

Pharmacology News

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Spring 2021

TULANE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF PHARMACOLOGY

Message from the Chair: Dr. David Busija

We are nearing the end of the severe disruptions in teaching and research as well as in personal lives caused by the COVID-19 pandemic. Tulane University School of Medicine has done an effective and timely job of ensuring that faculty, staff, and students are regularly tested for COVID-19 infections and have access to COVID-19 vaccines. We are expecting to have *in-class instruction* and resume our *in-person seminar series* (with some room capacity restrictions) in the fall semester but will maintain our Zoom meeting capabilities. During the last six months the department has maintained its research, teaching, and service functions. Twenty-eight students from our Masters in Pharmacology Program received their degrees on May 21, 2021 and likely will experience the same high degree of success on admission to medical and dental school programs as in previous years. We wish these students good luck in the future. In medical student education, the T2 Pharmacology Course, organized by **Dr. Craig Clarkson**, was a finalist in the T2 Course of the Year Award, given by the medical student Owl Club. Our trainees continue to have success in acquiring extramural financial support for their studies. **Dr. Benard Ogola**, a Postdoctoral Fellow in **Dr. Sarah Lindsey's** laboratory, was awarded a K99/R00 grant from the NHLBI. This award allows a smooth transition from Postdoctoral to junior faculty status. Also in **Dr. Lindsey's** laboratory, **Dr. Bruna Visniauskas** received a Postdoctoral Fellowship and **Isabella Kilanowski-Dorah** received a Predoctoral Fellowship, both from the American Heart Association (AHA). Our newest faculty member, **Dr. Jorge Castorena-Gonzalez**, is completing his first year in the department. His research program has introduced new technology and research focus (see story, below). Our faculty continue to be productive in research as shown by NIH grant awards and an impressive list of publications (see Page 6). Despite the shortage of facilities workers, we have completed remodeling a large laboratory in the department to provide much needed space. This renovated laboratory, formerly occupied by **Dr. Phil Kadowitz**, will become part of **Dr. Katakam's** laboratory, and his current unrenovated space will be the next renovation project. Finally, the department continues to provide service to the medical school, professional societies, and research by serving on university and medical school committees, and AHA and NIH Study Sections.

New Research and Technology

The Castorena Lab recently acquired an **Andor Dragonfly-200 spinning-disk confocal microscopy system** that allows high-speed, high-resolution imaging in a variety of fluorescence applications. **Dr. Castorena** uses this system to study how dynamic changes in the intracellular concentration of calcium regulate the function/dysfunction of the collecting lymphatics, which are the major vessels of the lymphatic

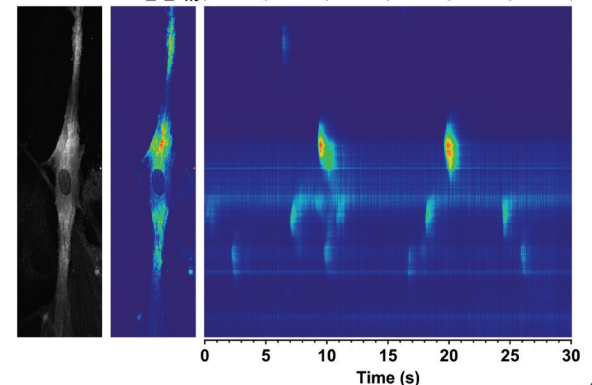
system's vasculature through which excess interstitial fluid is continuously drained from tissues and organs around the body. The lymphatic vasculature also comprises the major trafficking system for immune cells and is the primary route for the dissemination of cancer metastases. Deficiencies of the lymphatic system can result in abnormal accumulation of fluid known as lymphedema. Lymphedema of the extremities is the most common form of lymphedema; however, abnormal fluid accumulation can occur anywhere in the body, including spaces within and around vital organs, potentially compromising their function and resulting in life-threatening conditions. *Utilizing a diet-induced obesity model in mice expressing genetically encoded calcium indicators in lymphatic muscle and endothelial cells, pressure myography, confocal microscopy, and custom-written image processing and analysis software tools, the Castorena group seeks to understand the role of aberrant calcium signaling in lymphatic dysfunction associated with obesity.*

