

Pharmacology News

Volume 7, Issue 1
Fall 2017

TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

Message from the Chair: Dr. David Busija

I would like to applaud and emphasize the accomplishments of three of our Assistant Professors in acquiring vital new technologies which will make us more competitive at the national level.

Dr. Sarah Lindsey has purchased the Visual-Sonics Vevo 1100 high Frequency Ultrasound System that will allow quick calculations of cardiac function and heart structure in the beating mouse heart. Measurement of these variables is not a trivial matter because of the small size of the murine heart and the heart rate which can reach 600 beats/min. She will use this equipment in the study of estrogen's protective effects on the heart and vasculature. **Dr. Suttira "Joy" Intapad** has purchased a Data Sciences International (DSI) Telemetry system with Ponemah software that will allow her to record arterial blood pressure simultaneously in up to 16 awake mice at a time. She will use this equipment in her studies on the effects of low birth weight on arterial pressure in the adult. **Dr. Ricardo Mostany** has purchased a new patch clamp system to expand his electrophysiology studies and has developed mini-microscopy cameras (miniscopes) with Brandon Thrash and Michael Langhardt that allow the examination of neuronal activity in real time to study how the network activity changes over the life of an animal or in mouse models of Alzheimer's disease. In addition, Drew Davidson from the Mostany lab with Zach Murdock and Lauren Hymel from Dr. Quincy Brown's lab have developed a wireless self-contained portable optogenetic stimulator that will allow selective neural activation without off-target drug effects for the study of motor behavior.

New Technologies in Pharmacology

VisualSonics Vevo 1100 High Frequency Ultrasound System: **Dr. Bernard Ogola**, post-doctoral fellow working with **Dr. Sarah Lindsey**, is shown using their new echocardiogram to study estrogen's protective vascular



effects. The system allows them to image and analyze the real-time, in vivo, physiological functioning of the heart and vasculature. The Lindsey lab can measure pulse wave velocity, cardiac function, and other cardiovascular parameters in rodent models. Their first goal is to determine the best method for assessing carotid artery stiffness by validating their in vivo results with ex vivo measurements.

Radio-Telemetry System with Ponemah Software: **Dr. Suttira Intapad** is shown using her new Radio-Telemetry system to study developmental programming of cardiovascular pathology, particularly hypertension in intrauterine growth restricted mice. The DSI telemetry system is designed for monitoring and collecting data such as blood pressure, heart



rate, and other cardiovascular parameters in freely moving laboratory mice. It is stress-free and supports extended data collection for any chronic experiment.

Miniature Fluorescent Microscopes (miniscopes):

In **Dr. Ricardo Mostany's** lab, Brandon Thrash and Michael Langhardt have assembled five miniscopes based on the open source design of the UCLA Miniscope project. These head-mounted microscopes have a mass of less than 3



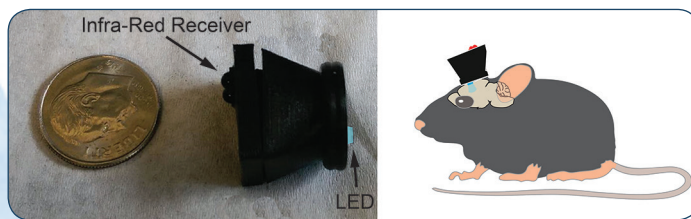
Miniscopes. *Left:* Michael (back) and Brandon (front) testing one of the miniscopes (in Brandon's hand). *Right:* Close-up of one of the miniscopes to appreciate the actual dimensions of these devices

grams and are used to record the activity of neuronal populations in awake, freely moving animals. The miniscopes allow for the repeated imaging of cell networks in the brain, and will enable members of the Mostany Lab to examine how neuronal dynamics change throughout the lifespan or in disease states such as Alzheimer's Disease.

