

THE *biomedical* BEAT

Official Newsletter of the
Graduate School of Biomedical Sciences



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FROM THE DESK OF DEAN SCHNEIDER...

It has been almost 18 months since the COVID-19 pandemic reached our campuses and changed our lives dramatically. Everyone has done a tremendous job adapting to our ever-changing academic environment, and I am grateful for your efforts and diligence. Now as we return to campus, to our offices, and to our classrooms, we must continue to remember that the COVID-19 pandemic is still a part of our everyday lives. Even as we begin our fall semester, the number of cases of the highly infectious SARS-CoV-2 Delta variant is increasing in all of our TTUHSC communities. However, we have the opportunity to “flatten the curve” and slow the spread of COVID-19. TTUHSC highly recommends getting a

FROM THE DESK OF DEAN SCHNEIDER (CONTINUED)

vaccination, if eligible, and wearing a facial covering when indoors among groups of people, regardless of your vaccination status. I am vaccinated, and you will see me wearing a mask on campus. We are extremely fortunate that highly efficacious COVID vaccines are available. Vaccinations protect not only the recipients but also the people in our communities who are unable to be vaccinated due to health or age restrictions.

During the past year and half, the TTUHSC faculty, staff and students have shown remarkable resiliency and resolve. We have demonstrated that vaccination, social distancing, and face masks dramatically reduce the incidence of new COVID-19 infections. However, under no circumstances should anyone feel pressured about their personal choices. Please remember our Values-Based Culture. It is vital that we treat everyone with a kind heart, helping hands and a positive attitude. As members of the TTUHSC family, we each have a responsibility to do our part to protect the well-being of ourselves and those we serve. All individuals on our campuses must take steps to help stop the spread of COVID-19 through personal health monitoring and following good hygiene practice. Should you suspect you have COVID-19, if you are experiencing symptoms, or know you have been exposed to the virus, you need to report such to Institutional Health through the updated online attestation form. Institutional Health will provide guidance for testing and next steps, including appropriate self-isolation requirements.

We are fortunate to have the opportunity to teach, learn, and do research on campus in person, but there will be some challenges. So, please let's remember to stay safe and healthy, and let's get through this together as One-Team.

Brandt L. Schneider, Ph.D.

Dean of the Graduate School of Biomedical Sciences
Co-Director Institute of Anatomical Sciences

GSBS WELCOMES NEW EMPLOYEE

The Graduate School is excited to introduce our newest employee, Ashley "Ash" Hanson! Ash is our office coordinator, and she's the first smiling face you'll see when you come by our offices! Ash previously worked at the School of Medicine. She has two cute pups, Walter and Jackson, and is an Enneagram 7 Wing 6!



PUBLIC HEALTH TO BECOME OFFICIAL HSC SCHOOL

The Texas Tech University System Board of Regents has officially authorized the process to establish the Julia Jones Matthews School of Population and Public Health at Texas Tech University Health Sciences Center. This decision has culminated from many years of hard work and dedication by countless faculty and staff. Congratulations on taking the next step in our journey to transform health care in our communities!

COURSE EVALUATION SCHOLARSHIP WINNERS

- Frances Arredondo • Derick Boayke
- Nishma Patel • Rachael Reasch

RETREAT SCHOLARSHIP WINNERS



PAMELA
LUNA



DAMI
OCHOLA



PRANEETHA
PANTHAGANI



FLAVIA
SARDELA



SKYLER
TRAN

SABR STUDENTS IMPRESS AT SYMPOSIUM

The Summer Accelerated Biomedical Research (SABR) Program is a 10-week internship program with a commitment to fostering students' desire for science and research. During this internship, interns are exposed to the life of a graduate student, and learn to become more independent and self-autonomous. Along the way, and with the help of their mentor, graduate students, and other lab staff, interns complete their own research project. The culmination of 10 weeks' worth of research, mentorship, and hard work was the SABR Symposium, during which our interns presented their summer research projects to faculty, staff, and students. This year's students impressed the faculty judges with their techniques and professionalism, all earning high marks. A complete list of interns, mentors, and research projects is below.