Imaging of Intracellular Ca²⁺ Transients in the Lymphatic Vasculature

ANDOR Dragonfly 200
Spinning-Disk Confocal Microscopy System



Lymphatic
Muscle Cell



**Faculty News: All presentations, participation, lectures, and posters
were accomplished by Zoom or Webinar**

Dr. David Busija

- **Grant Submissions:** Submitted two NIH R01 grants on 3/5/2021
- **Grant Reviewer:** Ad hoc member, NIH BINP Study Section, 2/8-9/2021
- **Professional Service:** (1) Appointed to the Finance Committee of the American Physiological Society, and (2) Treasurer of the Association of Medical School Pharmacology Chairs

Dr. Stephen Braun

- **Grant Submissions:** (1) NIH NIMH, R01, MPI with Partha Chandra; (2) PI: Partha Chandra, NIH NIAID R01, Co-I: Stephen Braun
- **Editorial Board Member:** *Journal of Frontiers in Immunology*, *Frontiers in Microbiology*
- **Journal Reviewer:** *Biomolecules*, *Gene Therapy*

Dr. Jorge Castorena-Gonzalez

- **Invited Speaker:** (1) "The Lymphatic System: A Fluid-Transporting System - Implications for the Development of Cardiovascular Diseases," University of Guanajuato, Physics Department, Seminar Series, 1/2021, Leon, Guanajuato, Mexico; (2) "Regional Valve Dysfunction in Collecting Lymphatic Vessels from Diet-Induced Obese Mice," Lymphatic Forum 2021, NAVBO (North American Vascular Biology Organization) and LE&RN (Lymphatic Education and Research Network), organized by Georgia Tech, Stanford University, and the University of Illinois at Chicago, May 2021
- **Journal Reviewer:** *American Journal of Physiology*

Dr. Partha Chandra

- **Grant Submissions:** (1) NIH R01, PI, 01/07/21, (2) NIH R01, MPI with Stephen Braun and Ricardo Mostany, 01/07/2021
- **Invited Speaker:** "Multiomics Uncovers Sexual Disparities in the Expression of Genes and Proteins in Rat Cerebral Microvessels," *Experimental Biology* 2021, April 27-30, 2021 (EB2021)
- **Poster Presentations:** (1) EB2021, "Latent HIV-1 exosomes Induce Mitochondrial Hyperfusion due to Loss of Phosphorylated Dynamin-related protein 1 in Brain Endothelium," EB2021; (2) "Multiomics Uncovers Sexual Disparities in the Expression of Genes and Proteins in Rat Cerebral Microvessels," EB2021
- **Journal Reviewer:** *Frontiers in Microbiology*
- **Editorial Board Member:** *International Journal of Immunopathology and Pharmacology* (SAGE Publication)

Dr. Craig Clarkson

- **Award:** "Caring Teacher Award" presented by the Tulane AOA Medical Student Honor Society, 4/26/21

Dr. Suttira Intapad

- **Grant Submission:** (1) NIH R01, 2/4/21; (2) Bridge Grant, Tulane SOM, 4/30/21
- **Grant Reviewer:** 2020-2021 Career Development Award Vascular Science 3, AHA, 5/20/21
- **Editorial Board Member:** *The Kidney 360 Journal*
- **Journal Reviewer:** *Clinical Science*, *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*

