Pharmacology News

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TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

Message from the Chair, Dr. David Busija

We are completing another successful academic year in the areas of research, teaching, and service. With the recent award of a NIH R01 grant to ***Dr. Sarah Lindsey,*** our overall NIH funding has increased dramatically over the last 6 years. Based on our research momentum, we expect to do even better in the next few years. We have increased our faculty numbers with the recent appointment of ***Dr. Ibolya Rutkai*** as Instructor. Dr. Rutkai has been awarded a prestigious Scientist Development Grant (SDG) from the American Heart Association. This award represents the third SDG acquired by the Pharmacology faculty. Our medical and graduate teaching program has continued to excel and our students consistently score above the national average on Pharmacology and other areas on the USMLE Step 1 examination. Our M.S. graduates continue to have success in gaining admission to medical schools. ***Dr. Craig Clarkson***, the Director of our M.S. and Ph.D. programs, has been named as a Fellow of the prominent Academy of Pharmacology Educators of the American Society of Pharmacology and Experimental Therapeutics. The Pharmacology faculty continue to serve on a variety of important committees at Tulane University and on national professional committees and grant review study sections. I want to thank all of the faculty, staff, and students for the continuing success of our department.

NIH R01 Award to Dr. Sarah Lindsey

Dr. Sarah Lindsey, Principal Investigator and first recipient of the Dr. Barbara S. Beckman Professorship in Pharmacology, received a five year, $1.9 million grant from the National Heart, Lung, and Blood Institute to study the mechanisms by which estrogen reduces arterial stiffness. Dr. Lindsey's team will investigate the role of the recently-discovered G protein-coupled estrogen receptor and its impact on pulse wave velocity and biaxial vascular mechanics. This work will be facilitated by the purchase of a high-frequency ultrasound for live imaging of vascular function in mice. Dr. Lindsey proposes that nongenomic estrogen signaling preserves the elastic properties of central arteries by reducing oxidative stress and deposition of extracellular matrix proteins. Another important aspect of her work is how aging alters the expression of estrogen receptors in the vasculature and thereby promotes adverse responses to menopausal hormone therapy. This work is an interdisciplinary project which includes contributions by Dr. Prasad Katakam in Pharmacology, as well as Dr. Kristin Miller and Dr. Carolyn Bayer in the Tulane Department of Biomedical Engineering and Dr. Leanne Groban at Wake Forest School of Medicine. Please view the story by Meg Farris, WWLTV, 3/23/2017.

Dr. Craig Clarkson inducted into Academy of Pharmacology Educators by The American Society for Pharmacology and Experimental Therapeutics (ASPET)

Dr. Craig Clarkson *has been named a Fellow of the Academy of Pharmacology Educators of ASPET.* This prestigious Academy recognizes a select group of pharmacologists who have made exemplary contributions to pharmacology education.

Dr. Clarkson joined the faculty at Tulane in 1985 as an assistant professor in pharmacology with a B.S. in Biology & Chemistry from the University of Puget Sound, a Ph.D. from Northwestern University, and three years of postdoctoral training at the University of California, San Francisco. While directing his own research laboratory at Tulane, he simultaneously took on increasing responsibility for medical and graduate teaching. Following Hurricane Katrina, he took over directorship of the Pharmacology Department's M.S. and Ph.D. programs, and left bench research to devote his time to curricular development.

Over the years, Dr. Clarkson has helped to implement a variety of learner-centered methods of teaching at Tulane, including problem-based learning, team-based learning, just-in-time-teaching, peer instruction, and high fidelity patient simulation. More recently, he developed an open access wiki learning resource, Pharmwiki which contains drug monographs, case-based learning modules, and interactive self-assessment quizzes designed to foster self-directed learning in medical pharmacology. ***He has been the recipient of eighteen academic awards at Tulane, including the School of Medicine and University's top awards for excellence in teaching.***

Dr. Clarkson is one of just three educators who are being honored this year by induction into this distinguished group of pharmacology educators. The other inductees include Peter G. Bradford, Associate Professor of Pharmacology and Toxicology, Jacobs School of Medicine and Biomedical Sciences at the University at Buffalo and Katharine Brandi, RPh (DE), PhD, Assistant Professor, Skaggs School of Pharmacy and Pharmaceutical Sciences, University of California San Diego. Current fellows can be viewed at Academy of Pharmacology Educators .

