

# Pharmacology News

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TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

## Message from the Chair Dr. David Busija

We are nearing the end of a successful 2014-2015 academic year. **Dr. John McLachlan** received one of the highest awards possible from his academic peers. **Dr. Sarah Lindsey** became the first Barbara S. Beckman Professor. The students in our Masters in Pharmacology Program will be graduating in May and we have two, 4 + 1 students who passed their Masters thesis defenses: **Rebecca Budish** and **Angellica Gordon**. We are proud to announce that three of our Ph.D. students have successfully defended their dissertations: **Sombrita Dutta**, **Donna R. Edwards**, and **Narae Lee**. Additionally, **Drs. Edward Pankey** and **Ryan Jupiter** have matched and will be starting residencies in July. We offer hearty congratulations to all who have met their academic goals! We have had a wonderful seminar program with first rate speakers, including the recent Schüeler Lecture by **Dr. David Kleinfeld** from the University of California-San Diego. **Dr. Ricardo Mostany** has completed the assembly of our second multiphoton microscope which further enhances the *in vivo* imaging capacity of the department. **Dr. Debasis Mondal** and **Dr. Stephen Braun** have collaborated and received an R21 grant from NIH. Our faculty continues to provide excellent instruction through the medical and graduate schools and to excel in their research efforts. The department *trainees* and *post-doctoral fellows* have been especially active and productive. Please look at their accomplishments on page four and six.

## First Barbara S. Beckman Professor



Dr. Sarah Lindsey (L) and Dr. Barbara Beckman (R)

**Dr. Sarah Lindsey** is the first to receive the **Dr. Barbara S. Beckman Professorship in Pharmacology**. Dr. Lindsey researches the beneficial actions of estrogen in hypertension, diabetes, and aging. She compares the rapid actions of estrogen to its long-term genomic effect, investigates how estrogen interacts with other hormones such as angiotensins, and examines whether estrogens in the environment influence our endogenous hormone systems. Knowledge of estrogen receptor pharmacology will improve hormone therapy in postmenopausal women and alleviate perceived cardiovascular risk.

**Dr. Beckman** created the professorship in February of 2012 to encourage diversity, propel the careers of women scientists, and encourage women to take leadership roles in the basic sciences. The professorship is also supported by 40% matching funds from the Louisiana Board of Regents. Dr. Beckman has achieved success in research, teaching, and service and epitomizes the work-life balance for today's female scientists. She has published over 100 manuscripts on research funded by NIH and other grants, has served on theses and dissertation committees of over 50 trainees, has served on national committees for scientific organizations including ASPET, and is a consistently dedicated teacher at Tulane. She was interim chairman of the Department of Pharmacology from 2010-2011 and is currently Associate Dean of Admissions and Student Affairs.

**Professor John A. McLachlan** delivered the 45th prestigious **Homer N. Calver Lecture at the Environment Section of the American Public Health Association's 142nd annual meeting in New Orleans in November 2014**. The *Calver Lecture* was established in 1970 as the flagship event of the Environment Section and involves a presentation from a recognized national leader from the field of Environmental Health focusing on late-breaking, cutting-edge, and sometimes controversial themes in the environmental health arena. The title of **Dr. McLachlan's** lecture was "*Making sense of environmental signals - a priority for public health.*"

**Dr. McLachlan** is the Celia Scott Weatherhead and Albert J. Weatherhead III Distinguished Chair in Environmental Studies; Professor, Department of Pharmacology, School of Medicine and Adjunct Professor, Department of Ecology and Evolutionary Biology, School of Science and Engineering, Tulane University.

Previous award-ees include David Satcher, former US Surgeon General; Kenneth Olden, former director of the National Institute of Environmental Health Sciences (NIEHS/NIH); and Carol Browner, former head of the US Environmental Protection Agency. Last year's lecturer was Dr. Linda Birnbaum, current Director of NIEHS/NIH.



Dr. John McLachlan (L) and Leon Vinci (R), Awards Committee Chair, Environment Section, American Public Health Association.