*Left, clockwise from back row:
Angel, Jake, Alex, Bailee,
Jonathan, Charlie, Alissa,
Haley, Katie, Jorie*



Summer Research Projects

Katie Chen, "Synergistic effects of DNA damaging agents irinotecan and temozolomide with ATM inhibitor AZD0156 in ALT+ osteosarcoma cell lines"

Mentor: Dr. Reynolds

Haley De Selle, "Influence of sex on ACEA antinociception in inflammatory and chronic pain models"

Mentor: Dr. Guindon

SABR STUDENTS' RESEARCH PROJECTS

Angel Dominguez, "The Minimal Region of CstF-77 that Maintains the Interaction Between the CstF-77 and CstF-64 Polyadenylation Proteins"

Mentors: Dr. MacDonald and Dr. Grozdanov

Jorie Fleischman, "A backdoor strategy to elucidate the thermodynamics and structural determinants of drug induced Long QT syndrome by blockade of the hERG channel. "

Mentor: Dr. Cuello

Alissa Landefeld, "Complement deposition in engineered Sertoli cell allografts"

Mentor: Dr. Dufour

Alexandria Mabry, "Association of HIV Nef variants with expression of Pulmonary Hypertension genes"

Mentor: Dr. Almodovar

Jake Moore, "Screening for RhoGEF genes that regulate embryonic cellularization and ventral furrow formation in *Drosophila melanogaster*."

Mentor: Dr. Thomas

Bailee Newham, "A new insulin mutation discovered in neonatal diabetes activates mRNA control pathway"

Mentor: Dr. Karamyshev

Jonathan Pertile, "Charcot-Marie Tooth disease-inducing mutations of the Na,K-ATPase"

Mentor: Dr. Artigas

Charles Zhu, "Human Cancer Cell Lines employing the Alternative Lengthening of Telomeres (ALT) Mechanism are sensitive to p53 reactivation utilizing APR-246"

Mentor: Dr. Reynolds

Thank you to everyone who made this year's SABR program possible, include the SABR committee, mentors, and our seminar speakers!

For more information on our internship program, please [click here](#).

**2021 DEAN'S OUTSTANDING RESEARCH AND
STUDENT MENTOR**



DR. URBATSCH

2021 DEAN'S SCHOLARS



**RACHEAL
AKWII**



**ITISHREE
KAUSHIK**



**HONG-MY
NGUYEN**



**RACHEL
WASHBURN**



**VICTORIA
YOUNG**

2021 DEAN'S TEACHING AWARDS



DR. ST. JOHN
Dean's Teaching Award
in Public Health



DR. KAUR
Dean's Teaching Award
in GMES



DR. URBATSCH
Dean's Teaching Awards
in Biotechnology &
Biomedical Sciences

STUDENT AND FACULTY PUBLICATIONS

Al-Ahmad AJ, Pervaiz I, Karamyan VT. Neurolysin substrates bradykinin, neurotensin and substance P enhance brain microvascular permeability in a human in vitro model. *J Neuroendocrinol.* 2021 Feb;33(2):e12931. Epub 2021 Jan 28. PMID: 33506602.

Archie SR, Cucullo L. Cerebrovascular and Neurological Dysfunction under the Threat of COVID-19: Is There a Comorbid Role for Smoking and Vaping?. *Int J Mol Sci.* 2020;21(11):3916. Published 2020 May 30. doi:10.3390/ijms21113916

Blanton HL, Barnes RC, McHann MC, Bilbrey JA, Wilkerson JL, Guindon J. Sex differences and the endocannabinoid system in pain. *Pharmacol Biochem Behav.* 2021 Mar;202:173107. doi: 10.1016/j.pbb.2021.173107. Epub 2021 Jan 12. PMID: 33444598; PMCID: PMC8216879.

Castro-Piedras I, Sharma M, Brelsfoard J, Vartak D, Martinez EG, Rivera C, Molehin D, Bright RK, Fokar M, Guindon J, Pruitt K. Nuclear Dishevelled targets gene regulatory regions and promotes tumor growth. *EMBO Rep.* 2021 Jun 4;22(6):e50600. doi: 10.15252/embr.202050600. Epub 2021 Apr 16. PMID: 33860601; PMCID: PMC8183407.

Hein, M., Ji, G., Tidwell, D., D'Souza, P., Kiritoshi, T., Yakhnitsa, V., Navratilova, E., Porreca, F., Neugebauer, V. Kappa opioid receptor activation in the amygdala disinhibits CRF neurons to generate pain-like behaviors. *Neuropharmacology* 185: 108456 (13 pp.), 2021. PMID: 33444637. PMC7887082.