Faculty News

Dr. David Busija

- ***Invited Speaker:*** ***(1)*** School of Gerontology, University of Southern California, "Mitochondria mechanisms in cerebral blood vessels," Los Angeles, CA, 03/13/17; ***(2)*** Department of Cell Biology and Pharmacology, Florida International University, Miami, FL, "Mitochondrial mechanisms in the cerebral vasculature in health and disease," 04/19/17; ***(3)*** Symposium speaker, "Neurovascular Coupling in the Brain," Experimental Biology 2017, Chicago, IL, 04/24/17 (EB2017).
- ***Professional Service:*** ***(1)*** ***Elected:*** 2017-2019, Chair Elect, Cardiovascular Division, American Society of Pharmacology and Experimental Therapeutics, ***(2)*** 2014 - present, Treasurer, Association of Medical School Pharmacology Chairs; ***(3)*** Ad hoc Reviewer NIH, Special Study Section, 01/12/17.

Dr. Stephen Braun

- ***Invited Speaker:*** ***(1)*** Tulane Department of Pharmacology, Fall 2016; ***(2)*** Tulane Department of Structural and Cellular Biology, 04/26/17; ***(3)*** Retroviral Pathogenesis Meeting, "Stimulation, Transduction, and Expansion of CMV-specific T Cells for Adoptive T Cell Immunotherapy in NHP Model," New Orleans, LA, December 2016.
- ***Submitted Grants:*** NPRP10-0201-170436 (Subcontract)
- ***Grant Reviewer:*** ***(1)*** 2016 NIAID Study Section, Small Business: HIV/AIDS Innovative Research Applications ZRG1 AARR-J 13; ***(2)*** 2016 NIAID Study Section, Special Emphasis Panel RFA-AI-16-028: Understanding HIV Rebound (P01).

Dr. Bruce Bunnell

- ***Grant Awards:*** ***(1)*** Co-PI, NIH-NHLBI grant, "Angiogenesis Model for Aging Research," PI: W. Lee Murfee, 07/01/16-06/30/21; ***(2)*** Co-PI, NSF grant CBET-1604129: "Improving the survival of heterogeneous cultures of mesenchymal stem cells," PI: K. O'Conner, 08/01/16-07/31/19; ***(3)*** Co-PI, NIH-NINDS grant, "Directed Evolution of Novel AAV capsids for global CNS delivery in rodents and primates," PI: S. Gray (University of North Carolina), 09/30/16-08/31/21; ***(4)*** PI: Pilot Project, "Adipose stem cells from obese humans promote breast cancer tumorigenesis and metastasis," 08/15/12-06/30/17, NIH-NIGMS, Louisiana Clinical and Translational Science Center (LaCATS); PI of overall LaCATS: William Cefalu.
- ***Invited Talks:*** ***(1)*** Plenary Session Speaker, American College of Veterinary Pathology Meeting, "The biology of adipose stem cells is negatively impacted by age and obesity," New Orleans, LA, 12/2-7/2016; ***(2)*** American Council on Life Insurance, Medical Section Meeting, "Biology and Therapeutic Applications of Adipose Stem Cells," New Orleans LA, 02/18-21/17.
- ***Reviewer:*** ***(1)*** Grant Proposal Review Committee, Regenerative Medicine, Maryland Department of Health, ***(2)*** Therapeutic Approaches for Genetic Diseases (TAG) Study Section, NIH.