## Faculty News

### Dr. David Busija

- **Symposia:** Organizer and Chair of Symposium: "New Roles of Mitochondria in Vascular Function," Talk Title: "Resilient Mitochondrial Mechanisms in Endothelium Following Ischemia," Experimental Biology 2015 (EB2015), 03/30/15, Boston, MA.
- **Grant Reviewer:** Brain Injury Neural Protection NIH Study Section, October 14-15, 2014, ad hoc member.
- **Editorial Boards:** American Journal of Physiology and Microcirculation

### Dr. Barbara Beckman

- **Service to the Community:** (1) Serving 2nd year of a 3 year term on the Sci Hi Charter School Board that Dr. Paul Guth cofounded. Working with Masters students to establish a sustainable mentoring program for students at the school; (2) Member, Scholarship Committee of the New Orleans Rotary Club which awards college scholarships to deserving local high school students each June.

### Dr. Stephen Braun

- **Grant Award:** NIH NIAID R21 (Debasis Mondal, PI; Stephen Braun, Co-I), "Cell-based Gene Therapy Targeting Residual Active HIV Reservoirs," \$421,834, 3/01/15-2/28/17.
- **Submitted Grants:** (1) NINDS R21 (Stephen Braun, PI); (2) NIH NIAID (Supplement) (Stephen Braun, PI); (3) NIH NCI R21 (Debasis Mondal, PI, Stephen Braun, Co-I).
- **Outreach:** Member, Host Committee, American Society of Gene and Cellular Therapy, 2015, New Orleans, LA

### Dr. Bruce Bunnell

- **Invited Speaker:** (1) International Federation of Adipose Therapeutics and Science (IFATS), 2014, Amsterdam, The Netherlands, "ASCs with Enhanced Anti-inflammatory Properties Demonstrate Improved Outcomes in the Murine EAE Model of Human Multiple Sclerosis," Nov. 13-16, 2014; (2) Page Morton Hunter Distinguished Seminar, Department of Bioengineering, Clemson University, "The Application of Adult Stem Cells for Regenerative Medicine and Tissue Engineering," Jan. 21-22, 2015; (3) Surgical Solutions Symposium, Las Vegas, NV, "Stem Cells from Adipose Tissue," March 19-21, 2015.
- **Moderator:** "Soft Tissue Basic", IFATS, 2014, Amsterdam, The Netherlands, November 13-16, 2015.
- **Grant Reviewer:** (1) Member, Therapeutic Approaches for Genetic Diseases Study Section, NIH, Bethesda, MD, March 3-4, 2015; (2) Member, Grant Proposal Review Committee, Regenerative Medicine, Maryland Department of Health, Baltimore, MD, March 15-17, 2015.

- **Submitted Grants:** (1) R01 grant, Lee Murfee (PI), Bunnell (Collaborator) NIH/NIA; (2) R01 grant, Lee Murfee (PI), Bunnell (Collaborator) NIH/NIBIB; (3) R21 grant, Kim O'Conner (PI), Bunnell (Collaborator) NIH/NIBIB; (4) DoD grant, DoD-Breast Cancer Research Program Breakthrough Award, Bunnell (PI).

### Dr. Craig Clarkson

- **Service to Tulane:** (1) Chair, Student Affairs Committee; (2) Biomedical Sciences Steering Committee: Participated in internal and external site reviews of Tulane SOM doctoral programs to assess the quality of the programs and recommend changes where needed; (3) SOM Curriculum Committee: Involved in developing a competency-based component of assessment for the first two (pre-clinical) years of the MD program.

### Dr. Milton Hamblin

- **Grant Reviewer:** American Heart Association (AHA) - Cardiac Biology Regulation - BSc 6, April 2015.
- **Grant Submissions:** (1) Louisiana Board of Regents (Nov. 2014); (2) AHA (Jan. 2015); (3) NIH (Feb, 2015).

### Dr. Philip Kadowitz

- **Mentorship:** Please see Trainee and Publication sections for information on Dr. Kadowitz's five current trainees.

