

# Pharmacology News

Volume 7, Issue 2  
Spring 2018

TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

## Message from the Chair: Dr. David Busija

The department recently completed a report for the Provost's Office, documenting the success of our one-year *Master of Science in Pharmacology Degree Program* initiated in 1998. The mission of the Master's Program is to train students in the principles underlying the discipline of medical pharmacology. This program is designed for students who are seeking admission to a medical or other professional school.

The program also emphasizes community service. Students are expected to move beyond the scope of academics and work in a community to improve the health of a population. *During the 2016-17 academic year, students in our program performed over two thousand hours of public service in the New Orleans area* (with an average of 68 community service hours per student for the academic year). The self-contained structure of the program promotes bonding among the students and facilitates interactions with the faculty.

Over the last 17 years, *at least 80% of students graduating from our program have been admitted to medical schools* around the nation. For the current class of 2017-18, five students have already been accepted into medical school, and we expect many more will be accepted as they begin applying for admission in the summer and fall of 2018.

In addition, this year six previous Master's students, now in their fourth year of medical school at Tulane University, School of Medicine, have been accepted into excellent residency programs: Psychiatry, *University of Virginia*, Charlottesville, VA; Surgery-Preliminary, *Baylor College of Medicine*, Houston, TX; General Surgery, *Montefiore Medical Center*, Einstein, NY; Pathology, *Wake Forest Baptist Medical Center*, Winston-Salem, NC; Orthopaedic Surgery, *Drexel University COM/Hahnemann University Hospital*, PA; and General Surgery, *Tulane University School of Medicine*, LA.

I would like to thank **Dr. Craig Clarkson**, Director of Graduate Studies, **Ms. Sewann Strong**, Master's Program Coordinator, and the *faculty and staff* of the Department of Pharmacology for making our *Master of Science in Pharmacology Degree Program* a success. We look forward to the graduation of our current students in May.

## Forty-Sixth Annual Schüeler Distinguished Lectureship - Dr. Pinchas Cohen

The faculty and staff of the Department of Pharmacology were honored to host **Dr. Pinchas (Hassy) Cohen** (shown third from the right with members of the Pharmacology faculty) as the 46th Schüeler Lecturer on March 23, 2018. The Schüeler Lectureship was established in 1971 by Dr. James Fisher, former Chair of the Department of Pharmacology. Fourteen of the previous Schüeler recipients are Nobel Laureates and most are members of the National Academy of Sciences.

Dr. Cohen is Dean and founder of the USC Leonard Davis School of Gerontology, one of the premier research institutions in the nation. He manages a program of translational research and is also

cofounder and Director of CohBar, a biotechnology company developing treatments for diseases of aging (which is traded on the NASDAQ). He has authored over 300 papers with an H-index of 82. Dr. Cohen's lecture: "*Mitochondrial-Derived Peptides: Physiology and Therapeutic Potential*," discussed the newly discovered and characterized mitochondrial peptides (MDPs), including humanin and MOTS-c, which are novel cyto-protective factors and metabolic regulators.

His lecture focused on the diverse roles played by MDPs in health and disease and how MDP expression varies among different races and ethnicities to put them at increased risk for diseases such as type II diabetes.



## Faculty News

### Dr. David Busija

- **National Professional Service:** Assumed the duties of Chair of the Division of Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics at Experimental Biology 2018, April 21-25, 2018, San Diego, CA (EB2018); period of service: 2018-2021.
- **Submitted Grants:** (1) PI: NIH R01 12/8/17, (2) PI: NIH COBRE, 1/24/18, and (3) PI: NIH R01 2/5/18.
- **Grant Reviewer:** (1) NIH Vascular and Hematology SEP, 12/05/17; (2) NIH Vascular and Hematology SEP, 04/18/18; (3) ASPET SURF Grant Review Panel, 04/5/18; and (5) LA CaTS Roadmap Scholars Review, 04/25/18.
- **Journal Reviewer:** *American Journal of Physiology* (AJP).