Dr. Prasad Katakam

- **Grant Submissions:** NIH R01, Submitted three grants as Co-I, one as consultant
- **Mentorship:** (1) Co-mentor for K99/R00 grant, (2) Co-sponsor of two predoctoral AHA fellowship grants, (3) Consultant for two applications for Tulane School of Medicine Pilot Grants, (4) Consultant for one LAC Pilot Grant, (5) SOM: Consultant for two applications, (6) Consultant for one LaCATS Pilot Grant
- **Invited Speaker:** (1) "Impact of Aging, Sex, and Alzheimer's Disease on Cerebral Microvascular Bioenergetics," 9th National Annual Meeting of the Association of Scientists of Indian Origin in America, Inc, 1/17/21; (2) "Peroxynitrite Scavenging: Impact on Cellular and Mitochondrial Energetics," Department of Pharmacology Seminar Program, Tulane University School of Medicine, New Orleans, LA, 3/5/21
- **Grant Reviewer:** (1) AHA Vascular Wall Endothelial Biology Fellowships Panel, Chairman, 2/21; (2) NIH Acute Neural Injury and Epilepsy, adhoc member 2/2021; (3) LaCATS Roadmap Scholar Nomination, Phase I and II peer-review 2/21; (3) NIH ZRG1 F10C-C (20), adhoc member fellowship grants NHLBI 4/2021
- **Professional Service:** (1) Chairman: Nominations Committee, American Physiology Society, Cardiovascular Section; (2) Award Committee member, Microcirculatory Society
- **Editorial Boards:** *Frontiers Vascular Physiology* (Associate Editor), *Frontiers Aging Neuroscience* (Guest Associate Editor), *Translational Stroke Research* (Member)
- **Journal Reviewer:** *Stroke*, *American Journal of Physiology Heart and Circulatory Physiology*, *The Journal of Cardiovascular Pharmacology*
- **Service:** Poster Judge Health Science Research Days 2021 (THSRD2021)

Faculty News continued

Dr. Sarah Lindsey

- **Grant Submissions:** (1) NIH P01, Project 3 and Core B Leader, PI: Jill Daniel, February 2021; (2) NIH R01, March 2021, PI; (3) NIH R01, March 2021, Co-Investigator: Sarah Lindsey, PI: Minolfa Prieto
- **Invited Speaker:** "Menopause, Estrogen Receptors, and Vascular Stiffness," Red Dress Day Event, University of Kentucky, 2/5/21
- **Associate Director and Enrichment Program Director:** Tulane Center of Excellence in Sex-Based Biology & Medicine, Inaugural Symposium, 4/29/21

Dr. John McLachlan

- **Invited Speaker:** Dr. John McLachlan recently was named and presented a Legacy Lecture for the Institute for Green Science at the Carnegie Mellon University. Director Terry Collins, the Teresa Heinz Professor of Green Chemistry at Carnegie Mellon and a panel chose eight senior scientists who have pioneered the field of Endocrine Disruption Science to give a very personal perspective on their work and ideas. Professor Collins stated that he wanted to capture the essence of how a field develops and grows. The lecture was presented on 4/29/21.

Dr. Howard Mielke

- **Invited Speaker:** Invited to present at three virtual conferences to extend the message about environmental signaling and health to the nursing profession who have direct contact with patients: (1) Global Summit on Nursing education, "Soil lead (Pb) contamination of children's play areas-Health consequences of cultural attitudes in New Orleans, USA and Oslo, Norway," Webinar-Boston, 3/15-18/21; (2) 4th International Conference on Pediatrics and Healthcare, "Neonates and infants in outdoor play areas: Public health consequences of cultural attitudes about lead (Pb) dust in New Orleans, USA and Oslo, Norway." Webinar-UK, 3/24/21; and (3) Global Virtual Summit on Nursing Practice and Science, "Revisioning nursing with advanced science: The health consequences of environmental lead contamination on children's play areas," 4/26/21
- **National Service:** Member: CDC Lead Exposure Preven-

tion Advisory Committee

- **Reviewer:** *Environment International, Environmental Health Perspectives*
- **Outreach and Service to Community:** Consulting with young colleagues beginning their professional careers, nursing professionals, community and citizens who requested soil analysis or other analytical assistance