### Dr. Prasad Katakam

- **Invited Speaker:** (1) Neuroscience Program, School of Science and Engineering, Tulane, "Role of Neuronal Isoform of Nitric Oxide Synthase in Brain Microvascular Endothelial Cells", 3/25/15; (2) Kaley Lecture and Complementary Presentations Symposium, Title: "Identification and Functional Characterization of Neuronal Nitric Oxide Synthase in Primary Brain Microvascular Endothelial Cells," EB2015, Boston, Massachusetts, 3/30/15.
- **Submitted Grant:** NIH R01, NINDS, 02/05/15.
- **Poster Presentations:** Arteriosclerosis, Thrombosis and Vascular Biology Peripheral Vascular Disease 2014 Scientific Sessions, Title: "Impact of Pharmacological Inhibition of Neuronal Nitric Oxide Synthase on Brain Microvascular Endothelial Cells." Toronto, Canada, May 2014.
- **Moderator:** Co-chair of Symposium: "New Roles of Mitochondria in Vascular Function", EB2015, Boston, MA, 3/30/15.
- **Reviewer:** (1) AHA Endothelial Biology 2, Fall 2014/Spring 2015; (2) National Commission for Science and Technology-Chile; ad-hoc grant reviewer, Jan. 2015; (3) Israel Science Foundation; ad-hoc member, March 2015; (4) Member, Abstract Review Subcommittee for AHA/International Stroke Conference 2014/2015. (5) Ad-hoc reviewer for the

*Service to Tulane and SOM:* **Dr. Bunnell:** Research Advisory Committee and Vice-Chair: Promotions and Honors Committee; **Dr. Busija:** Chairman of the Basic Science Chairs; **Dr. Mondal:** Nominating Committee; **Dr. Lindsey:** Faculty Advisory Committee and Biomedical Sciences Admissions 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

journals Diabetes, Circulation, British Journal of Pharmacology, Journal of Cerebral Blood Flow and Metabolism, AJP, Journal of Applied Physiology, PLOSOne, Obesity, and BMC Physiology; (6) Editorial Board Member of Scientific Reports (Nature Publishing Group).

### Dr. Sarah Lindsey

- **Awards:** (1) Selected as a “Rising Star in Research” by Tulane School of Medicine, Fall 2014; (2) Awarded the Dr. Barbara S. Beckman Professorship in Pharmacology, January 2015.
- **Submitted Grants:** (1) AHA Collaborative Sciences Award, 10/31/2014; (2) Pfizer Investigator Initiated Research Proposal, 11/25/14; (3) AHA Grant-in-Aid, 01/16/15; (4) NIH R01, 02/09/2015; (5) Tulane's Institute of Integrated Engineering for Health and Medicine Pilot Project Grant, 02/20/2015.
- **Grant Reviewer:** AHA Peer Reviewer, Vascular BioBP - BSc 3, Spring 2015.
- **Outreach:** Presented: “Circulation: the body’s delivery system,” Kindergarten, Morris Jeff Community School, 11/17/2014.

### Dr. John McLachlan

- **Invited Speaker:** (1) Children’s Environmental Health Network, Wingspread Conference Center, Racine, Wisconsin. Gave opening talk concerning the next twenty years of the environment and children’s health, resulting in a call to action statement (<http://www.prweb.com/releases/CEHN/VisionStatement/prweb12282999.htm>), Oct. 21-23, 2014; (2) International Meeting, Breast Cancer Amazon Project, Title: “Environmental Estrogens, Epigenetics, and Breast Cancer Risk”, Palermo, Sicily, 11/21/14.
- **Outreach:** (1) Member: Advisory committee for doctoral student, Dept. of Biology, University of Louisiana, Lafayette, LA, 10/17/14; (2) Member: External Advisory Committee review meeting for Jackson State University RCMI/NIH Center on Environmental Health, Jackson, MS, 12/08/14; (3) Judge: Student Poster Competition, Nicholls State University Research Week, Thibodaux LA, 03/03/15. As a reward for participation, students of the Chef John Folse Culinary Institute of Nicholls State prepared gluten-free gumbo!

### Dr. Howard Mielke

- **Invited Speaker:** Invited Keynote Address: “Nature and Extent of Metal Contaminated Soils in Urban Environments” to the conference “Urban Soils and Metal Contamination: Issues—Remedies”, University of Texas at Arlington, TX, 3/30/15-4/01/15.

### Dr. Debasis Mondal

- **Grant Award:** NIH NIAID R21 (AI116348-01A1) (Debasis Mondal, PI; Stephen Braun, Co-I). “Cell-based Gene-therapy Targeting Residual Active HIV Reservoirs,” \$421,834, 03/10/15–02/28/17.

