratories. **Second**, we have hired four junior faculty members (Drs. Katakam, Hamblin, Lindsey, and Mostany). **Third**, we have bought state of the art equipment, including two multiphoton microscopes, Bruker eScan for measuring reactive oxygen species and nitric oxide, and the Seahorse Bioscience XFe24 Analyzer for measuring mitochondrial respiration. **Fourth**, we have provided excellent teaching to the medical school curriculum. **Fifth**, we have maintained our high quality Masters in Pharmacology program. Also, **Sixth**, we have created a stellar seminar program with up to 20 outside speakers each year. These accomplishments have been a true team effort with all the departmental faculty, staff, and students involved. Thus, I would like to thank everyone for their help during this period. **But we are not finished with changes yet.** In the coming two years I plan to hire new faculty, complete the remaining laboratory renovations, and buy new equipment as needed. Also, as part of our effort to increase our visibility across campus as well as nationally, we have selected two great speakers who are leaders in their fields to present the James W. Fisher and Fred Schueler Distinguished Lectures. In October 2015 **Dr. Leslie A. Leinwand** from the University of Colorado, Boulder, presented her work entitled "A woman is not a small man: sex differences in the heart." In February 2016 **Dr. Ed Boyden** from the Massachusetts Institute of Technology will present his work entitled "Tools for Understanding and Repairing Complex Biological Systems."

## Dr. Howard Mielke "Hero of Katrina" and a Superhero to Many



**Dr. Howard Mielke** was recently named a "Hero of Katrina" by A Community Voice during their 10 Year Commemoration of Hurricane Katrina. He was awarded the Environmental Justice Award on August 1, 2015. He has worked with parents, preschools, schools, and other organizations in New Orleans to clean up lead contamination in order to reduce blood lead levels. Also, every year Dr. Mielke is sought out for his expert advice. This year he has been extensively quoted in an exposé by the National Geographic Magazine and articles in the Chicago Tribune, New York Times, and by Tulane's Podcast "The Green Room," among others. His quiet, dedicated, and tenacious conscience raising began in the 1980s. His testimony at the Senate hearings in Washington D.C., led by Senator David Durenberger, was instrumental to the passage of the Airborne Lead Reduction Act of 1984. He gave an hour of his time to discuss the historical, current, and future issues concerning lead in the environment. This article represents his deepest concerns related to lead, as explored during the interview and subsequent conversations.

**Dr. Mielke:** The big issue right now for medicine is that we do not have a treatment for high blood lead levels. Chelation drugs were tried; succimer was the most promising. However, a large group study in 2001, reported in the New England Journal of Medicine, indicated that chelation drugs removed lead but caused neurological and behavioral problems and did not induce cognitive benefits. The authors concluded that there are no effective drug treatments for high blood lead and therefore prevention is key. Afterward, the CDC's Lead Poisoning Prevention Program put a lot of money and effort into prevention measures that focused on cleaning out houses and educating parents, but this approach has also been found to be largely ineffective: we are not getting all of the sources of lead dust, especially for children 9 months to 24 months old.

We have to be very vigilant because lead has been used in so many different ways and there is a never ending series of events that can change the amounts of lead in the environment. There are always new sources or new routes of contamination. For example, consider the water pipes in Flint, MI. Formerly, alkaline substances such as calcium carbonate were put into the water supply which deposited a protective coating between the lead pipes and the water passing through. But over time the pipes narrowed and constricted the water supply. Recently, the sanitary engineers in Flint Michigan changed chlorination techniques, thus changing the pH of the water, and the protective coating leached out and the water is once more in contact with the lead

pipes. Consequently, blood lead levels of children have risen in Flint, MI from the water supply. Other cities have done the same and have run into similar problems.

Of course, Vietnam and other developing countries are seeing heightened blood lead levels, some through their countries' industrial activities, and some through salvage operations of developed countries' waste. Thus, it is a global problem.