Dr. Ricardo Mostany

- **Grant Award:** R56, "Dysfunctional homeostatic plasticity in Alzheimer's Disease," National Institute on Aging (NIA), \$424,805, 1 year
- **Grant Submissions:** (1) NIA, 11/2020 (Lindsey PI; Mostany Co-I); (2) NIA, 11/2020, 11/2020, MPIs Katakam and Mostany; (3) NIA, 11/2020, R01, PI: Mostany; (4) NIA, 11/2020, MPIs: Katakam and Mostany; (5) NIMH, 1/2021, R01: PIs: Braun and Chandra, Co-I: Mostany; (6) NIA, 1/2021, PI: Lead, Project PI: Mostany; (7) NIAID, 2/2021, R01, PI: Norton, Co-I: Mostany
- **Invited Speaker:** "Alterations in plasticity in healthy and pathological aging," Integrative Center for Neural Repair, University of California, Los Angeles, CA, 4/30/21
- **Grant Reviewer:** (1) NIH Center for Scientific Review (CSR), Fellowships: Sensory and Motor Neuroscience, Cognition and Perception (ZRG1 F02B-E (20) L), March 2021; (2) National Fellowships Committee for Graduate Women in Science 2021, May 2021; (3) American Heart Association (AHA), Career Development Award, Radiology and Surgery, May 2021
- **Journal Reviewer:** *Journal of Neuroscience, Stroke*

Dr. Ibolya Rutkai

- **Award:** Received a \$15,000 Tulane Brain Institute Research Fund Award to support her research project, "Proteomic landscape of microvessels in the aged brain: therapeutic potential of mitochondria." This award is supported by the Panetta Family Endowed Fund.
- **Invited Speaker:** "SARS-CoV-2-Associated neuropathology in non-human primates," EB2021, Research for this oral presentation was completed in the laboratory of Dr. Tracy Fischer of the Tulane National Primate Research Center.

University and SOM Committees: **Dr. Braun:** Tulane Primate Research Center (TNPRC) Space Committee; **Dr. Busija:** Basic Science Chairs, BMS Curriculum Task Force; **Dr. Clarkson:** BMS Curriculum Task Force, Curriculum, BMS Steering, Student Professionalism & Promotion, Phase 2 Curriculum Advisory, Innovation Council; **Dr. Lindsey:** BMS Student Association Faculty Advisor, Campus Climate Task Force - Sexual Harassment by Faculty Subcommittee, Women in Medicine and Science Programming, Vice Chair: Institutional Animal Care and Use; **Dr. Intapad:** Faculty Advisory, BMS Social Media-Recruiting; **Dr. Katakam:** Dean's Diversity, Equity, and Inclusion Coalition, DEI Coalition Research Subcommittee, Chairman: BMS Curriculum, BMS PhD Admissions, BMS Steering (Standby), GMF Faculty Advisory and Admissions, SOM Personnel & Honors, SOM Admissions Committee; **Dr. Mostany:** Nominating, Student Professionalism and Promotion Committee, Tulane Brain Institute Executive Committee, Chair: Tulane Brain Institute Seminar Series, President, Greater NOLA Society for Neuroscience Chapter.

Laboratory of Dr. David Busija

Dr. Siniša Čikić, Postdoctoral Fellow (Pharm) (1) gave an oral presentation, "Sex Differences in Gene-Expression between Brain Arteries and Cortical Microvessels in Mice revealed by RNA-Sequencing," at the 8th Annual Physiological Omics Conference, EB2021; (2) was coauthor on two posters presented by **Dr. Partha Chandra**, at EB2021; (3) presented a poster, "Sex Differences in Gene-Expression between Brain Arteries and Cortical Microvessels in Mice revealed by RNA-Sequencing," at THSRD2021; (4) received a award to cover registration for the Annual National Postdoctoral Association Conference on April 15-16, 2021; and (5) was a judge for the ASPET Student/Postdoc Poster Competition (Neuropharmacology) at EB2021.

Laboratory of Dr. Stephen E. Braun

Dr. Fayez M. Saleh, MD, MS, and PhD candidate (TNPRC) was an author on a publication (please see page 6).

Nathan Johnson, MD/PhD student (TNPRC), was first author on a publication (please see page 6).

