



**Center of Excellence for Integrative Health
(CEIH)
Annual Report
2020**

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Summary

- Up to December 2020, over 42 faculty members have joined the Center. The Center website is established (<https://www.ttuhschool.edu/centers-institutes/integrated-health-research/default.aspx>) to include member profiles, funded grant awards, etc.
- Among 42 members, 31 members submitted their 2020 annual report. There are 192 peer-referred publications, 26 published abstracts, 141 presentations including oral and poster, and 90 grant awards. Detailed scholarly activities of these 31 members are in the appendix.
- Hosted one Center Steering Committee Meetings to discuss future plan for the Center.
- Hosted 2020 Annual Membership Meeting on September 9, 2020. A total of 17 members participated the meeting via zoom. 7 members presented their research highlights and interest areas at the meeting.
- Hosted 3rd Annual Integrative Medicine Symposium on October 23, 2020, via Webinar Format and virtual poster. *Keynote speaker*: Dr. Victor Sierpina, Professor of Family Medicine and W.D. and Laura Nell Nicholson Family Professorship in Integrative Medicine, University of Texas Medical Branch. *Presenation topic*: A Mindful Life: Methods and Manifestation). There were 240+ participants joined this meeting. There are 12 posters presented by our Center members.
- Worked with Department of Medical Education for summer rotation activities of the Family Medicine Accelerated Track (FMAT) to apply integrative health to chronic disease management.
- Announced two \$5,000 seed grant RFA for members to submit grant application. Center members in TTUHSC and TTU faculty eligible to serve as a Principal Investigator.

Vision/Mission

VISION

- To improve the health of individuals through integrative health research discoveries and high-quality education.

MISSION

- To support the strategic objectives and academic mission of School of Medicine and TTUHSC in enhancing research and research-related education.
- To foster and facilitate synergistic, interdisciplinary, trans-disciplinary, and inter-professional collaboration among researchers/colleagues committed to integrative health research and to assist the professional development of new researchers.
- To promote thoughtful and compassionate healthcare in the broad field of integrative health through innovative and rigorous research at basic, translational, clinical, and population levels, and assist and support researchers in conducting cutting edge research that will grow the empirical evidence base for integrative approaches to health.
- To promote research-associated educational opportunities for medical students.

Strategic Plan

The key goals for the Center are:

1. Establish a critical mass of outstanding faculty with an emphasis on those doing integrative health research through basic, translational, clinical, community, and health service research.
2. Promote and establish collaborations in basic, translational, clinical, community, and health service research in integrative health among TTUHSC campuses, TTU, and other institutions.
3. Enable a significant increase in peer-reviewed integrative health research funding (i.e. foundations, federal funding, industries) to TTUHSC and other TTU Systems.
4. Participate in consortium member meeting of the Academic Consortium for Integrative Medicine and Health to report Center activities, increase research collaboration, and improve medical education in the area of integrative health.

Membership

- Over 42 faculty members have joined the Center including 3 different schools (School of Medicine, School of Health Professions, and School of Nursing) from TTUHSC, and 4 colleges (College of Arts & Sciences, College of Human Sciences, College of Engineering, and College of Education) from TTU. Detailed member profiles can be found in the Center website <https://www.ttuhs.edu/centers-institutes/integrated-health-research/default.aspx>
- Current Steering Committee Members include Dr. Volker Neugebauer, Dr. Michael Blanton, Dr. Betsy Jones, Dr. Naima Moustaid-Moussa, and Dr. Yan Zhang).

MEMBER PROFILE Center of Excellence for Integrative Health

Name/departm ent/school	Contact Information	Research Interest/Expertise	Research Keywords
Al-Rahawan, Mohamad MD, MPH/Pediatric Hematology Oncology TTUHSC	m.al@ttuhsc.edu Office: (806) 775-8600	Pediatric Cancer treatment and prevention. Vitamin deficiency and supplementation in survivors of childhood cancer.	
Blanton, Michael P. PhD/ Pharmacology & Neuroscience/ SOM-Lubbock, TTUHSC	michael.blanton@ttuhsc.edu Office: (806) 743-3496 Cell: (806) 319-1778	Structure/function of neuronal nicotinic acetylcholine receptors; development of smoking cessation agents and PAMs (positive allosteric modulators) for the treatment of Alzheimer's, Parkinsonism, and other disorders of the nervous system. http://legacy.ttuhs.edu/medicine/pharmacology/faculty/blanton.aspx	
Brismée, Jean-Michel	Jm.brismee@ttuhsc.edu	Clinical trials, intervertebral disc hydration/height, musculoskeletal health	

PT, ScD/ Rehabilitation Sciences-SHP- Lubbock, TTUHSC	Office: (806)743-3243 Cell: (806) 789-0387	including, osteoarthritis, osteoporosis, diagnostics, manipulative therapy, mind- body therapies including yoga, meditation, Tai Chi.	
Chyu, Ming- Chien PhD/Mechanic al Engineering/TT U	m.chyu@ttu.edu Office: (806) 834-8982	Non-pharmacological approaches in musculoskeletal issues-healthcare engineering approach- biomechanics.	
Coman, Ioana A PhD/Public Relations/Colle ge of Media and Communication	ioana.coman@ttu.edu Cell: 865-607-5406 Office: 806.834.0936	Health communication & promotion (vaccines, outbreaks/pandemics, health issues) in risk and crisis contexts, different levels (local, national, international) and different platforms (media, social media, visuals, etc). Stigma, advocacy and health communication/promotion.	Health promotion Social Media Vaccines Outbreaks Mis/disinfor mation Stigma Advocacy
Dufour, Jannette PhD/Cell Biology and Biochemistry/S OM-Lubbock, TTUHSC	jannette.dufour@ttuhs.c.edu Office: (806) 743-2616	Use of immunoprotective Sertoli cells in transplantation. Specifically, mechanisms of Sertoli cell immune privilege, transplantation of genetically modified, immune privileged Sertoli cells and co- transplantation of Sertoli cells and pancreatic islets.	Sertoli cells, Immune privilege, Transplant ation, Diabetes, Islets, Gene therapy, Cell Therapy
Enakpene, Christopher A MD / Maternal- Fetal Medicine / Obstetrics & Gynecology / SOM, TTUHSC Midland/Permian Basin	christopher.a.enakpene@ttuhsc.edu Cell: 347 217 5127	Diabetes in pregnancy and obesity. On going clinical trial on randomization of early diabetes screening in obese pregnant women. Impact of gestational diabetes and impaired glucose tolerance on short and long-term maternal and child health. Multimodal approach in the prevention of preterm birth.	Clinicaltrial .gov. REDSOAP Study: NCT03116 009. Clinicaltrial .gov ARABIN Study NCT03052 270
Figuerola, Arturo MD, PhD/ Kinesiology and Sport Management/T TU	arturo.figuerola@ttu.edu Office: (806) 834-5587	Arterial function and skeletal muscle health (mass and strength) in middle-aged and older adults, especially in women. Aging, hypertension, obesity, type 2 diabetes, sarcopenia/dynapenia, and cardiovascular diseases. Resistance exercise training and dietary supplements with vascular effects.	Arterial stiffness, aortic hemodyna mics, wave reflection, blood flow, endothelial function, L-

			citrulline supplementation, resistance exercise, muscle metaboreflex
Jones, Betsy PhD/Medical Education/TTUHSC	Betsy.jones@ttuhsc.edu	Medical education	
Jung, Kwanghee PhD/Educational Psychology/TTU	kwanghee.jung@ttu.edu Office: (806) 834-0023	Multivariate Statistics and Functional Data Analysis, Psychological Measurement and Testing Theory, Data Analytics and Big Data Analytics, Bio-medical Data and Patient-Reported Outcomes Research, Human Brain and Mental Health Research, Statistical Software Development, Virtual Reality/Augmented Reality Development	
Kahathuduwa, Chanaka MBBS, MPhil, PhD/Laboratory Sciences & Primary Care-SHP/Psychiatry-SOM-Lubbock, TTUHSC	chanaka.kahathuduwa@ttuhsc.edu ; chanaka.kahathuduwa@ttu.edu	Neurophysiological mechanisms underlying human cognitive and neurophysiological mechanisms. Obesity and metabolic derangements-related human ingestive behavior. Developmental disorders such as ADHD and autism spectrum disorders.	
Kaur, Gurvinder PhD/Medical Education/SOM-Lubbock, TTUHSC	gurvinder.kaur@ttuhsc.edu	1) Diabetes (both type 1 and type 2) 2) Transplantation immunology (allo and xeno-transplantation, rodents) 3) Islet isolation (from rodents and pigs) 4) Immune cell (T cells, macrophages and dendritic cells) analysis by immunostaining and flow cytometry 5) Amyloid formation in beta cells	
Lawrence, J Josh PhD/Pharmacology & Neuroscience/SOM-Lubbock, TTUHSC	John.lawrence@ttuhsc.edu	nutritional deficiencies, excitation/inhibition balance in disease states, hippocampal neuromodulation, aging, Alzheimer's disease, epilepsy, autism	Autism Epilepsy Late onset of AZ
Lee, Jaehoon (Jason) PhD/Educational Psychology/TTU	Jaehoon.lee@ttu.edu Office: (806) 834-5907	high dimensional data analysis, experimental design and sample size calculation, as well as multiple testing adjustments	
Lee, Sue Ann S.	sueann.lee@ttuhsc.edu	Speech and language in children with hearing loss and cleft palate, Bilingual	Speech-language

PhD, CCC-SLP/Speech-Language-Hearing Sciences, SHP, TTUHSC	Office (806) 743-9051	speech and language development, treatment effectiveness using ultrasound and telepractice	impairment, bilingualism, speech-language intervention, speech-language instrumentation, ultrasound, telepractice
Luk, Hui Ying PhD/Kinesiology & Sport Management/TTU	Huiying.luk@ttu.edu Office: 806-834-0827	Immunoendocrine response on skeletal muscle regeneration and hypertrophy	Musculoskeletal recovery and growth/strength and conditioning/inflammation/hormones/muscle mass
Lyford, Conrad PhD Agricultural & Applied Economics, TTU	Conrad.lyford@ttu.edu Office: (806) 834-6881	Behavioral change towards healthy behavior and disease prevention. Community/school interventions for obesity prevention. Cost-benefit analysis. Developing country food security and health systems	
Narasimhan, Madhusudhan PhD/Pharmacology & Neuroscience/SOM-Lubbock, TTUHSC	madhu.narasimhan@ttuhsc.edu Office: (806) 743-4079	Molecular mechanisms underlying fetal alcohol developmental toxicity, Neuropathic pain mechanisms and treatments, Oncogenic signaling in cancer progression and metastasis and oncogene-directed treatment options	
Mello, Inola DNP, APRN, FNP-C Family Practice/SON TTUHSC	inola.mello@ttuhsc.edu Office: (806) 743-7282	Vitamin D, sexual health, sleep patterns/anxiety, recreation drug use/misuse in college health	
Moustaid-Moussa, Naima PhD/Nutritional Sciences /TTU	naima.moustaid-moussa@ttu.edu Office: (806) 834-7946	Basic and integrated nutrition and obesity research. Endocrine function of adipose tissue and nutrient-gene interactions in metabolic diseases. Beta cell function in diabetes and childhood obesity	

Murimi, Mary PhD RD: Nutritional Sciences/TTU	Mary.murimi@ttu.edu Office : (806)834-1812	Investigates the effects of the community environment on the nutrition status of the residents, and coping strategies for food insecure households especially among low-income populations. Applies Community based participatory research. Dr. Murimi has collaborative relationship with institutions in both Ethiopia and Kenya.	Food security, maternal and child nutrition, Nutrition education
Nair, Nandini PhD. MD. /Cardiology/ SOM-Lubbock, TTUHSC	Nandini.nair@ttuhsc.edu	Basic/translational/clinical research in heart failure. Proteomics and genomics. cardia transplant and mechanical assist device.	
Neugebauer, Volker MD,PhD/Pharmacology & Neuroscience/ SOM-Lubbock, TTUHSC	Volker.neugebauer@ttuhsc.edu Office: (806) 743-3880	Neurobiological mechanisms of brain dysfunction in preclinical setting related to chronically relevant disorders, such as chronic pain, comorbid conditions of anxiety, depression, alcohol use disorder, and epileptogenesis.	
Oldewage-Theron, Wilna PhD, RD (SA)/Nutritional Sciences/TTU	wilna.oldewage@ttu.edu Office: (806) 834-0567	Investigating the impact of community nutrition programs (food fortification, supplementation, nutrition education, food product development and implementation, school nutrition, vegetable and soy gardening) on food insecurity and the double burden of disease of women, children and the elderly	
Palmer, Ty PhD/Kinesiology and Sport Management/TTU	Ty.palmer@ttu.edu Office: (806) 834-7884	Impact of age-related disparities on muscular function. Interventional strategies to improve functional performance in older adults	
Park, Oak-Hee PhD/Nutritional Sciences/TTU	Oak-hee.park@ttu.edu	Community nutrition. Food environment.	
Pelly, John MBA, PhD/Medical Education/SOM -Lubbock, TTUHSC	John.pelly@ttuhsc.edu	Mindfulness strategies in learning and mind-body wellness, integrative medicine education	Education
Phy, Jennifer MD/ Obstetrics & Gynecology/SOM M-Lubbock, TTUHSC	Jennifer.phy@ttuhsc.edu Office: (806) 743-4256	Polycystic ovary syndrome and weight loss by dietary modification. Acupuncture on vascular tone and stress levels in infertile women undergoing in vitro fertilization.	
Narissra M. Punyanunt-Carter, PhD	n.punyanunt@ttu.edu Office: (806)834-3273	Health communication; health advocacy, the crafting of messages about health, and strategies for the promotion of health-care services.	

Communication , College of Media & Communication TTU			
Shen, Leslie PhD, CCRP/ Pathology/ SOM-Lubbock, TTUHSC	Leslie.Shen@ttuhsc.edu Office: (806) 743-2815 Cell: (806) 787-6971	Clinical trials and animal studies – dietary supplement/phytochemicals in musculoskeletal health and obesity. Mind-body exercise (clinical only) in musculoskeletal health and obesity.	Clinical trials - obesity-related chronic diseases (diabetes, metabolic syndrome).
Shin, Andrew PhD / Nutritional Sciences / TTU	andrew.shin@ttu.edu Office: 806-834-1713	Neurobiology of appetite control, body weight regulation, nutrient metabolism. Behavioral neuroscience, Mechanisms underlying bariatric surgery	Branched-chain amino acids, Roux-en-Y gastric bypass, brain, Alzheimer's disease, obesity, diabetes
Singh, Sharda PhD TTUHSC	Sharda.singh@ttuhsc.edu Office: (806) 743-1540	Clinical trials and animal studies – dietary supplement/phytochemicals in prevention of doxorubicin induced cardiotoxicity. Molecular mechanisms involved in protein-protein interaction that prevents cancer development.	
Sizer, Phillip S. Jr. PT, PhD, OCS, FAAOMPT/Rehabilitation Sciences/SHP- Lubbock, TTUHSC	Phil.sizer@ttuhsc.edu Office: (806) 743-3902	Clinical pathoanatomy, sensorimotor control and functional biomechanics of the spine and extremities Tissue and movement screening	
Huaxin Song PhD/School of Nursing TTUHSC	Huaxin.song@ttuhsc.edu Office: 806-743-2661	Chronic Disease Management through interprofessional collaborative practice; Childhood obesity prevention; Big Data and measurement matrix for research and quality improvement programs for healthcare system.	Chronic Disease Management/ Geriatric care/ Childhood obesity
St. John, Julie DrPH, MPH, MA, CHWI/Dept. of Public Health,	julie.st-john@ttuhsc.edu Office: 325.696.0473 Cell: 325.513.4943	Health status and quality of life improvement among diverse and rural populations through community health development and partnership approaches; scope of practice and training of Community Health Workers; addressing	Community based participatory research; Public health;

GSBS, TTUHSC		human trafficking through community capacity building; health disparities; community health status assessments; program evaluation; intervention development	Community health workers; Partnerships Health disparities; Program evaluation
Sun, Grace DNP, APRN, FNP-BC TTUHSC/School of Nursing/TTU Student Health and Wellness	Grace.sun@ttuhsc.edu Office: (806) 743-9246	University Student Health and Wellness; Gastroenterology/Hepatology; Interprofessional education; Nutrition, Physiology, Metabolism	
Tinsley, Grant PhD/Kinesiology & Sport Management/TTU	Grant.tinsley@ttu.edu Office: (806) 834-5895	Body composition assessment methodology, lifestyle interventions to improve body composition, intermittent fasting, dietary supplementation, resistance training	Body composition assessment; intermittent fasting; fat mass; muscle mass; resistance training
Vellers, Heather PhD, RCEP/Kinesiology & Sport Management/TTU	Heather.Vellers@ttu.edu Office: (806) 834-8890	Mitochondrial biology and genetics-role in exercise training response and pathological etiologies	Mitochondrial genetics, mtDNA, aerobic exercise training
Zhang, Fangyuan PhD/Mathematics and Statistics/TTU	fangyuan.zhang@ttu.edu Office: (806) 834-2587	Developing statistical methods to detect genetic effects, epigenetic effects, and interaction effects between genes and environment associated with human complex diseases. Application of biostatistical methods to real data analysis.	Statistical genetics, biostatistics
Zhang, Yan PhD, LAc/Texas Christian University	Yan.zhang@tcu.edu Office: 806-743-6056	Clinical trials-acupuncture and mind-body intervention Health services research-secondary data analysis (NHIS) on CAM related topics, patient-outcome study Complementary and integrative health education	Clinical trials-acupuncture and mind-body intervention, integrative pain management study

			Health services research-secondary data analysis, patient-outcome study
Zook, Julie Ph. D./Architecture/ TTU	Julie.zook@ttu.edu Office: (806) 834-0699	Environmental determinants of health related to architectural and urban/community design; use of EHR data to better understand functioning of healthcare architecture	Architecture Healthcare workers Patient experience
Zumwalt, Mimi MD/Orthopedic Surgery/ Sports Medicine TTUHSC	mimi.zumwalt@ttuhsc.edu Office: (806) 743-2465	Female athletes/Injury prevention Exercise techniques/training Rx Natural/alternative nutrition Sex/Gender differences	female athletes sex/gender musculoskeletal injury/ strength & conditioning

Achieved Goals and Objectives

Summarize goals, objectives, and success toward meeting goals and objectives. Describe any changes to goals and objectives with explanation. (Please include the matrix submitted with the center’s original application. If not included in original application, please include a matrix that can used to assess how well the mission and goals of the Center are being met.)

The following are the Center Goals, Objectives, and Matrix submitted with the center’s original application:

GOALS and OBEJCTIVES:

Research:

- To foster transdisciplinary/multi-disciplinary collaborations for high quality basic, translational, and clinical research in integrative health within TTUHSC, TTU, and beyond.
- To assist and support researchers in conducting cutting edge research that will grow the empirical evidence base for integrative approaches to healthcare.
- To collaborate with basic scientists to develop biological correlates of integrative health clinical outcomes and explore potential mechanisms of action in effectiveness and efficacy studies.
- To build academic and community research partnerships.
- To rigorously test the safety and effectiveness of integrative health approaches for treatment and management of diseases.
- To present, publish, and disseminate reliable information in integrative health using public and professional outlets.

Education:

- To provide research opportunities for medical students.
- To develop a month-long research elective for 4th-year medical students.
- To host research and education integrative health conference.

METRICS

Achievement of mission and goals will be assessed using the following outcome measures:

- Attendance rate of activities/events organized by the Center.
- Presentations by members (especially invited speaking engagements).
- Publications (abstracts, case-report, full-length manuscripts): joint publications by two or more center members on projects funded by the Center.
- Joint grant applications and new individual applications based on Center projects. These would be expected to be applications to regional and national organizations.
- Participation of number of medical students in research activity related to integrative health.

Based on the Metrics, the following are our achieved goals and objectives:

Attendance rate of activities/events organized by the Center.

- Due to Covid-19 pandemic, our 3rd Annual Integrative Medicine Symposium was hosted virtually. Keynote speaker: Dr. Victor Sierpina, Professor of Family Medicine and W.D. and Laura Nell Nicholson Family Professorship in Integrative Medicine, University of Texas Medical Branch. Presentation topic: a Mindful Life: Methods and Manifestation). There are 120+ participants joined this meeting. Great attendance rate for this symposium (~ 240 attendants including members and non-members covering faculty, SOM students, graduate students, etc.). There are 12 posters presented by our Center members.
- Also due to Covid-19 pandemic, we hosted our 2020 Center Membership Meeting via zoom. There are 17 members joined. to invite 7 members to highlight their research interests.
 - Mohamad Al-Rahawan, MD, MPH, Department of Pediatrics, SOM
 - Jean-Michel Brismée, PT, ScD, OCS, FAAOMPT. Department of Rehabilitation Sciences, SHP
 - Chanaka N. Kahathuduwa, MBBS, MPhil, PhD. Department of Laboratory Sciences & Primary Care-SHP & Department of Psychiatry, SOM
 - J Josh Lawrance, PhD. Department of Pharmacology & Neuroscience, SOM
 - Conrad Lyford, PhD. Department of Agricultural and Applied Economics, TTU
 - Kwanghee Jung, PhD. Department of Educational Psychology, TTU
 - Julie St-John, DrPH, MA. Public Health, TTUHSC
- Worked with Department of Medical Education for summer rotation activities of the Family Medicine Accelerated Track (FMAT) to apply integrative health to chronic disease management.

