



TEXAS A&M UNIVERSITY
College of Medicine

RESEARCH REPORT

2019-2020

THE STATE OF RESEARCH

A message from the Senior Associate Dean of Research

The past two years have been somewhat disruptive and challenging for the College of Medicine research enterprise. In 2019, about 35 investigators moved from the main University campus in College Station and the research complex in Temple to the Health Science Center Campus in Bryan. Relocating that many research groups simultaneously did pose some logistical challenges, with unforeseen delays, a need for improvisation and the inevitable adjustments after resuming research activity in yet untested, new laboratories. However, everyone settled in by mid-summer and all groups were able to restart their research programs in the second half of 2019. In addition, extensive preparations throughout the year were being conducted for the Liaison Committee on Medical Education (LCME) site visit, which took place in January 2020. We passed this critical test with flying colors, thanks to the active participation of all stakeholders and the meticulous planning and expert leadership of our Dean, Amy Waer, MD.

While we were poised to resume research activities in the expanded research campus, the notion of a pandemic was on no one's mind at the beginning of last year. But the spread of the Coronavirus across the US in a matter of weeks threw everyone into uncharted waters and required all of us to change our daily routines on a dime. Although the COVID-19 epidemic has been unsettling, I believe the college has risen to the challenge, and – having adjusted our ways of doing research – we have remained productive. I extend a heartfelt "Thank You" to all faculty, students, postdocs, research technicians and staff for their unrelenting effort, poise and discipline to keep our campus safe. With various vaccines now becoming available, and a federal administration in place that values basic scientific facts, I believe we are on our way back to a life resembling normalcy. If there is one lesson to be learned, it is this: we, as scientists, have a civic duty to disseminate our knowledge to the general public, so that we can preserve its trust in our work. Perhaps too often we keep our nose to the grindstone, following our scientific discoveries entirely focused on the detail of our unquestionably vital work, and we simply underestimate the importance of making our mission comprehensive to the general public. A public that may have only a

basic, if any, understanding of the complexity of scientific research. The more we share our work with the public; emphasize its relevance for human health; and make understanding of our research mission a civic duty, the less divisive the subject of science will be to society.

With this context, I am excited to share the research highlights of our faculty and their teams – pandemic, political turmoil and social unrest notwithstanding – over the last two years.

Hubert Amrein, PhD
Senior Associate Dean of Research



COLLEGE OF MEDICINE BY THE NUMBERS



**Full Time
Faculty**



**External
Funding**



**Increase in
Funding Over
10 Years**



Publications

INFRASTRUCTURE EXPANSION

In May 2019, the second Medical Research and Education Building (MREB II) was opened to faculty from three basic science departments: Medical Physiology (MPHY), Molecular and Cellular Medicine (MCM) and Microbial Pathogenesis and Immunology (MPIM). In addition, MREBII and the Clinical Building (CB1) became the home of the newly formed Department of Psychiatry and Behavioral Sciences (PABS), which was established in August 2018 as the first major clinical research unit in the College of Medicine. The state-of-the-art facility provides more than 150,000 square feet of space for more the faculty and their research teams. The open laboratory concept – already realized in MREB, the home of the Departments of Neuroscience and Experimental Therapeutics (NEXT) and MPIM – lends itself to informal and spontaneous interactions and collaborations among the different research groups. The opening of MREBII consolidates now the majority of the faculty on the Bryan campus, totaling more than 300,000 square feet, of which about 120,000 is dedicated to research. This includes new core space for the Integrated Microscopy and Imaging Laboratory (IMIL) and the Cell Analysis Facility (CAF), as well as expansions of Biosafety Level 3 (BSL3) laboratories and the Animal Facility. Together, these additions increase the college's capacity in research activity on highly contagious pathogenic microorganism – a timely added resource – and research using rodent model systems for a range of human diseases.

The College of Medicine retains a major footprint in the Reynolds Medical Building (RMB) on the West Campus, where several research groups from the Department of Molecular and Cellular Medicine still reside. Additionally, the Institute of Biotechnology (IBT), housed in the ALKEK Building in the Houston Medical Center, has now been integrated into a separate academic unit, the Department of Translational and Medical Sciences (TMS).