Laboratory of Dr. Castorena-Gonzalez

Kelli Jablon, (NU) presented two posters, (1) "Endothelial-Cell Modifications in Murine Collecting Lymphatic Vessels in Obesity," at EB2021; and (2) "Assessment of Lymphatic Endothelial Dysfunction in Aging: Implications on Abnormal Drainage of Interstitial Fluid from Vital Organs in Inflammatory Diseases," at the 2021 CELT Student Research Virtual Conference, Tulane University, May 2021; and (3) graduated from the School of Science and Engineering with a Magna Cum Laude distinction. She has been accepted for a prestigious one-year internship at Beth Israel Deaconess Medical Center in Boston, MA working as a scribe and clinical assistant. **Congratulations Kelli!**

Laboratory of Dr. Suttira (Joy) Intapad

Benjamin Bhunu, Graduate Student, (BMS) presented a poster, "Reduced Uterine Perfusion Pressure (RUPP) Impairs Blood Pressure (BP) Regulation and Renal Function in Intrauterine Growth Restriction (IUGR) Mouse Offspring, THSRD2021.

Dr. Rodrigo Yokota, Postdoctoral Fellow (Pharm) was coauthor on two posters presented at THSRD2021. One poster was presented by **Benjamin Bhunu** (above) and the other by **Isabel Riccio** (below).

Isabel Riccio, (NU) presented a poster, "Sphingosine-1-phosphate Signaling Pathway is Altered in Brain Microvessels of Intrauterine Growth Restricted Mice at THSRD2021.

Laboratory of Dr. Prasad Katakam

Dr. Siva S. Sakamuri, Postdoctoral Fellow (Pharm) gave an oral presentation, "Mechanisms Underlying the Altered Bioenergetics of Aged Brain Microvasculature," at EB2021.

Laboratory of Dr. Sarah Lindsey, [Our webpage](#)

Dr. Benard Ogola, Postdoctoral Fellow (Pharm), (1) received an **NIH NHLBI K99/R00** award for "Interplay of Sex Hormone and Chromosomes in Vascular Oxidative Stress and Arterial Stiffening," 1/16/21–1/15/26; (2) was first author on a poster, "Aldosterone-Induced Stiffening and Cardiac Dysfunction in Male and Female G Protein-Coupled Estrogen Receptor Null Mice" THSRD2021; and (3) received 1st place for his postdoctoral oral presentation, "Ovariectomy Increases the Expres-

sion of X-Linked Genes," at the University of North Texas 3rd Annual Women's Cardiovascular and Brain Health Research Symposium, 3/16/2021. **Congratulations Ben!**

Alec Horton, (NU), was first-author on a poster, "DHT Induces Arterial Stiffness in Female Mice," at THSRD2021.

Dr. Bruna Visniauskas, Post-doctoral Fellow (Pharm), (1) received **an AHA Postdoctoral Fellowship** for "Sex differences in circadian blood pressure and contribution to neurovascular coupling," 5/1/21–4/30/23; (2) presented a poster, "Sex Differences in Blood Pressure Rhythms," at THSRD2021; and (3) received the Tulane BIRCWH Award for Research in Women's Health and Sex Differences in Cardiovascular and Related Diseases at THSRD2021. **Congratulations Bruna!**

Isabella Kilanowski-Dorab, PhD student (BMS), received **an AHA Predoctoral Fellowship** for "Interactions of Estrogen and Aging on the Extracellular Matrix in Arterial Stiffening," 5/1/21–4/30/23. **Congratulations Isabella!**

Other lab members contributing to the research and data for the posters and oral presentations described above included: **MM Wilkinson**, **Nicholas Harris**, **Tristen Wong**, and **Zaidmara Diaz**.

Nicholas Harris, (SSE) will graduate from Tulane with Bachelor of Science in Engineering with Honors, He has been accepted to the LSUHSC MD/PhD Program. **Congratulations Nicholas!**

Zaidmara Diaz (School of Liberal Arts) will graduate from Tulane with a Bachelor of Arts in French and has been accepted to a Teaching Assistant Program in France. **Congratulations Zaidmara!**

Laboratory of Dr. Ricardo Mostany [Our website](#)

Alexis Ducote, PhD student (BI), gave (1) an oral presentation "Volumetric Analysis of Layer 5 Fast Dendritic Spine Dynamics after Plasticity Induction, Downtown and Uptown Neuroscience Krewe (DUNK) on 2/26/21, and (2) a poster, "Volumetric analysis of fast dendritic spine dynamics in aging somatosensory cortex following chemically-induced plasticity," at THSRD2021.