- **Poster Presentations:** “Targeting Tumor-Derived exRNA-Containing Exosomes by High Throughput Screening,” NIH Extracellular RNA Communication Consortium 3rd Investigators’ Meeting, Washington DC, Nov. 6-7, 2014.
- **Grant Submissions:** (1) NIH/NIAID, Exploratory & Developmental Grant (R21), submitted on 09/05/2015; (2) DoD/PCRP, Idea Development Award, submitted on 09/23/2014; (3) NIH/NIA, Exploratory & Developmental Grant (R21), submitted on 02/13/2015; (4) NIH/NCI, Exploratory & Developmental Grant (R21), submitted on 02/26/2015
- **Grant Reviewer:** (1) DoD, Prostate Cancer Research Program: Training-Clinical and Experimental Therapeutics Study Section, November 4-5, 2014; (2) Ochsner Translational Medicine Research Initiative Grants, Dec. 13-14, 2014.
- **Manuscript Reviewer:** (1) Virology Journal, (2) International Journal of Biological Sciences

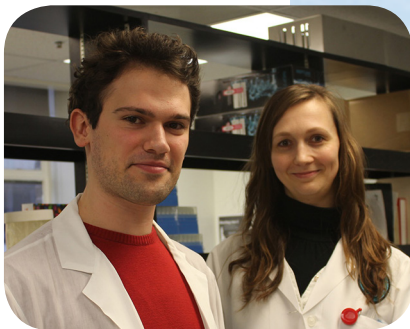
### Dr. Ricardo Mostany

- **Invited Speaker:** 4th Neuroelectronics and Nanotechnology: Towards a Multidisciplinary Approach for the Science and Engineering of Neuronal Networks Training Workshop - Dendrites 2014, Title: “Steady-state dynamics and experience-dependent plasticity of dendritic spines of layer 4/5a pyramidal neurons in somatosensory cortex.” Heraklion, Greece. 2014.
- **Grant Submissions:** (1) LA Board of Regents, Research Competitiveness Subprogram; (2) Tulane SOM–2015 Research Pilot Program; (3) Tulane’s Institute of Integrated Engineering for Health and Medicine, TI2EHM 2015 Pilot Project.
- **Grant Reviewer:** California Blueprint for Research to Advance Innovations in Neuroscience (Cal–BRAIN) Seed Grant Program 2014-2015.
- **Outreach:** Organized a visit to the Tulane SOM for high school students attending an after school college preparedness program (National Council of La Raza Escalera STEM program) to promote an appreciation for higher education careers in this under served community. This visit was organized in partnership with Puentes New Orleans, a non-profit organization serving the Latino population in Greater New Orleans and with the valuable help of **Dr. Katakam**. This program promotes economic mobility for Latino youth by increasing educational attainment, career planning, and access to information about advanced careers, 10/18/14.
- **Service to Tulane:** Member of the Tulane Brain Institute Advisory Committee. This committee is in the process of elevating the current Tulane Neuroscience Program to an interdisciplinary, University-wide Tulane Brain Institute to provide an infrastructure to facilitate the coordination and expansion of the already very successful interdisciplinary training programs and research initiatives in Neuroscience at Tulane.