- Announced two \$5,000 seed grant RFA for members to submit grant application. Center members in TTUHSC and TTU faculty eligible to serve as a Principal Investigator.
- Encouraged members to collaborate for manuscript (review or research study) and grant proposal application through offering member profiles and research grant table.

Presentations by members (especially invited speaking engagements):

- Based on 31 member reports, there was a total of 141 presentations, including oral and poster presentations at national and international symposiums. Please see more detailed presentation list in appendix.

Publications (abstracts, case-reports, full-length manuscripts, joint publications by two or more Center members on projects funded by the Center):

- Based on 31 member reports, there were 192 peer-referred articles publications and 26 published abstracts by Center members in 2020. Please see more detailed publication and abstracts list in the appendix.

Number of medical students participating in research activities related to integrative health:

- Approximately 25 medical students including FMAT are involved in research activities related to integrative health.

Others

- Center members are active in teaching medical students, graduate students, and undergraduate students from TTUHSC and TTU.

Descriptions of Center Progress and Activities

Include training activities, meetings sponsored, research, education, services, ongoing research projects, and intellectual property development.

Listed are the following activities that were not included in the Achieved Goals and Objectives section above:

- The steering committee has met once in 2020 and reviewed the progress of each goal. The meeting minutes and strategic adjustments were documented in a timely fashion and shared with responsible parties.
- Center members have met once in 2020 at the Annual Membership Meeting and presented/shared research highlights.
- Hosted the 3rd Annual Integrative Medicine Symposium on October 23, 2020, with ~ 240 attendants in attendance.
- Sponsored 5 medical students to participate in the 2020 Medical Student Summer Research Program.
- Worked with Department of Medical Education for summer rotation activities of the Family Medicine Accelerated Track (FMAT) to apply integrative health to chronic disease management.
- TTUHSC is an active member of the Academic Consortium for Integrative Medicine and Health. <https://imconsortium.org/>

Publications, Presentations, and Other Scholarly Activity

Please see attached appendix for list of publications (192 peer-referred journal articles, 26 published abstracts) and 141 presentations (oral and poster), and other scholarly activity from our 31 Center members who provided this information to include in this 2020 report.

Funding

List grants submitted, grants funded, endowments, program project/center grants, and contracts.

Please see attached appendix for list of 90 grant awards from our 31 Center members who provided this information to include in this 2020 report.

Future Plans

Include areas in need of improvement and detailed, proposed solutions.

The following areas are our 2021 plans:

- To promote Center visibility locally and nationally.
Locally: To organize the 2021 CEIH symposium planning committee for upcoming annual CEIH meetings.
Nationally: To present our Center progress/update at the upcoming virtual 2021 Integrative Medicine & Health Symposium, Hosted by the Academic Consortium, April 11-13, 2021.
- To host the 2021 Center Steering Committee Meeting in spring-summer 2021 regarding the future direction of CEIH.
- To host the 2021 Center Membership Meeting in spring-summer 2021.
- To increase research collaboration/discussion among center members as evidenced by increased collaborative grant proposal submissions and manuscript publications.
- To promote integrative health/medicine in medical student education.
- To continue public and professional integrative health/medicine education.
- To continue professional training in Integrative Medicine Education for medical student electives and clubs, and in grand rounds for Internal Medicine residents and Family Medicine palliative care fellows.
- To provide research opportunities for medical students or trainees.
- To provide seed funding for center members in collecting preliminary data for future proposal submission.
- To provide/exchange information at the Academic Consortium for Integrative Medicine and Health with center members for career development/growth in the area of Integrative Medicine and Health.

Other Highlights

Provide any other information not already covered in this report.

Budget

Include itemized expenses, and proposed budget for upcoming fiscal year.

2020 & Current:

- There is currently no budget designated from the School of Medicine for CEIH.
- The Center received funding of \$17,174 from a Center member, Dr. Yan Zhang's, unspent seed grant fund.

APPENDIX

2020 CEIH Members Scholarly Activities (# indicates collaboration among CEIH members)

AL-RAHAWAN, Mohamad

Publications

Nguyen TH, Makena MR, Al-Rahawan MM. Comments About Patterns of Prior and Subsequent Neoplasms in Children and Adolescents With Soft Tissue Sarcomas. *J Pediatr Hematol Oncol*. 2020 Nov 6. doi: 10.1097/MPH.0000000000001995. Epub ahead of print. PMID: 33165186.

Nguyen TH, Makena MR, Yavvari S, Kaur M, Pham T, Urias E, Panapitiya N, Al-Rahawan MM; Sarcoma as Second Cancer in a Childhood Hepatoblastoma Survivor: A Case Report and Large Population Analysis. *Medicina (Kaunas)*. 2020 May; 7;56(5):E224.

Turner AL, D'Souza P, Belirgen M, Al-Rahawan MM. Atypical Presentation of Multinodular and Vacuolating Neuronal Tumor of the Cerebrum in a Boy. *J Neurosci Rural Pract*. 2020 Jan;11(1):214-215.

Presentations

Oral: Pediatric Hematology-Oncology Nurse Inservice: Immunotherapy in neuroblastoma, Dinutuximab; Covenant Women and Children Hospital, Lubbock, TX

Poster: Treatment of Three Different BRAF-V600E Positive Brain Tumors with Vemurafenib and Dabrafenib/Trametinib: A Case Series; Society for Neuro-Oncology Annual Scientific Meeting; Austin, TX; Presented by Nikita Dhir, MS-III.

Poster: Exploring the Effects of Hematological Variables on Hemoglobin A1C in Diabetic Children. Pediatric Academic Societies Annual Meeting; Philadelphia, PA; Presented by first author, Sydney Loy, MS-II.

Poster: Sarcoma as second cancer in pediatric cancer survivors: Large population analysis.; American Association for Cancer Research (AACR) Annual Meeting; San Diego, CA; Presented by first author, Monish Ram Makena, MS, PhD.

Poster: Treatment of Three Different BRAF-V600E Positive Brain Tumors with Vemurafenib and Dabrafenib/Trametinib: A Case Series; Texas Tech University Health Science Center Student Research Week; Presented by Nikita Dhir, MS-III.

Grant awards

#South Plains Foundation	\$13,000.00
Local PI for UMC at the Children's Oncology Group (COG)	\$16,450.00

Joon Park, MD; UMC Endowed Chair in Medical Excellence
Cancer Prevention & Research Institute of Texas (CPRIT)

\$30,000.00
\$73,398.00

BLANTON, Michael

Grant award

September 1, 2019 - August 31, 2020, **Blanton MP**, Blanton Research Support from GSBS, \$9,000 (Total Amount). (Funded)

BRISMÉE, Jean-Michel

Publications

Hallur SS, Brismée JM*, Sizer PS, Dierick F, Dewan B, Thiry P, Sobczak S. Three-Dimensional Spinal Position With And Without Manual Distraction Load Increases Spinal Height. *Journal of Manipulative and Physiological Therapeutics*. 2020; 43(4):267-275.

Wilhelm MP, Hooper TL, Seeber GH, Browne KL, Gilbert KK, James CR, Brismée JM, Matthijs OC, Matthijs A, Sizer PS. The Relationship Between Measures of Foot Mobility and Subtalar Joint Stiffness Using Vibration Energy With Color Doppler Imaging - A Clinical Proof-of-Concept Validation Study. *PLOS One*. 2020;15(8):e0237634.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7437893/pdf/pone.0237634.pdf>

Seeber GH, Wilhelm MP, Sizer PS Jr, Guthikonda A, Matthijs A, Matthijs OC, Lazovic D, Brismée JM, Gilbert KK. The Tensile Behaviors of the Iliotibial Band - A Cadaveric Investigation. *International Journal of Sports Physical Therapy*. 2020;15(3):451-459.

MacDonald CW*, Lonnemann E, Petersen SM, Rivett DA, Osmotherly PG, Brismée JM. COVID 19 and Manual Therapy: International Lessons and Perspectives on Current and Future Clinical Practice and Education. *Journal of Manual and Manipulative Therapy*. 2020;28(3):134-145.

Dennis JA, Zhang Y, Curtis S, Brismée JM, Sizer PS. Conventional and Complementary Healthcare Approaches Used by American Adults Reporting Joint Pain: Patterns from the NHIS 2012. *The Journal of Alternative and Complementary Medicine - Paradigm, Practice and Policy Advancing Integrative Health*. 2020; 26(11):1080-1083.

<https://www.liebertpub.com/doi/pdf/10.1089/acm.2020.0237>

Nichols CW, Brismée JM, Hooper TL, Bertrand-Grenier A, Gilbert KK, St-Pierre M, Kapila J, Sobczak S. Glenohumeral Joint Capsular Tissue Tension Loading Correlates Moderately with Shear Wave Elastography: A Cadaveric Investigation. *Ultrasonography*. 2020;39(2):114-120.

<https://www.e-ultrasonography.org/upload/usq-19032.pdf> (Collaboration with Université du Québec a Trois-Rivières, Canada and University of North Texas)

Pape JL*, Brismée JM, Gilbert KK, Grabs D, Sobczak S. Accuracy of Unguided and Ultrasound Guided Coracohumeral Ligament Infiltrations – A Feasibility Cadaveric Case Series. *BMC Musculoskeletal Disorders*. 2020;21(1):136.

<https://bmcmusculoskeletaldisord.biomedcentral.com/track/pdf/10.1186/s12891-020-3153-4>

(Collaboration with Université du Québec a Trois-Rivières, Canada and Department of Physiotherapy, University Hospital of North Tees, Stockton on Tees, United Kingdom,)

Anderson TL, Brismée JM*, Smith TM, Sizer PS, Hanks RS, Hooper TL, Gerke DA, Phelps V, Stinson LW. New Fanwise Subacromial Corticosteroid Injection Technique for Shoulder Impingement: A Preliminary Prospective Single-Arm Clinical Trial. *eMedical Research*. 2020;2,100003:1-11. <https://www.emresonline.org/open-access-pdf/new-fanwise-subacromial-corticosteroid-injection-technique-for-shoulder-impingement-a-preliminary-prospective-singlearm-clinical-100003.pdf>

Mabry LM*, Boyles RE, Brismée JM, Agustsson H, Smoliga JM. Physical Therapy Musculoskeletal Imaging Authority: A Survey Of The World Confederation For Physical Therapy Nations. *Physiotherapy Research International*. 2020;25(2):e1822. <https://onlinelibrary.wiley.com/doi/epdf/10.1002/pri.1822>
((Collaboration with High Point University, North Carolina and University of St Augustine, Florida)

Seeber GH, Lierly M, Bassett C, Douthit C, Wilhelm M, Matthijs A, Matthijs O, Lazovic D, Brismée JM, Gilbert K, Sizer P Jr. The Constraining Effect of the Lateral Femoral Intermuscular Septum on Passive Hip Adduction in Un-embalmed Cadavers. *International Journal of Sports Physical Therapy*. 2020; 15(1):42-52.

Presentation (Poster)

Pape JL*, Lievyns A, Brismée JM, Poortmans V, Poortmans B, Sizer PS, Matthijs OC, Sobczak S. "Segmental Specific Lumbar Intervertebral Height Increases Following Supine Lying With Localized Lumbar Support Measured Using Musculoskeletal Ultrasound" Birmingham, United Kingdom, 11/14/2020.

Jahrestagung der Vereinigung Süddeutscher Orthopäden und Unfallchirurgen Seeber GH, Wilhelm MP, Guthikonda A, Lazovic D, Brismée JM, Gilbert KK, Sizer PS Jr. "Das Biomechanische Verhalten des Iliotibialbandes unter Zug - eine Präparatstudie." Baden-Baden, Germany, 05/01/2020

Jahrestagung der Vereinigung Süddeutscher Orthopäden und Unfallchirurgen Seeber GH, Lierly M, Bassett C, Douthit C, Wilhelm MP, Lazovic D, Brismée JM, Gilbert KK, Sizer PS Jr. "Der Limitierende Einfluss des Lateralen Intermuskulären Septums auf die Passive Hüftadduktion - eine Präparatstudie." Baden-Baden, Germany, 05/01/2020.

Natesan K, Drusch AS, Garcia L, Kunkel B, Hooper T, Kublawi M, Brismée JM, Yang H, Sizer PS. "Effect of VPAC on Muscles in Healthy Women". Lubbock, Texas, 03/11/2020. 32nd Annual Student Research Week at Texas Tech University Health Sciences Center

Khalid S, Garcia L, Kunkel B, Drusch A, Hooper T, Kublawi M, Brismée JM, Yang H, Sizer P. "Effect of Executive Cognitive Distraction on Sustaining a Volitional Preemptive Abdominal Contraction During a Unipodal Functional Movement in Healthy Subjects." Lubbock, Texas, 03/11/2020. 32nd Annual Student Research Week at Texas Tech University Health Sciences Center

Dice JL*, Dendy D, Sizer PS, Cook CE, Feuling S, Brismée JM. “Manual Therapy in Pediatrics: A Delphi Investigation of United States Physical Therapists” Denver, Colorado, 02/13/2020

Gehring R, Potter-Brunet J, Gilbert K, Sizer PS, Brismée JM. “Neurodynamic Treatment for Neurogenic Claudication Related to Lumbar Spinal Stenosis: Case Series with 3-Month Follow-up”. Denver, Colorado, 02/13/2020

Nichols Jr CW, Brismée JM, Hooper TL, Bertrand-Grenier A, Gilbert KK, Sobczak S. “Glenohumeral Joint Capsular Tissue Under Tension Loading Correlates Moderately with Ultrasound Shear Wave Elastography: A Cadaveric Investigation” Denver, Colorado, 02/13/2020

CONRAD, Lyford

Publications

Sima Siami-Namini, Sima, Conrad Lyford, Alexandre Trindade. “The Effects of Monetary Policy Shocks on Income Inequality Across U.S. States,” *Economic Papers*, 16 March 2020. <https://doi.org/10.1111/1759-3441.12279>

Kalenkoski, Charlene, Conrad Lyford, Thomas Korankye, Meredith Gavin, Alan Peiris. “Vitamin D, Cognitive Function, and Gait Speed in Older Adults: a NHANES Study,” *Journal of Population and Ageing*, 29 July 2020. doi.org/10.1007/s12062-020-09291-6

Felderhoff, Chad, Conrad Lyford, Jaime Malaga, Rod Polkinghorne, Chance Brooks, Andrea Garmyn and Mark Miller. “Beef Quality Preferences: Factors Driving Consumer Satisfaction,” *Foods* 2020, 9(3), 289; [doi:10.3390/foods9030289](https://doi.org/10.3390/foods9030289)

Presentations

Jayaramu, N. and C. Lyford. “Factors Impacting Satisfaction with a Cooperatives Mobile and Web-based Information Platforms”. Selected Paper. 2020 Southern Agricultural Economics Association (SAEA) Annual Meeting, February 11-14, 2020. Louisville, KY.

Grant awards

“A Pilot Study for Enhancing Nutrition and Family Resilience with Early Head Start in the COVID-19 Era”, Texas Tech University, 2021 Scholarship Catalyst Fund (\$3,500)

“Applying Behavioral Economics Approaches to Improve Food Security in Namibia with a Special Emphasis on Women”, January 2021, Department of State, Bureau of Educational and Cultural Affairs (\$4,955)

“OIA 2020 Mandela Washington Fellowship”, January 2020 to September 2020, Department of State, Bureau of Educational and Cultural Affairs (\$136,203)

DUFOUR, Jannette

Publications

Chung E, Elmassry MM, Kottapalli P, Kottapalli KR, Kaur G, Dufour JM, Wright K, Ramalingam L, Moustaid-Moussa N, Wang R, Hamood AN, Shen CL. 2020 Metabolic benefits of annatto-extracted tocotrienol on glucose homeostasis, inflammation, and gut microbiome. *Nutrition Research* 77:97-107. *Selected for an Open Access Award* (\$3,000 for Special Issue of Nutrition Research).

Kaur G, Wright K, Verma S, Haynes A, Dufour JM. The good, the bad and the ugly of testicular immune regulation: a delicate balance between immune function and immune privilege. *Molecular Mechanisms in Spermatogenesis* (in press).

Menikdiwela KR, Ramalingam L, Rasha F, Wang S, Dufour JM, Kalupahana NS, Sunahara KKS, Martins JO, Moustaid-Moussa N. 2020 Autophagy in metabolic syndrome: Breaking the wheel by targeting the renin angiotensin system. *Cell Death and Disease* (in press).

Washburn RL, Kaur G, Dufour JM. 2020 Sertoli cells and complement inhibitors: a possible mechanism to increase pancreatic islet viability. *Annals of Diabetes Research* 4:1013.

Kaur G, Wright K, Mital P, Hibler T, Miranda JM, Thompson LA, Halley K, Dufour JM. 2020 Neonatal pig Sertoli cells survive xenotransplantation by creating an immune modulatory environment involving regulatory T cells. *Cell Transplantation* 29:963689720947102. doi: 10.1177/0963689720947102.

Chung E, Elmassry MM, Kaur G, Dufour JM, Hamood AN, Shen CL. Effects of Dietary geranylgeraniol on glucose homeostasis, bone properties, adipokines and gut microbiome in obese mice with hyperglycemia and insulin resistance. *Nutrients* (submitted).

Sivaprakasam S, Sikder MOF, Ramalingam L, Kaur G, Dufour JM, Moustaid-Moussa N, Wachtel MS, Ganapathy V. SLC6A14 deficiency is linked to obesity, fatty liver, and metabolic syndrome but only under conditions of a high-fat diet. *Molecular Metabolism* (submitted).

Helmer BA, Martinez-Zaguilan R, Kaur G, Smith LA, Dufour JM, Chilton BS. Hltf-deletion from the TME in a CDX model of CRC reprogrammed the 1 human transcriptome-S-nitroso2 proteome to promote inflammation and direct metastasis. *PLOS ONE* (submitted).

Abstracts

Wang R, Ji G, Dufour JM, Kaur G, Miranda JM, Washburn RL, Hibler T, Luk HY, Neugebauer V, Shen CL. Ginger Mitigates Pain Behaviors and Improves Colon Health in Obese Rats with Diabetic Neuropathy. *Obesity Week The Obesity Society Annual Meeting* (Online conference due to COVID-19, November 2-6, 2020)

Invited Presentations (these are presentations I was invited to give in May of 2020 and August of 2022. However, they were postponed due to the COVID-19 pandemic)

Involvement of Tregs and complement in Sertoli Cell immune regulation.
Dr. Yves Clermont Lecture in Reproduction at the 12th Annual Research Day of the McGill Centre for Research in Reproduction and Development. (Montreal, Quebec, Canada) (Moved due to COVID-19 to May 2021)

The role of regulatory immune cells in Sertoli cell immune regulation.
“Immunology: Friend and Foe” 2020 Mammalian Research, Gordon Research Conference
Mount Holyoke College (South Hadley, Massachusetts) (Moved due to COVID-19 to August
2022)

Grant Awards

CH Foundation Seed Grant, “Investigating Sertoli cell immune regulation to improve islet survival as a treatment for diabetes.” (\$60,000, 1/2021-12/2021)
Kaur (Principal Investigator), Dufour (Co- Investigator)

CBB Women’s Health and Sex and Gender Differences Seed Grant, “Sertoli cell induction of Tregs in female recipients.” (\$15,000, 12/01/2020-11/30/2021)
Dufour (Principal Investigator), Kaur (Co- Investigator)

Wilson Foundation, “Genetically engineered Sertoli cells as a vehicle for cell based gene therapy.” (\$490,000, 12/01/2014-11/30/2020, no cost extension to 5/30/2021)
Dufour (Principal Investigator), Kaur (Co- Investigator)

JONES, Betsy

Presentation

Jones BG, Alex K, Anderson B, Cala JK, Chang S, Chen K, Griffin C, Jarman T, Low D, Moyana R, Moseley K, Naude D, Nguyen D, Thomas A, Thompson G, Walker B, Ximenez B, Klein K, Trotter D, Cook R. A Student-Generated, Peer-Led Teaching Activity for Integrative Medicine in a Family Medicine Accelerated Track, STFM Medical Student Education Conference, Virtual, February 2021.

Jones BG, Shen L, Kaur G, FMAT Students. A Student-Generated, Peer-Led Teaching Activity for Integrative Medicine in a Family Medicine Accelerated Track. Submitted to STFM Medical Student Education Conference, Portland, February 2020.

KAHATHUDUWA, Chanaka

Publications

Mastergeorge AM, Kahathuduwa C, Blume J. Eye-Tracking in Infants and Young Children at Risk for Autism Spectrum Disorder: A Systematic Review of Visual Stimuli in Experimental Paradigms. *J Autism Dev Disord*. 2020 Oct 4. doi: 10.1007/s10803-020-04731-w. Epub ahead of print. PMID: 33011860.

Dassanayake TL, Kahathuduwa CN, Weerasinghe VS. L-theanine improves neurophysiological measures of attention in a dose-dependent manner: a double-blind, placebo-controlled, crossover study. *Nutr Neurosci*. 2020 Aug 11:1-11. doi: 10.1080/1028415X.2020.1804098. Epub ahead of print. PMID: 32777998.