Robert Hitzemann, Susan E. Bergeson, Ari E. Berman, Jason A. Bubier, Elissa J. Chesler, Deborah A. Finn, Matthew Hein, Paula Hoffman, Andrew Holmes, Brent R. Kisby, Denesa Lockwood, Kerrie H. Lodowski, Michelle McManus, Julie A. Owen, Angela R. Ozburn, Praneetha Panthagani, Igor Ponomarev, Laura Saba, Boris Tabakoff, Aashlesha Walchale, Robert W. Williams, Tamara J. Phillips, Sex Differences in the Brain Transcriptome Related to Alcohol Effects and Alcohol Use Disorder, *Biological Psychiatry*, 2021, ISSN 0006-3223, <https://doi.org/10.1016/j.biopsych.2021.04.016>.

Kellogg MK, Miller SC, Tikhonova EB, Karamyshev AL. SRPassing Co-translational Targeting: The Role of the Signal Recognition Particle in Protein Targeting and mRNA Protection. *Int J Mol Sci.* 2021 Jun 11;22(12):6284. doi: 10.3390/ijms22126284. PMID: 34208095; PMCID: PMC8230904.

STUDENT AND FACULTY PUBLICATIONS (CONTINUED)

Koneru B, Farooqi A, Nguyen TH, Chen WH, Hindle A, Eslinger C, Makena MR, Burrow TA, Wilson J, Smith A, Reddy VP, Cadogan E, Durant ST, Reynolds CP: ALT neuroblastoma chemoresistance due to ATM-dependent telomere dysfunction is reversible with the ATM inhibitor AZD0156. *Science Translational Medicine* 13: eabd5750 (2021).

Mazzitelli, M., Marshall, K., Pham, A., Ji, G., Neugebauer, V. Optogenetic manipulations of amygdala neurons modulate spinal nociceptive processing and behavior under normal conditions and in an arthritis pain model. *Front. Pharmacol.* 12: 668337 (18 pp.), 2021. PMID: 34113253. PMC8185300.

Mazzitelli, M., Neugebauer V. mGlu3 – New hope for pharmacotherapy of schizophrenia. *Biol. Psych.*, 2021 (in press).

McHann MC, Blanton HL, Guindon J. Role of sex hormones in modulating breast and ovarian cancer associated pain. *Mol Cell Endocrinol.* 2021 Aug 1;533:111320. doi: 10.1016/j.mce.2021.111320. Epub 2021 May 24. PMID: 34033890; PMCID: PMC8263503.

Neugebauer, V. Amygdala Physiology in Pain. In: Rosenkranz, J.A., Urban, J.H. (Eds.) *Handbook of Amygdala Structure and Function, Handbook of Behavioral Neurosciences*, 26: 101-113, 2020. ISBN: 9780128151341. PMC8059430.

Sejal Sharma, Saeideh Nozohouri, Bhuvaneshwar Vaidya, Thomas Abbruscato, Repurposing metformin to treat age-related neurodegenerative disorders and ischemic stroke, *Life Sciences*, Volume 274, 2021, 119343, ISSN 0024-3205, <https://doi.org/10.1016/j.lfs.2021.119343>.

FACULTY ACHIEVEMENTS

The Google Scholar Database has identified **Dr. Grisham** as one of the world's most cited researchers in the world. Dr. Grisham has authored or coauthored 302 peer-reviewed manuscripts and 75 book chapters. His published work has been cited 36,686 times with 6,622 of those occurring since 2016. Google Scholar currently lists Dr. Grisham's H-Index at 101, meaning that 101 of his publications have been cited 101 or

FACULTY ACHIEVEMENTS (CONTINUED)

more times. His top two publications have been cited 1,379 and 1,036 times. Dr. Grisham was also selected as a 2021 SfrBM Fellow inductee! Congrats, Dr. Grisham!

Dr. Neugebauer received the Chancellor's Distinguished Research Award from the Texas Tech University System. He was also the recipient of the Douglas M. Stocco Scholarship/Research Award from the School of Medicine. Congratulations, Dr. Neugebauer!