LOCATION OF FACULTY BY ACADEMIC DEPARTMENT

LOCATION	MCM	MPIM	MPHY	NEXT	PABS	TMS	HUM	ME	PCM
MREB BRYAN		13		26					
MREB II BRYAN	12	7	16		2				
REYNOLDS COLLEGE STATION	9								
ALKEK HOUSTON		3	1			29			
HPEB BRYAN			2				1	3	
CB1 BRYAN				1	11		7		
2900 E 29 ST BRYAN									14
OTHER			1	1			4	2	9

As of December 2020, the college had more than 170 full time faculty, of which 83 are tenured or on tenure track. About 100 faculty are primarily engaged in research, and they train close to 300 postdoctoral fellows, research technicians, graduate students and undergraduate students.



RESEARCH FOCUS AREAS

Faculty stakeholders of the college's departments engaged in a research retreat in January 2020 and laid out several strategic research initiatives. As a key priority, they identified strategic research priorities in which faculty has particular strengths and yet unrealized potential. In addition, these key priorities should also provide a fertile ground for collaborations, not only across departments, but also with faculty in other Texas A&M colleges. These efforts ultimately led to the creation of six research focus areas, which provide intellectual "homes" for faculty from different departments and also serve as a navigation tool for graduate students, undergraduate students and postdoctoral scholars in finding their way around the many different research opportunities.

In addition to being well-integrated into the strategic priorities of the college, the research focus areas are well-aligned with the overall roadmap of the Health Science Center.

Brain, Behavior, Psychiatric and Neurological Disorders

(25 faculty members)

Biomedical Engineering and Regenerative Medicine

(19 faculty members)

Cancer, Cell and Developmental Biology

(26 faculty members)

Cardiovascular, Lymphatic and Metabolic Diseases

(23 faculty members)

Genetics, Genomics and Network Biology

(21 faculty members)