## Trainee News

- **Donna Edwards**, working with **Dr. Debasis Mondal**, successfully defended her Ph.D. dissertation: "PRL-3: A novel early prostate cancer biomarker and prognostic indicator of metastasis." **Congratulations Dr. Edwards!**
- **Naira Lee**, working with **Dr. Steven Braun**, successfully defended her Ph.D. Dissertation: "Drug Delivery and Homing Function of Mesenchymal Stem Cells in HIV Therapy" on December 4, 2014. **Congratulations Dr. Lee!**
- **Sombrita Dutta**, working with **Dr. Busija**, presented a poster: "Diazoxide Preconditioning Is Mediated by Mechanistic Target of Rapamycin and S6 Kinase" at Experimental Biology (EB2015), 3/28/15-01/01/15, Boston, MA. **Sombrita** successfully defended her Ph.D. Dissertation, "Mechanisms of diazoxide induced preconditioning in primary cortical neurons" on April 13, 2015. **Congratulations Dr. Dutta!**
- **Rebecca Budish**, working with **Dr. Lindsey**, passed her Master's thesis defence on April 7, 2015. **Congratulations!**
- **Angellica Gordon**, working with **Dr. Katakam**, passed her Master's thesis defence on April 9, 2015. **Congratulations!**
- **Dr. Edward Pankey** and **Dr. Ryan Jupiter**, working with **Dr. Kadowitz**, matched for medical residencies. The department extends hearty congratulations! **Vish Reddy**, working with **Dr. Kadowitz** has been accepted to Texas A & M for Medical School. Congrats! All of Dr. Kadowitz's trainees are authors on a publication based on their work of the last 6-12 months in Dr. Kadowitz's laboratory. Please see page 6.
- **Heather Barnes**, working with **Dr. Mostany** has been accepted at both Louisiana University Health Sciences Center, New Orleans, and Shreveport Medical School. **Congratulations!**
- **Emma Trimmer**, and **Heather Barnes**, working with **Dr. Mostany**, presented a poster: "Dendritic spine dynamics in the barrel cortex across the estrous cycle in female mice," 18th Meeting of the Southeast Ultrafast Conference - 2015, Jan. 15-16, 2015, Tallahassee, FL.
- **Emma Trimmer** and **Brennah Murphy**, working with **Dr. Lindsey**, presented posters at Tulane Health Science Research Days (HSRD), 3/25-3/26/15. **Emma's** poster was titled, "Bisphenol A works via GPER to induce detrimental cardiovascular effects" and **Brennah's** poster was, "Activation of the G protein-coupled estrogen receptor ameliorates salt-induced vascular remodeling".
- **Dr. Ibolya Rutkai**, working with **Dr. Busija**, has been awarded a Postdoctoral Fellowship from the American Heart Association. Grant Title: "Gender differences in mitochondria-mediated cerebrovascular responses following ischemia reperfusion injury." \$98,432, 1/1/2015-12/31/2016. **Dr. Rutkai** gave a seminar: "Mitochondria in the cerebral vasculature" for the Physiology Seminar Series, Tulane, 01/26/15. She also received a Young Scientist Travel Award from the American Society for Pharmacology and Experimental Therapeutics (ASPET), and from the Office of Graduate Postdoctoral Studies, Tulane, she received a Postdoctoral Fellow Travel Award to give an oral presentation and a poster: "Sex-differences in Mitochondrial Respiration in Rat Cerebral Arteries," at EB2015, 3/28/15-01/01/2015, Boston, MA.
- **Dr. Margaret Zimmerman**, PhD, working with **Dr. Lindsey**, received an ASPET Young Scientist Travel Award to attend EB2015 to present a poster: "Midlife Ovariectomy Increases Blood Pressure in Long Evans Rats and is Attenuated by Transient or Continuous Estradiol Treatment", 3/28/25-01/01/15, Boston, MA. She also received the 2015 Tulane BIRCIWH Award for Research in Women's Health and Sex Differences in Cardiovascular and Related Diseases for her poster at Tulane HSRD, 3/25 - 3/26/15. **Dr. Zimmerman** recently published two manuscripts. Please see page six.
- **Dr. Margaret Zimmerman** and **Shreya Kashyap** participated in the APS Physiology Understanding (PhUN) week where they presented a workshop to middle school students about the basics of kidney function. Through a hands-on demonstration, students learned how kidney disease affects overall health.
- **Shreya Kashyap**, has been awarded a Louisiana Board of Regents Supervised Undergraduate Research Experiences Award to continue working under **Dr. Lindsey's** direction for the spring and fall 2015 semesters. **Shreya** received an APS undergraduate Research Excellence Fellowship to attend EB2015 to give an oral presentation: "The Heart of the Matter: Menopause, Sex Steroids, and Cardiovascular Disease" and a poster, "G Protein-Coupled Estrogen Receptor Activation Attenuates Rat Aortic Smooth Muscle Cell Proliferation" for which she was awarded the Bruce Excellence in Undergraduate Research Award. At Tulane HSRD, 3/25-3/26/15, **Shreya** received the Dean of the School of Science and Engineering Award for Excellence in Research and Presentation by an Undergraduate Student.
- **Ram Sure**, a graduate student working with **Dr. Prasad Katakam**, presented a poster: "Identification and Functional Characterization of Neuronal Nitric Oxide Synthase in Primary Brain Microvascular Endothelial Cells" at EB2015, 3/30/15, Boston, MA. **Ram** has also submitted an American Heart Association Predoctoral Fellowship grant (2-year): "Role of Neuronal Nitric Oxide Synthase in Brain Microvascular Endothelial Cells" on 1/15/15, co-sponsored by **Dr. Katakam** and **Dr. Busija**.
- **Rebecca Voglewede**, a Ph.D. student working with **Dr. Mostany** has received two awards: First prize for best presentation of the conference for her poster: "Dendritic spine turnover within the mouse primary somatosensory barrel cortex following sensory manipulation", 18th Meeting of the Southeast Ultrafast Conference - 2015, Tallahassee, FL, USA, 01/2015; and Second prize for the poster: "Dendritic spine turnover within the mouse primary somatosensory barrel cortex following sensory manipulation", 12th Annual Advanced Imaging Methods Workshop, Feb. 2015, UC Berkeley, Berkeley, CA. **Rebecca** also received the Award for Research in Aging sponsored by the Tulane Center for Aging at Tulane HSRD, 3/25-3/26/15.
- **Dr. Seong Chul Kim**, working with **Dr. Hamblin**, gave an oral presentation: "A Sex-Specific Role of the Estrogen Receptor Alpha (ER- $\alpha$ ) Agonist, PPT in the Regulation of Vascular Tone" at the Tulane Diabetes Research Workshop, February 2015. **Dr. Kim** also presented a poster: "Estrogen Receptor-Alpha Activation of AMPK in Vascular Smooth Muscle Cells and Vascular Tone" at EB2015, 3/28/15-01/01/15.