Wireless Self-contained Portable Optogenetic Stimulator: **Drew Davidson**, in the **Mostany Lab**, with the help of undergraduate biomedical engineering students Zach Murdock and

New Technologies in Pharmacology

Lauren Hymel from the lab of Dr. J. Quincy Brown in Biomedical Engineering, has designed and built a miniaturized wireless device (2.4 grams) that can be used to control brain activity in awake, freely behaving and moving mice that express proteins in the brain that are light sensitive. The lab plans to use the device to control the activity of the specific brain cells involved in the control of motor behavior.



Pictures: Optogenetic Stimulator. Left, Optogenetic stimulator showing the infra-red receiver that communicates with a computer, and the position of the LED. Right, The LED-coupled device is shown being worn by a mouse that has been trained to carefully reach through a narrow gap to retrieve a food reward.

Faculty News

Dr. David Busija

- **Invited Speaker:** (1) Sterling Drug Lecturer, Department of Pharmacology, Boston University, "Mitochondrial dynamics in the cerebral circulation during health and disease," Boston, MA, 10/18/17; and (2) Tulane Brain Institute, "Mitochondrial dynamics in brain blood vessels," New Orleans, LA, 10/4/17.
- **Grant Award:** Mentor, NIH-NIGMS, with PI: S. Michal Jazwinski, "Mentoring Research Excellence in Aging and Regenerative Medicine," 7/1/17-6/30/22.
- **Award:** Chair-elect, Division for Cardiovascular Pharmacology, American Society for Pharmacology and Experimental Therapeutics (ASPET), 2018-2021.
- **Submitted Grants:** (1) PI, NIH, 6/5/17; (2) PI, NIH, 10/5/17; and (3) PI, NIH, 10/16/17.
- **Reviewer:** American Journal of Physiology (AJP)
- **Poster Presentation:** "Mitochondrial (dys)function: cause or consequence of type 2 diabetes," 2017 American Physiological Society (APS) Conference: Physiological Bioenergetic Mitochondria from Bench to Bedside, San Diego, CA, 8/27-30/2017.

Dr. Stephen Braun

- **Invited Speaker:** 35th Annual Symposium on Nonhuman Primate Models for AIDS, Adoptive T Cell Immunotherapy with DMV-Specific T cells Genetically Modified α HIV-CAR Vectors, 8/3/17.
- **Submitted Grants:** (1) PI, Alliance for Cardiovascular Research; (2) Co-PI, NIH NIAID R21/R33
- **Poster Presentations:** (1) "Adoptive T Cell Immunotherapy with CMV and Anti-HIV Specific Tc in NHP Model," American Society for Cellular and Gene Therapy, Washington, D.C., 5/11/2017.
- **Grant Reviewer:** 2017 NIAID Study Section, Special Emphasis Panel PAR-15-164: HIV Vaccine Research and Design Program (P01) 2018/01 ZAI1 AL-A (J2) 1
- **Journal Reviewer:** PLOS Pathogens, Translational Research, Molecular Therapy-Nucleic Acids, Cytotherapy

Dr. Bruce Bunnell

- **Grant Awards:** (1) PI, Lipedema Foundation, "Molecular and Cellular Characterization of Adipose Stem Cells from Lipedema Patients, and their Role in the Manifestation of Disease in vivo," 9/15/17-9/14/19; (2) Co-PI, R01 NS104016 with PI: Dr.

Andrew MacLean, "Eradication of latent SIV from the CNS," 4/1/17-3/31/22; (3) Mentor, NIH-NIGMS, with PI: Dr. S. Michal Jazwinski, "Mentoring Research Excellence in Aging and Regenerative Medicine," 7/1/17-6/30/22; (4) Co-PI, NIH-NCATS/NIAMS, with PI: Dr. Rocky Tuan, "Tissue Chip Modeling of Synovial Joint Pathologies: Effects of Inflammation and Adipose Diabetic Complications," 7/15/17-6/30/19.

Milton Hamblin

- **Reviewer:** Journals: AJP - Heart and Circulatory Physiology, 9/2017; J. Mol Cell Cardiol, 8/2017; Mol Cell Endocrinol, 9/2017.