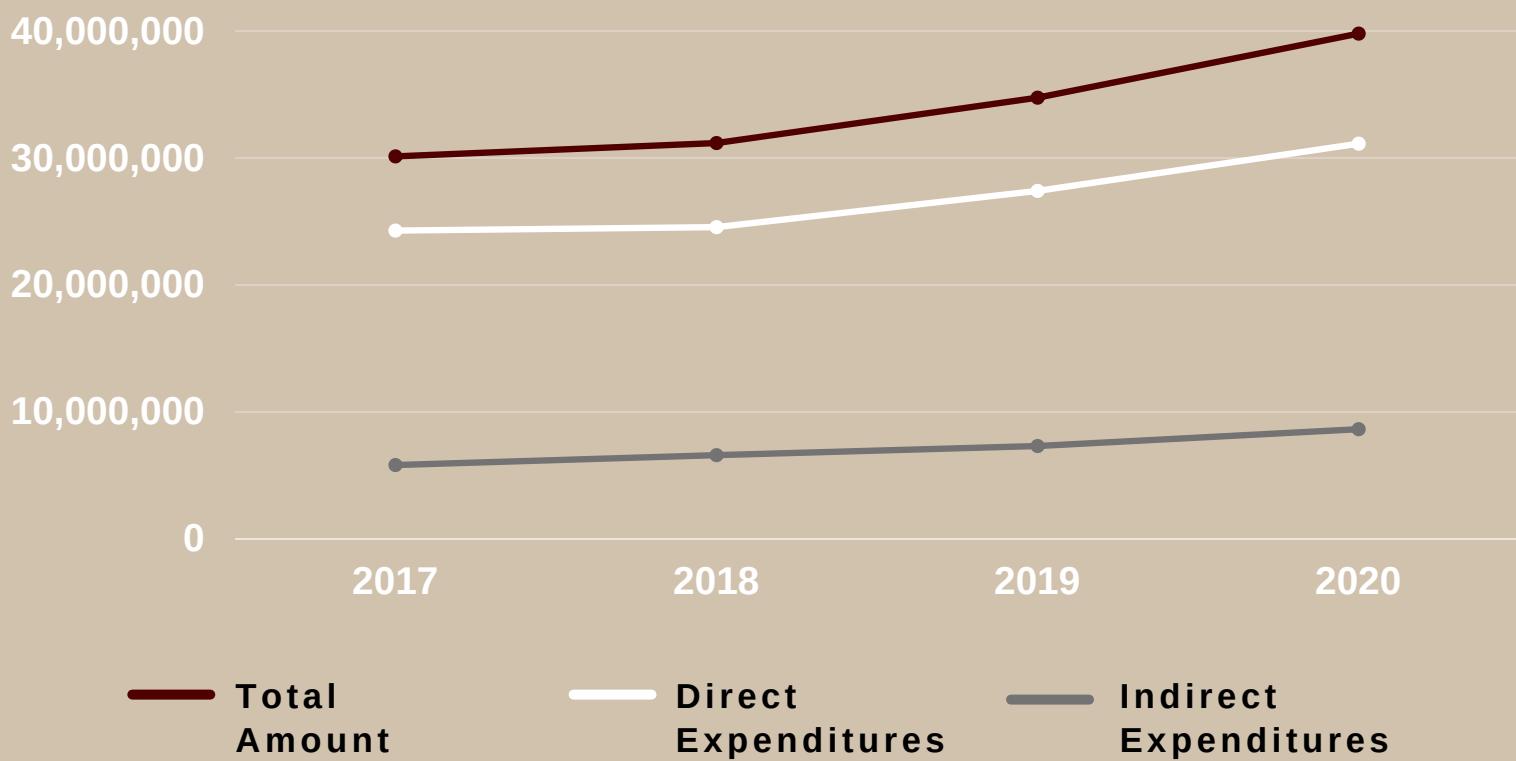
Infection, Immunity and Inflammation

(27 faculty members)

FUNDING HIGHLIGHTS

As of 2020, the College of Medicine faculty accumulated external annual research expenditures of almost \$40 million. Average funding over the last 10 years has steadily increased from about \$26.2 million of total expenditures/year in 2012 to \$39.8 million in 2020, with an accelerated trajectory over the last four years.

EXTERNAL FUNDING - 2017-2020



Expenditures in the current fiscal year (FY21, October 2020 to January 2021) is at \$17.4 million. Most funding is generated from grants from the National Institutes of Health (NIH), but significant resources are obtained from the Department of Defense (DoD) and the Cancer Research and Prevention Institute of Texas (CPRIT).

FUNDING PORTFOLIO OF FACULTY

The National Institutes of Health (NIH) is the major funding agency supporting the research of College of Medicine faculty. At the end of 2020, College of Medicine faculty were Principal Investigators (PI) or co-PI of more than 60 grants (45 R01s, 3 R35s, 1 RF1, 1 DP2, 10 R21s, 1 R56U and 1 R03), 4 training grants (2 R25s and 2 T32) and five center grants (2 P30s and 3 U01s).

The faculty has secured significant new funding over the last two years, especially from NIH. Additionally, several grants were awarded to our faculty from the Department of Defense (DoD) and the major state agency, the Cancer Research and Prevention Institute of Texas (CPRIT) in both 2019 and 2020.

NEW GRANTS AWARDED TO COLLEGE OF MEDICINE FACULTY IN 2019 AND 2020

(lists include all grants with total award sum > \$ 100,000)

NATIONAL INSTITUTES OF HEALTH

Most NIH grants are awarded for four to five years for R01, R35, U01, P30, and R25, with some exploratory grants lasting for two to three years (R21, R56 and R03). The list below includes grants in which a faculty member serves as PI or as co-PI. The award amount indicated reflects total cost/year, unless otherwise noted.

NATIONAL INSTITUTES OF HEALTH - 2019

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
Bankaitis, Vytas	The Biology & Biochemistry of Lipid Transfer Protein-Regulated Phosphoinositide Signaling	R35	NIGMS	\$682,706
Chang, Jiang	Epigenetic signaling, pathological cardiac hypertrophy and Western diet	R01	NHLBI	\$534,806
Chen, Zhilei	Internal Toxin Neutralizer for Treating STEC-infection	R01	NIAID	\$231,000
De Figueiredo, Paul; Han, A., co-PI	Development of a High-Throughput Microfluidics-Enabled Functional Assay for Rapidly Identifying Neutralizing Antibodies	R01	NIAID	\$719,651
Gashev, Anatoliy	Mast cell/histamine-mediated inflammation and subsequent decrease of lymphatic amyloid beta clearance accelerate progression of Alzheimer's disease	R56	NIA	\$574,591
Gregory, Carl	Nanoengineered bone repair scaffolds generated from stem cells and their secreted products for improved spinal fusion	R21	NIAMS	\$189,906
Huang, Nancy	Role of TET dioxygenase associated immune mechanisms in cardiac injury and repair	R01	NHLBI	\$436,631
Hurdle, Julian	High Throughput Screening for Non-antibiotic inhibitors of Clostridium difficile Pathophysiology	R01	NIAID	\$736,192

NATIONAL INSTITUTES OF HEALTH - 2019 (cont.)