### Dr. Stephen Braun

- **Grant Award:** Co-PI: Alliance for Cardiovascular Research, "Targeting CCR5 in Stem Cells from Rhesus Macaque Tissues," \$200,000, 7/01/17-6/30/19.
- **Submitted Grants:** (1) R01 to NIAID; (2) L01 to LA CaTS; (3) Pilot Grant to LA CaTS; (4) L01 to support Lysosomal Disease Network U54 consortium cooperative agreement grant under Rare Diseases Clinical Research mechanism.
- **Grant Reviewer:** 2017 NIAID Study Section, Special Emphasis Panel PAR-15-164: HIV Vaccine Research and Design (HIVRAD) Program (P01) 2018/01 ZAI1 AL-A (J2) 1.
- **Journal Reviewer:** *PLoS Pathogens* and *Molecular Therapy Journal - Nucleic Acids*

### Dr. Bruce Bunnell

- **Invited Speaker:** Department of Microbiology & Immunology, Tulane SOM, "Are adipose stem cells a biological double edge sword?," New Orleans, LA, 4/4/18.

### Milton Hamblin

- **Journal Reviewer:** *American Journal of Physiology-Heart and Circulatory Physiology* and *Current Drug Targets*.

### Dr. Suttira Intapad

- **Award:** Renal Section Research Recognition Award

from American Physiology Society, EB2018.

- **Submitted Grants:** (1) LA CaTS Round 7 Pilot Grant, and (2) Innovative grant, American Heart Association (AHA).
- **Poster Presentations:** At EB2018: (1) "Sphingosine-1-Phosphate Type 1 Receptor and eNOS Signaling Pathway Play a Role in High Blood Pressure of Intra-uterine Growth Restricted Mouse," and (2) "Role of Sphingosine-1-Phosphate on Expression of MAPK and AKT Signaling Pathways in Hypoxic Human Extravillous Trophoblasts."
- **Grant Reviewer:** American Heart Association-Vascular Biology & Blood Pressure BSc Fellowship.
- **Journal Reviewer:** *American Journal of Physiology-Regulatory, Integrative, and Comparative Physiology*; and *Journal of Cellular Physiology*.
- **Professional Service:** Judge: (1) ASPET Cardiovascular Pharmacology Trainee Competition, EB2018; (2) Tulane Health Sciences Research Days 2018 (THSRD). Interviewer: Neurology Ph.D. program.

### Dr. Prasad Katakam

- **Invited Speaker:** Department of Medical Physiology, Texas A&M College of Medicine, "Impact of nitric oxide synthase inhibition on brain microvascular endothelial cells," 12/13/2017, Temple, TX.
- **Reviewer:** Grants: (1) NIH Special Emphasis Panel: Neurodegeneration, Neurodevelopment and Neuroimmunology, ZRG1 MDCN-M "The Blood-Brain Barrier, Neurovascular System and CNS Therapeutics," 3/7/18; (2) AHA: Fellowship Vascular Endothelial Biology Basic, 1/2018; (3) AHA, Career Development Award Organ Basic Sciences, 3/2018; (4) Abstract Reviewer, AHA/American Stroke Association and International Stroke Association Annual Scientific Meeting, 2018. Journals: *Circulation Research* and *Annals of New York Academy of Sciences*.
- **Professional Service:** Judge: Health Sciences Research Day, 2/20/18; Interviewer: Medical Student Admissions; Ph.D. Student Admissions, BMS Program; Physician Scientist Program,

### Dr. Sarah Lindsey

- **Grant Award:** (1) PI: HL 133619-01A1S1, Diversity Supplement for Dr. Benard Ogola, 9/17-2/11.
- **Invited Speaker:** (1) LSUHSC Cardiovascular Cen-

## Faculty News continued

ter of Excellence, November 29, 2017. "Elucidating Estrogen Receptor Mechanisms in the Vascular Wall," New Orleans, LA, November 29, 2017.