Another source is the inhalation route. I have become interested in the work of Dr. Mark A.S. Laidlaw, a scientist from Australia. His data illustrates a very interesting concept about soil as a reservoir for air pollution. We have known for some time that blood lead levels are associated with seasonality. It is high in late summer and early fall and low in winter. If you believe that lead exposure takes place mainly through paint and house dust ingestion you would think that winter would show the highest blood lead levels because children spend a greater amount of time inside in winter. But he has shown that in late summer/early fall, as the ground dries and as the wind blows, dry soil is picked up and suspended in air creating a suspension-inhalation pathway for lead exposure. I am sure the effect is stronger than we realize. When we took lead out of gasoline, the first thing we saw was a very rapid reduction in blood lead indicating that the inhalation pathway is very strong, especially for the youngest children. In correlation with that theory, the major lesson we learned from Katrina is that putting down a new layer of soil makes a huge difference in blood lead levels. Anything you can do to cap the polluted soil reservoir will reduce exposure.

For these reasons, for many years I have advocated for the passage of a Clean Soil Act, such as Norway and several other countries have done. We have a Clean Air Act (1970) and a Clean Water Act (1972), but no Clean Soil Act. The content of soil has a direct correlation to the content of our air and water. We tend to compartmentalize soil, air, and water but it is the interaction that is important and where we need to focus our energy.

In addition, scientists at Wayne State University have shown that the DNA methylation profile of a child can be significantly influenced by the mother's prior lead exposure constituting a possible multigenerational epigenetic inheritance of environmental lead exposure. Unfortunately, society may suffer more widespread and deeper consequences from environmental lead pollution and high blood lead than previously believed. We must be proactive where lead is concerned.

— Nancy Busija, Senior Editor

## Faculty News

### Dr. David Busija

- **Invited Speaker:** (1) Plenary Speaker, 79th Meeting of the Hungarian Physiological Society and Hungarian Micro-circulatory and Vascular Biology Society, "Resilient mitochondrial mechanisms in endothelium following ischemia," Szeged, Hungary, May 2015; (2) 8th European Biology Organization (EVBO), "Mitochondrial regulation of vascular function: beyond ATP production," Pisa, Italy, June 2015; (3) University of Vermont, Department of Pharmacology, "Mitochondrial dynamics in the cerebral vasculature," Burlington, VT, Oct. 15, 2015.
- **Grant Submission:** NIH, October, 2015.
- **National Professional:** Distinguished Lecturer Awards Committee, ASPET.

### Dr. Stephen Braun

- **Grant Renewal:** Alliance for Cardiovascular Research, "Targeting CCR5 in Stem Cells from Rhesus Macaque Tissues," 7/01/15-6/30/17, \$104,267.
- **Poster Presentation:** American Society of Gene and Cellular Therapy, "CAR-transduced T cells Demonstrate Increased CTL Function," New Orleans, LA, May 2015.

### Dr. Bruce Bunnell

- **Invited Speaker:** (1) Surgical Solution Symposium, "Adipose-derived cells: Standardization and application," Washington, DC, 9/2015; (2) Tissue Engineering and Regenerative Medicine International Society (TERMIS),

IFATS PANEL, "Anti-inflammatory properties of adipose stem cells, Boston, MA, 9/2015; (3) Lifecell Inc., "Adipose stem cells," New Orleans, LA 8/2015; (4) Frontiers in Biomedicine, Louisiana Tech University, "Adipose stem cells: Biology and use as an intervention for Multiple Sclerosis," Ruston, LA. 5/2015; (5) Tongji University School of Medicine, "Adipose stem cells as a therapeutic intervention for Multiple Sclerosis," Shanghai, China, 4/2015.

- **Grant Awards:** (1) United Therapeutics Corp., (Bruce Bunnell, PI), 4/1/15-12/31/15, \$250,000; (2) DoD-PROP, Project Number: W81XWH-15-1-0444D "Manufacture Articular Cartilage from Human Adipose-Derived Stromal/ Stem Cells for Cartilage Repair," Zongbing You (PI), Bruce Bunnell (Co-PI), 09/30/15-09/29/18.
- **Outreach:** (1) President, International Federation of Adipose Therapeutics and Science (IFATS) Society; (2) Adhoc Member, Board of Scientific Counselors, National Institute of Dental and Craniofacial Research, NIH.