Dr. Suttira Intapad

- **Invited Speaker:** Tulane Renal & Vascular Workshop, Department of Physiology, "Linking intrauterine growth restriction and blood pressure," New Orleans, LA, 6/2017.
- **Poster Presentations:** (1) "Impairment of Key Sphingolipid Metabolism Enzymes in Placenta and Kidneys of Reduced Uterine Perfusion Mouse Model," American Society of Nephrology Kidney Week 2017, 11/2017; and (2) "Blockade of Macula Densa NOS1 Decreases GFR and Promotes the Development of Hypertension During Pregnancy," Council on Hypertension Meeting, San Francisco, CA, 9/14-17/2017.
- **Moderator:** Chair, President's Symposium Series, "Women in Health Research," Experimental Biology 2017 (EB2017), 4/22-26/2017.
- **Reviewer:** Journals: JASN, Hypertension, AJP- Regulatory, Integrative, and Comparative Physiology, Immunol Res.

Dr. Prasad Katakam

- **Invited Speaker:** APS Conference: Cardiovascular Aging: New Frontiers and Old Friends, "Role of Endothelial nNOS in Age-related Microvascular Impairments," Westminster, CO, 8/11-15/2017.
- **Award:** APS Publications 2016 Star Reviewer of AJP.
- **Reviewer:** Journals: Ad Hoc: Circ Res., Circulation, Hypertension, Stroke, JCBFM, Br. J. Pharmacol., Compr Physiol, AJP, Sci. Rep., J Gerontol A Biol Sci Med Sci, JCPT, J Microcirc, Int. J. Cardiol., J. Diabetes Complications, Geroscience, Neurochem Int. JoVE, J. Vasc Res., Grants: AHA: Brain 2 Panel; NIH Eastern Regional Comprehensive Metabolomics Research Core; LaCATS: Pilot project applications; NIH Acute Neural Injury and Epilepsy

Faculty News continued

Study Section.

- **Professional Service:** Organizing Committee, APS meeting: Cardiovascular Aging: New Frontiers and Old Friends, Westminster, CO, 8/11-14/2017.
- **Outreach:** (1) Mentor for Porter Physiology Fellowship, EB2017; (2) Poster Modulator for Undergraduate Poster Session, EB2017.

Dr. Sarah Lindsey

- **Grant Award:** (1) PI, NIH_NHLBI Administrative Supplement for R01, \$281,677; (2) Co-PI, Carol Lavin Bernick Faculty Grant Program, "Determination of behavioral and physiological correlates of an animal model of PTSD," PI: Dr. Laura Schrader, \$10,000, 6/2017-6/2018.
- **Invited Speaker:** (1) Tulane Hypertension & Renal Center of Excellence, "Estrogen Receptor Signaling in Arterial Stiffness," 9/21/17; and (2) University of Mississippi Medical Center, "Role of Membrane-Initiated Estrogen Signaling in Arterial Stiffness," Jackson, MS, 10/3/17.
- **Outreach:** (1) Presentation to Morris Jeff Community School, "Heart Healthy Habits," 9/27/17.

Dr. John McLachlan

- **Invited Speaker:** (1) Keynote Address, "Environmental Hormones and other Signals," 12th Annual Center of Excellence in Environmental Toxicology Symposium for the National Institute of Environmental Health Sciences Center of Excellence at the University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, 6/19/17; and (2) 14th International Symposium on Recent Advances in Environmental Health Research, "Environmental signaling as a model to integrate diverse environmental factors at the mechanistic level," Jackson State University, Jackson, MS, 9/11-13/2017.
- **Reviewer:** Journal of Clinical Endocrinology and Metabolism.
- **Outreach:** Judge for EXPEAUX '17, Student Research and Creative Exposition, Nicholls State Univ., Thibodaux, LA, 4/5/17.