Kahathuduwa CN, Wakefield S, West BD, Blume J, Dassanayake TL, Weerasinghe VS,

Mastergeorge A. Effects of L-theanine-caffeine combination on sustained attention and inhibitory control among children with ADHD: a proof-of-concept neuroimaging RCT. *Sci Rep*. 2020 Aug 4;10(1):13072. doi: 10.1038/s41598-020-70037-7. PMID: 32753637; PMCID: PMC7403383.

Dodd SL, Long JD, Hou J, Kahathuduwa CN, O'Boyle MW. Brain activation and affective judgements in response to personal dietary images: An fMRI preliminary study. *Appetite*. 2020 May 1;148:104561. doi: 10.1016/j.appet.2019.104561. Epub 2019 Dec 20. PMID: 31870934.

Akter S, Dawson JA, Kahathuduwa CN, Chin SH, Binks M. Psychological and weight history variables as predictors of short-term weight and body fat mass loss. *Obes Sci Pract*. 2019 Dec 2;6(2):152-161. doi: 10.1002/osp4.394. PMID: 32313673; PMCID: PMC7156839.

Thomas DM, Clark N, Turner D, Siu C, Halliday TM, Hannon BA, Kahathuduwa CN, Kroeger CM, Zoh R, Allison DB. Best (but oft-forgotten) practices: identifying and accounting for regression to the mean in nutrition and obesity research. *Am J Clin Nutr*. 2020 Feb 1;111(2):256-265. doi: 10.1093/ajcn/nqz196. PMID: 31552422; PMCID: PMC6997628.

Rasha F, Kahathuduwa C, Ramalingam L, Hernandez A, Moussa H, Moustaid-Moussa N. Combined Effects of Eicosapentaenoic Acid and Adipocyte Renin-Angiotensin System Inhibition on Breast Cancer Cell Inflammation and Migration. *Cancers (Basel)*. 2020 Jan 16;12(1):220. doi: 10.3390/cancers12010220. PMID: 31963198; PMCID: PMC7016836.

Vorland CJ, Brown AW, Kahathuduwa CN, Dawson JA, Gletsu-Miller N, Kyle TK, Thabane L, Allison DB. Questions on 'Intervention effects of a kindergarten-based health promotion programme on obesity related behavioural outcomes and BMI percentiles'. *Prev Med Rep*. 2019 Nov 21;17:101022. doi: 10.1016/j.pmedr.2019.101022. PMID: 32154090; PMCID: PMC7058642.

Invited Seminar Presentations

Estimating Severity, Case-Fatality, and Risk Factors of Severity of COVID-19 Using Meta-Analysis Methodology – At the intersection of two pandemics COVID-19 & Obesity, Seminar organized by the Obesity Research Institute, TTU

Funded Grant Applications

Role	Funding Mechanism	Amount	Funding Dates	Project Title
Co-I (Funded)	Texas Child Mental Health Care Consortium	\$500,000	08/01/2020-12/31/2022	West Texas Node of the Texas Child Mental Health Care Consortium for the Study of Childhood Depression, Suicide and Trauma (PI: Wakefield)
PI (Funded)	TTUHSC - School of Health Professions Seed Grant	\$10,000	02/10/2020-12/31/2020	Development and Examination of the Utility of a Novel, Web-based Neurofeedback Intervention to Manage Obesity

Co-I (Funded)	TTUHSC School of Medicine Seed Grant	\$10,000	05/01/2020- 04/31/2022	Ability of Positive Psychological Factors to Moderate the Associations between Susceptibility to Anxiety and Depressive Disorders of Medical Students and Their Academic Performance (PI: Ibrahim)
PI (Funded)	Texas Society of Allied Health Professions	\$1,500	01/01/2020 – 12/31/2020	Development and Evaluation of a Research Methods Curriculum for Physician Assistant Students.

KAUR, Gurvinder

Honors and awards

2020 Dean's Basic Science Teaching Award-Year 1

Publications

Kaur G, Wright K, Mital P, Hibler T, Miranda JM, Thompson LA, Halley K, Dufour JM (2020). Neonatal pig Sertoli cells survive xenotransplantation by creating an immune modulatory environment involving CD4 and CD8 regulatory T cells. *Cell Transplant* 29: 1-21.

Washburn RL, Kaur G, Dufour JM (2020). Sertoli cells and complement inhibitors: A possible mechanism to increase pancreatic islet viability. *Ann Diabetes Res* 4: 1-5. (Published)

Chung E, Elmassry MM, Kottapalli P, Kottapalli KR, Kaur G, Dufour JM, Wright K, Ramalingam L, Moustaid-Moussa N, Wang R, Hamood AN, Shen C (2020). Metabolic benefits of annatto-extracted tocotrienol on glucose homeostasis, inflammation, and gut microbiome. *Nutrition Research (New York, N.Y.)* 77: 97-107. (Published)

Kaur, G., Wright, K., Verma, S., Haynes, A. L., Dufour, J. M., The Good, The Bad and The Ugly of Testicular Immune Regulation: A Delicate Balance Between Immune Function and Immune Privilege. In: Molecular Mechanisms in Spermatogenesis (In Press).

Presentations/Exhibits/Productions

Wang R, Ji G, Dufour JM, Kaur G, Miranda JM, Washburn RL, Hibler T, Luk HY, Neugebauer V, Shen CL. Ginger mitigates pain behaviors and improves colon health in obese rats with diabetic neuropathy. The Obesity Society (TOS) 38th Annual Meeting (Virtual, Nov 2-6, 2020)

Washburn RL, Kaur G, Dufour JM. Sertoli cell expression of complement regulatory proteins is necessary to their survival of hyperacute rejection. 3rd Annual Abilene Research Symposium (Virtual oral presentation, October 30th 2020)

Webster, D., Jones, B., Pressley, T., Kaur, G., Kruczek, C., Brower, G., Engaged learning: Integrating simulations, ultrasound and small groups into large-group courses. International

Association of Medical Science Educators (IAMSE) Meeting, Denver, CO, June 2020. (Focus session Presenter; Meeting cancelled due to COVID-19).

Schneider, B., Vories, B., Gore, M., Higgins, K., Lee, V. H., Williams, S., Bishop, K., Kaur, G., Formative assessments predict performance and promote a positive learning environment. Experimental Biology Meeting, San Diego, CA, April 2020. (Selected for Oral presentation, Meeting cancelled due to COVID-19).

Mohammed, T., Kaur, G., Creation of male and female perineum dissection videos to enhance student understanding of perineal injuries. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020.

Coleman, B. R., Schneider, B., Kaur, G., Active learning resources applied to first four weeks of embryological development in first year medical school curriculum. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020.

Gore, M., Vories, B., Kaur, G., Schneider, B. Using formative exams in Clinically Oriented Anatomy: Identifying at-risk students and reducing stress. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020. (Selected for oral presentation).

McCabe, P., Schneider, B., Kaur, G., Incorporating active learning materials into the gastrointestinal and reproductive embryology curriculum for first-year medical students. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020.

Sellers, J., Schneider, B., Kaur, G., Active learning techniques and their effects on medical student education of head and neck embryology. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020.

Wright, K., Reilly, B., Kaur, G., Dufour, J. M., Multi-color immunophenotyping of M1 and M2 polarized macrophages and monocytes in primary mouse tissue that has vast application in mouse models including transplantation. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020. (Selected for oral presentation; won 2nd prize).

Hibler, T., Kaur, G., Wright, K., Dufour, J. M., SMAD2/3, IL-10, and you: A Sertoli cell's guide to promoting allograft survival. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020.

Washburn, R. L., Kaur, G., Dufour, J. M., Sertoli cell inhibition of the complement system may improve xenograft viability. 32nd Annual Student Research Week, March, Texas Tech University Health Sciences Center, Lubbock, Texas, March 2020. (Won 2nd prize).

Grant awards

The Jasper L. & Jack Denton Wilson Foundation, December 2019 - November 2020, Kaur G (Co-Investigator), Dufour JM (Principal Investigator), Genetically Engineered Sertoli Cells as Vehicle Cell Based Gene therapy, 4.3% effort, \$70,000 (Direct Cost).

LAWRENCE, John

Publications:

F. Yi, T. Garrett, K. Deisseroth, H. Haario, E. Stone, and J. J. Lawrence. Septohippocampal transmission from parvalbumin-positive neurons features rapid recovery from synaptic depression. *Submitted to Scientific Reports 8/7/20; revisions requested 9/2/20; revised and resubmitted 11/30/20; accepted 12/14/20; finalized proofs 12/31/20.*

V. Sekulic, F. Yi, T. Garrett, A. Guet-McCreight, J. J. Lawrence*, and F. K. Skinner*. Integration of Within-Cell Experimental Data With Multi-Compartmental Modeling Predicts H-Channel Densities and Distributions in Hippocampal OLM Cells. Accepted 5 August 2020; published 17 September 2020.

**shared senior authors*

Grant Awards:

Wylie Briscoe Endowment Lawrence (PI) 7/24/18-8/31/20 Annual Direct Costs: \$12,500
Prevention of Inhibitory Circuit Failure and Memory Loss in Alzheimer's Disease through Increased Retinoic Acid Signaling.
Role: PI

TTUHSC Collaborative Seed Grant Program in Aging Lawrence (co-PI) 2/1/2020-1/31/2021
Total Costs: \$20,000
Role of aberrant Wnt/Ca²⁺ signaling in Alzheimer's disease and cancer
Role: co-PI

TTUHSC School of Medicine Collaborative Seed Grant Program Lawrence (co-PI) 5/27/2020-5/26/2021
Models to Test Dominant-Negative and Gain-of-Function Mechanisms of ATP1A1 Mutations
Primary hyperaldosteronism (PHA), Charcot-Marie-Tooth (CMT), as well as a form hypomagnesemia accompanied with seizures and cognitive delay (HASCD) have all been associated with mutations in ATP1A1, the gene encoding for the $\alpha 1$ catalytic subunit of the Na⁺,K⁺-ATPase (NKA). It has been proposed that inward passive transport modes are a required "gain of function" for HASCD, and possibly for PHA. The goal of this proposal is to expand the cellular- and animal-model toolbox to evaluate the mechanisms of ATP1A1-linked disease.
Role: co-PI

Presentation: Other Scholarly Activity:

*B. Kisby, K. Castaneda, A.J. Pascullo, R. Barnes, J.D. Bailoo, Igor Ponomarev, and J.J. Lawrence. Sex-specific protection from inhibitory circuit disruption by retinoic acid signaling in a

novel mouse model of Alzheimer's disease. 2020 Laura W. Bush Institute for Women's Health, Sex- and Gender- Health Symposium, Texas Tech University Health Sciences Center, Lubbock, TX, October 23rd, 2020.

**Merit award winner, category: Women's Health and Differences in Health/Gender, Focus on Basic Sciences.*

K. Castaneda, B. Kisby, A.J. Pascullo, R. Barnes, J.D. Bailoo, Igor Ponomarev, and J.J. Lawrence. Sex-specific protection from inhibitory circuit disruption by retinoic acid signaling in a novel mouse model of Alzheimer's disease. 32st Annual Student Research Week 2020: 20/20 Visions of Biochemistry, Texas Tech University Health Sciences Center, Lubbock, TX, March 10th-13th, 2020.

LEE, Jaehoon

Publications

Aryaie, A., Tinsley, G., Lee, J., Watkins, B. A., Moore, L., Alhaj-Saleh, A., Shankar, K., Wood, S., Wang, R., & Shen, C.-L. (2020). Actions of annatto-extracted tocotrienol supplementation on obese postmenopausal women: Study protocol for a double-blinded placebo-controlled randomized trial. *British Medical Journal Open*, *10*(3), e034338.

Barlow, S. M., Custead, R., Lee, J., Hozan, M., & Greenwood, J. (2020). Wireless sensing of lower lip and thumb-index finger 'ramp-and-hold' isometric force dynamics in unilateral MCA stroke. *Sensors*, *20*(4), 1221.

Chu, S.-Y., Barlow, S. M., Lee, J., & Wang, J. (2020). Effects of utterance rate and length on the spatiotemporal index in Parkinson's disease. *International Journal of Speech-Language Pathology*, *22*(2), 141–151.

Chu, S.-Y., Park, H.-R., Lee, J., Shaharuddin, K., & Gan, C. (2020). Self-stigma and its associations with stress and quality of life among Malaysian parents of children with autism. *Child: Care, Health and Development*, *46*(4), 485–494.

Chu, S.-Y., Sakai, N., Lee, J., Harrison, E., Tang, K.-P., & Mori, K. (2020). Comparison of social anxiety between Japanese adults who stutter and nonstuttering controls. *Journal of Fluency Disorders*, *65*, 105767.

Claiborn, J. M., Dozier, T. H., Hart, L. S., & Lee, J. (2020). Misophonia phenomenology, impact, and clinical correlates. *Psychological Thought*, *13*(2), 349–375.

Emerson, A. M., Smith, S., Lee, J., Kelly, P. J., & Ramaswamy, M. (2020). Effectiveness of a Kansas City, jail-based intervention to improve cervical health literacy and screening, one-year post-intervention. *American Journal of Health Promotion*, *34*(1), 87–90.

Froehlick-Grobe, K., Betts, A. C., Driver, S., Carlton, D., Lopez, A. M., Lee, J., & Kramer, M. K. (2020). Group Lifestyle Balance Adapted for individuals with Impaired Mobility: Outcomes of a six-month randomized controlled trial and combined groups at 12 months. *American Journal of Preventive Medicine*, *59*(6), 805–817.

Gibson, C. A., Gupta, A., Greene, J. L., Lee, J., Mount, R., & Sullivan, D. K. (2020). Feasibility and acceptability of a televideo physical activity and nutrition program for recent kidney transplant recipients. *Pilot and Feasibility Studies*, 6, 126.

Griffin-Shirley, N., Lee, J., Nguyen, T., Othuon, V., & Page A. (2020). Survey-based learning of interns in orientation and mobility program. *Vision Rehabilitation International*, 11(1), 1-6.

Hunt, P., Kozleski, E., Lee, J., Mortier, K., Fleming, D., Hicks, T., Balasubramanian, L., Leu, G., Bross, L. A., Munandar, V., Dunlap, K., Stepaniuk, I., Aramburo, C., & Oh, Y. (2020). Implementing comprehensive literacy instruction for students with severe disabilities in general education classrooms. *Exceptional Children*, 86(3), 330–347.

Jung, K., Cho, S., Lee, J., Kim, S., & Ryoo, J. (2020). An illustrative application of generalized structured component analysis for brain connectivity research. *Behaviormetrika*, 47(1), 273–289.

Kim, S. Y., Lee, J., Wester, S. R., & Fouad, N. (2020). Do “manly” men believe other men are happier? Social comparison, masculine norms, and positive work-family spillover. *Psychology of Men & Masculinity*, 21(2), 251–265.

Lee, J., Jung, K., & Park. J. (2020). Detecting conditional dependence using flexible Bayesian latent class analysis. *Frontiers in Psychology*, 11, 1987.

Loeb, D. F., Imgrund, C. M., Lee, J., Barlow, S. M. (2020). Language, motor, and cognitive outcomes of toddlers who were born preterm. *American Journal of Speech-Language Pathology*, 29(2), 625–637

Min, J., KC, B., Kim, S., & Lee, J. (2020). The impact of disasters on a heritage tourist destination: A case of Nepal earthquakes. *Sustainability*, 12, 6115.

Park, S., Kim, S., & Lee, J. (2020). A pilot study on the relationship between urban green spaces and fine particulate matter. *International Journal of Geospatial and Environmental Research*, 7(1), 3.

Pickett, M. L., Lee, J., Brouseeau, D. C., Satterwhite, C., & Ramaswamy, M. (2020). Correlates of sexually transmitted infection testing following women’s release from jail. *Women & Health*, 60(10), 1109–1117.

Ptomey, L. T., Szabo-Reed, A. N., Vidoni, E. D., Washburn, R. A., Gorczyca, A. M., Little, T. D., Lee, J., Helsel, B. C., Williams, K. N., & Donnelly, J. E. (2020). A dyadic approach for a remote physical activity intervention in adults with Alzheimer’s disease and their caregivers: Rationale and design for an 18-month randomized trial. *Contemporary Clinical Trials*, 98, 106158.

Smith, P., Lee, J., & Chang, R. (in press). Characterizing competing tensions in Black immigrant literacies: Beyond partial representations of success. *Reading Research Quarterly*.

Szabo-Reed, A. N., Washburn, R. A., Greene, J. L., Ptomey, L. T., Gorczyca, A., Lee, R. H., Little, T. D., Lee, J., Honas, J., Donnelly, J. E. (2020). Physical Activity Across the Curriculum (PAAC3): Testing the application of technology delivered classroom physical activity breaks. *Contemporary Clinical Trials*, 90, 105952.

Oh, H., Lee, J., Gosnell, S. N., Patriquin, M., Kosten, T., & Salas, R. (2020). Orbitofrontal, dorsal striatum, and habenula functional connectivity in psychiatric patients with substance use problems. *Addictive Behaviors, 108*, 106457.

Oh, H., Lee, J., Kim, S., Rufino, K. A., Fonagy, P., Oldham, J. M., Schanzer, B., & Patriquin, M. A. (2020). Time in treatment: Examining mental illness trajectories across inpatient psychiatric treatment. *Journal of Psychiatric Research, 130*, 22–30.

Vellers, H. L., Verhein, K. C., Burkholder, A. B., Lee, J., Kim, Y., Lightfoot, J. T., Shi, M., Weinberg, C. R., Sarzynski, M. A., Bouchard, C., & Kleeberger, S. R. (2020). Association between mitochondrial DNA sequence variants and VO2 max trainability. *Medicine & Science in Sports & Exercise, 52*(11), 2303-2309.

Presentations

Barlow, S. M., Lee, J., Custead, R., Hozan, M., & Greenwood, J. (February, 2020). *Orofacial and digit force dynamics in chronic MCA ischemic stroke*. Poster presented at the Motor Speech Conference, Santa Barbara, CA.

Gibson, C. A., Valentine, H., Mercier, R.-B., Harvey, S., Landfried, L., & Lee, J. (May, 2020). *Results of a nutrition incentive program within a bi-state region: A mixed-method evaluation*. Paper presented at the annual meeting of the American Society for Nutrition, Seattle, WA.

Hoffman, E., Hozan, M., Lee, J., & Barlow, S. M. (February, 2020). *Orofacial and digit force dynamics in neurotypical children*. Poster presented at the Motor Speech Conference, Santa Barbara, CA.

Hoffman, E., Lee, J., & Barlow, S. M. (February, 2020). *Perioral and digit vibrotactile threshold estimation in neurotypical children*. Poster presented at the Motor Speech Conference, Santa Barbara, CA.

Jung, J., Jung, K., & Lee, J. (March, 2020). *Developing Power BI dashboard with predictive models for student persistence and success*. Paper presented at the annual meeting of the Texas Association for Institutional Research, San Antonio, TX.

Jung, K., Suh, H., Lee, J., Park, J., & Kim, K. (April, 2020). *Analysis of a statewide standardized assessment data using multilevel redundancy analysis*. Poster presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Kim, Y., & Lee, J. (June, 2020). *Assessing mediation using propensity score: Comparison between classical and causal inference approach*. Poster presented at the Modern Modeling Methods (M3) Conference, Storrs, CT.

Kim, Y., Lee, J., & Little, T. D. (August, 2020). *Multiple imputation with principle components: Missing data estimation for categorical variables*. Poster presented at the annual meeting of the American Psychological Association, Washington, D.C.

Kim, Y., Lee, J., & Little, T. D. (October, 2020). *Multiple imputation with principal components: Non-normal categorical data*. Poster presented at the annual meeting of the Society of Multivariate Experimental Psychology, Iowa City, IA.

Kim, Y., Lee, J., & Little, T. D. (August, 2020). *The Impact of item parceling on factorial invariance*. Poster presented at the annual meeting of the American Psychological Association, Washington, D.C.

Lee, J., Jung, J., Nazarenko, N., Garcia, L., & English, L. (March, 2020). *Funding and building developmental math and academic support services: Using data to identify success and challenges*. Poster presented at the annual meeting of the Texas Association for Institutional Research, San Antonio, TX.

Lee, J., Kim, S., Li, X., Kim, Y., & Zeng, Y. (June, 2020). *Using principal components to develop propensity score*. Paper presented at the Modern Modeling Methods (M3) Conference, Storrs, CT.

Moon, H., Cheon, J., & Lee, J. (April, 2020). *Teaching block-based programming: A systematic review of current approaches and outcomes*. Paper presented at the annual meeting of the Society for Information Technology & Teacher Education, New Orleans, LA.

Moon, H., Kelly, D., Cheon, J., & Lee, J. (November, 2020). *Comparison of the effects of two teaching approaches on the learning of conditionals with block-based programming in an online environment*. Paper presented at the annual meeting of the Association for Educational Communications and Technology, Online.

Moon, H., Park, H., Kim, Y., Lee, J., & Karkar Esperat, T. M. (April, 2021). *SEM meta-analysis on adjustment difficulties in siblings of children with and without autism spectrum disorder*. Paper presented at the annual meeting of the American Educational Research Association, Online.

*Park, J., Jung, K., & Lee, J. (April, 2020). *The robustness of latent class analysis to violations of local independence assumption*. Poster presented at the annual meeting of the National Council on Measurement in Education, San Francisco, CA.