### Dr. Milton Hamblin

- **Grant Reviewer:** American Heart Association (1) Vascular Endothelial Biology 2 (Oct. 2015); (2) Vascular Endothelial Biology Clinical (Oct. 2015).
- **Journal Reviewer:** American Journal of Physiology-Heart (Aug. 2015).

### Dr. Philip Kadowitz

- **Mentorship:** Please see Publication section for information on publications by Dr. Kadowitz's recent trainees.

*Service to Tulane and SOM:* **Dr. Bunnell:** Research Advisory Committee, Executive Committee: Tulane National Primate Research Center, Chair: Promotions and Honors Committee; **Dr. Busija:** Chairman: Basic Science Chairs; **Dr. Mondal:** Nominating Committee; **Dr. Lindsey:** Faculty Advisory Committee, Biomedical Sciences (BMS) Admissions Committee, Nominating Committee; **Dr. Katakam:** Nominating Committee; **Dr. Hamblin:** University Senate; **Dr. Clarkson:** Curriculum Committee; **Dr. Kadowitz:** Promotions and Honors Committee; **Dr. Beckman:** Promotion and Honors Committee; **Dr. Mostany:** Tulane Brain Institute Advisory Committee.



## Faculty News continued

### Dr. Prasad Katakam

- **Invited Speaker:** Department of Pharmacology, "Good Cop/Bad Cop: The role of eNOS and enNOS in Brain Microvascular Endothelial Cells," August 14, 2015.
- **Submitted Grants:** (1) American Diabetes Association: Innovative Basic Science Application, April 15, 2015; (2) Sponsored American Heart Association Predoctoral Fellowship for Ram Sure (Dr. Busija, secondary sponsor); (3) NIH R01 to National Institute of Neurological Disorders and Stroke, June, 2015; (4) NIH R01 to National Institute of Neurological Disorders and Stroke, resubmitted Aug. 2015.
- **Poster Presentation:** Brain 2015: "Brain microvascular endothelial cells express constitutively active neuronal nitric oxide synthase distinct from the isoform expressed in neurons," Vancouver, Canada, June 27-30, 2015.

### Dr. Sarah Lindsey

- **Grant Awards:** (1) American Heart Association (AHA) Grant-in-Aid, (Sarah Lindsey, PI) "Environmental Estrogens in Female Cardiovascular Health," \$165,000. (2) Louisiana Board of Regents Supervised Undergraduate Research Experiences, "The effect of GPER Activation on Murine Aortic Smooth Muscle Cells," research mentor for Shreya Kasyap, \$4,500.
- **Invited Speaker:** (1) AHA Council on Hypertension, "G Protein-Coupled Estrogen Receptor Deletion Exacerbates Pulse Pressure in Female but not Male Hypertensive Mice," Sept. 16-19, 2015. (2) Department of Pharmacology Seminar Series, Tulane University, "Eliciting Estrogen's Protective Vascular Effects", Sept. 25, 2015.
- **Grant Submissions:** (1) NIH R01, (2) HHMI Faculty Scholars Competition, (3) Pfizer Compound Transfer Program, (4) Tulane SOM Bridge Funding.
- **Moderator:** Symposium, "Renin Angiotensin System I," AHA Council on Hypertension, Washington, D.C., Sept. 16-19, 2015.

### Dr. John McLachlan

- **Invited Speaker:** (1) Keynote Speaker, 8th Copenhagen Workshop on Endocrine Disruptors, "Environmental Signaling: From Environmental Estrogens to Endocrine Disrupting Chemicals and Beyond," Copenhagen, Denmark, April, 27-30, 2015; (2) Distinguished Lecturer, Honorary Biomedical Sciences and Health Information Lecture Series, as part of Twelfth International Symposium on Recent Advances in Environmental Health Research, Jackson State University, Jackson, MS, 9/15/15; (3) Tulane University SOM Hayward Genetics Center Grand Rounds, "Environmental estrogens, epigenetics and differentiation in disease," 9/25/15.