Dr. Howard Mielke

- **Invited Speaker:** (1) "The Earth's climate in the 21st century and beyond," 1st Shaanxi University Normal University Internationalization of Graduate Education Forum, Shaanxi, China, 7/16/17; (2) "The astonishing role of urban soil in lead exposure of children: Hurricane Katrina's lessons," 14th International Symposium on Recent Advances in Environmental Health Research, Jackson State University, Jackson, MS, 9/13/17; (3) "Linking urban chemistry with exposure, learning, violence, and expected lifespan," Department of Chemistry, Loyola University, New Orleans, LA, 9/25/17; and (4) "Soil lead lessons from natural experiences in New Orleans," Public Forum on Childhood Lead Poisoning in New Orleans, Justice and Beyond, Christian

Unity Baptist Church, New Orleans, LA, 10/2/17.

- **Submitted Grant:** U.S. Housing and Urban Development, 7/21/17.
- **Poster Presentation:** "The astonishing role of soil in lead exposure of children, Hurricane Katrina's lessons," International Society of Exposure Sciences: Integrating Exposure Science Across Diverse Communities, Research Triangle Park, NC, 10/16/17.
- **Reviewer:** (1) Environmental Health Perspectives, 6/26-28/2017; (2) Environmental Research, 8/28-30/2017; (3) Environment International, 9/16-18/2017; and (4) Int. Journal of Environmental Research and Public Health, member of the editorial board.
- **Outreach:** (1) *Teaching:* Department of Environmental Engineering at Shaanxi Normal University, Xi'an, China, "The environment and health," 7/2-31/2017. (2) Bloomberg Mayors Challenge Idea Accelerator, 9/29/17; and (3) The Public Forum on Childhood Lead Poisoning in New Orleans, Meeting of Justice and Beyond, 10/2/17.

Dr. Debasis Mondal

- **Grant Submissions:** Co-PI, NIH U54 (NIMHD;RFA-MD-17-005).
- **Reviewer:** (1) Cancer Causes & Control, 3/23-4/24/2017; (2) PLOS One, 6/30-7/30/2017; and (3) DOD Study Section, Breast Cancer Research Program (BTA 1 & 2), 8/9-8/11/2017.

Dr. Ricardo Mostany

- **Grant Awards:** (1) PI, NIH: National Institute on Aging, "Deficits in cortical synaptic plasticity in the AppNL-G-F model of Alzheimer's disease," \$149,500 for one year; (2) Co-PI, Elsa U. Pardee Foundation, "A Novel Treatment for Glioblastoma Multiforme," PI: Dr. Reza Izadpanah, \$166,000 for one year.
- **Invited Speaker:** (1) Structural and Cellular Biology Departmental Seminar Series, "Reduced sensory-evoked structural plasticity in the aged brain," Tulane University, New Orleans, LA, 9/2017; (2) Tulane Biomedical Engineering Departmental Seminar Series, "Imaging structural plasticity in the aged brain," Tulane University, New Orleans, LA, 10/2017.
- **Reviewer:** *Journals:* Cellular and Molecular Neurobiology
- **Outreach:** (1) Career development presentation at the Escalera Career Day: "Do's and Don't's of College and Job Interviews," Grace King High School, Metairie, LA, 5/4/17.

Dr. Ibolya Rutkai

- **Grant Award:** PI, LA CaTS Roadmap Scholars Program, "The role of mitochondria in the cerebral circulation," 07/2017-07/2019.
- **Poster Presentation:** "Correlation between mitochondrial function and morphology after ischemia-reperfusion," 2017 APS Conference: Physiological Bioenergetics-Mitochondria from Bench to Bedside, San Diego, CA, 8/27-30/2017.

Service to Tulane and 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, Faculty Advisory, Nominating, Sexual Violence Prevention and Education Coalition, 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.

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

Ashwin Adivi (Pharm) recently joined the lab as a Lab Technician.

Tyler Dean (Pharm) joined the lab as a Lab Technician. He has recently been accepted to the LSU School of Medicine for Fall 2018.