Yi, M., Wang, J., Flores, R., & Lee, J. (April, 2020). *Examining the relationship between elementary preservice teachers' development of knowledge and practice of teaching 2-dimensional shapes: A mixed methods study*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Grant awards

Federal:

A dyadic approach for a remote physical activity intervention in adults with Alzheimer's disease and their caregivers, Donnelly & Ptomey (PIs), NICHD R01AG061187, 09/15/2019–05/31/2024, \$3,635,657, Co-I.

Engaging in STEM, Biggers (PI), ED P031C160244, 10/01/2016–09/30/2021, \$4,915,613, Co-I.
Engaging students: The path to STEM success, Capps (PI), ED P031C160219, 10/01/2016–09/30/2021, \$3,800,750, Co-I.

Exposure to violence and subsequent weapons use: Mediating and moderating processes, Huesmann (PI), NICHD R01HD084652, 07/01/2016–4/30/2021, \$2,077,631, Co-I.

Individual and family based approaches to increase physical activity in adolescents with IDD, Donnelly & Ptomey (PIs), NICHD R01HD094704, 09/01/2018–08/31/2023, \$2,484,834, Co-I.

Kansas-Missouri Nutrition Incentive Collaborative, USDA, 01/01/2021–12/31/2023, N.A/\$7,000 (Co-I), 100%.

Medication development for the treatment of alcohol use disorder, Bergeson & Shen (PIs), NIAAA 1U01AA028957, 09/20/2020-08/31/2025, \$7,251,682, Co-I.

Panhandle pipeline (P2): Assessing the impact of mandatory vs. self-selected structured activities on STEM undergraduate student success, Biggers (PI), NSF 1644179, 07/15/2017–6/30/2022, Co-I.

Physical Activity Across the Curriculum (PAAC 3): Teacher vs. remotely delivered classroom physical activity breaks, Donnelly (PI), NIDDK R01DK085317, 03/01/2018–02/28/2023, Co-I.
Revised Calculus Concept Inventory: Measuring the learning gains of first year calculus students, Moskal (PI), NSF 1916751, 10/01/2019-09/30/2022, \$300,000, Co-PI.

Scale up trial of project WOWii to increase exercise among people with SCI, Froehlick-Grobe (PI), NIDILLR xxx, 09/01/2020–08/31/2023, Co-I.

Sexual health empowerment for jail-involved women's health literacy and prevention, Ramaswamy (PI), NCI R01CA181047, 04/01/2019–03/31/2024, \$1,602,097, Co-I.

Somatosensory modulation of salivary gene expression and oral feeding in preterm infants, Barlow (PI), NICHD R01HD086088, 04/01/2016–03/31/2021, \$2,797,503, Co-I.

Systematic investigating the enhancing effect of therapy dogs on social behavior in group social skills Instruction in children with autism, Dotson & Protopopova (PIs), NICHD R21HD095206, 01/01/2019–12/31/2020, \$390,212, Co-I.

Tri-city cervical cancer prevention study among women in the justice system, Ramaswamy (PI), NCI R01CA226838, 09/01/2018–08/31/2023, \$2,929,836, Co-I.

State:

Competitive Edge Seed Grant: Instilling computational thinking through making an augmented reality application, Jung & Lee (PIs), Texas Tech University, 09/01/2020–08/31/2021, \$15,000, Co-PI.

Competitive Edge Seed Grant: Development of institutional research analytics tools and platform, Jung & Lee (PIs), Texas Tech University, 09/01/2019–08/31/2021, \$15,000, Co-PI.

International Research and Development Seed Grant: Development of a new machine learning-based predictive model for ADHD diagnosis using ADHD-200 brain imaging datasets, Jung & Lee (PIs), Texas Tech University, 09/01/2019–08/31/2020, \$2,000, PI.

Levels of vitamins D and infection risk in pediatric patients undergoing chemotherapy, Al-Rahawan (PI), South Plains Foundation, 2019-2020, \$15,000/\$0 (Co-I)/100%

Teacher Incentive Allotment, Hamman (PI), Texas Education Agency, 11/01/2019–10/31/2021, \$7,444,153, Co-PI.

Private:

Actions of dietary tocotrienols on obesity, Shen (PI), American River Nutrition, Inc., 11/01/2018–10/31/2020, \$70,000, Co-I.

LEE, Sueann
Publications

Bae, Y., Lee, S.A.S., *Velik, K., *Liu, Y., *Beck, C., & Fox, R. (2020). Differences in nasalance and nasal perception between Texas South and Midland dialect in English. *Journal of Acoustical Society of America*.

Lee, S.A.S. (2020). Controlled data supports the effectiveness of ultrasound feedback in treatment of vocalic /r/ errors in children with speech sound disorders (Commentary paper). *Evidence-Based Communication Assessment and Intervention*, 14, 118-122.

Gibson*, T., & Lee, S.A.S. (in press). The effects of ultrasound biofeedback in speech intervention for young children with hearing loss. *Clinical Linguistics & Phonetics*,

Lee, S.A.S. (in press) Production accuracy of English and Korean phoneme in simultaneous Korean-English bilingual children in the US. *Communication Sciences and Disorders*

*Liu, Y., & Lee, S.A.S. (in press). English nasalance values of Chinese learners of English. *Folia Phoniatria et Logopaedica*.

Presentations

Lee, S.A.S. (2020). Introduction to ultrasound in speech intervention for children with cleft palate. Annual Meeting of American Cleft Palate Craniofacial Association, March 31, Portland, OR. (Conference canceled due to the Pandemic).

Lee, S.A.S., & Ortega, F. (2020). Benefit of Animated Illustration for Child's Visual Attention and Word Learning: An Eye-Tracking Study, Technical Research, Proposal accepted at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Lee, S. A.S. & Davis, G.* (2020). Initial consonant cluster production in children with cleft palate. Proposal accepted for poster presentation at Annual meeting of American Cleft Palate Craniofacial Association. March 31, Portland, OR. (Conference cancelled due to Corona Pandemic)

Nguyen, M.D., Lee, S.A.S., Hayakawa, T., Yamamoto, M., Natsume, N. (2020). Normative Nasalance Values in Vietnamese Adult Speakers, Proposal accepted for poster presentation at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Lee, S.A.S., Ngan, T., Dang, H., Nugyen, M.T., & Ha, N. (2020). Phonological Development in Vietnamese Children with a Central Hue Dialect. Proposal accepted for poster presentation at

the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Lee, S.A.S., Davis, G., & Liu, Y. (2020). Characteristics of Consonant Clusters in Children with Repaired Cleft Palate. Proposal accepted for poster presentation at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Lee, S.A.S., & Giles, J. (2020). Phonological Approach to Treat Developmental Errors in Children with Repaired Cleft Palate via Telepractice. Proposal accepted for poster presentation at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Bae, Y., Lee, S.A.S., Velik, K., Liu, Y., Beck, C., Fox, R. (2020). Differences in Nasalance and Nasality Perception between Texas South and Midland Dialects. Proposal accepted for poster presentation at the Annual Convention of the American Speech-Language-Hearing Association, San Diego, CA (Convention canceled).

Grant awards

2019-2021 \$27,000 The CH Foundation, Lubbock TX
Project Title: "Teaching words and grammatical morphology via telepractice".
Role: Primary Investigator

2020 \$500 Faculty Research and Scholarly Assistant Program (Publication fee support),
TTUHSC SHP

LUK, Hui-Ying

Publications

Luk, HY., Levitt, DE., Appel, C., Vingren, JL. Sex Dimorphism in Muscle Damage-induced Inflammation (2021). *Medicine & Science in Sports & Exercise*. (in press)

Luk HY, Appell C, Chyu MC, Chen CH, Wang C, Yang RS, Shen CL (corresponding author). Impacts of Green Tea on Joint and Skeletal Muscle Health: Prospects of Translational Nutrition. *Antioxidants (Basel)* 2020 Oct 28;9(11):1050. doi: 10.3390/antiox9111050.

Presentations

Jiwan, NC., Appel, C., Miller, K., Vellers, H., Luk, HY. Acute Resistance Exercise-Induced Hormonal Response Increases Mitochondrial Fusion and Mitophagy Markers Only in Untrained Young Men. *Annual Conference of The American Physiological Society of Integrative Exercise Physiology* 2020.

Miller, KE., Vechin, FC., Jiwan NC., Appell, C., Luk, HY. Proteomic Investigation of Resistance Exercise-Induced Hormonal Changes on Muscle Damage in Untrained Women: A Pilot Study. *Annual Conference of The American Physiological Society's Integrative Physiology of Exercise* 2020.

Wang, R., Ji, G., Dufour, JM., Kaur, G., Miranda, JM., Washburn, RL., Hibler, T., Luk, HY., Neugebauer, V., Shen, CL. Ginger Mitigates Pain Behaviors and Improves Colon Health in Obese Rats with Diabetic Neuropathy. *The Obesity Society Annual Meeting 2020.*

Luk, HY., Appel, C., Fokar, M., Vingren, JL. Sex Dimorphism in Muscle Damage-Induced Inflammation. *Annual meeting of the American College of Sports Medicine 2020.*

Appel, C., Fokar, M., Vingren, JL, Luk, HY. Resistance Exercise-Induced Hormone Change Promotes Autophagy Response in Untrained Women. *Annual meeting of the American College of Sports Medicine 2020.*

Raif, T., Appel, C., Fokar, M., Vingren, JL, Luk, HY. Muscle Damage Increases Autophagy Activation in Untrained Young Men. *Annual meeting of the American College of Sports Medicine 2020.*

Grant Awards

Tocotrienols supplementation for postmenopausal women with low muscle strength
ARN supplemental fund, American River Nutrition, Inc., Hadley, MA.
Shen CL (PI). The goal of study is to test the hypothesis that tocotrienol supplementation modify endocannabinoid and oxylipins in postmenopausal women with low muscle strength. \$30,000. 11/1/2018-10/31/2021.

Dietary tocotrienol (vitamin E isomer) supplement for postmenopausal women: aspects of metabolomics and gut microbiome
Laura W. Bush Institute for Women's Health.
Shen CL (PI, 3%). The goal of this study is to test dietary tocotrienol supplementation on metabolites and gut microbiome of obese women. \$10,000. 8/1/2018-7/31/2021

The effect of resistance exercise-induced hormone changes on autophagy response in untrained men and women. American College of Sports Medicine Texas Chapter. Luk HY (Student Research Mentor). Casey Appel (Student PI). \$1,000

MELLO, Iola

Publications

Moore, A. M., Parks, K., & Mello, I. T. (2020). Transitioning from Registered Nurse to the Advanced Practice Nurse Role. *To appear in Nursing Made Incredibly Easy*, 18(2), 51-54.

NAIR, Nandini

Publications

Kittipibul V, Vutthikraivit W, Kewcharoen J, Rattanawong P, Tantrachoti P, Putthapiban P, Nair N. Angiotensin II antagonists and gastrointestinal bleeding in left ventricular assist devices: A systematic review and meta-analysis. *The International journal of artificial organs* 391398820951811, August 25, 2020.

Nair N. Does Diabetes Influence Post-Transplant Survival in CF-axial LVAD BTT Patients? *J Heart Lung Transpl*, 2020. (In Press)

Nair N. Risk Prediction Model for Basal Cell Carcinoma in Cardiac Allograft Recipients. *J Heart Lung Transpl*, 2020. (In Press)

Nair N. Risk Prediction Model for Cutaneous SCC in Cardiac Allograft Recipients. *J Heart Lung Transpl*, 2020. (In Press)

Elmassry M, Rahman MR, Dixon T, Rogers B, Nair N. Giant Left Ventricular Thrombus Formation in the Setting of Severe Aortic Stenosis and Heavy Cigarette Smoking. *Cureus*, 12(7): e9130, July 11, 2020. PubMed Central ID Number: PMC7417085

Latt H, Mantilla B, San D, Sosa E, Nair N. Loeffler Endocarditis and Associated Parasitosis: A Diagnostic Challenge. *Cureus*, 12(5): e8152, May 16, 2020. PubMed Central ID Number: PMC7294858

Presentations

Nair N. 1.Risk Prediction Model for Basal Cell Carcinoma in Cardiac Allograft Recipients 40th Annual Sessions 2020, ISHLT, Montreal, Canada, 2020. (Peer Reviewed)

Grant awards

Bovine model for diastolic dysfunction, 2017 - Present, Texas Tech University Health Sciences Center, President's Collaborative Research Grant. Nair N .

MOUSTAID-MOUSSA, Naima

Publications

Aljawadi, A., Rasha, F., Ramalingam, L., Alhaj, S., Moussa, H., Gollahon, L., Dharmawardhane, S., Moustaid-Moussa, N. Protective effects of eicosapentaenoic acid in adipocyte-breast cancer cell cross talk. *J. Nutr. Biochem.* 75:108244; 2020. [IF: 4.57; Citations: 1]

Zahid MDK, Rogowski M, Ponce C, Choudhury M, Moustaid-Moussa N, Rahman SM. CCAAT/enhancer-binding protein beta (C/EBP β) knockdown reduces inflammation, ER stress, and apoptosis, and promotes autophagy in oxLDL-treated RAW264.7 macrophage cells. *Mol Cell Biochem* 463(1-2): 211-223, 2020. [IF: 2.884; Citations: 4]

Kumar N, Willis A, Satbhai K, Ramalingam L, Schmitt C, Moustaid-Moussa N, Crago J. Developmental toxicity in embryo-larval zebrafish (*Danio rerio*) exposed to strobilurin fungicides (azoxystrobin and pyraclostrobin). *Chemosphere.* 241:124980, 2020. doi: 10.1016/j.chemosphere.2019.124980. [IF: 5.108, Citations: 3]

Kahathuduwa CN, West BD, Blume J, Dharavath N, Moustaid-Moussa N, Mastergeorge A. The risk of overweight and obesity in children with autism spectrum disorders: A systematic review

and meta-analysis. *Obes Rev.* (12):1667-1679, 2019. doi: 10.1111/obr.12933. Epub 2019 Oct 8. Review. [IF: 8.19; Citations: 6]

Rasha, F., Kahathuduwa CN, Ramalingam, L; Hernandez, A., Moussa, H., Moustaid-Moussa, N. Combined effects of eicosapentaenoic acid and adipocyte renin–angiotensin system inhibition on breast cancer cell inflammation and migration. *Cancers*, MDPI: 12(1), 220 (pp 1-17). 2020 <https://doi.org/10.3390/cancers12010220>. [IF: 6.16, Citations:1]

Menikdiwela KR, Ramalingam L, Rasha, F., Wang, S., Dufour, J., Kalupahana, N., Sunahara, K., Martins, J., Moustaid-Moussa, N. Autophagy in Metabolic Syndrome: Breaking the Wheel by Targeting the Renin Angiotensin System. *Cell Death & Disease*. In Press, 2020 [IF: 6.30, Citations: 3]

Kalupahana, N., Goonapienuwala, B., Moustaid-Moussa, N. Omega-3 Fatty Acids and Adipose Tissue: Inflammation and Browning. *Ann. Rev. Nutr.* [IF: 8.422]. doi:10.1146/annurev-nutr-122319-034142; online ahead of print; June 2020.

Claycombe-Larson, K., Alvine, T., Wu, D., Kalupahana, N.S., Moustaid-Moussa, N., Roemmich, J.N. Nutrients and Immunometabolism: Role of Macrophage NLRP3. *J. Nutr.* 00:1–12, 2020. <https://doi.org/10.1093/jn/nxaa085>; [IF: 4.416, Citations: 3]

Pahlavani, M., Ramalingam, L., Miller, E.K., Davis, H., Scoggin, S., Moustaid-Moussa, N. Discordant Dose-Dependent Metabolic Effects of Eicosapentaenoic Acid in Diet-Induced Obese Mice. *Nutrients*; 12(5), 1342 (pp 1-5), 2020; [IF: 4.21]

Ramalingam L, Soponthomarick B*, Menikdiwela K, and Moustaid-Moussa N. Endoplasmic Reticulum (ER) Stress in Part Mediates Effects of Angiotensin II in Pancreatic Beta Cells. *Diabetes Metab Syndr Obes.* 13:2843-2853, 2020 [IF: 3.19]

Menikdiwela, K., Ramalingam, L., Abbas, M.M., Bensmail, H., Scoggin, S., Kalupahana, N.S., Palat, A., Gunaratne, P., Moustaid-Moussa, N. Role of microRNA 690 in Mediating Angiotensin II Effects on Inflammation and ER stress. *Cells (Basel, Switzerland)*; 9(6):1327, 2020. doi: 10.3390/cells9061327. [IF: 5.65, Citation:1]

Yosofvand, M., Liyanage, S., Kalupahana, N.S., Scoggin, S., Moustaid-Moussa, N., Moussa, H. AdipoGauge software for analysis of biological microscopic images. *Adipocyte Int. J.* doi: 10.1080/21623945.2020.1787583. 9(1):360-373; 2020. [IF: 3.14]

Rasha, F., Ramalingam, L., Menikdiwela, K., Hernandez, A., Moussa, H., Gollahon, L., Layeequr Rahman, R., Moustaid-Moussa, N. Renin angiotensin system inhibition attenuates adipocyte-breast cancer cell interactions. *Exp Cell Res.* doi: 10.1016/j.yexcr.2020.112114. 1;394(1):112114, 2020. [IF: 3.38]

Albracht-Schulte, K., Islam, T., Johnson, P., Moustaid-Moussa, N. Systematic review of beef protein effects on gut microbiota: Implications for health. *Adv. Nutr.* 00:1–13 2020; [IF: 7.26]

Chung, E., Elmassry, M.M., Kottapalli, P., Kottapalli, K.R., Kaur, G., Dufour, J., Wright, K., Ramalingam, L., Moustaid-Moussa, N. Wang, R., Hamood, A.N., Shen, C.L., Metabolic benefits

of annatto-extracted tocotrienol on glucose homeostasis, inflammation, and gut microbiome. *Nutr. Res.*77:97-107, 2020. doi: 10.1016/j.nutres.2020.04.001. [IF: 2.76]

Dou, X., Ding, Q., Lai S., Jiang, F., Song, Q., Zhao, X., Fu, A., Moustaid-Moussa, N., Su, D., Li. S. Salidroside alleviates lipotoxicity-induced cell death through inhibition of TLR4/MAPKs pathway, and independently of AMPK and autophagy in AML-12 mouse hepatocytes. *J. Funct. Foods.*20: 103691: pp1-11, 2020 [IF: 3.7]

Jayarathne, S., Ramalingam, L., Edwards, H., Vanapalli, S.E., Moustaid-Moussa, N. Tart Cherry Increases Lifespan in *Caenorhabditis elegans* by Altering Metabolic Signaling Pathways; doi: 10.3390/nu12051482. *Nutrients*; 12(5):1482, 2020. [IF: 4.21]

Ramvalho, T., Pahlavani, M., Kalupahana, N.S., Wijayatunga, N., Ramalingam, L., Jancar, S., Moustaid-Moussa, N. Eicosapentaenoic Acid Regulates Inflammatory Pathways through Modulation of Transcripts and miRNA in Adipose Tissue of Obese Mice. *Biomolecules*, 10, 1292:1-14; doi:10.3390/biom10091292; 2020 [IF: 4.08]

Koboziev, I., Scoggin, S., Gong, X., Mirzaei, P., Zabet-Moghaddam, M., Yosofvand, M., Moussa, H., Jones-Hall, Y., Moustaid-Moussa, N. Effects of Curcumin in a Mouse Model of Very High Fat Diet-Induced Obesity. *Biomolecules* 2020, 10, 1368: 1-16 (doi:10.3390/biom10101368) [IF: 4.08]

#Ramalingam L, Sopontammarak B, Menikdiwela KR, Moustaid-Moussa N. Endoplasmic Reticulum (ER) Stress in Part Mediates Effects of Angiotensin II in Pancreatic Beta Cells. *Diabetes Metab Syndr Obes*; 13:2843-2853, 2020 (doi: 10.2147/DMSO.S257797. eCollection 2020.PMID: 32884312) [IF: 2.84]

#Harlan, L., Mena, L.T., Ramalingam, L., Jayarathne, S., Shen, C-L., Moustaid-Moussa, N. Mechanisms Mediating Anti-Inflammatory Effects of Delta-Tocotrienol and Tart Cherry Anthocyanins in 3T3-L1 Adipocytes. *Nutrients*; 2(11):3356. doi: 10.3390/nu12113356 [IF: 4.21]

Choi, J.M., Camfield, E., Bowman, A., Rajan, K., Labbé, N., Gwinn, K.D., Ownley, B.H., Moustaid-Moussa, N., D'Souza, D.H. Value-added switchgrass extractives for reduction of *Escherichia coli* O157: H7 and *Salmonella* Typhimurium populations on Formica coupons. *Food Microbiol.* In Press, 2020

Other publications – gender equity in academia:

Malisch, J.L., Harris, B.N., Sherrer, S.M., Lewis, K.A., Shepherd, S.L., McCarthy, P.C., Spott, J.L., Karam, E.P., Moustaid-Moussa, N., McCrory Calarco, J. Ramalingam, L., Talley, A.E., Cañas-Carrell, J.E., Ardon-Dryer, K., Weiser, D.A., Bernal, X.E., Deitloff, J. Opinion: In the wake of COVID-19, academia needs new solutions to ensure gender equity. *Proc. Natl. Acad. Sci. U S A.* 117(27):15378-15381, 2020. doi: 10.1073/pnas.2010636117. [IF:9.35, Citation: 41]