### Dr. Howard Mielke

- **Invited Speaker:** (1) EPA Region 8, "Getting the Lead In and Out and Beyond," Denver, CO, 8/2/15; (2) 12th

International Symposium on Recent Advances in Environmental Health Research: "Children's Health in Pre and Post Katrina New Orleans: does soil lead play a role in blood lead reductions?" Jackson, MS, 9/14/15; (3) ATSDR, EPA, CDC, HUD, USDA Lead in Urban Soil Workshop. USEPA Region 3 Headquarters, "Soil Lead Matters: Urban contamination and children's health," Philadelphia, PA, 9/15/2015; (4) Exposures in an Evolving Environment Conference, International Society of Exposure Science (ISES), Session: Protecting children from lead exposure at toxic hotspots worldwide, "Closing the soil lead knowledge gap: experience and cost effective interventions ('mapping and capping') from New Orleans, USA." Henderson, NV, 10/19/15.

- **Submitted Grant:** HUD Health Home Technical Studies Grant Program Pre-Application FR-5900-N-15.
- **Poster Presentation:** Exposures in an Evolving Environment Conference, "Review: Association Between A Forward Lag of Historical Total Gasoline Lead Emissions and Contemporary Autism Trends in California, USA," coauthored with Mark A.S. Laidlaw, Henderson, NV, 10/20/2015.

### Dr. Debasis Mondal

- **Grant Submissions:** NIH (NCI)
- **Poster Presentations:** (1) Grantees Meeting: Third exRNA Communication Meeting, "Targeting Tumor-derived exRNA Containing Exosomes by High Throughput Screening," Bethesda, MD. May 19 -21, 2015; (2) Louisiana Cancer Research Center (LCRC) Retreat, "The EMT regulator Sox9 is a biomarker of aggressive prostate cancer and the anticancer effects of entinostat<sup>TM</sup> may function via suppressing Sox9 expression," New Orleans, LA, 4/10/15; (3) LCRC Retreat, "African American patient derived adipose stem cells (ASCs) regulates growth of AR-naïve PC cells through activation of estrogen signaling axis," New Orleans, LA, April 10-11, 2015.

### Dr. Ricardo Mostany

- **Grant Awards:** (1) Pilot COBRE: Aging and Regenerative Medicine; Age-related differential modulatory effects of acetylcholine on cortical synaptic connectivity. (R. Mostany, PI); \$52,000 for one year; (2) Tulane's Institute of Integrated Engineering for Health and Medicine (TI2EHM) 2015 Pilot Project (R. Mostany, Co-PI); \$7,500 for one year.
- **Submitted Grants:** (1) Pilot COBRE on Aging and Regenerative Medicine, (2) School of Medicine Bridge Funds.
- **Outreach:** Volunteer at STEM (Science, Technology, Engineering, Math, growing future innovators, creators, and makers for the 21st century) Saturday activities organized by STEM NOLA. <http://www.stemnola.com/>
- **The Mostany laboratory published a laboratory web page in April. Please visit the web page to follow their most recent activities.** <http://mostanylab.tulane.edu/>



## New Faces in Pharmacology



Dr. Partha Chandra

**Dr. Partha K. Chandra** has joined the Department of Pharmacology as a Research Scientist II. He works with **Dr. Mondal** and is looking forward to future collaboration opportunities with other members of the department. He moved from the Department of Pathology and Lab Medicine at Tulane SOM where he worked for eight years.

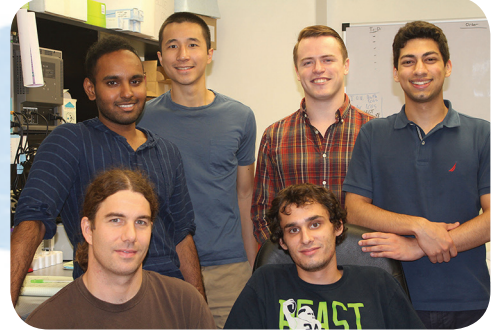
**Dr. Katakam's** lab has grown with the addition of **Tyler Baker, Vihab Abraham, Allen Chen, Bonamico Jacobs, Graham Unis, and Neelesh Jain**. Lab members are former and current Pharmacology Masters students.