- **Journal Reviewer:** *Hypertension* and *British Journal of Pharmacology*.

### Dr. Howard Mielke

- **Invited Speaker:** (1) Society of Toxicology EPA sponsored workshop, "The Astonishingly Holistic Role of Soil in Lead Exposure of Children," San Antonio, TX, 3/13/18; (2) American Chemistry Society, "Analytical Chemistry in the Developing World: Lessons from Katrina," 3/19/18; (3) Unite for Sight, Global Health and Innovation Conference, Yale University, "Innovative Intervention of Childhood Lead Dust Exposure: Lessons from New Orleans," New Haven, CT, 4/14/18.
- **Poster Presentation:** (1) Dynamics of Community Lead Dust and Children's Blood Lead 10 Years after Hurricane Katrina in Metropolitan New Orleans," Society of Toxicology meeting, San Antonio, TX, 3/11/18-3/15/18; and (2) "The Geographic Disparity and Role of Soil in Lead Exposure and Children's Health: Lessons from New Orleans," Association of American Geographers, New Orleans, 4/11/18.
- **Reviewer:** *International Journal of Environmental Research Public Health* and *Environmental Research*.
- **Outreach:** (1) Working with *Tulane Wave News* on articles about lead in hair dye and soil lead as a potent hand-to-mouth and aerosol route of lead exposure for children, and (2) advised Stephania Taladrid on an article for *The New Yorker Magazine*.

### Dr. Debasis Mondal

- **Submitted Grant:** Co-PI, DOD (W81XWH-17-PCR-IDA) Prostate Cancer Research Program Idea Development Award, PI: Dr. Khismatullin, Submitted on 10/26/2017.

- **Award:** Vice-President of American Association of Indian Scientists in Cancer Research(AAISCR)
- **Grant Reviewer:** (1) Study Section: DOD; (2) Prostate Cancer Research Program.
- **Journal Reviewer:** *International Journal of Oncology*
- **Guest Editor:** Antioxidants Journal Special Issue, "Oxidative Stress and Cancer: The Nrf2 Enigma."
- **Professional Service:** Thesis Committees: (1) Adedoyin Johnson (Urology, BMS), (2) Amy Freehan (Neuroscience), (3) Hakm Murad (Biomedical Engineering), (4) Fayez M. Saleh (Primate Center, BMS).

### Dr. Ricardo Mostany

- **Submitted Grants:** (1) MPI-R01 National Institute of Mental Health (Schrader and Mostany, PIs); (2) Co-Investigator R01 National Cancer Institute (Izadpanah and Chandrasekar PIs)
- **Reviewer:** *Brain Research* and *Journal of Neurochemistry*
- **Outreach:** (1) Escalera STEM Youth Summit New Orleans 2017. Hands-on volunteer; (2) Guest speaker, Life Maps at the Escalera STEM Youth Summit. December 2017; (3) Organized a visit, with help of Drs. Katakam (Pharmacology) and Prieto (Physiology), to Tulane SOM for high school students from the UnidosUS Escalera STEM program, 03/24/18.

### Dr. Ibolya Rutkai

- **Invited Talk:** At EB2018: "In vivo visualization of mitochondria in the cerebral endothelium of mice," 4/21-25/18, San Diego, CA.
- **Poster Presentations:** At EB2018: (1) "Estrogen and mitochondrial function in cerebral arteries and endothelium in rats and mice"; (2) "In vivo visualization of mitochondria in the cerebral endothelium of mice"; and (3) at Translational Science 2018: "Protective effects of estrogen against hypoxia," 3/19-21/2018. Washington, DC.