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
Jinadatha, Chetan*	A Trail to Explore the Benefits of Antimicrobial Self Sanitizing Surfaces on Bio-Burden levels and Healthcare-Acquired Infections	R01	AHCR	\$480,279
Lee, Ryang-Hwa	Extracellular Vesicles Produced by Mesenchymal Stem Cells as Novel Therapy for Autoimmune Uveitis	R01	NEI	\$371,250
Mitchell, Brett	Role of Renal Lymphatics in Blood Pressure Regulation	R01	NIDDK	\$396,459
Patrick, Kristin**	Pre-mRNA splicing regulation is critical for controlling macrophage activation	R35	NIGMS	\$374,934
Newell Rogers, Karen PI; Shapiro, Lee, co-PI	Mechanisms by which CD74 Contributes to Traumatic Brain Injury	R01	NINDS	\$375,030
Samuel, James	The immunomodulatory role of Ankyrin repeat containing effectors expressed by <i>Coxiella burnetii</i>	R21	NIAID	\$188,906
Samuel, James	Identification and Role of Type IV Secretion Effector Proteins in <i>Coxiella burnetii</i>	R01	NIAID	\$367,669
Garcia, B., PI; Skare, Jon, co-PI	Virulence Mechanisms of Multifunctional Borrelial Proteins	R56	NIAID	\$616,527

NATIONAL INSTITUTES OF HEALTH - 2019 (cont.)

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
Threadgill, David	Texas A&M Center for Environmental Health Research	P30	NIEHS	\$1,491,783
Rusyn, I., PI; Threadgill, David, co-PI	Chromatin regions; genes and pathways that confer susceptibility to chemical-induced DNA damage	R01	NIEHS	\$687,113
Tong, Carl	Cardiac Myosin Binding Protein-C in Development and Reversal of Heart Failure	R01	NHLBI	\$442,704
Trache, Andreea	Integrins as regulators of vascular contractility in aged resistance arteries	R03	NIA	\$73,553
Vladimirov, Vladimir	Assessing miRNA expression in the Corticolimbic System of Major Depressive Disorder	R01	NIMH	\$685,522
Pi, L., PI; Watson, Robert, co-PI	Molecular basis of viral DNA sensing through the cGAS-STING pathway	R01	NIAID	\$362,292

*Part-time faculty; grant awarded to Central Texas Veterans Research Foundation
**PI receiving new grants using Grant Advisory Committee (GAC) program support

NATIONAL INSTITUTES OF HEALTH - 2020

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
Amrein, Hubert*	The taste of ribonucleosides: The molecular and cellular basis underlying chemosensory detection of previously unknown macronutrients	R01	NIDCD	\$371,007
Amrein, Hubert	Modulation of peptidergic neurons by the gluconeogenic enzyme Glucose-6-Phosphatase	R21	NINDS	\$225,000
Chen, Zhilei	A Novel Technology for Engineering Binders to Membrane Proteins	R21	NIGMS	\$227,063
Chang, Jiang	Epigenetic signaling, pathological cardiac hypertrophy and Western diet	R01	NHLBI	\$534,806
Glaser, Shannon, PI; Alpini, G. et al, co-PIs	Alcohol-induced hepatotoxicity – implications of secretin/secretin receptor axis	R01	NIAAA	\$553,365
Huang, Nancy	Molecular toolkit for single-cell oxi-mC analysis	R21	NIGMS	\$241,282
Ji, Jun-Yuan	Context-specific Functions of CDK8	R01	NIGMS	\$331,818
Chapkin, R, PI; Karpac, Jason, co-PI	Targeting plasma membrane spatial dynamics to suppress aberrant Wnt signaling	R21	NCI	\$597,153

NATIONAL INSTITUTES OF HEALTH - 2020 (cont.)