Milton Hamblin

- ***Poster Presentations:*** "ERalpha Protects Against Lipoprotein-Associated Oxidative Stress to Regulate Vascular Tone in Both Male and Female Mice" EB2017.
- ***Reviewer:*** ***(1)*** Journal of Molecular and Cellular Cardiology, February 2017; ***(2)*** Scientific Reports, February 2017.

Dr. Suttira Intapad

- ***Invited Speaker:*** Tulane Hypertension & Renal Center of Excellence at a special THRCE Seminar in honor of World Kidney Day 2017, "Developmental Programming of Hypertension: Does Size Matter?" 03/09/2017.
- ***Poster Presentations:*** ***(1)*** "Sex-dependent variability in protein expression of renal sphingosine-1-phosphate signaling pathway and blood pressure of intrauterine growth restricted mice," Tulane Health Science Research Days 2017 (THSRD); ***(2)*** "Sex differences in renal sphingosine-1-phosphate signaling pathway and blood pressure of intrauterine growth restricted mice," EB2017.
- ***Moderator:*** Judge: 2017 THSRD poster competition, 02/20-21/17.
- ***Reviewer:*** Journal of Cellular Physiology, December 2016.

Dr. Philip Kadowitz

- ***Publication:*** Gur S, Rezk BM, Abd Elmageed ZY, Kadowitz PJ, Sikka SC, Hellstrom WJ. Characterisation of pomegranate juice effects on human corpus cavernosum. Andrologia. 2016 Oct 26. doi: 10.1111/and/12712. [Epub ahead of print].

Dr. Prasad Katakam

- ***Professional Service:*** Member, Organizing Committee, APS meeting, Cardiovascular Aging: New Frontiers and Old Friends, Westminster, Colorado, 08/11-14/17.
- ***Reviewer:*** *Ad hoc Peer Reviewer:* Circulation, Circulation Research, Diabetes, AJP, JPET, Microcirculation, Molecular Neurobiology, Journal of Neurochemistry, Journal of Visualized Experiments, Cell Stress and Chaperons; *Grant Reviewer:* AHA: Endothelial Biology 2 and Brain 2 Panels (October).

Faculty News continued

- ***Service:*** *Judge for poster competitions:* THSRD, BMS retreat, and Neuroscience retreat; and *Interviewer*: BMS, Physician Scientist Program, Neuroscience graduate program, and Medical School MD program.
- ***Outreach: (1)*** Volunteer at STEM, and ***(2)*** AHA Heart Walk Leader, November 2016.

Dr. Sarah Lindsey

- ***Grant Award: (1)*** *R01 Award. Please see Page 1.*
- ***Recognition: (1)*** Featured in an article: Scofield, Carolyn "Tulane researcher awarded $1.9M to improve menopausal hormone therapy," Tulane New Wave, 03/17/2017; and ***(2)*** on 4WWL TV News, 03/23/17.
- ***Invited Speaker: (1)*** Tulane Department of Biomedical Engineering, "Estrogen Receptors, Blood Pressure, and Vascular Remodeling," 11/10/17; and ***2)*** APS President's symposia on Sex differences in Physiology and Pathophysiology, "Eliciting Estrogenic Cardioprotection via GPER," EB2017.
- ***Moderator:*** Co-Chair: Novel Imaging Technologies in Reproductive Physiology. APS Endocrinology and Metabolism Section, Experimental Biology, EB2017.
- ***Reviewer:*** Hypertension, Biochimica et Biophysica Acta (BBA) - Molecular Basis of Disease.
- ***Outreach: (1)*** Presented "The circulatory system," 7th grade, Morris Jeff Community School, 12/14/16; and ***(2)*** Science Fair Judge, Ben Franklin High School, 01/8/17.

Dr. John McLachlan

- ***Publications:*** Please see Page 6.