**SOM Committees:** **Dr. Bunnell:** Chair: Faculty Grievance, Chair: Personnel and Honors, Research Advisory, Executive Committee: Tulane National Primate Research Center; **Dr. Busija:** Head: Basic Science Chairs, LCME subcommittees: (1) Mission, Planning, Organization, and (2) Leadership and Administration; **Dr. Mondal:** Nominating; **Dr. Lindsey:** BMS Admissions, Sexual Violence Prevention and Education Coalition, Sexual Harassment by Faculty Subcommittee, Tulane Brain Institute, Tulane Diabetes Research Program, Tulane BIRCH, Tulane Hypertension & Renal Center of Excellence; **Dr. Katakam:** Faculty Advisory Committee, BMS Steering; **Dr. Hamblin:** Nominating; **Dr. Clarkson:** Curriculum, BMF Steering; and **Dr. Mostany:** Tulane Brain Institute Executive; Chair: Tulane Brain Institute Seminar Series; Nominating (Basic Sciences Rep); President, Greater NOLA Society for Neuroscience Chapter.

**Laboratory News: Pharmacology (Pharm), Brain Institute (BI), Neuroscience Undergraduate (NU), Stem Cell and Regenerative Medicine (SCRM), Neuroscience Program (NP), Cell & Molecular Biology Program (CMB), Physiology (Phys), School of Science and Engineering (SSE), Biomedical Engineering (BE)**

### Laboratory of Dr. David Busija

**Dr. Siniša Čikić** has joined the Busija lab. Please read **New Faces** on Page 5 for information on Dr. Čikić.

**Ashwin Adivi** (Pharm) has been accepted at the University of Incarnate Word School of Osteopathic Medicine in San Antonio, TX for Fall 2018. **Congratulations Ashwin!!**

**Tyler Dean** (Pharm) has been accepted at LSU School of Medicine for Fall 2018. **Congratulations Tyler!!**

**Ashwin Adivi** (Pharm), **Tyler Dean** (Pharm), and **Thomas Salter-Cid** (NU), and **Wesley Evans** (Pharm), were co-authors on a talk and two posters presented by first author, **Dr. Ibolya Rutkai**, at EB2018: **Talk: (1)** "In vivo visualization of mitochondria in the cerebral endothelium of mice," **Posters: (1)** "Estrogen and mitochondrial function in cerebral arteries and endothelium in rats and mice," and **(2)** "In vivo visualization of mitochondria in the cerebral endothelium of mice." These members of the **Busija** laboratory also contributed to a poster presented by **Dr. Ibolya Rutkai**, "Protective effects of estrogen against hypoxia," at the Translational Science 2018 Meeting, 3/19-21/2018 in Washington, DC.

**Genevieve Curtin** was co-author on a paper, "Cerebrovascular function and mitochondrial bioenergetics after ischemia-reperfusion in male rats," presented by first author, **Dr. Ibolya Rutkai** at EB2018.

### Laboratory of Dr. Suttira (Joy) Intapad

**Brennan Gagen** (Pharm) **(1)** presented a poster at EB2018, "Sphingosine-1-Phosphate Type 1 Receptor and 3NOS Signaling Pathway Play a Role in High Blood Pressure of Intrauterine Growth Restricted Mouse," and **(2)** was an author on another poster at EB2018, "Role of Sphingosine-1-Phosphate on Expression of MAPK and Akt Signaling Pathways in Hypoxic Human Extravillous Trophoblasts," **(3) Brennan** has been accepted to the Tulane School of Medicine and the LSU Shreveport School of Medicine for Fall 2018 and he has decided to attend Tulane. **Congratulations Brennan!!**

### Laboratory of Dr. Bruce Bunnell

**Rachel Sabol** (SCRM, Physician Scientist Program) received the Award for Research in Stem Cell Research and Regenerative Medicine sponsored by the Tulane Center for Stem Cell Research and Regenerative Medicine for her poster, "Obesity-altered Adipose Stem Cells Promote Triple Negative Breast Cancer Progression and Metastasis," at Tulane's 29th Health Science Research Days (THSRD), 2/19-20/18.