Cemo Semmedi, (BI), gave (1) an oral presentation, "Downregulation of firing rate set-point regulator CAMKIV in the aged cortex and in AD: a probable determinant of hyperexcitability," at DUNK, 2/26/202; and (2) a poster, "Homeostatic plasticity markers are reduced in barrel cortex in healthy aged and Alzheimer's disease (AD) model mice," at THSRD2021.

Ian Popescu (Pharm) gave (1) a poster, "Oxytocin effect on pyramidal neurons in advanced-age neocortex supports its potential for anti-aging therapy," at THSRD2021; and (2) has a first author publication (please see page 6).

Natalie Grosek (NU) was accepted to the Tulane Undergraduate Research in Neuroscience (TURN) Summer Program. **Congratulations Natalie!**

Laboratory of Dr. Ibolya Rutkai

Abigail Seman, (SSE) has joined the Rutkai Lab. Abigail is the recipient of two awards: (1) Newcomb-Tulane College's Office of Academic Enrichment 2021 NTC Summer Research Program, and (2) a CELT Summer Research Award for Faculty Mentored Undergraduate Research. **Congratulations Abigail!**

Master's in Pharmacology Graduate Spotlight: Graham Unis, M.D. Resident in Internal Medicine, Ochsner Health Systems



My Master's of Pharmacology degree from Tulane University allowed me to start leaps and bounds ahead when starting medical school. It was one of the most important years of my life. I met numerous career mentors as well as my loving wife, a fellow student of pharmacology.

Following my undergraduate studies in Helena, Montana, I was searching for a way to put my biology degree to work. While working at a local psychiatric hospital, I received an e-mail regarding the Master's of Pharmacology program at Tulane University. *My decision to apply led me down a path which allowed me to grow, learn, and apply knowledge in a highly effective way.* This made my time studying for medical school significantly more effective allowing me to score extremely high on my medical board exams while simultaneously starting a family with my wife. The pharmacological knowledge gained from the master's program proved to have broad applicability throughout medical school and well into my residency.

Following my wonderful experience at Tulane University, I traveled to Brisbane, Australia where I studied medicine as part of the University of Queensland - Ochsner Clinical School. *Following graduation, I stayed in New Orleans to pursue a residency in Internal Medicine at Ochsner Health Systems. I'm extremely grateful for the experiences, opportunities, education, and friendships provided to me during my time in the Tulane Master's of Pharmacology program.*

New Faces in Pharmacology



Pictured on the left is **Abigail Seman**, who is a new member of the **Rutkai Lab**. Abigail is an undergraduate pursuing

a degree in mathematics. She will be studying cerebral blood flow in the aging brain as part of a summer research award from Newcomb-Tulane's Office of Academic Enrichment.



Pictured on the left is **Natalie Grosek** who is a new member of the **Mostany Lab**. Natalie will be assisting

on a project analyzing images taken from a 2-photon microscope in mice pre- and post-stroke to determine whether or not hypoglycemia plays a role in causing further stroke damage.



Pictured on the left is **Loren Johnson** who started in the **Intapad Laboratory** in March of 2021 as a Labo-

ratory Technician. Loren has a B.S. in Biology from Louisiana Tech University and is working on the development of cardiac disease.

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

Publications

Gurralla R, Kilanowski-Doroh I, Hutson DD, Ogola BO, Zimmerman MA, Katakam PVG, Satou R, Mostany R, Lindsey SH. Alterations in the Estrogen Receptor Profile of Cardiovascular Tissues during Aging. *Geroscience*, Feb. 2021;43(11):433-442, PMID: 33558965

Chandra PK, Cिकic S, Baddoo MC, Rutkai I, Guidry JJ, Flemington EK, Katakam PV, Busija DW. Transcriptome analysis reveals sexual disparities in gene expression in rat brain microvessels. *J Cereb Blood Flow Metab*. 2021 Mar 9;271678X21999553, PMID: 33715494