Malisch, J.L., Harris, B.N., Sherrer, S.M., Lewis, K.A., Shepherd, S.L., McCarthy, P.C., Spott, J.L., Karam, E.P., Moustaid-Moussa, N., McCrory Calarco, J. Ramalingam, L., Talley, A.E., Cañas-Carrell, J.E., Ardon-Dryer, K., Weiser, D.A., Bernal, X.E., Deitloff, J. Response to the letter to the Editor: Reply to Arora et al.: Concerns and considerations about using the CV as an equity tool. *Proc. Natl. Acad. Sci. U S A.* In Press, 2020. [IF:9.35]

Grant awards

CURRENT FUNDING:

Role	Funding Agency	Total Amount (\$)	Funding Dates	Project Title
CURRENT				
PI	<u>Current:</u> NIH (NCCIH) Parent R15 & Admin Supplement (NIA)	799,300	2016-2021	Parent R15: Anti-obesity effects of omega 3 fatty acids in brown adipose tissue Admin Sup: Fish oil & Alzheimer's disease
Mentor/Sponsor	<u>Completed:</u> USDA NIFA ELI Post-doctoral Fellowship	165,000	2018-2020	Integrated gene and miRNA networks mediating anti-inflammatory effects of fish oil
US PI (Qatar PI: Dehbi)	<u>Current:</u> Qatar Foundation/Qatar Biomed. Res. Inst.	68,750	03/2018-03/2021	Role of HSP40/DNAJB3 in obesity and diabetes
PI	<u>Current</u> USDA-AFRI	500,000	04/2019-03/2022	Mechanisms mediating synergistic anti-inflammatory effects of fish oil & anthocyanins
PI	<u>Current:</u> AHA	154,000	07/2019-06/2021	Microbiome-mediated effects of curcumin in obesity-associated inflammation
PI	<u>Current:</u> Empirical Foods, Inc	1,600,000	06/2018-06/2022	Effect of beef proteins and pH on cancer, obesity and diabetes
PI	<u>Current:</u> Susan G Komen Breast Cancer Foundation, sponsored by The Obesity Society	5,000	01/2020-12/2020	Association between Obesity, Breast Cancer and the Renin Angiotensin System in Breast Cancer Patients
US PI (Qatar PI: Dehbi)	<u>Current:</u> Qatar Foundation/Hamad Bin Khalifa University	147,514	06/2019-06/2022	Therapeutic potential of DNAJB3 as a novel biomarker for obesity and diabetes
Mentor/Sponsor	<u>Current:</u> USDA NIFA Postdoctoral Fellowship	165,000	05/2020-04/2022	Combining exercise and fish oil to reduce human obesity-associated inflammation
PENDING/Not FUNDED SUBMISSIONS				
PI	<u>Pending:</u> USDA NIFA- REEU Workforce Development	500,000	04/2021-03/2026	Nutrition BEST REEU Program: Nutrition-Bench-to-Community Engaged Scholars in Texas

PI (Subcontract)	<u>Pending:</u> NIH	430,000 (TTU, \$112,670)	09/2021- 12/2024	Novel Pathways and miRNA Targets for the Renin Angiotensin Aldosterone System
Co-PI (PI: Park)	<u>Not funded</u> USDA NIFA/AFRI (Medium Priority ranking)	1,000,000	01/2021- 12/2025	Innovative Nutrition Education Program For Underserved (iNEP4U) Families: A Mobile Classroom To Prevent Chronic Diseases
Co-PI PI: Heppert	<u>Not funded</u> NIH (C06) Biomedical Research Facilities	8,000,000 TTU- infrastructure	09/2020- 08/2025	Rural One Health Biomedical Facility at a Hispanic Serving Institution
PI (MPI: USP, Brazil)	<u>Not funded</u> NIH R01 (Dual NIH- FAPESP)	2,362,000 (TTU, 1,500,000)	09/2020- 06/2025	Mechanisms mediating UCP1- independent effects of fish oil

NEUGEBAUER, Volker

Publications

Navratilova, E., Nation, K., Remeniuk, B., Neugebauer, V., Bannister, K., Dickenson, A.H., Porreca, F. Selective modulation of tonic aversive qualities of neuropathic pain by morphine in the right central nucleus of the amygdala requires endogenous opioid signaling in the anterior cingulate cortex. Pain: 161:609-618, 2020. PMID: 31725062. *PMC7124010* [Featured Article: Editor's Choice].

Chen, Y., Moutal, A., Navratilova, E., Kopruszinski, C., Yue, X., Ikegami, M., Chow, M., Kanazawa, I., Bellampalli, S.S., Xie, J., Patwardhan, A., Rice, K., Fields, H., Akopian, A., Neugebauer, V., Dodick, D., Khanna, R., Porreca, F. The prolactin receptor long isoform regulates nociceptor sensitization and opioid-induced hyperalgesia selectively in females. Sci Translat Med 12:529 eaay7550, DOI: 10.1126/scitranslmed.aay7550, 2020. PMID: 32024801. *PMC7523341* [Evaluated in F1000 Faculty Opinions by I. Vetter and R. Ji, <https://f1000.com/prime/737321616>].

Neugebauer, V., Mazzitelli, M., Cragg, B., Ji, G., Navratilova, E., Porreca, F. Amygdala, neuropeptides, and chronic pain-related affective behaviors. Neuropharmacology 170: 108052 (13 pp), 2020. PMID: 32188569. *PMC7214122*.

Ji, G. and Neugebauer, V. Kappa opioid receptors in the central amygdala modulate spinal nociceptive processing through an action on amygdala CRF neurons. Mol. Brain 13: 128 (10 pp), 2020. PMID: 32948219. *PMC7501648*

Neugebauer, V. Serotonin – Pain Modulation. In: Mueller, C.P., Cunningham, K.A. (Eds.) Handbook of the Behavioral Neurobiology of Serotonin, 2nd Edition, Handbook of Behavioral Neurosciences, 31: 309-320, 2020. ISBN: 9780444641250.

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.

Abstracts/Posters

Shen, C.L., Wang, R., Ji, G., Vellers, H., Sang, S., Neugebauer, V. Dietary supplementation of gingerols- and shogaols-enriched ginger root extracts attenuate pain-associated behaviors in animals with spinal nerve ligation. Nutrition 2020. Abstract ID 841370. Curr. Dev. Nutr. 4, 2020.

Elmassry, M.M., Wang, R., Hamood, A.N., Neugebauer, V., Shen, C.L. Two isomers of ginger root extracts modify composition and function of gut microbiota in rats treated with neuropathic pain. Nutrition 2020. Abstract ID 841512. Curr. Dev. Nutr. 4, 2020.

Zabet-Moghaddam, M., Gong, X., Mirzaei, P., Wang, R., Neugebauer, V., Shen, C.L. Differential impacts of gingerols- and shogaols-enriched ginger root extracts on fecal metabolites in rats with neuropathic pain. Nutrition 2020. Abstract ID 841603, Curr. Dev. Nutr. 4, 2020.

Phelps, C.E., Navratilova, E., Neugebauer, V., Porreca, F. Kappa Opioid Receptor Activation in the Right Central Nucleus of the Amygdala is Sufficient to Induce Conditioned Place Aversion and Periorbital Allodynia in the Absence of Injury. 18th World Congr. Pain, IASP, 2020.

Wang, R., Ji, G., Dufour, J.M., Kaur, G., Miranda, J.M., Washburn, R.L., Hibler, T., Luk, H.-Y., Neugebauer, V., Shen, C.-L. Ginger Mitigates Pain Behaviors and Improves Colon Health in Obese Rats with Diabetic Neuropathy. 38th Annual Meeting of The Obesity Society, O52, 2020.

Fang, C.Y., Sherali, S., Zabet, M., Gong, X., Mirzaei, P., Wang, R., Neugebauer, V., Shen, C.-L. The effects of ginger root extract on gut microbiota-derived metabolites in animals with neuropathic pain. 3rd Integrative Medicine Symposium and Annual LWBIWH Symposium, 2020.

Shen, C.-L., Wang, R., Ji, G., Vellers, H., Sang, S., Neugebauer, V. Dietary supplementation of gingerols- and shogaols-enriched ginger root extracts attenuate pain-associated behaviors in animals with spinal nerve ligation. 3rd Integrative Medicine Symposium and Annual LWBIWH Symposium, 2020. [Merit Award Winner].

Elmassry, M.M., Wang, R., Hamood, A.N., Neugebauer, V., Shen, C.-L. Two isomers of ginger root extracts modify composition and function of gut microbiota in rats treated with neuropathic pain. 3rd Integrative Medicine Symposium and Annual LWBIWH Symposium, 2020.

Presentations

Invited lectures

09-28-2020 “Differential roles of mGluR2 and mGluR3 in the amygdala in pain modulation”. 10th mGlu Meeting, Taormina, Italy. – postponed (COVID-19)

04-29-2020 “Role of amygdala CRF neurons in pain”. Neuroscience Research Center, Medical College of Wisconsin, Milwaukee, WI. – postponed (COVID-19)

04-21-2020 "Role of the amygdala in pain and opioid functions". Louisiana Addiction Research Center Symposium, LSU, Shreveport, LA – cancelled (COVID-19)

04-09-2020 "Amygdala pain mechanisms – Role of the CRF system". NIH PAIN Special Interest Group (SIG) Seminar Series. Bethesda, MD. – postponed (COVID-19)

01-08-2020 "Role of amygdala CRF neurons in pain". National Institute of Physiological Sciences International Workshop on Frontiers in Defensive Survival Circuit Research - Pain and Survival Strategy, Okazaki Japan

Grant awards (current support in 2020 and pending support).

1 R01 NS118731 – NIH/NINDS 08/01/20 – 07/31/25
"Trans-Synaptic Signaling Complex in Amygdala Pain Mechanisms"
The goal of this project is to determine the role of the trans-synaptic signaling complex centered on cerebellin 1 and glutamate delta 1 receptor in the regulation of amygdala plasticity and pain mechanisms.
PI, Volker Neugebauer
PI, Shashank Dravid (Contact)
Total costs: \$2,674,615 (TTUHSC subcontract, \$733,740)

R01 NS109255 – NIH/NINDS 08/15/19 – 06/30/24
"Pronociceptive and Antinociceptive Opioid Mechanisms in the Central Nucleus of the Amygdala"
The goal of this project is to determine cellular mechanisms and behavioral consequences of differential functions of mu and kappa opioid systems in the amygdala in neuropathic pain.
PI (Contact), Edita Navratilova, PI, Guangchen Ji
Co-I, Volker Neugebauer
Total costs: \$2,544,148 (TTUHSC subcontract, \$1,253,415)

R01 AA027096 – NIH/NIAAA 07/01/19 - 06/30/23
"The Neuroimmune Model of Excessive Alcohol Consumption: Transition to Alcohol Use Disorder"
The goal of this project is to determine cell type-specific molecular mechanisms of immune activation, its role and effects on the brain in the development of alcohol use disorder (AUD).
PI, Igor Ponomarev
Co-I, Volker Neugebauer
Total costs: \$2,868,750 (original start date, 09/10/2018; transferred to TTUHSC on 07/01/19)

R01 NS106902 – NIH/NINDS 04/01/18 - 03/31/23
"Stress-Induced Descending Facilitation from Amygdala Kappa Opioid Receptors in Functional Pain"
The overall goal of this project is to determine the role of KOR in amygdala plasticity and behaviors in a functional pain model. A key hypothesis is that blockade of stress-induced endogenous amygdala KOR signaling reduces pain responses following priming-induced latent sensitization.
PI, Volker Neugebauer
PI (Contact), Frank Porreca (University of Arizona)
Total costs: \$ 2,740,180 (TTUHSC subcontract, \$1,295,245)

R01 NS038261 - NIH/NINDS
"Amygdala Pain Mechanisms"

12/01/16 - 11/30/21

The overall goal of this project funded since 1999 is to determine role and mechanisms of amygdala plasticity in pain and its interactions with cortical-cognitive control centers, using electrophysiology, pharmacology, behavioral assays, gene transfer and optogenetic strategies. A current focus is on the regulation of amygdala excitability and output by SK potassium channels.

PI, Volker Neugebauer

Total costs: \$1,673,440

PN-CTNT 2018-12 LSVNBAW

12/01/18 - 11/30/20

Center of Excellence for Translational Neurosciences and Therapeutics, TTUHSC.

"Tai Chi for Pain Management: A Pilot Mechanistic Study".

The goal of this study is to collect preliminary data on how Tai Chi (pre and post design) may help with pain management of postmenopausal women with knee osteoarthritis and explore the molecular mechanism.

PI, Volker Neugebauer

PI (Contact), Chwan-Li (Leslie) Shen

Total costs: \$18,000

USDA/NIFA

"Ginger root extract for neuropathic pain"

01/01/21 - 08/31/23

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

PI (Contact) Chwan-Li (Leslie) Shen

Total costs: \$500,000

Other Scholarly Activity.

News Releases

"TTUHSC Garrison Institute on Aging Receives Award. Texas Health and Human Services Announces Innovators in Aging Award Recipients". In: TTUHSC Statline Daily Dose, by Suzanna Cisneros, September 3, 2020; <https://dailydose.ttuhs.edu/2020/september/lubbock-garrison-institute-on-aging-recvies-award.aspx>.

Vetter I: Faculty Opinions Recommendation of [Chen Y et al., Sci Transl Med 2020 12(529)]. In Faculty Opinions, 26 Feb 2020; 10.3410/f.737321616.793571434. <https://f1000.com/prime/737321616>.

Patent

International Patent WO 2020/092996 A1; U.S. Patent Application PCT/US 2019/059524 "Novel selective kappa opioid receptor antagonists and methods related thereto for treatment of addiction and neuropathic pain". Claiming Priority to Serial No.: 62/755,186 (filed 11/02/2018) and Serial No.: 62/928,008 (filed 10/30/2019)

By Nadezhda German, Volker Neugebauer, Mohammad Anwar Hossain, Thomas Abbruscato (published 05/07/2020)

Honors

- Douglas M. Stocco Scholarship/Research Award, SOM, TTUHSC, 2020
- Texas Health and Human Services Commission (HHSC) 2019 Innovators in Aging Award to TTUHSC Garrison Institute on Aging, 2020

Scientific sessions/meetings organized

- Chair, Sessions I and II “Amygdala and Pain”, Pain Mechanisms and Therapeutics Conference, Taormina, Italy, 2021 – postponed from 2020 (COVID-19).
- Co-Chair, Session “mGluRs and Pain”, 10th mGlu Meeting, Taormina, Italy, 2021 – postponed from 2020 (COVID-19).
- Organizer, 5th Annual Symposium, Center of Excellence for Translational Neuroscience and Therapeutics, Lubbock, TX, 2020 – postponed (COVID-19).

Service

- NIH study section (IRG IFCN-SCS), Regular Member, 2015 -
- President's Advisory Board, Member, 2020 -
- Emergency Task Force Research Committee, Member, 2020 -
- Review Committee for Application of People's Alzheimer's Disease Center, SOM, Member, 2020
- Research Misconduct Inquiry Committee, Chair, 2020

OLDEWAGE-THERON, Wina

Publications

OLDEWAGE-THERON W, MORALES S & EGAL A. 2020. Change in soy and nutrition knowledge and perceptions of smallholder South African farmers after attending a single one day soy nutrition training workshop: a pilot study. *African Journal of Food, Agriculture, Nutrition and Development*, 20(6): 16604-16621. <https://www.ajfand.net/Volume20/No6/Wilna18545.pdf>

MOYO G, MAGAISA T, PAGIWA A, KANDAWASVIKA R, NYANGA L, GOMORA Z & OLDEWAGE-THERON W. 2020. Barriers and facilitators of exclusive breastfeeding: Findings from a barrier analysis conducted in Mwenezi and Chiredzi districts, Zimbabwe. *World Nutrition*, 11(3): 12-21. <https://worldnutritionjournal.org/index.php/wn/article/view/732>

SAHA S, DAWSON J, MURIMI M, DODD S & OLDEWAGE-THERON W. 2020. Effects of a nutrition education intervention on fruit and vegetable consumption-related dietary behavioural factors among elementary school children. *Health Education Journal*, 11 pages. <https://doi.org/10.1177/001789692094421>.

O OTITOOLA, W OLDEWAGE-THERON & A EGAL. 2020. Prevalence of overweight and obesity among selected schoolchildren and adolescents in Cofimvaba, South Africa. *South African Journal of Clinical Nutrition*, 6 pages. <https://doi.org/10.1080/16070658.2020/1733305>

A EGAL & W OLDEWAGE-THERON. 2020. Extruded food products and their potential impact on food and nutrition security. *South African Journal of Clinical Nutrition*, 33(4): 2 pages. <https://www.tandfonline.com/doi/full/10.1080/16070658.2019.1583043>

Presentations

OLDEWAGE-THERON W. Food product development from a nutritionist perspective – focus on South Africa (invited speaker). Soy360 virtual conference 1-11 December 2020:

MOYO G, KANDAWASVIKA R, MAGAISA T, KAREMBO F, MUTENDADZAMERA C, MATIMBIRA I, HUTURUME T, NYANGA L, PAGIWA A & OLDEWAGE-THERON W. Measuring Perceived Barriers and Enablers of Mothers of Children 9 – 23 Months Feeding Them at Least Three Cooked Staple-containing Meals Each Day in Mwenezi and Chiredzi Districts, Zimbabwe (poster). 2020 Academy of Nutrition & Dietetics Food & Nutrition Conference & Expo virtual conference July 2020.

JAMSHIDINAEINI Y & OLDEWAGE-THERON W. Comparative Outcome Evaluation of Three Delivery Models for a Diabetes Prevention Education Program for Older Adults. Society of Nutrition Education and Behavior virtual conference 20-25 July 2020.

JAMSHIDINAEINI Y & OLDEWAGE-THERON W. Comparative effectiveness of three different delivery models for a community-based Diabetes prevention and management education program in older adults. American Society of Nutrition virtual conference 30 May-2 June 2 2020 (Seattle, WA):

RIVERA JN, BASU T, BENAVIDES ML, THOMAS-JACKSON S & OLDEWAGE-THERON W. Breastfeeding practices among South African women: A pilot study (poster). Texas Academy of Nutrition and Dietetics Conference 2-4 April 2020, Georgetown, TX:

PALMER, Ty

Publications

Palmer, T. B., Blinch, J., Farrow, A. C.*, Agu-Udemba, C. C.†, Mitchell, E. A.† (2020). Real-time measurement of isometric peak torque and rate of torque development using a novel strength testing device: a validity and reliability study. *Physiological Measurement*, 41(11), 1-10.

Farrow, A. C.*, Gonzales, J. U., Agu-Udemba, C. C.†, Sobolewski, E. J., Thompson, B. J., Palmer, T. B. (2020). Effects of age on vertical jump performance and muscle morphology characteristics in females. *Journal of Sports Medicine and Physical Fitness*, 60(8), 1081-1088.

Palmer, T. B., Farrow, A. C.*, Palmer, B. M. (2020). Relationships between hamstring morphological characteristics and postural balance in elderly men. *Journal of Musculoskeletal and Neuronal Interactions*, 20(1), 88-93.

Note: * indicates graduate student author; † indicates undergraduate student author.

Papers Presented at Professional Meetings and Seminars

Online Abstract

Palmer, T. B. (Presenter & Author), Farrow, A. C.* (Author Only), Agu-Udemba, C. C.† (Author Only), Mitchell, E. A.† (Author Only), ACSM National Conference, ACSM, San Francisco, CA,

"Time course of the acute effects of static stretching on passive stiffness in elderly men," National, peer-reviewed/refereed, published in proceedings. (June 2020).

Farrow, A. C.* (Presenter & Author), Agu-Udemba, C. C.† (Author Only), Mitchell, E. A.† (Author Only), Palmer, T. B. (Author Only), ACSM National Conference, ACSM, San Francisco, CA, "Relationships between muscle quality, maximal and rapid torque characteristics, and walking speed in elderly females," National, peer-reviewed/refereed, published in proceedings. (June 2020).

Poster

Agu-Udemba, C. C.† (Presenter & Author), Mitchell, E. A.† (Author Only), Farrow, A. C.* (Author Only), Palmer, T. B. (Author Only), Texas ACSM Regional Meeting, Texas ACSM, Waco, TX, "Age-related differences in forearm muscle size and handgrip maximal and rapid force characteristics," Regional, peer-reviewed/refereed, published in proceedings. (February 2020).

Farrow, A. C.* (Presenter & Author), Agu-Udemba, C. C.† (Author Only), Mitchell, E. A.† (Author Only), Palmer, T. B. (Author Only), Texas ACSM Regional Meeting, Texas ACSM, Waco, TX, "Relationships between walking speed and lower extremity muscle quality and strength in elderly females," Regional, peer-reviewed/refereed, published in proceedings. (February 2020).

Mitchell, E. A.† (Presenter & Author), Agu-Udemba, C. C.† (Author Only), Farrow, A. C.* (Author Only), Palmer, T. B. (Author Only), Texas ACSM Regional Meeting, Texas ACSM, Waco, TX, "Sex-related differences in maximal and rapid hamstrings to quadriceps strength capacities," Regional, peer-reviewed/refereed, published in proceedings. (February 2020).

Note: * indicates graduate student author; † indicates undergraduate student author.