### Laboratory of Dr. Prasad Katakam

**Venkata (Ram) Sure** successfully completed his prospectus examination toward the doctoral degree in Pharmacology, November 2017. **Congratulations Ram!! Ram also** received a travel award from the BMS program to attend the Society for Neuroscience Annual Meeting,

November 2017, Washington, D.C.

**Wesley Evans**, Ph.D. Student (NP), successfully completed his qualifying examination toward his doctoral degree in Neuroscience in February 2018. **Congratulations Wesley!!**

**Aaron Albuck** (NU) received an American Physiological Association (APS) Undergraduate Summer Research Fellowship Award for his project, "The effects of Peroxynitrite on Neuronal Mitochondria Respiration."

### Laboratory of Dr. Sarah Lindsey, [Please visit our webpage](#)

**Dr. Benard Ogola** (Pharm) gave two invited talks, one poster, and was selected for an oral competition: **Talks: (1)** Tulane Hypertension and Renal Center of Excellence, "GPER Attenuates Angiotensin-I-Induced Oxidative Stress via cAMP-Mediated Regulation of NOX4," 2/22/2018; and **(2)** Pharmacology Seminar Series, "Molecular Mechanisms Underlying the Antioxidant Effects of GPER," 3/16/2018; **(3) Poster:** first author on a poster: "GPER Attenuates Angiotensin II-Induced Oxidative Stress via cAMP-Mediated Regulation of NOX4," at EB2018; and **(4) Competition:** oral competition for postdoctoral trainees hosted by the Cardiovascular Division of ASPET at EB2018. Other poster authors from the Lindsey Lab and the Department of Pharmacology included **Dr. Margaret Zimmerman, Ram Sure, Dr. Prasad Katakam, and Dr. Sarah Lindsey.**

**Ines Aguerre** (NU) received an APS 2018 Undergraduate Summer Research Fellowship Award from the Short-Term Research Education Program to Increase Diversity in Health-Related Research (STRIDE) category for her project, "Impact of sex and GPER deletion on the vascular extracellular matrix."

### Laboratory of Dr. Debasis Mondal

**Namrata Khurana**, an International Ph.D. candidate from Amity University, India, working with **Dr. Debasis Mondal** presented a poster: "Bardoxolone-methyl suppresses both androgen receptor and its splice-variant ARv7 in prostate cancer cells to enhance the anti-cancer efficacy of enzalutamide," American Association for Cancer Research, Chicago, IL. April 14-18, 2018. Other authors on the poster from Pharmacology included **Dr. Partha Chandra** and **Dr. Mondal.**

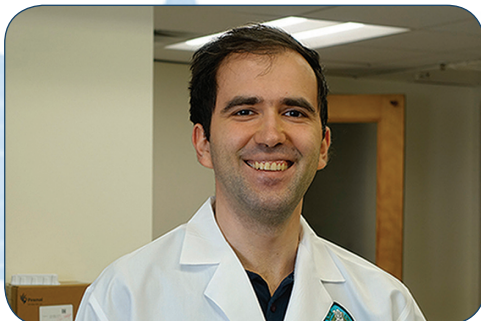
**Dr. Partha Chandra** (Pharm) presented a seminar at the Tulane Primate Center, "Mesenchymal stromal cells reactivate latent HIV-1 and increases the efficacy of latency reversing agents," Covington, LA, 3/2/18.