Dr. Julie St. John completed a Rural Health Fellowship funded by the F. Marie Hall Institute for Rural and Community Health in June. Her efforts focused on assessing the health-related needs of the Abilene community; working with ThriveABI, an initiative of the Community Foundation of Abilene, to provide health engagement and empowerment; and mobilizing the community through training, message campaigns, and policy development. Dr. St. John and her partners developed a community vision for the areas of education, essential needs, health and wellness, workforce and economic development, family well-being and neighborhoods, and arts and culture. Dr. St. John conducted the baseline data collection necessary to move ThriveABI's program to the next phase of development, implementation, and evaluation.

GRANTS RECEIVED

R01 NS120395 – NIH/NINDS (Impact score: 10, Percentile: 1.0). 08/01/21 – 07/31/26. "A prolactin-mediated neuroendocrine link between stress-induced latent sensitization and female-selective pain". The goal of this study is to identify a previously unknown stress-related neuroendocrine link between hypothalamic kappa opioid receptors and prolactin/prolactin receptor signaling in nociceptors as a basis for female selective pain syndromes. PI, Volker Neugebauer (collaboration with University of Arizona). Total costs: \$2,297,350.

COHS AD Seed Grant – TTU. 03/01/21 – 12/31/21. "Global gene expression profiling of high fat and fish oil effects in a mouse model of Alzheimer's disease". The goal of this study is to test if fish oil has protective effects in an Alzheimer's disease mouse model by reducing brain, adipose tissue and systemic inflammation and decreasing amyloid beta accumulation. PI, Volker Neugebauer (collaboration with Dr. Naima Moustaid-Moussa, TTU). Total costs: \$10,000

GRANTS RECEIVED (CONTINUED)

2021-67017-34026 - USDA/NIFA. 01/01/21 - 12/31/23. "Ginger root extract for neuropathic pain". The goal of this study is to evaluate the effects of ginger root extract on neuropathic pain-associated sensory and affective behaviors, gut health, and neuroinflammation in animals. PI, Volker Neugebauer (collaboration with Dr. Chwan-Li (Leslie) Shen). Total costs: \$500,000

STUDENT ACHIEVEMENTS

Sabrina Archie received the Mary Lou Clements-Man Endowed Scholarship for Fall 2020. She was also selected as a member of the Phi Kappa Phi Honor Society based on her academic excellence. Congratulations, Sabrina!

Shreyas Gaikward was awarded the Best Poster Presentation Award in the Junior Graduate Students category during Amarillo Research Days 2021. Congratulations, Shreyas!

Md. Rakibul Islam received the second place IBGSA Best Seminar Award. Congratulations, Rakibul!

Itishree Kaushik received the following awards: Society of Toxicology (SOT) Robert J. Rubin Trainee Award of Joint Risk Assessment; Specialty Section (RASS) and Mechanisms Specialty Section (MSS) at the Virtual 2021 SOT Annual Meeting and ToxExpo; second place Graduate Student Excellence in Research Award in the SOT Stem Cells Specialty Section (SCSS) at the Virtual 2021 SOT Annual Meeting and ToxExpo; second place Dr. Laxman Desai Graduate Student Best Abstract Award from the Association of Scientists of Indian Origin (ASIO) at the Virtual 2021 SOT Annual Meeting and ToxExpo. Congratulations, Itishree!

Melissa McHann was awarded a course evaluation scholarship. Congratulations, Melissa!

Hong-My Nguyen received the Best Seminar Award from the Immunotherapeutics and Biotechnology Graduate Student Association. Congratulations, Hong-My!

Ganesh Acharya and **Dami Ochola** received Early Career Investigative scholarships from AACR! Congratulations!

STUDENT ACHIEVEMENTS (CONTINUED)

Iqra Pervaiz was awarded the Kent Scientific Scholarship, Jackson Laboratory "Workshop on Surgical Techniques in the Laboratory Mouse", Bar Harbor, Maine; September 2021, as well as the The Honor Society of Phi Kappa Phi "Love of Learning" Award, September 2021. Additionally, Iqra was offered membership to Phi Kappa Phi. Congrats, Iqra!



CONTACT US



TO BE INCLUDED...

To be included in the next issue, please send any achievements, publications, grants, news, etc. to Ashlee Rigsby at ashlee.rigsby@ttuhsc.edu