Grant Research Support

Year	Title of Current Research or Grant	Granting Agency	Amount \$	Chief Investigators & Faculty Members in order	Percent Contribution
2018	Tocotrienols supplementation for postmenopausal women with low muscle strength-ARN supplemental fund	American River Nutrition, Inc.	\$30,000	Shen, L. (Principal), Palmer, T. B. (Co-Investigator)	5%
2018	Tocotrienols supplementation for postmenopausal women with sarcopenia: a pilot study	South Plains Foundation	\$15,000	Shen, L. (Principal), Palmer, T. B. (Co-Investigator)	41%

Intellectual Property (e.g., copyrights, patents)

Year	Patent Title	Patent Nationality	Inventors
2020	Dynamo Torque Analyzer	United States	Palmer, T. B., Blinch, J.

PARK, Oak Hee

Presentations

Invited Presentation: Park, O. (2020). Perspective of Climate Change for Nutrition Interventions in an Underserved Neighborhood in West Texas. USAIN 2020 Virtual Conference.

Grant awards

Texas Tech University (2019-2020): Great Greens (GG): Innovative Nutrition and Gardening Curriculum for Obesity Prevention among Early Adolescent: PI: 100% credit, \$5,000.

Other Scholarly Activity: Fall 2020: RHIM Graduate Class Presentation: Research Method-Online Survey Through Qualtrics: Case of National Survey for Ugly Produce and Consumption Behavior

PHY, Jennifer

Presentations

Phy JL. PCOS Support and Building Your Healthcare Team National PCOS Association, September 26, 2020. (Peer Reviewed)

Phy JL. Multidisciplinary Approach to Management of Polycystic Ovary Syndrome National PCOS Association, September 12, 2020.

PUNYANUANT-CARTER, Narissra

Publications

Levine, T. R., Punyanunt-Carter, N. M., & Moore, A. D. (In Press). The Truth-Default and Video Clips: Testing the Limits of Credulity. *Communication Studies*.
<https://doi.org/10.1080/10510974.2020.1833357>

Punyanunt-Carter, N.M., & Rodriguez, N. B. (2020). An Examination of equity and interdependence theory as predictors of maintenance behaviors: interracial vs. intraracial dating relationships. *Journal of Intercultural Communication*, 49 (6), 617-631.
<http://dx.doi.org/10.1080/17475759.2020.1815822>.

Ouytsel, J. V., Punyanunt-Carter, N., Walrave, M., & Ponnet, K. (2020). Sexting within young adults' dating and romantic relationships. *Current Opinion in Psychology*, 36, 55-59.
<https://doi.org/10.1016/j.copsy.2020.04.007>

Rasmussen, E. E., Punyanunt-Carter, N., La Freniere, J. R., Norman, M. S., & Kimball, T. G. (2020). The serially mediated relationship between emerging adults' social media use and mental well-being. *Computers in Human Behavior*, 102, 206-213.
<https://doi.org/10.1016/j.chb.2019.08.019>

Niehuis, S., Reifman, A., Weiser, D., Punyanunt-Carter, N., Flora, J., Arias, V. S., & Oldham, C. R. (2020). Guilty pleasure? Communicating sexually explicit content on dating-apps and disillusionment with app usage. *Human Communication Research*, 46(1), 55-85.
<https://doi.org/10.1093/hcr/hqz013>

BOOK CHAPTERS

Riggs, R. E., & Punyanunt-Carter, N. M. (In press). Young adults use of sexting. In Rachel Kalish (Ed.) *Young Adult Sexuality in the Digital Age*. IGI Publishing.

Duffee, R., Cox, S., & Punyanunt-Carter, N. M. (In press). Chapter 8: Understanding children's parasocial relationships. In Thomas Socha & Narissra Punyanunt-Carter (Eds.). *Children's Communication Sourcebook*. Peter Lang Publishers.

Socha, T. J., & Punyanunt-Carter. (In press). Chapter 1: Introduction to communication focusing on children. In T. J. Socha, & N. Punyanunt-Carter, N. (Eds.), *Children's Communication Sourcebook* (ch 6). New York: Peter Lang.

WEBSITE CONTRIBUTION

Punyanunt-Carter, N.M. (2020). Ali Wong – Female Comedians. *In Media Res*.
<http://mediacommons.org/imr/content/ali-wong-female-standup-comedian>

Presentations

Jones, J., Punyanunt-Carter, N.M., & Wrench, J.S. (2020, November 17-22). Examining the Relationship between Political Communication Apprehension and Communication Apprehension with a Range of Political Communication Variables. Paper will be presented at the annual meeting of the National Communication Association online.

Levine, T.R., Punyanunt-Carter, N.M., & Moore, A. (2020, November 17-22). The Truth-Default and Video Clips: Testing the Limits of Credulity. Paper will be presented at the annual meeting of the National Communication Association online.

De La Cruz, J.J., Punyanunt-Carter, N. M., & Wrench, J. S. (2020, May 21-25). *Dating App Communication: Personal Characteristics, Motives, and Behavioral Intent*. Paper presented at the annual meeting of the International Communication Association, Gold Coast, Australia. (Conference canceled due to Covid19)

Punyanunt-Carter, N. M., Norman, M.S., & LaFreniere, J. (2020, April 1- 5). *Analyzing College Students' Perceptions about How Parents Should Interpersonally Communicate Divorce to Their Children*. Paper will be presented at the annual meeting of the Southern States Communication Association, Frisco, Texas. (Conference canceled due to Covid19)

Wagner, T., Punyanunt-Carter, N. M., & McCarthy, L. (2020, April 1- 5). *Rules, Reciprocity, and Emojis: An Exploratory Study on Flirtatious Texting Communication*. Paper will be presented at the annual meeting of the Central States Communication Association, Chicago, Illinois. (Conference canceled due to Covid19)

FUNDING GRANTS

2020 Texas Tech University Undergraduate Research Funding Grant COMC
\$600

SHEN, Chwan-Li (Leslie)

Publications

Aryaie A, Tinsley G, Lee J, Watkins BA, Moore L, Alhaj-Saleh A, Shankar K, Wood SR, Wang R, Shen CL (corresponding author). Actions of annatto-extracted tocotrienol supplementation on obese postmenopausal women: study protocol for a double-blinded placebo-controlled randomized trial. *BMJ Open*. 2020;10(3):e034338

Beebe ML, Mo H, Ji X, Shen CL (corresponding author). Tocotrienols in bone protection: evidence from preclinical studies. *eFood*. 2020;1(3):217-225.

Chung E, Elmassry MM, Kottapalli P, Kottapalli KR, Kaur G, Dufour JM, Wright K, Ramalingam L, Moustaid-Moussa N, Wang R, Hamood AN, Shen CL (corresponding author). Metabolic benefits of annatto-extracted tocotrienol on glucose homeostasis, inflammation and gut microbiome. *Nutrition Research*. 2020;77:97-107.

Zhou J, Tang L, Shen CL, Wang JS. Green tea polyphenols boost gut-microbiota-dependent mitochondrial TCA and urea cycle in sprague-dawley rats. *Journal of Nutritional Biochemistry*. 2020 Jul;81:108395.

Elmassry MM, Chung E, Cao JJ, Hamood AN, Shen CL (corresponding author). Osteoprotective effect of green tea polyphenols and annatto-extracted tocotrienol in obese mice is associated with enhanced the microbiome vitamin K2 biosynthetic pathways. *Journal of Nutritional Biochemistry* 2020 Dec;86:108492. doi: 10.1016/j.jnutbio.2020.108492. Epub 2020 Sep 11. PMID: 32920088

Harlan L, Mena LT, Ramalingam L, Jayarathne S, Shen CL, Moustaid-Moussa N. Mechanisms Mediating Anti-Inflammatory Effects of Delta-Tocotrienol and Tart Cherry Anthocyanins in 3T3-L1 Adipocytes. *Nutrients* 2020;12(11):E3356 2020 Oct 30;12(11):3356. doi: 10.3390/nu12113356.

Luk HY, Appell C, Chyu MC, Chen CH, Wang C, Yang RS, Shen CL (corresponding author). Impacts of Green Tea on Joint and Skeletal Muscle Health: Prospects of Translational Nutrition. *Antioxidants (Basel)* 2020 Oct 28;9(11):1050. doi: 10.3390/antiox9111050.

Xue KS, Tang L, Shen CL, Pollock BH, Guerra F, Phillips TD, Wang JS. Increase in Aflatoxin Exposure in Two Populations Residing in East and West Texas, United States. *International Journal of Hygiene and Environmental Health* 2020 Nov 13;231:113662. doi: 10.1016/j.ijheh.2020.113662. Online ahead of print.

Huang H-T, Cheng T-L, Lin S-Y, Ho C-J, Chyu JY, Yang R-S, Chen C-H, Shen C-L (corresponding author). Osteoprotective roles of green tea catechins. *Antioxidants (Basel)* 2020 Nov 16;9(11):1136. doi: 10.3390/antiox9111136.

Presentations

Invited Oral Virtual Presentation:

Shen, CL. "Challenges and risk management for investigator-initiated FDA-IND clinical trials". Annual meeting of Society of Clinical Research Associates (SoCRA), September 25-27, 2020. Las Vegas, NV.

Virtual posters at annual meetings (due to Covid-19)

Elmassry MM, Chung E, Hamood AN, Shen CL. Addition of geranylgeraniol and green tea polyphenols to high-fat diet impacts the gut microbiome composition and function in type 2 diabetic mice. Annual Meeting of International Congress on Integrative medicine and Health. 4/28/20-5/1/20.

Zabet M, Gong X, Mirzaei P, Wang R, Neugebauer V, Mechref Y, Shen CL. Analysis of fecal metabolome to study the function of Microbiota in rats with neuropathic pain treated by Ginger root extract. Annual Meeting of American Society for Mass Spectrometry 5/31/20-6/4/20.

Kim JS, Najjar RS, Shen CL, Feresin RG. Effects of annatto-extracted tocotrienols in the liver of high-fat diet fed mice. Annual Meeting of American Society for Nutrition, 5/30/20-6/2/20.

Elmassry MM, Wang R, Hamood AN, Neugebauer V, Shen CL. Two isomers of ginger root extracts modify composition and function of gut microbiota in rats treated with neuropathic pain. Annual Meeting of American Society for Nutrition, 5/30/20-6/2/20. Current Developments in Nutrition, 2020; 4: Suppl 2, June 20, page 394.

Shen CL, Wang R, Ji G, Vellers H, Sang S, Neugebauer V. Dietary supplementation of gingerols- and shogaols-enriched ginger root extracts attenuate pain-associated behaviors in animals with spinal nerve ligation. Annual Meeting of American Society for Nutrition, 5/30/20-6/2/20. Current Developments in Nutrition, 2020; 4: Suppl 2, June 20, page 74.

Zabet M, Gong X, Mirzaei P, Wang R, Neugebauer V, Shen CL. Differential impacts of gingerols- and shogaols-enriched ginger root extracts on fecal metabolites in rats with neuropathic pain. Annual Meeting of American Society for Nutrition, 5/30/20-6/2/20. Current Developments in Nutrition, 2020; 4: Suppl 2, June 20, page 494.

Elmassry MM, Chung E, Hamood AN, Shen CL. Supplementation of geranylgeraniol and tocotrienols to high-fat diet shifts the gut microbiome composition and function in type 2 diabetic mice. Annual Meeting of American Society for Nutrition, 5/30/20-6/2/20. Current Developments in Nutrition, 2020; 4: Suppl 2, June 20, page 393.

Wang R, Ji G, Dufour JM, Kaur G, Miranda JM, Washburn RL, Hibler T, Luk H-Y, Neugebauer V, Shen CL. Ginger Mitigates Pain Behaviors and Improves Colon Health in Obese Rats with Diabetic Neuropathy. Annual Meeting of The Obesity Society, 11/2/20-11/6/20.

Grant awards

Ginger root extract for neuropathic pain

Shen CL (PI-contact, 4%), Neugebauer, Volker (MPI). USDA/NIFA. 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. \$500,000. 1/1/2021-8/31/2023.

Medication Development for the Treatment of Alcohol Use Disorder
Bergeson S (PI-contact), Shen CL (MPI). NIH/NIAAA. The goal of this study is to complete studies to prepare the chemically modified minocycline analogs for completion of investigational new drug (IND) enabling approval by the FDA and to begin a Phase I clinical trial. \$7,251,682. 9/20/2020-8/31/2025.

Levels of vitamins D and infection risk in pediatric patients undergoing chemotherapy
South Plains Foundation
Shen CL (Co-I). The goal of study is to measure the serum levels of vitamin D in children undergoing chemotherapy and track changes after 6 months and to investigate the relationship between vitamin D levels and the incidence of fever as a marker for infection in this population. \$13,000. 9/1/19-8/31/20.

Tai Chi for pain management: a pilot mechanistic study
Center of Excellence for Translational Neurosciences and Therapeutics, TTUHSC.
Shen CL (PI). The goal of this study is to collect preliminary data on how Tai Chi may help with pain management of postmenopausal women with knee osteoarthritis and explore the molecular mechanism. \$18,000 from CTNT. \$6,000 matching fund Texas Tech University Neuroimaging Institute (TTNI). 12/1/2018-11/30/2021.

Actions of dietary tocotrienols on obesity: ARN supplemental fund
American River Nutrition, Inc., Hadley, MA.
Shen CL (PI). The goal of study is to test the hypothesis that tocotrienol supplementation improve lipid profiles and modify endocannabinoid and oxylipins in obese postmenopausal women. \$70,000. 11/1/2018-10/31/2021.

Tocotrienols supplementation for postmenopausal women with low muscle strength
ARN supplemental fund, American River Nutrition, Inc., Hadley, MA.
Shen CL (PI). The goal of study is to test the hypothesis that tocotrienol supplementation modify endocannabinoid and oxylipins in postmenopausal women with low muscle strength. \$30,000. 11/1/2018-10/31/2021.

Dietary tocotrienol (vitamin E isomer) supplement for postmenopausal women: aspects of metabolomics and gut microbiome
Laura W. Bush Institute for Women's Health.
Shen CL (PI, 3%). The goal of this study is to test dietary tocotrienol supplementation on metabolites and gut microbiome of obese women. \$10,000. 8/1/2018-7/31/2021

Actions of dietary tocotrienols on obesity: a pilot clinical study
School of Medicine, Texas Tech University Health Sciences Center.
Shen CL (PI, 3%). Aryaie A (co-PI). Lee J (co-I), Tinsley G (co-I), Watkins BA (co-I). The goal of this pilot study is to test a dietary tocotrienol supplementation for feasibility, and to quantitatively assess its potential anti-obesity effects on postmenopausal women. \$20,000. 7/1/2018-12/31/2020.

Grants submitted under review

"Development of new N-arachidonyl glycine (NAGly) analogs for neuropathic pain". Benamar K (PI-contact), Shen CL (MPI, 10%). NIH/NIDR. The goal of this study is to evaluate the effects of NAGly analogs for neuropathic pain, to prepare NAGly analogs conduct pre-IND animal studies,

to obtain IND enabling approval by the FDA, and to begin a Phase I clinical trial. 6/1/2020-5/31/2026. \$4,478,331.

Grants submitted but not funded

Clinical Investigation of Tai Chi and n-3 PUFA on endocannabinoid modulation and brain fMRI connectivity in knee OA pain.” Shen CL (PI, 25%). NIH. The goal of this study is to advance our knowledge about mechanisms of a mind-body exercise (Tai Chi) and n-3 polyunsaturated fatty acids supplement in individuals with knee osteoarthritis pain. 4/1/2021-3/31/2026. Requested \$3,627,586.

On-going Research Project

Assessing Nurse Practitioners’ (NPs) Attitudes and Use of Complementary and Alternative Medicine (CAM) Practices for Pain Management. Role: Co-investigator.

Other Scholarly Activity: supervised 13 medical students for 2020 Medical Student Summer Research Programs.

Daniel Payberah (MS2), School of Medicine, TTUSHC, 2020 MSSRP: conducting meta-analysis. Project title: Effects of Botulinum Toxin on Tension-type Headaches: A Systematic Review and Meta-analysis.

Kevin Chin (MS2), School of Medicine, TTUHSC, 2020 MSSRP: conducting meta-analysis. Project title: Effects of Tai Chi and Qi Gong on anxiety and depression: a systematic review and meta-analysis.

Haven Ward (MS2), School of Medicine, TTUHSC, 2020 MSSRP: conducting meta-analysis. Project title: Effects of Tai Chi and Qi Gong on anxiety and depression: a systematic review and meta-analysis.

Fehintola Soetan (MS2), School of Medicine, TTUHSC, 2020 MSSRP: conducting meta-analysis. Project title: Effects of mind-body interventions on symptoms and cognitive functions of individuals with ASD.

Adam Wynn (MS2), School of Medicine, TTUHSC, 2020 MSSRP: conducting meta-analysis. Project title: Effects of consumption of coconut oil or coconut on glycemic control and insulin sensitivity: a systematic review and meta-analysis_of interventional trials.

Jason Chen (MS1), School of Medicine, TTUHSC, 2020: conducting 2nd analysis of data. Project tentative title: Association between physician advice for lifestyle change and actual reported behavior change in patients suffering from musculoskeletal pain.

Jessyca Turner (MS2), School of Medicine, TTUHSC, 2020: conducting 2nd analysis of data and poster preparation. Project title: Applying diffusion of innovation to the Texas Mother Friendly Worksite Program: dose early adoption lead to lower rates of infant mortality.

Tochi Eboh (MS2), School of Medicine, TTUHSC, 2020: conducting 2nd analysis of data. Project title: TBD.

Alexis Shuck (MS2), School of Medicine, TTUHSC, 2020: working on a review article and poster presentation. Project title: Potential therapeutic benefits of capsaicin, EGCG, and green tea extract, curcumin, and ginger on fibromyalgia: a review of the literature.

Christina Tompkins (MS2), School of Medicine, TTUHSC, 2020: working on a review article and poster presentation. Project title: Analgesic effects of GSPE, soy and genistein, naringin, and omega-3 PUFA and their possible molecular mechanisms in treating fibromyalgia.

Rodan Devega (MS2), School of Medicine, TTUHSC, 2020: working on a review article and poster presentation. Project title: Potential health effects of curcumin, saffron, garlic, resveratrol, tea, and omega-3 fatty acids on depression: a review of the literature.

Luis Castro (MS2). School of medicine, TTUHSC, 2020: working on a review article: Bioactive components for neuropathic pain.

Maribel Castro (MS1). School of medicine, TTUHSC, 2020: working on a review article: Bioactive components for neuropathic pain.

SHIN, Andrew

Publications

Gannaban RB, NamKoong C, Ruiz HH, Choi HJ, Shin AC. Central regulation of branched-chain amino acids is mediated by AgRP neurons. *Diabetes*, 2021 Jan; 70(1): 62-75. Epub 2020 Oct 28.

Galyean S, Sawant D, Shin AC. Immunometabolism, micronutrients, and bariatric surgery: The use of transcriptomics and microbiota-targeted therapies. *Mediators of Inflammation*, 2020 Nov 17; 2020:8862034

Mullins CA, Gannaban RB, Khan MS, Shah H, Siddik MAB, Hegde V, Reddy PH, Shin AC. Neural underpinnings of obesity: the role of oxidative stress and inflammation in the brain. *Antioxidants*, 2020 Oct 20; 9(10): 1018

Shin AC*, Balasubramanian P, Suryadevara P, Zyskowski J, Herdt TH, MohanKumar SM, MohanKumar PS. Metformin effectively restores the HPA axis function in diet-induced obese rats. *International Journal of Obesity – Nature*, 2020 Sep 19 [Epub ahead of print]

*Corresponding author

Galyean S, Sawant D, Shin AC. Personalized Nutrition for Management of Micronutrient Deficiency - Literature Review in Non-Bariatric Populations and Possible Utility in Bariatric Cohort. *Obesity Surgery*, 2020 Sep; 30(9): 3570-3582. Epub 2020 Jun 20.

Akheruzzaman M, Hegde VK, Shin AC. Dhurandhar NV. Reducing endogenous insulin is linked with protection against hepatic steatosis in mice. *Nutrition & Diabetes – Nature*, 2020 Apr 14; 10(1): 11

Shah H, Shin AC. Meal patterns after bariatric surgery in mice and rats. *Appetite* (Special Issue on Bariatric Surgery – Invited Review), 2020 Mar 1; 146: 104340. Epub 2019 Jun 29.