### Laboratory of Dr. Ricardo Mostany, [Please visit our webpage](#)

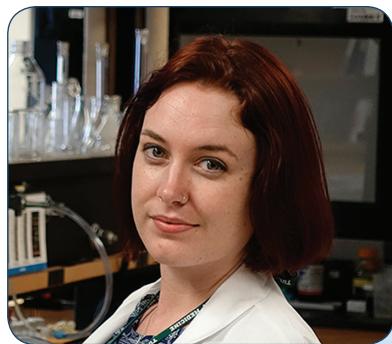
**Dr. Ion R. Popescu** (Pharm), presented a poster at THSRD, "Marked hyperexcitability of pyramidal neurons in the aged neocortex," 2/19-20, 2018. Other authors on the poster from the lab included **Kathy Le (NU), R. Palenzuela, and Dr. Ricardo Mostany.**

## New Faces in Pharmacology 2017 - 2018

**Kaylee Gentry**, M.Sc. (pictured below) has joined **Dr. Sarah Lindsey's** laboratory as a Medical Research Technician. Kaylee worked previously at the Tulane National Primate Research Center in Covington, LA. Kaylee is also a current Master of Arts student at Tulane. Kaylee collaborates on all of the grants in the lab as well as the genetic work and up-keep for the laboratory mouse colonies.



**Aaron Albuck**, (pictured below) an undergraduate student in the Neuroscience program, has been working in **Dr. Prasad Katakam's** lab since Fall 2017 as an undergraduate research assistant. Please see Page 4 for information about his APS summer research award.



**Dr. Siniša Čikić**, M.D. (pictured above) has joined **Dr. David Busija's** lab as a Post-doctoral Fellow. Siniša recently graduated from the University of Zagreb School of Medicine, Zagreb, Croatia. He will be studying the dynamics of mitochondria in cerebral arteries during disease states.



## Master's in Pharmacology Graduate Spotlight: Joanie Winter M.D. Candidate, Tulane class of 2018



As a student in the Tulane Masters of Pharmacology program, I gained far more than an education. I found lifelong friends and colleagues, supportive mentors, and a vibrant, exciting city which I now call home. Drs. Clarkson, Mondal, Lindsay, and Mostany, to name a few, were fantastic educators and student advocates who fostered intellectual, professional, and personal development. Supportive peers surrounded me, and we worked together, helping one another to succeed. I keep in close contact with many friends from the program, and am excited to see them pursuing their own passions in medicine. Living in New Orleans brought us together as we explored festivals, restaurants, and art markets in our spare time. The community service element of the program allowed us to visit new neighborhoods and feel like a part of the community.

I have always wanted to pursue a career in medicine. I was determined to show my dedication to the field and to my future patients. Through the Masters of Pharmacology program, I was able to experience rigorous coursework, as well as shadow and volunteer in the university and local hospitals. I retook the MCAT and increased my score in every field. At every medical school interview, people were interested to hear about the program. When I was accepted to medical school, my time spent in New Orleans during the Pharmacology program convinced me that I wanted to return here for medical school; I truly understood "what it means to miss New Orleans." I will graduate medical school this spring. On Match Day, I matched with University of Virginia for a General Psychiatry Residency, followed by a Child and Adolescent Fellowship. I plan to pursue a career in Child and Adolescent Psychiatry. I am very thankful to have had this special opportunity to learn and live in New Orleans.

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

This endowed fund supports students in the Department of Pharmacology.

To read the biography of Dr. Krishna please go to: [Agrawal Fund](#)

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

**Rutkai I, Merdzo I, Wunnava SV, Curtin GT, Katakam PV, Busija DW.** Cerebrovascular function and mitochondrial bioenergetics after ischemia-reperfusion in male rats. *J Cereb Blood Flow Metab.* 2017 Jan 1:271678X17745028. PMID: 29215305.

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Zanata, F.; Bowles, A.; Frazier, T.; Curley, L.T.; **Bunnell, B.A.**; Wu, X.; Wade, J.; Devireddy, R.; Gimble, J.M. and Ferreira, L.M. (2018) Effect of cryopreservation on human adipose tissue and isolated stromal vascular fraction cells in vitro and in vivo analyses. *Plastic and Reconstructive Surgery*, 141(2):232e-243e.

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

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[Please visit our website](#)

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

Department Administrator: Debbie Sanders

Senior Editor/Newsletter Preparation: Nancy Busija

Newsletter Oversight: 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.*