Dr. Howard Mielke

- ***Invited Speaker:*** European Geosciences Union, General Assembly, Threats and potentials in urban and peri-urban areas: soil and water degradation, ecosystem services and risk management. "The astonishingly holistic role of urban soil in the exposure of children to lead." Vienna, Austria, 04/27/17.
- ***Poster Presentation:*** "Dynamic Changes in Soil and Blood Lead on Public and Private Properties in New Orleans: Pre- vs. Post- Hurricane Katrina." Society of Toxicology Annual Meeting, Baltimore, MD, 03/14/17.
- ***Reviewer: (1)*** Environmental Geochemistry and Health, ***(2)*** Environmental Health Perspectives, ***(3)*** Environmental Health, ***(4)*** PLOS, and ***(5)*** PEW Trust for America's Health project. Reviewed the report, "Lead exposure from multiple sources, interventions and risk communication," September 2016 to March 2017.
- ***Recognition: (1)*** featured in an article: Scofield, Carolyn "Finding Poison on our Playgrounds," *The Magazine of Tulane University School of Medicine*, Winter, 2017: 14-17, Print and Web.

Dr. Debasis Mondal

- ***Invited Speaker:*** Dept. of Pharmacology. Tulane University Medical Center, New Orleans, LA. "Targeting ER-stress and Proteasome Function in Aggressive Cancers: Utility of Phytochemical-Pharmaceutical Combinations," 01/13/17.
- ***Reviewer: (1)*** Current Drug Targets, 03/5/17(1); ***(2)*** Antioxidants, 01/19/17; ***(3)*** Molecules, 01/15/17; ***(4)*** Oncotarget, 12/10/16; ***(5)*** Experimental and Molecular Pathology, 11/8/16; and ***(6)*** Cardiovascular Toxicology, 10/22/17.
- ***Service: (1)*** Judge: Tulane Research Day, 02/20/17 and 2/21/17; and ***(2)*** Student Interviews: BMS Program, 01/9/17, and Neuroscience Program, 03/03/17.

Dr. Ricardo Mostany

- ***Submitted Grants*:** NIH/NCI R01, Co-Investigator.
- ***Reviewer:*** *Journals:* Cellular and Molecular Neurobiology; *Grants:* ***(1)*** Research Council C1 Research Funds 2017, The Katholieke Universiteit Leuven, Belgium; and ***(2)*** National Fellowships Committee for Graduate Women in Science, 2017-18.
- ***Outreach: (1)*** Organized visit to Tulane SOM with ***Drs. Lindsey*** and ***Katakam*** (Pharmacology) and ***Prieto*** (Physiology) for high school students from La Raza Escalera STEM, 12/03/16; ***(2)*** Panel speaker at West Jeff High & LW Higgins High Annual Family, STEM Summit, Harvey, LA, 12/14/16; and ***(3)*** Talk: "Memory formation and storage" to 7th grade, Morris Jeff Community School, New Orleans, LA, 12/14-15/17.

Dr. Ibolya Rutkai

- ***Grant Award:*** American Heart Association Scientist Development Grant, "Estrogen mediated protection against stroke: mitochondria as subcellular targets of nitric oxide," 01/2017-12/20/2019, $231,000 for 3 years.
- ***Poster Presentation:*** "Two sides to every story: mitochondria as critical mediators of the divergent cerebrovascular responses to experimental stroke in male versus female rats," EB2017.

Service to Tulane and SOM: **Dr. Bunnell**: Chair, Faculty Grievance Comm, Chair, Personnel and Honors Comm, Research Advisory Comm, Executive Comm: Tulane National Primate Research Center; **Dr. Busija**: Head: Basic Science Chairs; **Dr. Mondal**: Nominating Comm; **Dr. Lindsey**: BMS Admissions Comm, Nominating Comm; **Dr. Katakam**: Member: Faculty Advisory Committee, BMS Steering Comm; **Dr. Hamblin**: Nominating Comm; **Dr. Clarkson**: Curriculum Comm; BMF Steering Comm; **Dr. Kadowitz**: Promotions and Honors Comm; **Dr. Mostany**: Tulane Brain Institute Executive Comm.