Presentations

Oral:

Mattern MV, Gannaban RB, Zheng H, Townsend RL, Berthoud HR, **Shin AC**. Dissecting mechanisms for improved BCAA metabolism following RYGB surgery in diet-induced obese mice. ObesityWeek (online conference), November 2020

Poster:

Siddik MAB, Zabet-Moghaddam M, Jung K, Hegde V, **Shin AC**. BCAAs not only predict Alzheimer's disease, but also induce features of neuronal dysfunction. ObesityWeek (online conference), Nov 2020

Grants/funding

NIH R21 AG069140-01

BCAAs as a novel biomarker and treatment for Alzheimer's disease, Sep 2020 – Aug 2022
(PI: **Andrew C. Shin**) - \$415,355

Diabetes Action Foundation

Understanding BCAA regulation – a step toward deciphering diabetes, Jan 2021 – Dec 2021
(PI: **Andrew C. Shin**) - \$20,000

National Science Foundation (NSF) National I-Corps

Novel diagnostic tool and compound repurposing for early detection and alleviation of Alzheimer's disease, 2019 – 2021
(PI: **Andrew C. Shin**) - \$50,000

Scientific & Technological Research Council of Turkey

The effects of central and systemic irisin on glucose homeostasis in diet-induced obese mice, Nov 2020 – Oct 2022
(PI: Hale E. Egritag; **Co-PI: Andrew C. Shin**) - \$45,000

Undergraduate Research Experience Grant, College of Human Sciences, TTU

Role of BCAAs as a biomarker of Alzheimer's disease and their potential contribution to neuronal injury, 2020 – 2021. (PI: **Andrew C. Shin**; Students: Namratha Mohan, Luis Ledezma, Monica Reyes) - \$2,250

Open Access Initiative Award – Office of Research & Innovation, TTU, 2020 - \$1,000

Other Scholarly Activity

European Science Foundation

College of Expert Reviewers – Member and Reviewer, 2020 – Present

Research Foundation Flanders (FWO)

Review College – Member and Reviewer, 2020 – Present

Editorial Board

Nutrition & Diabetes – *Nature* (2019 – Present)

SINGH, Sharda

Publications

Sridharan V, Seawright JW, Landes RD, Cao M, Singh P, Davis CM, Mao X-W, Singh SP, Zhang X, Nelson GA, Boerma M (2020). Effects of single-dose protons or oxygen ions on function and structure of the cardiovascular system in male Long Evans rats. *Life Sciences in Space Research*. 2020;26:62-8. doi: 10.1016/j.lssr.2020.04.002.

Rajan A, Tonk S, Bose C, Singh SP, Swarup S, Chavali S, Bhende K, Palade P, Hindle A, Darden M, Tonk V, Awasthi S (2020). Chromosomal alterations of pediatric malignancy in a West Texas population. *The Southwest Respiratory and Critical Care Chronicles*. 8(33):7-20. doi: 10.12746/swrccc.v8i33.627.

Bose C, Yadav S, Singhal SS, Singhal J, Hindle A, Lee J, Cheedella NKS, Rehman S, Rahman RL, Jones C, Darden M, Palade PT, Berz D, Singh SP, Awasthi S (2020). Rlip Depletion Suppresses Growth of Breast Cancer. *Cancers* (Basel). 12(6). Epub 2020/06/06. doi: 10.3390/cancers12061446. PubMed PMID: 32498332.

Bose C, Alves I, Singh P, Palade PT, Carvalho E, Børsheim E, Jun S-R, Cheema A, Boerma M, Awasthi S, Singh SP. Sulforaphane prevents age-associated cardiac and muscular dysfunction through Nrf2 signaling. *Aging Cell*. 2020;n/a(n/a):e13261. doi: 10.1111/ace1.13261.

Jun SR, Cheema A, Bose C, Boerma M, Palade PT, Carvalho E, Awasthi S, Singh SP. Multi-Omic Analysis Reveals Different Effects of Sulforaphane on the Microbiome and Metabolome in Old Compared to Young Mice. *Microorganisms*. 2020;8(10). Epub 2020/10/03. doi: 10.3390/microorganisms8101500. PubMed PMID: 33003447.

Presentations

TACC1 is amplified in a wide range of pediatric malignancy. Singh SP, Santhosh Chavali, Chhanda Bose, Vijay Tonk, Sanjay Awasthi. AACR Meeting, April 24-29-, 2020.

Rlip76 overexpression and Gpx1 silencing in lung tumors. Singh SP, Srikala Meda, Jihyun Lee, William C. Green, Sanjay Awasthi. AACR Meeting, April 24-29-, 2020.

Grant awards

DoD W81XWH-18-1-0534 (Awasthi, PI; Singh, Co-I) 8/15/18 - 8/14/21

Prevention of Breast Cancer by Haploinsufficiency of RALBP1

Major goals: The proposed studies will determine for the first time if Rlip depletion strategy can be used in breast cancer prevention, and to determine how Rlip regulates the expression of key oncogenes and tumor suppressors.

Role: Co-Investigator

School of Medicine Research Seed Grant Program TTUHSC (Alan Peiris, PI; Singh, Co-I) 2018-2021

Treating Vitamin D Insufficiency in Community Dwelling Elderly to Improve Arterial Stiffness

Major goals: Improving outcomes is replacing Vitamin D early and our study population excludes subjects with established cardiovascular disease.

Role: Co-Investigator

School of Medicine Research Seed Grant Program TTUHSC (Sharda Singh, PI) 2020-2022
Support for clinical trial: L18-089, Phase II trial of effects of the Nutritional Supplement Sulforaphane on Doxorubicin-Associated Cardiac Dysfunction.

Nutramax Laboratories Consumer Care, Inc. 2208 Lakeside Boulevard Edgewood, MD 21040
(Sharda Singh, PI) 2020-2022
Support for clinical trial: LBB141682, Effects of the Nutritional Supplement Sulforaphane on Doxorubicin-metabolism in cancer patents.

SIZER, Phil

Publications

Wilhelm MP, Hooper TL, Seeber GH, Browne KL, Gilbert KK, James CR, Brismée JM, Matthijs OC, Matthijs A, Sizer PS. The relationship between measures of foot mobility and subtalar joint stiffness using vibration energy with color doppler imaging-A clinical proof-of-concept validation study. *PLOS One* 2020 (Aug). e0237634. doi: 10.1371/journal.pone.0237634. eCollection 2020.

Seeber GH, Wilhelm MP, Sizer PS^{*Δ}, Gutihkonda A, Matthijs A, Matthijs OC, Lazovic D, Brismée JM, Gilbert K^Δ. The tensile behaviors of the iliotibial band – a cadaveric investigation. *Int J Sports Phys Ther*, 2020 (May). 5(3): 451–459.

Seeber GH, Wilhelm MP, Sizer PS^{*Δ}, Gutihkonda A, Matthijs A, Matthijs OC, Lazovic D, Brismée JM, Gilbert K^Δ. The tensile behaviors of the iliotibial band – a cadaveric investigation. *Int J Sports Phys Ther*, 2020 (May). 5(3): 451–459.

Hallur SS, Brismée JM^{*Δ}, Sizer PS, Dierick F, Dewan B, Thiry P, Sobczak S. Three-dimensional spinal position with and without manual distraction load increases spinal height. *J Man Physiol Ther*, 2020 (May). DOI:<https://doi.org/10.1016/j.jmpt.2019.04.007>.

Mena-Iturriaga MJ, Mauri-Stecca MV, Sizer PS, Leppe J. Quality of Life in chronic musculoskeletal symptomatic Chilean population: Secondary analysis of National Health Survey 2009-2010. *BMC Musculoskeletal Disorders*. 2020 (April). 21: 262. doi: 10.1186/s12891-020-03261-x

Anderson TL, Brismée JM, Smith TM, Sizer PS, Hanks RS, Hooper TL, Gerke DA, Phelps V, Stinson LW. New fanwise subacromial corticosteroid injection technique for shoulder impingement: A preliminary prospective single-arm clinical trial. *eMedical Research*. 2020 (Jan);2,100003:1-11. <https://www.emresonline.org/open-access-pdf/new-fanwise-subacromial-corticosteroid-injection-technique-for-shoulder-impingement-a-preliminary-prospective-singlearm-clinical-100003.pdf>

Seeber GH, Lierly M, Bassett C, Douthit C, Wilhelm M, Matthijs A, Matthijs O, Lazovic D, Brismée JM, Gilbert K, Sizer P Jr. The constraining effect of the lateral femoral intermuscular septum on passive hip adduction in Un-embalmed cadavers. *Int J Sports Phys Ther*. 2020

(Feb); 15(1):42-52.

Davis AJ, Wilhelm MP, Pendergrass TJ, Sechrist DA, Brismée JM, Sizer PS, Gilbert KK*^Δ. Anatomical relationship of palmar carpal bone landmarks used in locating the lunate and capitate during palpation: A cadaveric investigation. *J Hand Ther.* 2019 (Oct-Dec); 32(4):463-469.

Besomi M*, Leppe J, Mauri-Stecca V, Hooper T, Sizer P. Training volume and previous injury as associated factors for running-related injuries by race distance: a cross-sectional study. *J Sport Health Sci.* 2020 (Oct); DOI:10.14198/JHSE.2019.143.06.

Research Platform Presentations

Gehring R, Brismée JM, Sizer P, Gilbert K, Potter-Brunet J. “Neurodynamic treatment for neurogenic claudication with lumbar spinal stenosis” APTA Combined Sections Meeting, Denver, CO, February, 2020.

Vargo A, Sizer P, Kearns G, McGaugh J, Allen B. Teaching advanced cervical and thoracic manual physical therapy to students in a continuing education format. APTA Combined Sections Meeting, Denver, CO, February, 2020.

Dice JL, Dendy D, Sizer PS, Cook CE, Feuling S, Brismée JM. “Manual Therapy in Pediatrics: A Delphi Investigation of United States Physical Therapists” APTA Combined Sections Meeting, Denver, CO, February, 2020.

Vargo A, Sizer P, Kearns G, McGaugh J, Allen B. Teaching advanced cervical and thoracic manual physical therapy to students in a continuing education format. AAOMPT National Conference, Orlando, FL, October, 2019.

Gan J, Brismée JM, Bösch D, Kearns G, Sizer PS, Pitance L, Maranzano J, Sobczak S. “Accuracy of a Novel Approach to Dry Needle Placement in the Lateral Pterygoid Muscle in Cadavers” AAOMPT National Conference, Orlando, FL, October, 2019.

Dice JL, Dendy D, Sizer PS, Cook CE, Feuling S, Brismée JM. “Manual Therapy in Pediatrics: A Delphi Investigation of United States Physical Therapists” AAOMPT National Conference, Orlando, FL, October, 2019.

Froment FP*, Olson KA, Hooper TL, Shaffer SM, Sizer PS, Woodhouse LJ, Brismée JM. “Musculoskeletal Advanced Physiotherapy Scope of Practice: An International Exploratory Survey Throughout WCPT Member Organizations”. AAOMPT National Conference, Orlando, FL, October, 2019.

Research Poster Presentations

Seeber GH, Lierly M, Bassett C, Douthit C, Wilhelm MP, Lazovic D, Brismee J-M, Gilbert KK, Sizer PS Jr. Der Limitierende Einfluss des Lateralen Intermuskulären Septums auf die Passive Hüftadduktion - eine Präparatstudie. Poster presentation at the 68. Jahrestagung der

Vereinigung Süddeutscher Orthopäden und Unfallchirurgen e.V., Baden-Baden, Germany, May 1, 2020.

[Seeber GH](#), Wilhelm MP, Guthikonda A, Lazovic D, Brismee J-M, Gilbert KK, Sizer PS Jr. Das Biomechanische Verhalten des Iliotibialbandes unter Zug - eine Präparatstudie. Poster presentation at the 68. Jahrestagung der Vereinigung Süddeutscher Orthopäden und Unfallchirurgen e.V., Baden-Baden, Germany, May 1, 2020..

[Drusch A](#), McCormick J, Hooper T, Allen B, O'Connell D, Vintimilla A, Sizer P. The effect of a volitional preemptive abdominal contraction on biomechanical measures during a front versus back loaded barbell squat. Student Research Week, Lubbock, TX, USA, March, 2020.

[Vintimilla A](#), Lynch D, Drusch A, Hooper T, James CR, Brooks T, Sizer P. Biomechanical response to a volitional preemptive abdominal contraction and stabilization belt use during a loaded squat. Student Research Week, Lubbock, TX, USA, March, 2020.

[Khalid S](#), Garcia L, Kunkel B, Drusch A, Hooper T, Kublawi M, Brismee J, Yang H, Sizer P. Effect of executive cognitive distraction on sustaining a volitional preemptive abdominal contraction during a unipodal functional movement in healthy subjects. Student Research Week, Lubbock, TX, USA, March, 2020.

[Natesan K](#), Drusch A, Garcia L, Hooper T, Kublawi M, Brismee J, Yang H, Sizer P. Effect of volitional preemptive abdominal contraction on superficial multifidus response during a unipodal lower extremity reach task in healthy subjects. Student Research Week, Lubbock, TX, USA, March, 2020.

[Dice JL*](#), Dendy D, Sizer PS, Cook CE, Feuling S, Brismée JM. Manual therapy in pediatrics: A delphi investigation of united states physical therapists. APTA Combined Section Meeting, Denver, CO, USA, February, 2020.

[Gehring R](#), Potter-Brunet J, Gilbert K, Sizer PS, Brismée JM. Neurodynamic treatment for neurogenic claudication related to lumbar spinal stenosis: Case series with 3-month follow-up. APTA Combined Section Meeting, Denver, CO, USA, February, 2020.

[Seeber GH](#), Lierly M, Bassett C, Douthit C, Wilhelm M, Sargent E, Browne K, Lazovic D, Brismée JM, Gilbert KK, Sizer PS. The constraining effect of the lateral femoral intermuscular septum on passive hip adduction in un-embalmed cadavers. 4th Forschungssymposium Physiotherapie; November 22-23, Hildesheim, Germany, 2019.

Poster. TTUHSC SHP Endowed Lecture Series, October 3, 2019 (6 total)

Cooper K, Garcia L, Kunkel B, Hooper T, Drusch A, Kublawi M, Brismee J, Sargent E, Wilhelm M, Yang H, Gan J, Sizer P. The Effect of Executive Cognitive Distraction on Sustaining a Volitional Preemptive Abdominal Contraction During a Unipodal Functional Movement in Healthy Subjects.

Drusch A, Garcia L, Kunkel B, Hooper T, Kublawi M, Brismee J, Yang H, Sizer P. Effect of Volitional Preemptive Abdominal Contraction on Superficial Multifidus Response During Unipodal Lower Extremity Reach Task in Healthy Subjects.

Froment FP, Olson KA, Hooper TL, Shaffer SM, Sizer PS, Woodhouse LJ, Brismée JM. Direct Access Advantage for Musculoskeletal Physiotherapy Scope of Practice Throughout WCPT and IFOMPT Affiliated Countries.

Dice JL, Dendy D, Sizer PS, Cook CE, Feuling S, Brismée JM. Use of Manual Therapy in Children: A United States Physical Therapy Delphi Investigation.

Pepper T, Brismee JM, Sizer PS, Kapila J, Seeber G, Hooper TL. The immediate effects of foam rolling and stretching on iliotibial band stiffness: a randomized control trial.

Gehring R, Potter-Brunet J, Gilbert K, Sizer P, Brismée JM. Neurodynamic Treatment For Neurogenic Claudication Related To Lumbar Spinal Stenosis: A Case Series.

Submitted External Grant Activity

Co-Principal Investigator: National Science Foundation (NSF) ACTx Grant Proposal for \$15Mil (TTUHSC section \$825,000). SUBMITTED in collaboration with TTU and [6] other Universities across Texas: UTA, UTD, UTSW, UTGRV, TSU, UH. Status: Submitted 8-10-20

SONG, Huaxin

Publication

Song, H., Hughes, J. R., Turner, R. T., Iwaniec, U. T., Doerge, D. R., & Helferich, W. G. (2020). (±)-Equol does not interact with genistein on estrogen-dependent breast tumor growth. *Food and Chemical Toxicology*, 136, 110979.

Grant awards

HRSA-UD7HP37639 PD: Linda McMurry 07/2020-06/2023
Nurse Education, Practice, Quality, and Retention Interprofessional Collaborative Practice
Funding Agency: HRSA
Role: Program evaluator/Statistician, Data Manager

ST-JOHN, Julie

On-going Research Project

Assessing Nurse Practitioners' (NPs) Attitudes and Use of Complementary and Alternative Medicine (CAM) Practices for Pain Management. Role: Co-investigator.

SUN, Grace

On-going Research Project

Assessing Nurse Practitioners' (NPs) Attitudes and Use of Complementary and Alternative Medicine (CAM) Practices for Pain Management. Role: PI.

TINSLEY, grant

Publications

Articles displayed in reverse chronological order. Only Pubmed-indexed articles are displayed, and article information is automatically retrieved from PubMed. Notes: *corresponding author. †student researcher from GMT's laboratory

P. S. Harty, H. A. Zabriskie, R. A. Stecker, B. S. Currier, G.M. Tinsley, K. Surowiec, A. R. Jagim, S. R. Richmond, and C. M. Kerksick. "Caffeine Timing Improves Lower-Body Muscular Performance: A Randomized Trial". *Frontiers in Nutrition* 7 (2020), p. 585900. ISSN: 2296-861X. DOI: <https://doi.org/10.3389/fnut.2020.585900>. PMID: 33330586.

T. Moro, G. Tinsley, G. Longo, D. Grigoletto, A. Bianco, C. Ferraris, M. Guglielmetti, A. Veneto, A. Tagliabue, G. Marcolin, and A. Paoli. "Time-restricted eating effects on performance, immune function, and body composition in elite cyclists: a randomized controlled trial". *Journal of the International Society of Sports Nutrition* 17.1 (2020), p. 65. ISSN: 1550-2783. DOI: <https://doi.org/10.1186/s12970-020-00396-z>. PMID: 33308259.

R. C. O. Macedo, H. O. Santos, G. M. Tinsley, and A. Reischak-Oliveira. "Low-carbohydrate diets: Effects on metabolism and exercise - A comprehensive literature review". *Clinical Nutrition ESPEN* 40 (2020), pp. 17-26. ISSN: 2405-4577. DOI: <https://doi.org/10.1016/j.clnesp.2020.07.022>. PMID: 33183532

H. O. Santos, G. M. Tinsley, G. A. R. da Silva, and A. A. Bueno. "Pharmaconutrition in the Clinical Management of COVID-19: A Lack of Evidence-Based Research But Clues to Personalized Prescription". *Journal of personalized medicine* 10.4 (2020). ISSN: 2075-4426. DOI: <https://doi.org/10.3390/jpm10040145>. PMID: 32992693

H. O. Santos, R. Genario, R. C. O. Macedo, M. Pareek, and G. M. Tinsley. "Association of breakfast skipping with cardiovascular outcomes and cardiometabolic risk factors: an updated review of clinical evidence". *Critical Reviews in Food Science and Nutrition* (2020), pp. 1-9. ISSN: 1549-7852. DOI: <https://doi.org/10.1080/10408398.2020.1819768>. PMID: 32935557.

G. M. Tinsley * . "Five-Component Model Validation of Reference, Laboratory, and Field Methods of Body Composition Assessment". *The British Journal of Nutrition* (2020), pp. 1-38. ISSN: 1475-2662. DOI: <https://doi.org/10.1017/S0007114520003578>. PMID: 32921319.

B. J. Schoenfeld, A. Alto, J. Grgic, G. Tinsley, C. T. Haun, B. I. Campbell, G. Escalante, G. T. Sonmez, G. Cote, A. Francis, and E. T. Trexler. "Alterations in Body Composition, Resting Metabolic Rate, Muscular Strength, and Eating Behavior in Response to Natural Bodybuilding Competition Preparation: A Case Study". *Journal of Strength and Conditioning Research* (2020). ISSN: 1533-4287. DOI: <https://doi.org/10.1519/JSC.0000000000003816>. PMID: 32898035.

G. M. Tinsley * , A. E. Smith-Ryan, Y. Kim, M. N. M. Blue, B. S. Nickerson, M. T. Stratton † , and P. S. Harty † . "Fat-free mass characteristics vary based on sex, race, and weight status in US adults". *Nutrition Research* 81 (2020), pp. 58-70. ISSN: 1879-0739. DOI: <https://doi.org/10.1016/j.nutres.2020.07.002>. PMID: 32882467.

P. S. Harty † , M. T. Stratton † , G. Escalante, C. Rodriguez † , J. R. Dellinger † , A. D. Williams † , S. J. White † , R. W. Smith † , B. A. Johnson † , M. B. Sanders † , and G. M. Tinsley * . “Effects of Bang® Keto Coffee Energy Drink on Metabolism and Exercise Performance in Resistance-Trained Adults: A Randomized, Double-blind, Placebo-controlled, Crossover Study”. *Journal of the International Society of Sports Nutrition* 17.1 (2020), p. 45. ISSN: 1550-2783. DOI: <https://doi.org/10.1186/s12970-020-00374-5>. PMID: 32831109.

G. M. Tinsley * , C. Rodriguez † , S. J. White † , A. D. Williams † , M. T. Stratton † , P. S. Harty † , R. W. Smith † , J. R. Dellinger † , and B. A. Johnson † . “A Field-based Three-Compartment Model Derived from Ultrasonography and Bioimpedance for Estimating Body Composition Changes”. *Medicine and Science in Sports and Exercise* (2020). ISSN: 1530-0315. DOI: <https://doi.org/10.1249/MSS.0000000000002491>. PMID: 32804903.

J. do Nascimento Queiroz, R. C. O. Macedo, G. M. Tinsley, and A. Reischak-Oliveira. “Time-restricted eating and circadian rhythms: the biological clock is ticking”. *Critical Reviews in Food Science and Nutrition* (2020), pp. 1-13. ISSN: 1549-7852. DOI: <https://doi.org/10.1080/10408398.2020.1789550>. PMID: 32662279.

D. A. Larky, R. Bagheri, A. Abbasnezhad, G. M. Tinsley, M. Alipour, and A. Wong. “Effects of gradual weight loss vs rapid weight loss on body composition and resting metabolic rate: A systematic review and meta-analysis”. *The British Journal of Nutrition* (2020), pp. 1- 26. ISSN: 1475-2662. DOI: <https://doi.org/10.1017/S000711452000224X>. PMID: 32576318.