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
Kent, Thomas, PI; Hedge, M. et al, co-PIs	Novel Carbon Nanozyme Mechanisms for Traumatic Brain Injury	R01	NINDS	\$504,802
Miranda, Rajesh, PI; Larin, K., co-PI	Prenatal alcohol/cannabinoid co-exposures and fetal brain development	R01	NIAAA	\$495,778
Reddy, Samba	Novel pediatric anticonvulsants for nerve agents	U01	NINDS	\$755,985
Reddy, Samba	Novel Water-Soluble Adjunct Anticonvulsants for Nerve Agents	U01	NINDS	\$454,500
Rutkowski, Joseph*	Lymphatics and lymphangiogenesis in kidney function and inflammation	R01	NIDDK	\$398,679
Srinivasan, Rahul*	Identification of mechanisms by which cytisine and estrogen inhibit ER stress and exert neuroprotection in Parkinson's disease	R01	NINDS	\$350,326
Threadgill, David	Diverse Predoctoral Training in Genetics	T32	NIGMS	\$152,670
Wang, Jun	Ethanol drinking and the basal ganglia circuitry	R01	NIAAA	\$314,849

NATIONAL INSTITUTES OF HEALTH - 2020 (cont.)

PI	GRANT TITLE	TYPE	INSTITUTE	AWARD
West, Phillip*	Type I Interferon Responses in the Pathobiology of Anthracycline-induced Cardiotoxicity	R01	NHLBI	\$371,015
Xu, Yi	Activation of TGFbeta by a gut pathobiont	R21	NIAID	\$196,258

*PI receiving new grants using Grant Advisory Committee (GAC) program support

NATIONAL SCIENCE FOUNDATION

PI	GRANT TITLE	TYPE	YEAR	AWARD
Wang, Ya, PI; Srinivasan, Rahul et al, co-PIs	GCR: Programmable Nanorobots Integration with Magnetically-Driven neuron and brain tissue regeneration	Continuing grant	2020	\$162,305 (to R.S.)

DEPARTMENT OF DEFENSE

PI	GRANT TITLE	TYPE	YEAR	AWARD
Chen, Chieh, PI; Luo, Weijsia, co-I	Increased Risk of Heart Disease After Post-Traumatic Stress Disorder in Women: Role of Gonadal Hormones and Potential Preventive Interventions	Discovery Award	2019	\$303,000
Gashev, Anatoliy	Monitoring of Mast Cell Activation for Control of Health Status in Military Personnel	Accelerating Innovation in Military Medicine Research Award	2019	\$516,976

DEPARTMENT OF DEFENSE (cont.)

PI	GRANT TITLE	TYPE	YEAR	AWARD
Reddy, Samba	Neurosteroid Therapy for Gulf War Illness	Gulf War Illness Research Program	2019	\$341,550
Shetty, Ashok	Tracking Neuroinflammation in GWI from Brain-Derived Extracellular Vesicles in the Blood	Research Advancement Award	2019	\$1,010,267
West, A. Phillip	Inborn Errors of Innate Immunity and Impaired Antimicrobial Defenses in Primary Mitochondrial Diseases	Expansion Award - Funding Level 1	2019	\$749,378

AMERICAN HEART ASSOCIATION

PI	GRANT TITLE	TYPE	YEAR	AWARD
Chang, Jiang	Rho Signaling in the development and treatment of myocardial infarction complication	Research grant	2019	\$300,000
Mitchell, Brett, PI; Alaniz, Robert, co-PI	Determining how microbiota-derived tryptophan metabolites regulate lymphocyte function in hypertension	Research grant	2019	\$200,000

CANCER RESEARCH AND PREVENTION INSTITUTE OF TEXAS

PI	GRANT TITLE	TYPE	YEAR	AWARD
Davies, Peter	The Combinatorial Drug Discovery Program (CDDP)	Academic Research	2020	\$3,989,892

CANCER RESEARCH AND PREVENTION INSTITUTE OF TEXAS (cont.)

PI	GRANT TITLE	TYPE	YEAR	AWARD
Martinez-Moczygemba, Margarita	Gulf Coast Consortium High-throughput Flow Cytometry Program (HtFCP)	Academic Research	2019	\$4,690,019
Tsai, Robert	Nucleostemin: A New Tumor Addictive Mechanism, Outcome Predictor, and Therapeutic Target for Hepatocellular Carcinoma	Academic Research	2019	\$900,000
Tsai, Robert	Genome-Wide DNA Methylation Markers for Predicting the Risk of Liver Cancer in Non-Alcoholic Fatty Livers	Academic Research	2020	\$250,000
Wang, Fen	Real-time analyses of metabolic synergy between cancer and stromal cells by optogenetic control of cell signaling	Academic Research	2019	\$200,000
Xie, Zhigang	A Mouse Model for Studying DIPG Initiation and Progression in the Pons	Academic Research	2019	\$721,306