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. Ibolya Rutkai (Pharm) ***(1)*** *has been promoted to Instructor in the Pharmacology Department. Congratulations, Ibolya!* Her faculty activities can be viewed on Page 2; ***(2)*** Dr. Rutkai will present a poster for the Busija lab representing work completed by ***Dr. Ivan Merdzo:*** "Dynamics of mitochondrial function changes in cerebral vasculature of type 2 diabetic rats," at EB2017.

Genevieve Curtin (NU) has joined the Busija lab and is a co-author on a poster, "Two sides to every story: mitochondria as critical mediators of the divergent cerebrovascular responses to experimental stroke in male versus female rats," EB2017.

Thomas Salter-Cid (NU) recently joined the Busija lab.

Laboratory of Dr. Bruce Bunnell

Rachel Sabol (SCRM) presented a poster: "Adipose stem cells from obese individuals promote metastasis of breast cancer patient derived xenograft (PDX)" at the Louisiana Cancer Research Consortium (LCRC) Retreat held at Xavier University, New Orleans, LA, 03/10/17.

Nick Pashos (SSE) IGERT Innovation MD/PhD program ***(1)*** was selected as Tulane Health Sciences Research Days, 02/2017 (THSRD) Award for Excellence in Research and Presentation by a Graduate Student, ***(2)*** has published a first authored paper, see Page 6.

Annie Bowles (CMB) ***(1)*** successfully defended her PhD dissertation on March 13, 2017. Congratulations Annie!; and ***(2)*** has published a paper, please see Page 6.

Laboratory of Dr. Prasad Katakam

Venkata (Ram) N. Sure (Pharm) **(1)** will receive the Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award from the American Physiological Society at EB2017; and ***(2)*** will give an oral presentation and poster: "A Novel Functional Variant of nNOS Mediates Anoxic Injury in Brain Microvascular Endothelial Cells via Mitochondrial Superoxide Generation" at EB2017; ***(3)*** gave a poster: "Functionally Distinct Neuronal Nitric Oxide Synthase Expressed in the Brain Microvascular Endothelial Cells Mediates Anoxic-injury to Blood-Brain Barrier," International Stroke Conference 2017, Houston, TX, 02/22/17; and ***(4)*** gave a poster: "Mitochondrial mechanisms of drug-induced disruption of blood-brain barrier," THSRD.

Laboratory of Dr. Sarah Lindsey

The Lindsey lab had a paper selected for press release as well as APSselect, a showcase of the best recently published articles in physiological research. Please see ** in Publications section on Page 6 of the newsletter.

Caleb Abshire, Dr. Margaret Zimmerman, and ***Gabrielle Clark***, along with ***Dr. Sarah Lindsey*** collaborated with members of the ***Prieto*** (Phys) and ***Miller*** (BE) lab to present: "Analysis of Arterial Stiffness Induced by High Fat Using Biaxial Mechanical Phenotyping," at Tulane Biomedical Sciences Retreat, 10/21/16.

Caleb Abshire, Dr. Margaret Zimmerman, and ***Dr. Sarah Lindsey*** collaborated with members of the ***Prieto*** (Phys) and ***Miller*** (BE) labs to present: "Importance of Axial Length in the Detection of Carotid Artery Stiffness Induced by a High Fat Diet," at THSRD.

Dr. Margaret Zimmerman (Pharm) Postdoctoral Fellow, received ***(1)*** a BIRCWH award for Research in Women's Health and Sex Differences in Cardiovascular and Related Diseases, ***(2)*** an ASPET travel award to EB2017, ***(3)*** an ASPET trainee showcase award, and ***(4)*** will present a poster: "Bazedoxifene Induces Greater Vascular Responses than Estradiol Independent of Sex and GPER," at EB2017.