R. Bagheri, B. H. Moghadam, E. Jo, G. M. Tinsley, M. T. Stratton † , D. A. Larky, M. Eskandari, and A. Wong. “Comparison of whole egg vs. egg white ingestion during 12 weeks of resistance training on skeletal muscle regulatory markers in resistance-trained men”. *The British Journal of Nutrition* (2020), pp. 1-20. ISSN: 1475-2662. DOI: <https://doi.org/10.1017/S0007114520002238>. PMID: 32576297.

G. M. Tinsley * , M. L. Moore † , Z. Rafi, N. Griffiths, P. S. Harty † , M. T. Stratton † , M. L. Benavides † , J. R. Dellinger † , and B. T. Adamson † . “Explaining Discrepancies Between Total and Segmental DXA and BIA Body Composition Estimates Using Bayesian Regression”. *Journal of Clinical Densitometry* (2020). ISSN: 1094-6950. DOI: <https://doi.org/10.1016/j.jocd.2020.05.003>. PMID: 32571645.

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M. T. Stratton † , G. M. Tinsley, M. G. Alesi, G. M. Hester, A. A. Olmos, P. R. Serafini, A. S. Modjeski, G. T. Mangine, K. King, S. N. Savage, A. T. Webb, and T. A. VanDusseldorp. “Four Weeks of Time-Restricted Feeding Combined with Resistance Training Does Not Differentially Influence Measures of Body Composition, Muscle Performance, Resting Energy Expenditure, and Blood Biomarkers”. *Nutrients* 12.4 (2020). ISSN: 2072-6643. DOI: <https://doi.org/10.3390/nu12041126>. PMID: 32316561.

P. S. Harty † , B. Sieglinger, S. B. Heymsfield, J. A. Shepherd, D. Bruner, M. T. Stratton † , and G. M. Tinsley * . “Novel body fat estimation using machine learning and 3-dimensional optical imaging”. *European Journal of Clinical Nutrition* (2020). ISSN: 1476-5640. DOI: <https://doi.org/10.1038/s41430-020-0603-x>. PMID: 32203233.

J. Grgic, C. Pickering, D. J. Bishop, J. D. Coso, B. J. Schoenfeld, G. M. Tinsley, and Z. Pedisic. “ADORA2A C Allele Carriers Exhibit Ergogenic Responses to Caffeine Supplementation”. *Nutrients* 12.3 (2020). ISSN: 2072-6643. DOI: <https://doi.org/10.3390/nu12030741> PMID: 32168870.

A. Aryaie, G. Tinsley, J. Lee, B. A. Watkins, L. Moore, A. Alhaj-Saleh, K. Shankar, S. R. Wood, R. Wang, and C. Shen. “Actions of annatto-extracted tocotrienol supplementation on obese postmenopausal women: study protocol for a double-blinded, placebo-controlled, randomised trial”. *BMJ Open* 10.3 (2020), p. e034338. ISSN: 2044-6055. DOI: <https://doi.org/10.1136/bmjopen-2019-034338>. PMID: 32152169.

G. M. Tinsley * , M. L. Moore † , M. L. Benavides † , J. R. Dellinger † , and B. T. Adamson † . “3-Dimensional optical scanning for body composition assessment: A 4-component model comparison of four commercially available scanners”. *Clinical Nutrition* (2020). ISSN: 1532-1983. DOI: <https://doi.org/10.1016/j.clnu.2020.02.008>. PMID: 32113641.

B. S. Nickerson, G. M. Tinsley, M. V. Fedewa, and M. R. Esco. “Fat-free mass characteristics of Hispanic adults: Comparisons with non-Hispanic Caucasians and cadaver reference values”. *Clinical Nutrition* (2020). ISSN: 1532-1983. DOI: <https://doi.org/10.1016/j.clnu.2020.01.013>. PMID: 32057536.

R. Bagheri, B. H. Moghadam, D. D. Church, G. M. Tinsley, M. Eskandari, B. H. Moghadam, M. S. Motevalli, J. S. Baker, R. A. Robergs, and A. Wong. “The effects of concurrent training order on body composition and serum concentrations of follistatin, myostatin and GDF11 in sarcopenic elderly men”. *Experimental Gerontology* 133 (2020), p. 110869. ISSN: 1873-6815. DOI: <https://doi.org/10.1016/j.exger.2020.110869>. PMID: 32035222.

Grant awards

2021 Influence of Caffeinated and Non-caffeinated Pre-workout Supplements on Resistance Exercise Performance Legion Athletics, Inc. Role: Lead Principal Investigator Amount: \$20,000

2020 2021 Evaluation of Novel Beverage Formulations for Hydration Enhancement in Humans: A Pilot Study 8 POiNT, LLC Role: Lead Principal Investigator Amount: \$43,494

2020 2021 The Influence of Creatine Monohydrate Supplementation on Testosterone, Dihydrotestosterone, and Hair Loss (A20-0119-001) Legion Athletics, Inc. Role: Lead Principal Investigator Amount: \$32,271

2020 Effects of a Caffeine- and Protein-Containing Coffee Beverage on Metabolism and Muscular Performance (A20-0134-001) Vital Pharmaceuticals, Inc. Role: Lead Principal Investigator Amount: \$20,000

Podcast Interview

“Intermittent Fasting: New Findings in Health and Performance.” Plenary session. Approximate attendance: 100. Duration: 1 hour. □ Colombia (Online) International Society of Sports Nutrition

The Health Scientist Invited guest for “Episode 50 - Grant Tinsley: Intermittent fasting, fat loss and performance”.

Invited guest for “Episode 96 - Meal Timing, Intermittent Fasting, & Time Restricted Feeding”.

Invited guest for “Episode 90 - Sarcoplasmic Hypertrophy & Body Composition Roundtable” Guest Presentation for Introduction to Kinesiology Course. “A Career as a Professor.

Social Medica Interview: Astrid Naranjo (Anti-Diet Dietitian) “Time-Restricted Feeding and Intermittent Fasting.” Interview Conducted on Instagram Live

Abstracts

Displayed in reverse chronological order. †=student author from GMT’s laboratory

Zaragoza J, Urbina S, Purpura M, Jäger R, Tinsley G, Stone J, Askow A, Oliver J, Taylor L. “Probiotic administration increases amino acid absorption from plant protein – A placebocontrolled, randomized, double-blind, multicenter, crossover study.” The FASEB Journal. Forthcoming.

Harty P † , Surowiec K, Tinsley G, Zabriskie H, Stecker R, Currier B, Moon J, Richmond S, Jagim A, Kerksick C. “Practical Timing Strategies to Optimize Plasma Caffeine Concentration Prior to Exercise”. Journal of Strength & Conditioning Research. Forthcoming.

Stratton M† , Harty P † , Smith R† , Rodriguez C† , Williams A † , White S † , Dellinger J † , Johnson B † , Benavides M† , Tinsley G. “A Comparison Between Alterations in Ultrasound-derived Muscle Thickness and Dual-energy X-ray Absorptiometry Segmental Lean Mass”. Journal of Strength & Conditioning Research. Forthcoming.

Harty P † , Stratton M† , Griffiths N, Moore M† , Benavides M† , Dellinger J † , Adamson B † , Tinsley G. “Physiological and Anthropometric Predictors of Discrepancies Between Bioelectrical Impedance Analysis and Dual-Energy X-Ray Absorptiometry”. Medicine & Science in Sports & Exercise. Forthcoming.

Stratton M† , Harty P † , Moore M† , Griffiths N, Dellinger J † , Benavides M† , Adamson B † , Tinsley G. “Explaining Segmental Lean Soft Tissue Discrepancies Between Bioelectrical Impedance Analysis and Dual-Energy X-Ray Absorptiometry”. Medicine & Science in Sports & Exercise. Forthcoming.

Stratton M† , Tinsley G, Alesi M, Hester G, Olmos A, Serifini P, Modjeski A, Mangine G, King K, Savage S, Webb A, VanDusseldorp T. “The Effect of Time-Restricted Feeding in Combination with Resistance Training on Measures of Body Composition, Muscle Performance, Resting

Energy Expenditure, and Blood Biomarkers". Journal of the International Society of Sports Nutrition. 2020;17(1):23. <https://doi.org/10.1186/s12970-020-00352-x>.

Dellinger † , Johnson B † , Stratton M† , Harty P † , Benavides M† , White S † , Williams A † , Smith R† , Tinsley G. "Influence of Acute Water Ingestion on Bioelectrical Impedance Analysis Estimates of Body Composition". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/23>.

White S † , Harty P † , Stratton M† , Dellinger J † , Johnson B † , Smith R† , Williams A † , Benavides M† , Tinsley G. "Tracking Resistance Training-Induced Changes in Body Composition via 3-Dimensional Optical Scanning". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/20>.

Wong R, Barker J, Berreth T, Fox R, Maldonado M, Vancleave C, Zaragoza J, Tinnin M, Tinsley G, Taylor L, Brennan K. "The Effects Of Acute Resistance Exercise On Bioelectrical Impedance Analysis Measures Of Body Composition". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/155>.

Harty P † , Stratton M† , Johnson B † , Dellinger J † , Benavides M† , Smith R† , White S † , Williams A † , Rodriguez C† , Tinsley G. "Influence of Subject Presentation on Body Composition Estimates from Dual-Energy X-Ray Absorptiometry, Air Displacement Plethysmography, and Bioelectrical Impedance Analysis". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/68>.

Benavides M† , Johnson B † , Harty P † , Stratton M† , Dellinger J † , Smith R† , Williams A † , Rodriguez C† , White S † , Tinsley G. "Impact of Fluid Consumption on Estimates of Intracellular, Extracellular, and Total Body Water from Multi-Frequency Bioelectrical Impedance Analysis". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/97>.

Barker J, Berreth T, Fox R, Maldonado M, Vancleave C, Wong R, Zaragoza J, Tinnin M, Tinsley G, Taylor L, Brennan K. "The Effects Of Acute Resistance Exercise On Dual-Energy X-Ray Absorptiometry Measure Of Body Composition". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/157>.

Birdsell D, Tinsley G, Zaragoza J, Tinnin M, Prather J, Harrison C, Smith S, Lockwood C, Taylor L. "Comparison of Bioimpedance Analysis and Dual Energy X-Ray Absorptiometry in Division III Football Athletes". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/76>.

Stratton M† , Harty P † , Smith R† , Dellinger J † , Johnson B † , Benavides M† , Williams A † , White S † , Rodriguez C† , Tinsley G. "Body Fat Gain Automatically Increases Lean Mass by Changing the Fat-Free Component of Adipose Tissue". International Journal of Exercise Science: Conference Proceedings. 2020;2(12). <https://digitalcommons.wku.edu/ijesab/vol2/iss12/49>. 15.

Williams A † , Tinsley G, Stratton M† , Harty P † , Benavides M† , White S † , Johnson B † , Smith R† , Dellinger J † , Rodriguez C† . "Agreement Between 4-Compartment Model and 7-Site Ultrasonography for Tracking Weight Training-Induced Changes in Body Composition".

International Journal of Exercise Science: Conference Proceedings. 2020;2(12).
<https://digitalcommons.wku.edu/ijesab/vol2/iss12/21>.

Smith R† , Harty P † , Stratton M† , Dellinger J † , Benavides M† , Johnson B † , Williams A † , White S † , Rodriguez C† , Vincent B † , Tinsley G. "Relationship Between Rate and Composition of Mass Gain During Overfeeding Plus Resistance Training". International Journal of Exercise Science: Conference Proceedings. 2020;2(12).
<https://digitalcommons.wku.edu/ijesab/vol2/iss12/28>.

Rodriguez C† , Smith R† , Stratton M† , Harty P † , Johnson B † , Dellinger J † , Benavides M† , Vincent B † , Williams A † , White S † , Tinsley G. "Relationship Between Muscular Performance Changes and Increases in Body Mass During Overfeeding Plus Resistance Training". International Journal of Exercise Science: Conference Proceedings. 2020;2(12).
<https://digitalcommons.wku.edu/ijesab/vol2/iss12/33>

VELLERS, Heather

Publications

Vellers, H.L., Verhein, K.C., Burkholder, A.B., Lee, L., Kim, Y., Lightfoot, J.T., Shi, M., Weinberg, C.R., Sarzynski, M.A., Bouchard, C., Kleeberger, S.R. Association between Mitochondrial DNA Sequence Variants and VO₂ max Trainability (2020). Editor's Pick, *Medicine & Science in Sports & Exercise*, 52(11), 2303-2309. This manuscript was selected as a highlighted Active Voice commentary for the ACSM Sports Medicine Bulletin.

Vellers, H.L., Massett, M.P., Avila, J.J., Kim, S.K., Marzec, M., Santos, J.H., Lightfoot, J.T., Kleeberger, S.R. Mitochondrial DNA Lesions and Copy Number are Strain Dependent in Endurance-Trained Mice (2020). *Physiological Reports*, 8:e14605.

Letsinger, A. C., Menon, R., Iyer, A. R., Vellers, H. L., Granados, J. Z., Jayaraman, A., & Lightfoot, J. T. (2020). A High Fat/High Sugar Diet Alters the Gastrointestinal Metabolome in a Sex Dependent Manner. *Metabolites*, 10(10), 421.

Gonzales, J. U., Fischer, S. M., Maharaj, A., Vellers, H.L., Anderson, T., Karnjanapiboonwong, A., Subbiah, S., Kellawan, J. M., & Figueroa, A. Response of exercise-onset vasodilator kinetics to L-citrulline supplementation during different phases of the menstrual cycle (2020). *Physiological reports*, 8(15), e14536.

Presentations

Oral:

Invited Speaker, *Do our Mothers Determine Aerobic Capacity Trainability? Potential Role of the Mitochondrial Genome on Aerobic Capacity Trainability*, Center for Translational Research in Aging and Longevity and Department of Health and Kinesiology Fall 2020 Seminar, Texas A&M University. (November 6, 2020).

Invited Speaker*, *Association between Mitochondrial Genome Dynamics with Endurance Exercise Trainability in Mice and Humans*, Sam and Ann Barshop Institute Spring 2020 Seminar Series, San Antonio Nathan Shock Center, University of Texas Health Science Center at San

Antonio. (May 6, 2020). *Due to the COVID-19 pandemic, this in-person presentation was rescheduled as a webinar.

Invited Speaker*, *Association between Mitochondrial DNA Sequence Variants and Aerobic Capacity Trainability in Mice and Humans*, Department of Toxicology, Texas A&M University. (April 6, 2020). *Due to the COVID-19 pandemic, this in-person presentation was rescheduled as a webinar.

Poster:

Hamed Khedmatgozar*, MP Massett, Mohamed Fokar, JT Lightfoot, SR Kleeberger and HL Vellers. *Influence of Genetic Background on Heart Mitochondrial DNA Lesions and Copy Number in Inbred Mice*. American College of Sports Medicine Conference 2020.

Chwan-Li Shen, R Wang, Guangchen Ji, HL Vellers, Shengmin Sang, Volker Neugebauer. *Dietary Supplementation of Gingerols- and Shogaols-Enriched Ginger Root Extracts Attenuate Pain-Associated Behaviors in Animals with Spinal Nerve Ligation*. Nutrition 2020.

Grant awards

Principal Investigator – (80% effort) *Role of Genetic Background on Age-Related Changes in Mitochondrial Genome Dynamics: Influence of Aerobic Exercise*. National Institute of Aging Nathan Shock Center New Investigator Pilot Award. San Antonio Nathan Shock Center. \$30,000.

Co-Investigator – (10% effort; Dr. Joaquin Gonzales, PI) *Effect of Pulsatile Pressure and Long Sleep Duration on Cerebral Vascular Function*. American Heart Association. \$197,451.

ZHANG, Fangyuan

Publication

Wang, D., Wang, T., Gill, A., Hilliard, T., Chen, F., Karamyshev, A., Zhang, F. (2020). Uncovering the cellular capacity for intensive and specific feedback self-control of the argonautes and MicroRNA targeting activity. *Nucleic Acids Research*, 48(9), 4681–4697.

Zhang, F., Lin, S. (2020). Incorporating information from markers in LD with test locus for detecting imprinting and maternal effects. *European Journal of Human Genetics*, 28, 1087–1097.

Dennis, J., Zhang, Y., Zhang, F., Mi, N., Cruz, N., Hannabas, G. (in press). Gender differences in stroke hospitalization incidence, 30-day mortality, and readmission in a regional medical center in the southwestern United States. *SOUTHERN MEDICAL JOURNAL*.

Zumwalt, Mini

Publications

Zumwalt MA. Gender Gap in Painful Knees: PFJ & ACL - "Odd Couple"/Biomechanics & Neuromuscular Differences between Females & Males. *Women in Sport and Physical Activity Journal*, 2020.

William H M, Christian D, Zumwalt MA. Reconstruction of Subacute Pectoralis Major Tendon Rupture from CrossFit Injury: Case Report and Literature Review. *Journal of Musculoskeletal Disorders and Treatment*, 6(1):, 2020.

Douthit C, Miers H, Zumwalt MA. Chest Wall Injury-CrossFit. *Medicine & Science in Sports & Exercise*, 52(7S): 543-5434, July 2020.

John A, Ha F, Zumwalt MA. Susceptibility/manifestations of different age groups with various comorbidities to COVID-19 infection. *The Southwest Respiratory and Critical Care Chronicles*, 8(35): 7-16, July 2020.

Kharbat A, Mizer A, Zumwalt MA. Decontamination methods of personal protective equipment for repeated utilization in medical/surgical settings. *The Southwest Respiratory and Critical Care Chronicles*, 8(34): 27-39, April 2020.

Rossettie S, Perry C, Pourghaed M, Zumwalt MA. Effectiveness of manufactured surgical masks, respirators, and home-made masks in prevention of respiratory infection due to airborne microorganisms. *The Southwest Respiratory and Critical Care Chronicles*, 8(34): 11-26, April 2020.

Amanda P, Alesia V, Katerina K, Zumwalt MA. Unique Case of 32-Year-Old Male Presenting with Angiolipoma of an ACL Hamstrings Autograft. *Journal of Musculoskeletal Disorders and Treatment*, 6(2):, April 2020.

Zumwalt MA, Reddy A. Stem Cells for Treatment of Musculoskeletal Conditions - Orthopaedic/Sports Medicine Applications. *Biochimica et biophysica acta. Molecular basis of disease*, 1866(4): 165624, April 1, 2020.

Weaver A, Kellar K, Miers H, Buttler R, Ashraf A, Woolridge A, Dasaraju A, Chappa J, Ferguson M, Brindley G, Watkins P, Zumwalt MA. Gender and Ethnic Differences in Seeking Healthcare Plus Time of Recovery from Procedures for Shoulder and Knee Conditions. *J Musculoskelet Disord Treat*, 6: 071, January 2020.

Presentations

Rossetti S, Mizer A, Zumwalt MA. Alternative Treatment for the Active Female with Musculoskeletal Pain., 2020. (Peer Reviewed)

Pourghaed M, Perry C, McComb J, Zumwalt MA. Exercise & Nutritional Guidelines for Weight Management in the Obese Female., 2020. (Peer Reviewed)

Osemwengie B, Umelo J, Mwangi L, Johnson EL, Zumwalt MA. Intramedullary Nailing vs LISS in Distal Femur Fractures., 2020. (Peer Reviewed)

Osemwengie B, Umelo J, Mwangi L, Johnson EL, Zumwalt MA. Minimally Invasive vs Open Surgery for Management of Achilles Tendon Rupture., 2020. (Peer Reviewed)

Kharbat A, Zumwalt MA. Motor Cortex Control of Posture., 2020. (Peer Reviewed)

Osemwengie B, Umelo J, Mwangi L, Johnson EL, Zumwalt MA. Operative vs Non-Operative Management of Achilles Rupture., 2020. (Peer Reviewed)

Miears H, Zumwalt MA, et al. Gender and Ethnic Differences in Seeking Healthcare Plus Time of Recovery from Procedures for Shoulder and Knee Conditions. 4th Annual Mayo Clinic Sports Medicine for the Primary Care Clinician, Orlando, Florida, March 2020. (Peer Reviewed)

Miears H, Douthit C, Zumwalt MA. Pectoralis Tendon Rupture from A/Typical Injury Mechanism- A Report of Two Cases. 4th Annual Mayo Clinic Sports Medicine for the Primary Care Clinician, Orlando, Florida, March 2020. (Peer Reviewed)

Rounds A, Zumwalt MA. Prevention & Management of Osteoporosis through Exercise. 4th Annual Mayo Clinic Sports Medicine for the Primary Care Clinician, Orlando, Florida, March 2020. (Peer Reviewed)

Zumwalt MA. Osteoporosis & the Female Athlete. Annual Conference, Texas Orthopaedic Association/Texas Orthopaedic Foundation (TOA/TOF), San Antonio, Texas, February 2020. (Peer Reviewed)

Grant Awards

Tai Chi for pain management: a pilot mechanistic study

Center of Excellence for Translational Neurosciences and Therapeutics, TTUHSC.

Shen CL (PI). The goal of this study is to collect preliminary data on how Tai Chi may help with pain management of postmenopausal women with knee osteoarthritis and explore the molecular mechanism. \$18,000 from CTNT. \$6,000 matching fund Texas Tech University Neuroimaging Institute (TTNI). 12/1/2018-11/30/2021.