PRINCIPAL INVESTIGATORS HOLDING ACTIVE GRANTS IN 2020 AWARDED PRIOR TO 2019

NIH: Amrein, H., Bondos, S. (with Bystroff, C., Rensselaer Polytechnic Institute) Cannon, C., Chang, J., Chen, Z., Clark, S. Dashwood, R., Earnest, D. (w. Sohrabji, F.), Fuchs-Young, R., Glaser, S., Gregory, C., Griffith W., Hettema, J., Hook., A.M., Huang, N., Hurdle, J., Ji, J-Y., Karpac, J., Liu, F. (w. Lee, R-H), Mancini, M., McGregor, A., Miranda, R., Miranda, R. (with Larkin, University of Houston), Musser, S., Reiner, D., Rimer, M., Shetty, A., Skare, J. (with Hu, L. Tufts University), Sitcheran, R., Sohrabji F., Sohrabji (w. Miranda R), F., Song., J., Threadgill (with Feinberg, A., Johns Hopkins University), D., Wang, J., Watson. R., Watson, R. (w. Li, P), Zhou, Y.

PRINCIPAL INVESTIGATORS HOLDING ACTIVE GRANTS IN 2020 AWARDED PRIOR 2019 (cont.)

DoD/DARPA: Shetty, A., Samuel, J.

NASA: Zawieja, D., Hein, T.

NSF: Kapler, G., Bondos, S.

CPRIT: Gregory, C., Sitcheran, R.,

American Heart Association: Chang, J., Chakraborty, S.

TRAINING GRANT AWARDS

Three faculty have secured competitive training grants in the last two years. These grants will provide both graduate and medical students stipends to conduct research with faculty in the College of Medicine.

David Threadgill, PhD, Distinguished Professor in the Department of Molecular and Cellular Medicine and Chair of the Interdisciplinary Graduate Program in Genetics, has spearheaded the submission of two NIH T32 training grants, which were awarded in 2020. The Initiative for Maximizing Student Diversity in Biomedical Sciences (IMSD) provides two one-year stipends to each of six different graduate programs, including Medical Sciences and Genetics with heavy participation from College of Medicine faculty. The “Diverse Predoctoral Training in Genetics” provides five one-year stipends to the Genetics program to support increased exposure to diverse career paths. Both grants were awarded over a period of five years, thus accumulating stipends for a total of 85 students for one year.

Brett Mitchell, PhD, Professor of Medical Physiology and director of the Summer Undergraduate Research Program, has been the driving force behind a multiyear effort to secure funding for the program. In 2020, he was awarded an R25 NIH award, which provides support for 10 undergraduate students during a 10-week research program over the next five years. With this award, the College of Medicine will be able to support 50 students for summer research internships.

David P. Huston, MD, Associate Dean for Physician Scientist Development, Professor of Microbial Pathogenesis and Immunology, and Director of the Clinical Science and Translational Research Institute for the College of Medicine, has secured a five year Physician Scientist Institutional Award from the Burroughs Wellcome Fund foundation to establish an Academy of Physician Scientists as a partnership of the College of Medicine with the College of Engineering, Houston Methodist Hospital and Research Institute, and the Texas Medical Center. The Academy serves as an innovative pipeline for attracting and nurturing medical students, and physicians during residency or fellowship, to pursue successful research careers as physician-scientists, with an emphasis on medical engineering, which spans engineering of genes, cells, tissues, devices, technologies, diagnostics, analytics, therapeutics, and informatics.

TRAINING GRANT AWARDS (cont.)

PI	GRANT TITLE	TYPE	YEAR	AWARD/YR
Threadgill, David	Diverse Predoctoral Training in Genetics	NIH - T32	2020	\$152,670
Butler-Purry, K. et al, PI; Threadgill, David	IMSD at Texas A&M University: Initiative for Maximizing Student Diversity in Biomedical Sciences	NIH - T32	2020	\$249,928
Mitchell, Brett	Texas A&M College of Medicine Developing and Readyng Underrepresented Minority Researchers (DRUMR) Summer Research Program	R25	2020	\$102,384
Huston, David	Burroughs Wellcome Fund Physician-Scientist Institutional Award: Texas A&M University Academy of Physician-Scientists	PSIA	2019	\$500,000