**Dillion Hutson** and **Hallie Spooner**, both Juniors in the Cell & Molecular Biology Program at Tulane; **Shreya Kashyap**, a Senior in Neuroscience, and **Jennifer Duong**, a former Masters in Pharmacology student, have joined **Dr. Lindsey's** lab.

**Sanjay Wunnava**, a current Masters in Pharmacology student, has joined **Dr. Busija's** lab.

**Annie DeWitt, and Harnan Mejia Gomez**, both undergraduate Neuroscience students, and **Michael Langhardt**, a MS Neuroscience student, joined **Dr. Mostany's** lab in March, April, and May, respectively.

**Dr. Kadowitz** has a new crew of laboratory personnel: **Kevin Swan**, a 2015 Pharmacology Masters graduate, **Bryant Song** and **Travis Chen**, current Masters students, **Cody Koress**, B.S. Tulane 2014, and **David Mondschein**, a senior at Tulane in the Neuroscience Program.



Dr. Katakam's Lab: L to R: Tyler Baker (seated), Vihab Abraham, Allen Chen, Bonamico Jacobs, and Graham Unis (seated).



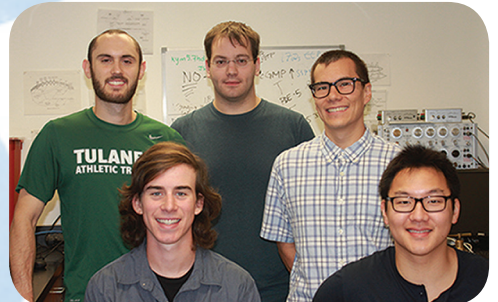
Dr. Lindsey's Lab: L to R: Jennifer Duong, Hallie Spooner (seated) Dillion Hutson, and Shreya Kashyap (seated)



Dr. Mostany's Lab: L to R: Hernan Mejia Gomez, Annie DeWitt, and Michael Langhardt



Sanjay Wunnava



Dr. Kadowitz Lab: L to R: Cody Koress, David Mondschein (seated), Kevin Swan, Travis Chen, and Bryant Song (seated)

## Masters Program Graduate Spotlight: Dr. Tony L. Wang



Dr. Tony L. Wang

**Being a doctor has been my dream since I was young.** However, after college graduation, I wasn't prepared for the competitive medical school application process. One day I received a pamphlet about the Masters program in Pharmacology at Tulane. The program offered the graduate level experience I was looking for to prepare me for the long journey ahead.

**As someone who has spent the majority of his life in sunny Southern California, I was initially drawn to Tulane's program because of the warm climate in New Orleans, as well as by the well-known hospitable reputation of the South.** I was not disappointed as a warm reception and a sense of welcome greeted me on the first day of the program. The faculty made a special effort to make our transition to New Orleans as smooth as possible by explaining colloquial terminology, pointing out the best local restaurants, and highlighting other famous attractions that make New Orleans unique. I realized that not only were the faculty friendly and approachable, they were also very knowledgeable in their fields. My experience in this environment helped me gain the skills and confidence necessary to apply to medical schools.

**During the first few years in medical school, I appreciated the advantages that came with**



## Masters Program Graduate Spotlight: Dr. Tony L. Wang, continued

**having a Masters in Pharmacology.** It gave me a strong foundation in biochemistry, physiology, and scientific analysis. Furthermore, it helped me develop the skills necessary for basic and clinical scientific research.

**My decision to specialize in anesthesiology was due, in part, to my early exposure to pharmacology.** It became an interest that I have fostered, especially in how drugs affect different physiological processes. In fact, it has garnered the interest of many interviewers during residency applications and became a talking point which allowed me to establish a rapport that enhanced the interview. I look forward to my future, grateful for the experiences I've had, especially those in the pharmacology program that gave me a head start.