## New Faces in Pharmacology



*Dr. Ivan Merdzo (L)  
and Dr. Tunde Tokes (R)*

**Tunde Tokes**, Ph.D., and **Ivan Merdzo**, M.D., have joined **Dr. Busija's** lab. **Dr. Tokes** received her Ph.D. from the University of Szeged in Szeged, Hungary. She has six years of previous teaching experience at the University of Szeged where she maintains her position as an assistant lecturer in the Institute of Surgical Research. Her research experiences have included examining pathological processes and therapeutic possibilities in different rat models. She has eleven publications. **Dr. Merdzo** is from Croatia and moved from Mostar, Bosnia/Herzegovina, where he graduated with his M.D. from the University of Mostar School of Medicine. Before traveling to New Orleans to join **Dr. Busija's** lab, he worked in the Internal Medicine Department with Centre for Hemodialysis at Mostar University Hospital, Bosnia/Herzegovina.



*Glenda Leon*

**Glenda Leon** has joined the departmental office staff. Glenda moved to New Orleans in September, 2014, from Okinawa, Japan, where she lived for three years and worked as an Administrative Assistant for the Marine Corps Community Services. Before 2011, she lived in San Diego, CA, and worked at the University of California, San Diego, in different departments including the Department of Medicine (Biomedical Informatics Division), the Telemedicine Learning Center, and California Institute for Telecommunications and Information Technology. Glenda's expertise will be valuable to the department!

## Masters Program Graduate Spotlight: Dr. Vilija Vaitaitis



*Dr. Vilija Vaitaitis*

*The Tulane University Masters in Pharmacology* program has served as the foundation for my acceptance into medical school and success thus far as a medical student. Upon entering the Pharmacology program I had average grades from my undergraduate studies and a mediocre MCAT score. I knew I needed to strengthen my application and I felt like the pharmacology program not only sounded interesting, but would be a useful knowledge base for any future medical student.

*This program is designed for students to succeed.* The small class size, the dedicated faculty and staff and the prestigious researchers within the department provide every student with the tools necessary to enhance themselves as an applicant for any scientific field. Many of my classmates have successfully matriculated into medical school, research positions, and pharmacy school. During my year as a Masters student I had the opportunity to participate in basic science research. The techniques and skills I learned translated into a research based thesis and job opportunities as a research scientist prior to entering medical school and during my first summer of medical school. The Pharmacology program provided me with a strong knowledge base not only in pharmacology but in biochemistry and physiology as well. I refined my study techniques and at the end of the year, I increased my MCAT score by 6 points.