INTERNAL RESEARCH SUPPORT AND AWARDS

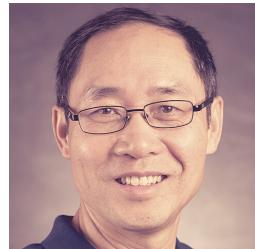
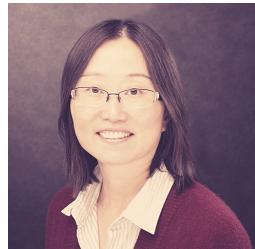
PILOT GRANTS: The Office of Research has established a competitive internal funding source for investigators. These pilot grants are used to generate preliminary data to establish new research programs, with the goal to secure external grants. In 2020, the Research Advisory Committee (RAC) evaluated a total of 10 applications and recommended three for support by the college with \$40,000. These pilot grant awards were supplemented with an additional \$20,000 from the respective departments.

PI	PILOT GRANT TITLE	EXTERNAL GRANT APPLICATION
Sitcheran, R.; West, A.P.	Targeting Macrophage Metabolic Reprogramming in Immunodeficiency and immune Dysfunction	R01 (submitted January 21) NIK regulation of Metabolic Reprogramming in Primary Immunodeficiency Disease (NIH/NIAID)

INTERNAL RESEARCH SUPPORT AND AWARDS (cont.)

PI	PILOT GRANT TITLE	EXTERNAL GRANT APPLICATION
Kuo, L.; Hein, T.	Mechanisms of cone photoreceptor degeneration and the therapeutic potential of stanniocalcin-1	R21 (submission pending; June 21)
Liu, F.	Harnessing the innate immune system for functional restoration of salivary glands	R21 (submitted January 21) Therapeutic effects and mechanisms of MSC extracellular vesicles on radiotherapy-induced xerostomia

RESEARCH EXCELLENCE AWARDS: Each year, the Research Excellence Award recognizes an investigator's accomplishments and his/her standing in the national and international scientific community. An awardee's research program must provide novel insights into important biological processes and/or a better understanding of diseases that can lead to the improvement of human health and well-being. The award consists of a College of Medicine plaque and a cash price of \$3,000. The award winners in 2019 were **Shannon Glaser, PhD (senior)** and **Yun Nancy Huang, PhD (junior)**. The award winners in 2020 were **Jiang Chang, MD, PhD (senior)** and **Jason Karpac, PhD (junior)**.



From left to right: Shannon Glaser, Yun Nancy Huang, Jiang Chang, Jason Karpac

GRANT ADVISORY COMMITTEE SUCCESS: In 2018, the Office of Research created the Grant Advisory Committee (GAC) Program for faculty seeking external funding, especially funding from the NIH. Faculty preparing new grant applications identify advisors with a proven NIH/DoD funding record to form an expert advisory panel that provides input and support in crafting a competitive proposal. Of the 10 GACs, six have led to funded-NIH grants (designated by an asterisk in the new grants list). The Office of Research will maintain and expand this program for all faculty seeking funding from NIH and DoD. Early career investigators or faculty developing a new research program are encouraged to inquire about the GAC program.

TRAINEE ACTIVITIES

POSTDOCTORAL SCHOLAR ACTIVITY

As with every research institution, postdoctoral scholars play an important role in the research enterprise of the College of Medicine. Under the programmatic and administrative leadership of Stacy De Leon, the Office of Postdoctoral Affairs, provides career and professional development opportunities; assists with career exploration; and advocates for policies and resources to support postdocs in the College of Medicine. In addition, Ms. De Leon serves in an advisory role for the Texas A&M Health Science Center Postdoctoral Association.

Despite the pandemic putting a pause on some activities, the postdoctoral community was very active. Over the course of 2019 and 2020, the Office of Postdoctoral Affairs provided numerous workshops and lectures for College of Medicine and Health Science Center postdocs. Activities focused on a wide variety of topics, from writing and publishing journal articles to professionalism in science; from how to create and use an individual development plan to high-impact presentations; from teamwork skills for scientists to NIH F32 mock study sections.

In collaboration with other Texas A&M colleges and peer institutions across Texas, many of the college's postdocs participated in the Annual Texas A&M Postdoctoral Research Symposium and the Texas Medical Center's Annual Postdoctoral Career Symposium.