Laboratory of Dr. Bruce Bunnell

Nick Pashos (SSE) a Ph.D. candidate working with **Dr. Bunnell**, and his business partner Billy Heim (Tulane BS '05, MBA '12), attended an in-residence program at IndieBio, San Francisco, CA, April to October 2017, to accelerate BioAesthetics, a start-up company focused on developing a graft to regenerate the nipple-areola complex; a technology spin-out of the Bunnell Lab as part of Nick's Ph.D. They also worked at IndieBio on raising \$2.5 million for ongoing projects and safety and efficacy trials at the Tulane National Primate Research Center. BioAesthetics, now a venture capitalist backed start-up, has recently opened private lab space in the New Orleans Bioinnovation Center.

Laboratory of Dr. Prasad Katakam

Siva Sakamuri (Pharm), *Jared Sperling* (Pharm), *Monica Dholakia* (Pharm), *Venkata Sure* (Pharm), and *Prasad V.G. Katakam* presented a poster at the APS Conference, Cardiovascular Aging: New Frontiers and Old Friends: "Altered Mitochondrial Responses to Nitric Oxide Synthase Inhibitors in Isolated Cardiac Mitochondria from Young and Aged Rats," Westminster, CO, 8/11-15/2017.

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

Dr. Bernard Ogola (Pharm) post-doctoral fellow, received a Judges Travel Subsidy Award to attend the Annual Biomedical Research Conference for Minority Students in Phoenix, Arizona from 11/1-4/2017.

Dr. Margaret Zimmerman (Pharm), post-doctoral fellow, submitted a NIH Pathway to Independence Award application (K99/R00) 10/12/17.

Gabrielle Clark (BE) presented a poster, "The effect of G protein-coupled estrogen receptor deletion on the common carotid artery mechanical properties," at the North American Vascular Biology Organization Conference, Monterey, CA, 10/15-19/2017.

Caleb Abshire (M.D./Ph.D. program) presented a poster: "Impact of Genetic GPER Deletion on Baseline Cardiovascular Parameters" at the North American Vascular Biology Organization Conference, Monterey, CA, 10/15-19/2017.

Laboratory of Dr. Debasis Mondal

Namrata Khurana, an International Ph.D. candidate from Amity University, India, working with **Dr. Debasis Mondal**, (1) received a Travel Award from the Society of Andrology; (2) to present a poster, "Targeted Degradation of Androgen Receptor and its Spliced Variant AR-V7 by the Phytochemical Sulforaphane: New Therapeutic Opportunity for Castration Resistant Prostate Cancer (CRPC)" at the 42nd Annual American Society of Andrology Conference, Miami, FL, 4/22-25/2017. Other authors from Pharmacology included: *Partha K. Chandra* and *Dr. Debasis Mondal*.

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

Members of the Mostany lab will present the following four

posters at the Society for Neuroscience Meeting in Washington, D.C., November 11-15, 2017.

Ion R. Popescu (Pharm), *Kathy Le* (NU), *Rebecca Voglewede* (BI/NP), and *Ricardo Mostany*. "Higher IPSC frequencies in non-adapting than in adapting layer 5 pyramidal neurons in the somatosensory cortex of mice."

Andrew Davidson, (CMB), *Hernan Mejía-Gómez* (NU), *Michael Jacobowitz* (Pharm), and *Ricardo Mostany*. "Dendritic spine density, dynamics, and morphology of layer 5 pyramidal neurons in the young and aged forepaw area of primary motor cortex."

Kaeli Vandemark (BI/NP), *Rebecca Voglewede* (BI/NP), and *Ricardo Mostany*. "Age-related changes in dendritic spine volume and morphology in the primary somatosensory cortex after sensory stimulation."

Rebecca Voglewede, *Kaeli Vandemark*, *Annie DeWitt* (BI/NP), *Marissa Heffler* (BI/NU), *Emma Trimmer* (Pharm), and *R. Mostany*. "Bundled whisker stimulation causes age-dependent bidirectional structural plasticity of L5 apical tuft dendritic spines."