Dillion Hutson (CMB) ***(1)*** received an award in the ASPET undergraduate poster competition, and ***(2)*** an ASPET travel award to EB2017. Dillon graduated from Tulane in December 2016 with a B.S. in Cell and Molecular Biology. He has been accepted to the Master's Program in the Tulane Department of Genetics!

Hallie Spooner (CMB) received an ASPET travel award to EB2017. Hallie will receive her B.S. in CMB in May 2017!

Jen Duong (Pharm) ***(1)*** received an ASPET travel award to EB2017, and ***(2)*** presented a poster: "IGF-1 and ANG II regulate expression of the G protein-coupled estrogen receptor in vascular smooth muscle cells," EB2017. Jen will leaving the Lindsey Lab to begin medical school in the fall. The lab will miss her!!

Caleb Abshire (M.D./Ph.D. program) ***(1)*** received a Tulane Biomedical Sciences Travel award for EB2017, and ***(2)*** will present a poster: "Importance of Axial Length in the Detection of Carotid Artery Stiffness Induced by a High Fat Diet," at EB2017.

Rebecca Yoon (NU) will receive her undergraduate degree in May 2017! Rebecca has been accepted into the Pharmacology M.S. Program.

Laboratory of Dr. Ricardo Mostany

Drew Davidson (CMB) gave a seminar: ***(1)*** "Aging-related changes in structural plasticity of layer 5 neurons of primary motor cortex," in the Student Seminar Series of CMB, 02/03/17; and gave two posters for "Long-term, in vivo imaging of dendritic spine dynamics of layer V pyramidal neurons in the young and aged primary motor cortex," at ***(2)*** Symposium on Aging and Regenerative Medicine, Tulane, 03/17/17; and ***(3)*** the School of Science and Engineering Research Day, 04/06/17.

Dr. Ion R. Popescu (Pharm) Postdoctoral Fellow, gave two posters titled: "Action potential frequency adaptation correlates with inhibitory drive in pyramidal neurons of the somatosensory cortex," at ***(1)*** THSRD, and ***(2)*** School of Science and Engineering Research Day, Tulane University, 04/06/2017; and ***(3)*** a third poster, "Hyperpolarized resting membrane potential of fast spiking neurons: a putative cause of decreased activity-dependent IPSCs in pyramidal neurons of the barrel cortex of aged mice," at the Symposium on Aging and Regenerative Medicine, Tulane, 03/17/17.

Rebecca Voglewede (BI/NP) gave multiple presentations of "Age-dependent alterations in cortical dendritic spine dynamics following whisker stimulation," in the following formats and events: ***(1)*** Oral Talk, Tulane Brain Institute Retreat, 03/04/17; ***(2)*** Invited Talk, HHMI/Janelia Research Campus, Ashburn, VA, 03/24/17; ***(3)*** Poster and Invited Talk, St. Jude Children's Research Hospital National Graduate Student Symposium, Memphis, TN, 03/20-24/17; ***(4)*** Invited Talk and Poster, Gordon Research Symposium: Dendrites: Molecules, Structure & Function, Lucca, Italy, 03/25-26/17; ***(5)*** Poster, Gordon Research Conference, 03/26-30/17; and ***(6)*** Poster, School of Science and Engineering Research Day, Tulane University, 04/06/17.

Kaeli Vandemark (BI/NP) ***(1)*** received the Dean of the School of Science and Engineering Award for Excellence in Research and Presentation by an Undergraduate Student, announced 02/23/17, for her poster: ***(2)*** "Age-related Changes in Dendritic Spine Volume and Morphology After Sensory Stimulation in the Primary Somatosensory Cortex," School of Science and Engineering Research Day, Tulane University, 04/6/17; and presented another poster; ***(3)*** "Age-dependent alterations in dendritic spine dynamics in the somatosensory cortex following whisker stimulation," THSRD.