POSTDOCTORAL SCHOLAR AWARDS

PI	TITLE	TYPE	YEAR	AWARD
Bell, Samantha (R. Watson, advisor)	Investigating the role of liquid-liquid phase separation in the interaction between <i>Mycobacterium tuberculosis</i> and macrophages	New Investigator Award - NIH (DP2)	Awarded upon T/TT faculty position	\$1,500,000

POSTDOCTORAL SCHOLAR AWARDS (cont.)

PI	TITLE	TYPE	YEAR	AWARD
Kodali, Maheedhar (A. Shetty, advisor)	Cannabidiol for Improving Brain Function in Gulf War Illness	New Investigator Award - DOD Transition Postdoctoral Fellow	2019	\$755,064
Weindel, Catherine (R. Watson, advisor)	Assessing the requirement for LRRK2 in mitochondrial metabolism, the immune response, and outcome of bacterial infection	Postdoctoral Fellowship - Parkinson's Foundation	2019	\$120,000

OTHER POSTDOCTORAL ACCOMPLISHMENTS

Gaurav Baranwal - The Pappenheimer Postdoctoral Travel Award, The Microcirculatory Society, 2020

Christian Boada - President's Award for Excellence in Peer-Reviewed Publication, Houston Methodist Academic Institute, 2020; Candidate for the National System of Investigator, Consejo Nacional de Ciencia y Tecnología, 2020

Shobana Navaneethabalakrishnan - New Investigator Travel Award, Council on Hypertension, American Heart Association, 2020

GRADUATE STUDENT RESEARCH ACTIVITY

Each year, the College of Medicine's Graduate Student Organization (GSO) hosts a Student Research Symposium to showcase and highlight their research; promote interaction among students from different departments and campuses; and invite an established investigator to present a keynote lecture. In the last few years, there has been a steady increase in participation. Attendance has more than doubled from 74 in 2016 to over 200 in 2019). Unfortunately, the symposium had to be canceled in 2020 due to the COVID-19 pandemic, but plans are in place to hold it once again in 2021.

Three students have obtained highly competitive fellowships: Marisa Pinson and Dae Chung, both students under the mentorship of Dr. R. Miranda, received NIH awards; and Taylor Huntington, a mentee of R. Srinivasan, received an award from NSF.

GRADUATE STUDENT AWARDS

PI	TITLE	TYPE	YEAR	AWARD
Huntington, Taylor	Understanding the Unexplored Powerhouse of the Brain: astrocytic Mitochondria	NSF Graduate Research Fellowship (3 yrs)	2019	\$34,000
Chung, Dae	Alcohol Effects on the Proteome and Transcriptome of Fetal Neural Stem Cell-Derived Extracellular Vesicles: Mechanism for Alcohol Teratogenesis	NIH F31 Graduate Student Fellowship award	2020	\$34,025
Pinson, Marisa	Gag-like Proteins in exosome-mediated Neural Development and Fetal Alcohol Spectrum Disorder	NIH F30 MD/PhD Student Fellowship award	2020	\$33,965



PUBLICATIONS

College of Medicine faculty have excelled in publishing their scientific discoveries. The publication lists below include peer-reviewed papers of journals listed in PubMed, that feature College of Medicine faculty as corresponding last author or first author. Note that more than 200 additional papers include college faculty as collaborators, which can be found [here](#).

2019 PUBLICATIONS

1. Bake S, Okoreeh A, Khosravian H, **Sohrabji F**. Insulin-like Growth Factor (IGF)-1 treatment stabilizes the microvascular cytoskeleton under ischemic conditions. *Exp Neurol.* 2019 Jan;311:162-172. doi: 10.1016/j.expneurol.2018.09.016. Epub 2018 Oct 1. PMID: 30287160; PMCID: PMC6263796.
2. Gasheva OY, Tsoy Nizamutdinova I, Hargrove L, Gobbell C, Troyanova-Wood M, Alpini SF, Pal S, Du C, Hitt AR, Yakovlev VV, Newell-Rogers MK, Zawieja DC, Meininger CJ, Alpini GD, Francis H, **Gashev AA**. Prolonged intake of desloratadine: mesenteric lymphatic vessel dysfunction and development of obesity/metabolic syndrome. *Am J Physiol Gastrointest Liver Physiol.* 2019 Jan 1;316(1):G217-G227. doi: 10.1152/ajpgi.00321.2018. Epub 2018 Nov 26. PMID: 30475062; PMCID: PMC6383386.
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