Drew Davidson's CMB Prospectus was approved on 7/21/17 for his research mentored by *Dr. Mostany*. He received a (1) Glenn/AFAR Scholarship (10/2017-7/2018) for Research in the Biology of Aging for "Compensatory strategy for motor learning in the aged mouse cortex due to excitation-inhibition imbalance," and the (2) Graduate Studies Student Association Presenter Award, 11/2017.

Alexis Ducote (NP) was accepted into the Tulane Brain Institute PhD Neuroscience Program. Congratulations Alexis!

Hernan Mejia-Gomez received the 2017 CELT Summer Fund for Student/Faculty Research, Scholarship, and Creative Activities award. Congratulations Hernan!

Drew Davidson, *Hernan Mejia-Gomez*, and *R. Mostany* presented a poster at the Tulane Undergraduate Research in Neuroscience Summer Program meeting, "Using CLARITY to survey inhibitory interneuron sub-populations in the aged primary motor cortex."

Brandon Thrash (Pharm) was accepted at LSU School of Medicine in New Orleans. Congratulations Brandon!

Rebecca Voglewede's (1) Ph.D. Prospectus was approved by the Neuroscience Program on 8/11/17; (2) presented a seminar, "Bundled whisker stimulation causes age-dependent bidirectional structural plasticity of L5 apical tuft dendritic spines," LSU Neuroscience Department, New Orleans, LA, 6/13/17; and (3) received a Visiting Scientist fellowship at Howard Hughes Medical Institute on the Janelia Research Campus in the laboratory of Dr. Jeff Magee, Ashburn, VA, 7/2017-2/2018.

Kathy Le (1) defended her Honor Thesis on April 10, 2017; (2) received the Tulane Senior Scholar in Neuroscience Award on May 2017; and (3) was awarded The Class of 1903 Shakespeare Prize for Best Shakespearean Essay by a Woman, May 2017.

Michael Langhardt (NP) received a Graduate Student Studies Association Travel Award to attend the Society for Neuroscience Meeting, Washington, D.C., 11/11-15/2017.

New Faces in Pharmacology 2016 - 2017



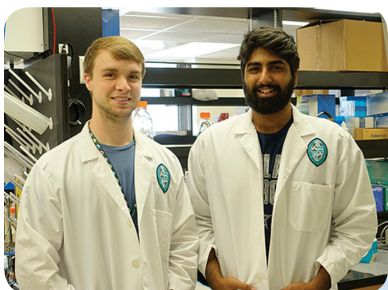
Dr. Bunnell's Lab:
Omair Mohiuddin

Dr. Bernard Ogola, *top right*, a Post-doctoral fellow working with **Dr. Sarah Lindsey**, received his Ph.D. in Pharmaceutical Sciences from Texas Tech University School of Pharmacy. Ben's research involves eliciting estrogen's cardio-protective vascular effects.

Omair A. Mohiuddin, *top left*, is a Ph.D. student working with **Dr. Bruce Bunnell** in the Stem Cell Center. Omair received his MSc in Medical Biotechnology from the University of Westminster, UK and before that, his B-Pharmacy from the University of Karachi, Pakistan. His current project involves creating decellularized scaffolds for tissue regeneration.



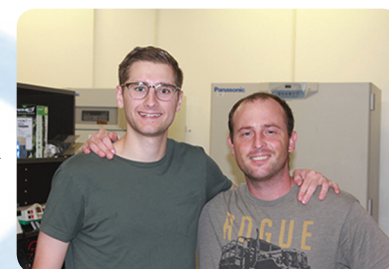
Dr. Lindsey's Lab:
Dr. Bernard Ogola, Ph.D.



Dr. Busija's Lab: L to R: Tyler Dean
and Ashwin Adivi

Tyler Dean and **Ashwin Adivi** are Lab technicians in **Dr. David Busija's** laboratory. Tyler graduated from Wake Forest University, NC, with a B.S. with honors in Chemistry and a concentration in Biochemistry. Ashwin received a B.S. in Biochemistry/Molecular Biology and a B.A. in History from Trinity University, TX and a M.S. in Pharmacology from Tulane.