## Trainee News

**Matthew Moore**, an undergraduate majoring in cell and molecular biology working with **Dr. Milton Hamblin**, received a 2015 Newcomb Tulane College Honors Summer Research Program Award for his research proposal. **Congratulations Matthew!**

**Annie DeWitt**, an undergraduate working with **Dr. Mostany** received a Tulane Neuroscience Summer Program Award. **Congratulations Annie!**

**Drew Davidson**, a Cell and Molecular Biology PhD student under the direction of **Dr. Ricardo Mostany**, successfully passed his Qualifying Exam on October 15th. **Congratulations Drew!**

**Rebecca Voglewede**, a Neuroscience PhD student working with **Dr. Ricardo Mostany** successfully passed her Qualifying Exam on September 30th, 2015. **Congratulations Rebecca!**

**Dr. Margaret Zimmerman, Dillon Hutson, Brennah Murphy, Shreya Kashyap, and Emma Trimmer** working with **Dr. Sarah Lindsey** presented a poster: "Long-term Estrogen Duration Promotes Renal Tubular Cast Formation in Aged Ovariectomized Long Evan Rats," at the AHA Council of Hypertension meeting in Washington DC, Sept. 16-19, 2015. **Dr. Jill M. Daniel** was also an author on this poster.

**Dr. Margaret Zimmerman**, working with **Dr. Sarah Lindsey**, submitted two Post-doctoral grants: **(1)** an AHA Post-doctoral Research Grant, July 16, 2015, and **(2)** a PhRMA Postdoctoral Fellowship, September 1, 2015.

**Annie DeWitt, Rebecca Voglewede, and Emma Trimmer** working with **Dr. Mostany** presented a poster, "Short Term Dendritic Spine Dynamics within the Primary Somatosensory Barrel Cortex Following Sensory Manipulation," Tulane Neuroscience Summer Program Poster Session, New Orleans, August 2015.

**Emma Trimmer, Bailin Alexander, and Heather Barnes** working with **Dr. Mostany** presented a poster, "Dendritic spine

dynamics in the somatosensory cortex across the estrous cycle in female mice," 45th Annual Society for Neuroscience Meeting, Chicago, IL. 2015.

**Rebecca Voglewede, Matt Allen, and Emma Trimmer** working with **Dr. Mostany**, presented a poster, "Dendritic spine dynamics within the mouse primary somatosensory cortical barrel field following sensory manipulation," Tulane Health Science Research Days, New Orleans, USA, 2015.

**Michael Langhardt**, working with **Dr. Mostany**, has a publication from work at his former institution: University of Nevada, Las Vegas. Please see the Publications Section on Page 6.

**Dr. Ibolya Rutkai**, working with **Dr. Busija**, has **(1)** given an oral presentation "Sex-differences in mitochondrial respiration is mediated by nitric oxide in rat cerebral arteries," at the 9th Mitochondrial Physiology School, in Greenville, NC, August 10-13, 2015; **(2)** presented a Seminar, "Sex-differences in the cerebral vasculature," Department of Pharmacology Seminar Series, Tulane University, New Orleans, LA, Sept. 18, 2015; **(3)** submitted an NIH K99/R00 Pathway to Independence Award application, October 12, 2015; **(4)** been appointed to the Young Scientist Committee of the American Society for Pharmacology and Experimental Therapeutics (ASPET); **(5)** published one first authored and one coauthored publication; please see the Publications Section on Page 6; **(6)** been selected to serve as a reviewer for the ASPET 2016 Summer Undergraduate Research Fellowships; and **(7)** been selected for an APS Abstract Travel Award to attend the Cardiovascular, Renal and Metabolic Diseases: Physiology and Gender Conference to present a poster: "The Important Role of Nitric Oxide Synthase in Controlling Mitochondrial Respiration of Large Cerebral Arteries in Female and Male Rats," Annapolis, MD, Nov. 17-20, 2015.