*As a medical school applicant, my Masters experience was a popular topic in interviews.* Many of my interviewers were interested to hear more about my research projects and they were impressed by the experience I had gained and progress I had made over the course of one year. As a medical student I felt better prepared for the rigorous coursework because I had a strong knowledge base in many of the subjects after being taught by such great faculty who were truly invested in my success. On my USMLE STEP 1 exam Pharmacology was my highest scoring section and I fully credit it to my experience in the Tulane Pharmacology Masters Program.

*Please contribute 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

Strong, A.L., Ohlstein, J., Shi, Z., Jiang, Q., Zhang, Q., Zheng, S., Boue, S.M., Elliott, S., Gimble, J.M., Burow, M.E., Wang, G. and **Bunnell, B.A.** (2014) Novel daidzein analogs enhance osteogenic activity of bone marrow mesenchymal stem cells and adipose stem cells through estrogen dependent and independent mechanisms. *Stem Cell Res. and Ther.*, 5:105.

Strong, A.L., Burow, M.E., Gimble, J.M. and **Bunnell, B.A.** (2015) Concise Review: The Obesity Cancer Paradigm: Exploration of the interactions and cross-talk between adipose stem cells and solid tumors. *Stem Cells*, 33:318-326.

Jackson, K., Dayton, R.D., Fisher-Perkins, J.M., Didier, P.J., Baker, K., Weimer, M., Gutierrez, A., Cain, C.D., Mathis, J.M., Gitcho, M.A., **Bunnell, B.A.** and Klein, R.L. (2014) Progress towards a relevant primate model of amyotrophic lateral sclerosis. *J. Med. Primatol.*, in press.

Grayson, W.L., **Bunnell, B.A.**, Martin, E., Frazier, T., Hung, B.P., Gimble, J.M. (2014) Stromal/Stem Cells in Clinical Bone Regeneration. *Nat. Rev. Endo.*, 11:140-150.

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**David W. Busija, Ibolya Rutkai, and Prasad V. Katakam.** Chapter: Mitochondrial depolarization in endothelial and other vascular cells and their role in the regulation of cerebral vascular tone. In: *Ion Channels in Vascular Disease*. Eds. Irena Levitan and Alex Dopico Wiley, Hoboken, NJ. In press.

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**Mostany, R.;** Miquelajauregui, A.; Shtrahman, M.; Portera-Cailliau, C. Two-photon excitation microscopy and its applications in neuroscience, in *Methods in Molecular Biology: Advanced Fluorescent Microscopy: Methods and Protocols*. Verveer, P.J. (Ed.), Springer Publishing, New York, 2015, 1251:25-42.

Gonçalves, J.T.; **Mostany, R.** Intravital two-photon excitation microscopy in neuroscience: General concepts and applications, In: *Advances in Intravital Microscopy: From Basic to Clinical Research*. Weigert, R (Ed.), Springer Publishing, New York, 2014.

Bratton MR, Martin EC, Elliott S, Rhodes LV, Collins-Burow BM, **McLachlan JA,** Wiese TE, Boue SM, Burow ME. Glyceollin, a novel regulator of mTOR/p70S6 in estrogen receptor positive breast cancer. *J Steroid Biochem Mol Biol.* 2015 Mar 12;150:17-23.

Ohlstein JF, Strong AL, **McLachlan JA,** Gimble JM, Burow ME, **Bunnell BA.** Bisphenol A enhances adipogenic differentiation of human adipose stromal/stem cells. *J Mol Endocrinol.* 2014 Dec;53(3):345-53.

**Daniel Yoo, Ryan C. Jupiter, Edward A. Pankey, Vishwaradh G. Reddy, Justin A. Edward, Ricardo Mostany, Philip J. Kadowitz.** Analysis of cardiovascular responses to the H<sub>2</sub>S donors Na<sub>2</sub>S and NAHS in the rat. *AJP-Heart and Circulatory Physiology*, Submitted, in second revision.

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Sullivan JC, Rodriguez-Miguel P, **Zimmerman MA,** Harris RA. Differences in Angiotensin (1-7) between Men and Women. *Am J Physiol Heart Circ Physiol.* 2015 Feb 6. epub ahead of print.

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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.*