Brennan Gagen and **Thomas Swazy** are new Lab technicians in **Dr. Sutirra (Joy) Intapad's** laboratory. Brennan graduated from Millsaps College, MS, with a B.S. in Biochemistry. Thomas received an M.S. in Cell and Molecular Biology from Tulane.



Dr. Intapad's Lab: L to R: Brennan
Gagen and Thomas Swazy III

Master's in Pharmacology Graduate Spotlight Gregory Minutillo, MS, MD/MPH candidate Tulane class of 2018



When I was 22 years old, I packed up nearly everything I owned in New York and moved to New Orleans, a city that I had never imagined I'd come to call home. I had been accepted into The Master of Science in Pharmacology degree program at Tulane University School of Medicine. During my career as a collegiate athlete, I had realized that I could see my future only as a physician and began to focus my energy toward realizing that goal. Like other late academic bloomers interested in medicine, I needed an avenue to convey this desire and my ability to medical schools around the country. The Tulane Master's in Pharmacology program is a unique opportunity to demonstrate one's capacity to command and succeed in a medical school curriculum. In addition to that major opportunity, other invaluable assets to strengthening the medical school application process presented themselves. Many are a function of the responsiveness of the Tulane culture. Take research, for example. I literally just walked into the cardiovascular institute at Tulane and asked how I could get involved. Because of the approachability of the faculty and the receptive environment at Tulane, I was working in a cardiology research lab within the month. Opportunities like this are all over the place at Tulane Medical School, and the Master's Program encourages you to capitalize on them!

Lastly, with respect to culture and uniqueness, no other city parallels that of New Orleans. It really is a wonderful place to live, study, and envelope one's self. I know wherever I wind up as a practicing physician, I'll carry a bit of its rhythm with me.

*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
Tulane University School of Medicine Office of Development #8745, 1430 Tulane Avenue, New Orleans, Louisiana 70112

In Memoriam, Dr. Philip J. Kadowitz

March 20, 1941 - July 18, 2017

Dr. Philip J. Kadowitz, known as "Phil" to friends and colleagues, passed away on July 18, 2017 after an extended hospitalization. A Memorial Service and luncheon sponsored by his family and the Department of Pharmacology was held at Tulane Medical School on September 15, 2017. The service was attended by about 150 family, friends, colleagues, and former and current students. Phil is survived by his wife, *Ellen*; two daughters, *Dr. Nancy Kadowitz* and *Rebecca Munini*; a sister and nephew, and four grandchildren. Dr. Kadowitz was a Pharmacology faculty member for 46 years and he inspired and mentored many graduate students, postdoctoral fellows, countless medical students, and collaborated with many scientists during his nearly five decades at Tulane. He was an author on more than 562 peer reviewed papers and 35 book chapters. He was an Established Investigator of the American Heart Association and received the 2017 Lifetime Achievement Award from the International Academy of Cardiovascular Sciences. He was a highly cited author: in the top 0.5% of all published researchers in the world with an H-index of 68. In addition to his interests in science, Dr. Kadowitz repaired cars for friends and discussed mechanics with anyone who had an interest; he also baked and cooked and fed many students while helping improve their thinking skills. He was the ultimate scientist and he will be missed. Dr. Kadowitz has a posthumous publication with his final graduate student. Please see below ***.

Publications

Lin D, Izadpanah R, **Braun SE**, Alt E. A Novel Model to Characterize Structure and Function of BRCA1. *Cell Biol Intern* (in press).