**Ram Sure**, working with **Dr. Katakam**, submitted an AHA Predoctoral Fellowship grant, July 23, 2015.

**Thank you to those who have donated to The Dr. Krishna C. Agrawal Education Fund to support our students**

This is an endowed pool of resources to support students in the Department of Pharmacology. To read the biography of Dr. Krishna please go to:

<http://tulane.edu/som/departments/pharmacology/agrawalfund.cfm>

**To support Pharmacology students** through The Dr. Krishna C. Agrawal Education Fund or to make a gift to the Department of Pharmacology, contact Mark McKeown, Senior Director of Development for Tulane University School of Medicine, 504-314-7380, or [mmckeown@tulane.edu](mailto:mmckeown@tulane.edu)  
Tulane University School of Medicine Office of Development #8745, 1430 Tulane Avenue, New Orleans, Louisiana 70112

## Publications

- Yamaleyeva LM, Pulgar VM, **Lindsey SH**, Yamane L, Varagic J, McGee C, daSilva M, Bonfa PL, Gurley S, Brosnihan KB. (2015) Uterine Artery Dysfunction in Pregnant ACE2 Knockout Mice is Associated with Placental Hypoxia and Reduced Umbilical Blood Flow Velocity. *Am J Physiol Endocrinol Metab* 309(1):E84-94.
- Edward J, Pankey E, Jupiter R, Lasker G, Yoo D, Reddy V**, Chong I, Jones M, Feintech S, **Lindsey SH, Kadowitz PJ**. (2015) Analysis of Erectile Responses to Bradykinin in the Anesthetized Rat. *Am J Physiol Endocrinol Metab* 309(1):E84-94.
- Jupiter RC, Yoo D, Pankey EA, Reddy VV**, Edward JA, Polhemus DJ, Peak TC, **Katakam P, Kadowitz PJ**. Analysis of erectile responses to H<sub>2</sub>S donors in the anesthetized rat. *Am J Physiol Heart Circ Physiol*. 2015 Sep;309(5):H835-43.
- Gokce A, Abd Elmageed ZY, Lasker GF, Bouljihad M, **Braun SE**, Kim H, **Kadowitz PJ**, Abdel-Mageed AB, Sikka SC, Hellstrom WJ. Intratunical Injection of Genetically Modified Adipose Tissue-Derived Stem Cells with Human Interferon  $\alpha$ -2b for Treatment of Erectile Dysfunction in a Rat Model of Tunica Albuginea Fibrosis. 2015 Jul;12(7):1533-44.
- Dutta S, Rutkai I, Katakam PV**, and **Busija DW**. The mechanistic target of rapamycin (mTOR) pathway and S6 Kinase mediate diazoxide preconditioning in primary rat cortical neurons. *Journal of neurochemistry* 2015. Sep;134(5):845-56
- Rutkai I, Dutta S, Katakam PV**, and **Busija DW**. Enhanced Mitochondrial Respiration in Female Compared with Male Rat Cerebral Arteries. *American Journal of Physiology Heart and circulatory physiology* 2015 Aug 14. Epub ahead of print.
- Strong, A.L., Gimble, J.M. and **Bunnell, B.A.** (2015) Analysis of the Pro- and Anti-Inflammatory Cytokines Secreted by Adult Stem Cells During Differentiation. *Stem Cells Inter.*, Article ID 412467.
- Tran, T., Yao, Hsu, S.W., Gimble, J.M., **Bunnell, B.** and Cheng, H. (2015) Arginine vasopressin inhibits adipogenesis in human adipose-derived stem cells. *Mol. Cell. Endo.*, 406:1-9. PMID: 25697345
- Strong, A.L., Bowles, A.C., MacCrimmon, C.P., Lee, S.J., Frazier, T.P., Katz, A.J., Gawronska-Kozak, B., **Bunnell, B.A.** and Gimble, J.M. (2015) Characterization of a Murine Pressure Ulcer Model to Assess Efficacy of Adipose-derived Stromal Cells. *Plast Reconstr Surg Glob Open*. 7;3:e334. PMID: 25878945
- Scarritt, M.E, Pashos, N.C. and **Bunnell, B.A.** (2015) A review of cellularization strategies for tissue engineering of whole lungs. *Frontiers in Bioengineering and Biotechnology* 3:43. PMID: 25870857