Chandra PK, Rutkai I, Kim H, Braun SE, Abdel-Mageed AB, Mondal D, Busija DW. Latent HIV-Exosomes Induce Mitochondrial Hyperfusion Due to Loss of Phosphorylated Dynamin-Related Protein 1 in Brain Endothelium. *Mol Neurobiol*. 2021 June;58(6):2974-2989, PMID:33586027

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Klionsky DJ,.....**Chandra PK** (authorship position:373).....et al. Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition). *Autophagy* 2021 Jan;17(1):1-382, PMID:33634751

Popescu, IR, Le KQ, Ducote AL, Li JE, Leland AE, Mostany R. Increased intrinsic excitability and decreased synaptic inhibition in aged somatosensory cortex pyramidal neurons. *Neurobiology of Aging* 2021, 98:88-98, PMID: 33249377

Suarez-Lopez JR, Cairns MR, Sripada K, Quiros-Alcala L, **Mielke HW**, Eskenazi B, Etzel RA, Kordash K. COVID-19 and children's health in the United States: consideration of physical and social environments during the pandemic. *Env. Res.* Volume 197, June, 111-160, doi.org/10.1016/j.envres.2021.111160

Egendorf SP, **Mielke HW, Castorena-Gonzalez JA, Powell ET, Gonzales CR.** Lead (Pb) in New Orleans: A spatiotemporal and racial analysis. *Int. J. Environ. Res. and Public Health* 2021, 18 (3), 1314, doi.org/10.3390/ijerph18031314

Mentoring Effort: Four 2019 pharmacology master's students (identified with asterisks, below) working in the **Braun laboratory**, did the initial bioinformatic searches to find the sequences for the various lentiviral vectors, and then the sequence alignments of the vectors to HIV-1, and made figures and author contributions to the following publication.

Johnson NM, *Alvarado AF, *Moffatt TN, *Edavettal JM, *Swaminathan TA, Braun SE. HIV-based lentiviral vectors: Differences in origin and sequences. *Mol Ther- Methods & Clin Devel*. 2021 June; 21: 451-465, doi.org/10.1016/j.omtm.2021.03.018

Lin D, Scheller SH, Wu C, Robinson M, Izadpanah R, Alt E, **Braun SE.** Increased efficiency for Bi-allelic Mutations of the CCR5 gene by CRISPR/Cas9 Using Multiple Guide RNAs as a Novel Therapeutic Option for HIV. *CRISPR J.* 2021 Feb;4(1):92-103, PMID: 33616448

Eldesouki RE, Wu C, **Saleh FM**, Abdel Moemen Mohamed E, Younes S, EL Sayed Hassan N, Brown TC, Alt EU, Robinson JE, Badr FM, **Braun SE.** Identification and targeting of Thomsen-Friedenreich and IL1RAP antigens on chronic myeloid leukemia stem cells using bi-specific antibodies. *OncoTargets Ther.* 2021;14:609-621, PMID: 33519209

Yaghoubi H, Izadpanah A, Nedaei S, Akbari H, Agah EM, **Mostany R, Chandrasekar B, Alt E, Izadpanah R.** Anti-cancer and antibacterial effects of Terfezia boudieri-derived silver nanoparticles. *Combinatorial Chemistry and High Throughput Screening* 2020, Nov 16, epub ahead of print, PMID: 33208063

Albuck AL, **Sakamuri SSVP, Sperling JA, Evans WR, Kolli L, Sure VN, Mostany R, Katakam PVG.** Peroxynitrite decomposition catalyst enhances respiratory function in isolated brain mitochondria. *American Journal of Physiology, Heart and Circulatory Physiology* 2021, 320(2):H630-H641, PMID: 33164581

Yokota R, Bhunu B, Toba H, Intapad, S. Sphingolipids and kidney disease: Possible role of preeclampsia and intrauterine growth restriction (IUGR). *Kidney360* 2 (3), 534-541, doi.org/10.34067/kid/0006322020

Palygin O, Guan Z, **Intapad S, Sullivan JC.** Hypertension and Chronic Kidney Injury or Failure. *Front Physiol.* 2021 Mar11;12:662737, doi: 10.3389/fphys.2021.662737.

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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.