Poropat Arthur E, Laidlaw Mark AS, Lanphear Bruce, Ball Andrew, **Mielke Howard W.** (2017) Blood lead and preeclampsia: A meta-analysis and review of implications. *Environmental Research* 160:12–19,

Zahrn Sammy, Laidlaw Mark AS, Rowe Domini B, Ball Andrew S, **Mielke Howard W.** (2017) Motor neuron disease mortality and lifetime petrol lead exposure: Evidence from national age-specific and state-level age-standardized death rates in Australia. *Environmental Research* 153:181–190.

Khurana N, Kim H, Chandra PK, Talwar S, Sharma P, Abdel-Mageed AB, Sikka SC, **Mondal D.** Multimodal actions of the phytochemical sulforaphane suppress both AR and AR-V7 in 22Rv1 cells: Advocating a potent pharmaceutical combination against castration-resistant prostate cancer. *Oncol Rep.* 2017 Aug 30. PMID: 28901514.

Sanchez CG, Molinski SV, Gongora R, Sosulski M, Fuselier T, MacKinnon SS, **Mondal D**, Lasky JA. The Antiretroviral nelfinavir mesylate, a potential therapy for systemic scleroderma. *Arthritis Rheumatol.* 2017 Sep 21. PMID: 28940894.

Datta A, Kim H, Lal M, McGee L, Johnson A, Moustafa AA, Jones JC, **Mondal D**, Ferrer M, Abdel-Mageed AB. Manumycin A suppresses exosome biogenesis and secretion via targeted inhibition of Ras/Raf/ERK1/2 signaling and hnRNP H1 in castration-resistant prostate cancer cells. *Cancer Lett.* 2017, Aug 24;408:73-81. PMID: 28844715.

Intapad S, Dasinger JH, Fahling JM, Backstrom MA, Alexander BT. Testosterone is protective against impaired glucose metabolism in male intrauterine growth-restricted offspring. *PLOS ONE* (In Press).

Merdzo I, Rutkai I, Sure VN, McNulty CA, Katakam PV, Busija DW. Impaired mitochondrial respiration in large cerebral arteries of rats

with type II diabetes. *J Vasc Res* 54:1-12, 2017.

Boese AC, Kim SC, Yin KJ, Lee J-P, **Hamblin MH.** (2017) Sex Differences in Vascular Physiology and Pathophysiology: Estrogen and Androgen Signaling in Health and Disease. *Am J Physiol Heart Circ Physiol*, 313(3), H524-H545. PMID: 28626075.

*****Swan KW**, Song BM, Chen AL, Chen TJ, Chan RA, Guidry BT, **Katakam PVG**, Kerut EK, Giles TD and **Kadowitz PJ.** Analysis of decreases in systemic arterial pressure and heart rate in response to the hydrogen sulfide donor sodium sulfide. *Am J Physiol Heart Circ Physiol*, 2017;313:H732-H743.

Motherwell JM, Azimi MS, Spicer K, Alves NG, Hodges NA, Breslin JW, **Katakam PVG** and Murfee WL. Evaluation of Arteriolar Smooth Muscle Cell Function in an Ex Vivo Microvascular Network Model. *Sci Rep.* 2017;7:2195.

Liu J, Edgington-Giordano F, Dugas C, Abrams A, **Katakam P**, Satou R and Saifudeen Z. Regulation of Nephron Progenitor Cell Self-Renewal by Intermediary Metabolism. *J Am Soc Nephrol.* 2017.

Strong, AL, Jones, RB Jr, Glowacki, J, Boue, SM, Burow, ME, and **Bunnell, BA** (2017) Glycinol enhances osteogenic differentiation and attenuates the effects of age on mesenchymal stem cells. *Regen. Med.* 12:513-524.

Burks, H, **Pashos, N**, Martin, E, **McLachlan J, Bunnell, B.**, and Burrow, M (2017) Endocrine disruptors and the tumor microenvironment: a new paradigm in breast cancer biology. *Mol. Cell. Endo.*, 457:13-19.

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Pharmacology News is a publication of the Department of Pharmacology, Tulane University
1430 Tulane Avenue, Suite 3700, #8683, New Orleans, LA 70112; Phone: 504-988-5444

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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.