- Strong, A.L., Bowles, A.C., MacCrimmon, C.P., Frazier, T.P., Lee, S.J., Katz, A.J., Gawronska-Kozak, B., **Bunnell, B.A.** and Gimble, J.M. (2015) Adipose stromal cells repair pressure ulcers in both young and elderly mice: potential role of adipogenesis in skin repair. *Stem Cells Transl. Med.*, 4:632-642. PMID: 25900728
- Gimble, J.M., **Bunnell, B.A.** and Elliott, K. (2015) Challenges in regenerative medicine: Reimbursement policies for experimental cell therapies. *Chall. in Regen Med*, 1: 35-36.
- Liu, Y., Munoz, N., **Bunnell, B.A.**, Logan, T.M. and Ma, T. (2015) Density-dependent metabolic heterogeneity in human mesenchymal stem cells. *Stem Cells*, in press.
- Laurent LC, Abdel-Mageed AB, Adelson PD, et al. ... **Mondal, D.** Meeting report: discussions and preliminary findings on extracellular RNA measurement methods from laboratories in the NIH Extracellular RNA Communication Consortium. *J Extracell Vesicles*. 2015 Aug 28;4:26533.
- Hagan S, Khurana N, Chandra S, Abdel-Mageed AB, **Mondal D**, Hellstrom WJ, Sikka SC. Differential expression of novel biomarkers (TLR-2, TLR-4, COX-2, and Nrf-2) of inflammation and oxidative stress in semen of leukocytospermia patients. *Andrology*. 2015 Jul 30;3(5):848-855.
- Xiang S, Dauchy RT, Hauch A, Mao L, Yuan L, Wren MA, Belancio VP, **Mondal D**, Frasch T, Blask DE, Hill SM. Doxorubicin resistance in breast cancer is driven by light at night-induced disruption of the circadian melatonin signal. *J Pineal Res*. 2015 Aug;59(1):60-9.
- Datta A, Bhasin N, Kim H, Ranjan M, Rider B, Abd Elmageed ZY, **Mondal D**, Agrawal KC, Abdel-Mageed AB. Selective targeting of FAK-Pyk2 axis by alphanaphthoflavone abrogates doxorubicin resistance in breast cancer cells. *Cancer Lett*. 2015 Jun 28;362(1):25-35.
- Roy Upal, Barber Paul, Tse Dinh Yuk ching, Batrakova Elena V, **Mondal Debasis**, Nair Madhavan. Role of MRP Transporters in Regulating Antimicrobial Drug Inefficacy and Oxidative Stress-induced Pathogenesis during HIV-1 and TB Infections. *Frontiers in Microbiology*. 2015. 6:00948.
- Miquelajauregui A, Kribakaran S, **Mostany R**, Badaloni A, Consalez G, Portera-Cailliau C. Layer 4 pyramidal neurons exhibit robust dendritic spine plasticity in vivo after input deprivation. *J Neurosci*. 2015, 35(18):7287-7294. PMID: 25948276.
- Yoo, D.; Jupiter, R.C.; Pankey, E.A.; Reddy, V.G.; Edward, J.A.; Swan, K.W.; Peak, T.C.; Mostany, R.; Kadowitz, P.J.** Analysis of Cardiovascular Responses to the H<sub>2</sub>S donors Na<sub>2</sub>S and NaHS in the Rat. *American Journal of Physiology. Heart and Circulatory Physiology* 2015, 309(4):H605-H614.
- Murtishaw, AS, Heaney, CH, Bolton, MM, **Langhardt, MA**, and Kinney, JW. (2015) Effect of acute lipopolysaccharide-induced inflammation in intracerebroventricular-streptozotocin injected rats. *Neuropharmacology*, epub ahead of print: doi:10.1016/j.neuropharm.2015.08.044.
- Mielke, H.W.** Nature and Extent of Metal Contaminated Soils in Urban Environments. *Environmental Geochemistry and Health, Environmental Geochemistry and Health*. Accepted for publication.
- Mielke H**, Gonazales C, Powell E. New Orleans before and after Hurricane Katrina/Rita: The temporal-dynamic changes in children's lead exposure. *Bayou Chemist, American Chemical Society*, 8/15:4.

**Pharmacology News is a publication of the Department of Pharmacology, Tulane University**

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**Chair: Dr. David W. Busija**

Department Administrator: Debbie Sanders

Senior Editor/Newsletter Preparation: Nancy Busija

Newsletter Oversight: Dr. Barbara Beckman, Dr. Sarah Lindsey

**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.*