Laboratories of Dr. Stephen Braun, Dr. Phil Kadowitz, and Dr. Debasis Mondal

The following poster presentations at THSRD represent the collaborative activities of Dr. Braun's, Dr. Kadowitz', and Dr. Mondal's students and trainees.

"MSCS activate the latent provirus in HIV-1 infected monocytes: putative role of AKT signaling and C/EBPB in augmenting TAT transactivation of the HIV-1 LTR."

"A novel function of nebivolol: stimulation of stem cell proliferation and inhibition of differentiation."

"A immunodeficient mouse model mimics humans in lacking A-gal epitopes."

"Disrupting Tumor-Host Communication, an effective approach to control Glioblastoma Development."

"Manumycin A suppresses exosome biogenesis and secretion in prostate cancer cells via targeted inhibition of Ras/Raf/MEK/ERK1/2 signaling and hnRNP H1 in prostate cancer cells."

"Targeted Degradation of AR and its Spliced Variant AR-V7 by the Phytochemical Sulforaphane: New Therapeutic Opportunity for Prostate Cancer."

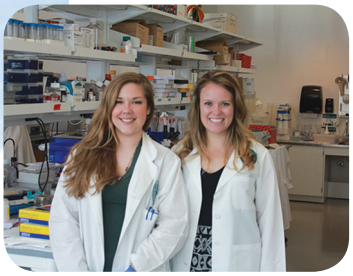
"The membrane-active phytopeptide CYO2 increases anti-HIV efficacy by simultaneously increasing drug uptake and by disrupting viral particles."

"Mesenchymal stromal cells (MSCs) recruited and facilitate latent HIV-1 reactivation via novel PI3K-AKT survival pathway."

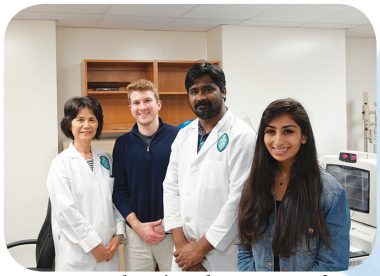
New Faces in Pharmacology 2016 - 2017

There have been many additions to the Pharmacology laboratories. ***Rachel Sabol*** and ***Rachel Wise*** are both working with **Dr. Bunnell.** ***Rachel Sabol*** has a B.S. and M.S. from Tulane and is in the M.D/Ph.D Program. ***Rachel Wise*** has a B.S. from Loyola, New Orleans, and a M.S. from the Neuroscience Program. She is working toward her Ph.D. in Neuroscience. ***Genevieve Curtin*** and ***Tomas Salter-Cid*** are both Neuroscience undergraduates who are working in **Dr. Busija's** laboratory. ***Grace Bloomfield, Gabrielle Clark,*** and ***Caleb Abshire*** are working in **Dr. Lindsey's** lab. Grace is an undergraduate in CMB, Gabrielle is a Ph.D. student in BE, and Caleb is in the M.D/.Ph.D program. Caleb and Grace are working on various aspects of GPER. Gabrielle is studying biaxial mechanical characterization of vaginal and arterial tissue. In **Dr. Katakam's** lab, pictured L to R, ***Sufen Zheng*** has joined the lab as a Technician, ***Jared Sperling*** and ***Monica Dholakia*** are current Pharmacology Masters students, and ***Dr. Siva Sakamuri*** is a Post-Doctoral Fellow. He worked previously at the National Institute of Nutrition in India. Dr. Sakamuri is studying the role of nitric oxide synthases in cardio and cerebrovascular physiology. ***Brandon Thrash*** has joined **Dr. Mostany's** lab. Brandon is a Pharmacology Masters student studying functional calcium imaging in neocortical circuits.

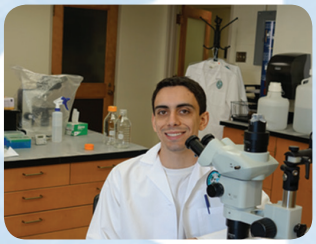
Dr. Lindsey's Lab: L to R: Grace Bloomfield, Gabrielle Clark, and Caleb Abshire

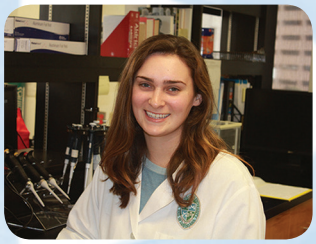


Dr. Bunnell's lab: L to R: Rachel Sabol and Rachel Wise



Dr. Katakam's Lab: L to R: Sufen Zheng, Jared Sperling, Dr. Siva Sakamuri, and Monica Dholakia





Dr. Busija's Lab: L to R: Thomas Salter-Cid and Genevieve Curtin

Brandon Thrash

Master's in Pharmacology Graduate Spotlight: Kevin Swan

Kevin Swan receives 2016 - 2017 LAMMICO Scholarship Award.

I went to college when I was quite young. At that time I did not intend on pursuing a career in medicine. Rather than spending my time developing an academic transcript suitable for admission to medical school and – to paraphrase Dr. Levitsky, LSU and Tulane Professor, – I spent my time thinking about what young boys think about instead of preparing for the future. When I decided to apply to medical school several years later, it was clear from the acceptance rates that I would be held accountable for my undergraduate academic performance.

The Masters in Pharmacology Program at Tulane gave me the opportunity to demonstrate to admissions committees that I was capable of excelling in medical school courses, and undoubtedly played a key role in my admission to medical school. Dr. Clarkson directs the medical pharmacology course, and his efforts to provide a superior educational experience for his students deserve recognition. Dr. Clarkson's ***Pharmwiki*** is an invaluable resource where he clearly identifies important concepts, alerts students to potential areas of confusion, and provides sample quizzes that allow students to identify and correct any areas of weakness or misunderstanding. I believe that students will learn a tremendous amount of material by taking any medical school course, but the speed and efficiency with which I acquired this knowledge was unparalleled due to the efforts of the pharmacology faculty.

The small class size allows students to develop close relationships with the faculty, and the ability to receive honest feedback from those intimately familiar with both the individual student and the medical school application process is of great personal and professional benefit. There are excellent opportunities for interested students to become involved in research, and I was ecstatic when four of the younger faculty members who had invested much of their time in us, all received National Institute of Health R01 grants. They are a deserving group of investigators, and the research and teaching future appears very promising for Tulane Pharmacology.

The program attracts a diverse mix of students from across the country, and this exposed me to ideas and activities I would not have otherwise experienced. My classmates from Louisiana did a superb job showing us around, and made spending a year in New Orleans an incredible experience. I am now a first year medical student at Louisiana State University School of Medicine in New Orleans.

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:
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

Publications

Yamaleyeva LM and **Lindsey SH.** (2017) Potential for miRNAs as Biomarkers and Therapeutic Targets in Preeclampsia. *Hypertension* PMID: 28193710.

Azimi MS, Lacey M, **Mondal D**, Murfee WL. An Ex Vivo Tissue Culture Model for Anti-angiogenic Drug Testing. *Methods Mol Biol.* 2016;1464:85-95. PMID:27858358.

Zimmerman MA, Lindsey SH. (2016) Letter to the Editor: Inconsistent Blood Pressure Phenotype in Female Dahl Salt-Sensitive Rats. *Am J Physiol Renal Physiol.* 311(6):F1391-F1392. PMID: 27956382.

Zimmerman MA, Hutson DD, Trimmer EH, Kashyap SN, Duong JL, Murphy B, Grissom EM, Daniel JM, **Lindsey SH.** (2017) Long- but not Short-term Estradiol Treatment Induces Renal Damage in Midlife Ovariectomized Long Evans Rats. *Am J Physiol Renal Physiol.* 312(2):F305-F311. PMID: 28153915.

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