

**Eunhee Chung, Ph.D.**  
Assistant Professor  
The University of Texas at San Antonio

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Department of Kinesiology  
College for Health, Community, and Policy  
The University of Texas at San Antonio  
One UTSA Circle  
San Antonio, TX 78249

Work Phone: (210) 458-6723  
Email: [eunhee.chung@utsa.edu](mailto:eunhee.chung@utsa.edu)

Laboratory Address: [Molecular Exercise Physiology Laboratory](#), BSE 2.306  
Research Productivity can be found [ORCID ID](#): 0000-0002-4501-9333 and [Google Scholar](#)  
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## Educational Background

- 2007-2012 Post-Doctoral Fellow, Molecular, Cellular, & Developmental Biology, University of Colorado, Boulder  
Research Area: Molecular Mechanisms of pregnancy-induced cardiac hypertrophy and regression. (Advisor: Dr. Leslie A. Leinwand)
- 2003-2007 Doctor of Philosophy, Kinesiology, University of Wisconsin, Madison  
Dissertation Title: Aging and exercise training effects on myocardial structure and function in rat heart (Advisor: Dr. Gary M. Diffie)
- 2000-2003 Master of Science, Kinesiology, University of Wisconsin, Madison  
Thesis Title: Altered single-cell force-velocity and power properties in exercise-trained rat myocardium (Advisor: Dr. Gary M. Diffie)
- 1998-2000 Bachelor of Science, Exercise and Sport Sciences, Exercise Physiology, University of Georgia
- 1989-1993 Bachelor of Engineering, Environmental Engineering, Kunkuk University, Seoul, Korea

## Professional License

- 1993-1997 Licensed Engineer Water Pollution Environmental, Ministry of Environment, South Korea

## Professional Employment History

- 2016 - Assistant Professor, Department of Kinesiology, Health, and Nutrition, University of Texas at San Antonio, San Antonio, TX.
- 2013 - 2016 Assistant Professor, Department of Kinesiology and Sport Management, Texas Tech University, Lubbock, TX.

- 2012 - 2013 Research Assistant Professor, Department of Kinesiology and Sport Management, Texas Tech University, Lubbock, TX.
- 2007 - 2012 Research Associate, Molecular, Cellular, and Developmental Biology and BioFrontiers Institute, the University of Colorado at Boulder, Boulder, CO.
- 2003 - 2007 Graduate Research Assistant, Department of Kinesiology, University of Wisconsin-Madison, Madison, WI.
- 2000 - 2003 Project Assistant, Senior Women's Aerobics and Weight Training Department of Kinesiology, University of Wisconsin, Madison
- 2000 - 2002 Teaching Assistant, Physical Education (PE-125: Adaptive Fitness and Personal Training). Department of Kinesiology, University of Wisconsin, Madison
- 2000 - 2002 Instructor, Physical Education (PE-133: Rhythmic/Step Aerobics), Department of Kinesiology, University of Wisconsin-Madison
- 1993 - 1994 Engineer Water Pollution Environmental, YoungSang Construction, Kyungnam, Korea

## Awards and Honors

- 2017-2018 Research Career Enhancement Award, the American Physiological Society
- 2015 Honored as a faculty member of the Lambda of Texas Chapter of PHI BETA KAPPA Society for inspired teaching
- 2013 1<sup>st</sup> Place Basic Research Award, "Calcineurin activity is required for cardiac remodeling in pregnancy." Gender-Specific Medicine & Women's Health Symposium, Nov. 14, 2013. Texas Tech University Health Science Center, Lubbock, TX.
- 2010 A new investigator travel award, 2010 OSSD (organization for the study of sex differences) annual meeting, June 3-5, 2010. Ann Arbor, MI.
- 2009 - 2011 SouthWest AHA postdoctoral fellowship, American Heart Association
- 2007 The Graduate Student Mentor Award, Graduate Student Collaborative and Multicultural Student Network, University of Wisconsin-Madison
- 2006 - 2007 Marie L. Carns Fellowship (support tuition, health insurance, and stipend)  
The Kinesiology Travel Award and Vilas Travel Fellowships from Graduate Student Collaborative (support conference travel expenses), University of Wisconsin-Madison
- 2005 - 2006 Marin L. Carns Fellowship and A Shade scholarship (support tuition, health insurance, and stipend); The Kinesiology Travel Award and Vilas Travel Fellowships from Graduate Student Collaborative (support conference travel expenses), University of Wisconsin-Madison
- 2004 - 2005 Virginia Horne Henry Wisconsin Distinguished Graduate Fellowship (support tuition, health insurance, conference travel fee, and stipend), University of Wisconsin-Madison
- 2004 Dissertation research support through NIA Animal Allocation Program (support research animals- old-aged rats for doctoral thesis). National Institute on Aging, Bethesda, MD.
- 2003 - 2004 Geneieve Brown Wright Graduate Fellowship; Carns, Cronin, Glassow Scholarship; Mary R. McKee and Elizabeth Waters Scholarship (Combined fellowship and

- scholarships support tuition, health insurance, and stipend); The Kinesiology Travel Award (support conference travel expenses), University of Wisconsin-Madison
- 2002 - 2003 Marie L. Carns Fellowship and McKee & Water Scholarship (support tuition, health, and stipend), University of Wisconsin-Madison
- 2001 - 2002 Maja Schade Scholarship, University of Wisconsin-Madison
- 2000 Dean's list for College of Education, University of Georgia, Athens, GA.
- 1999 Presidential Scholar, University of Georgia, Athens, GA.
- 1992 Department Scholarship, Kon-Kuk University, Seoul, Korea.

## Professional Memberships

- 2011 - Present American Heart Association
- 2008 - Present American Physiology Society
- 2003 - Present Korean United States Applied Physiology Society
- 2013 - 2017 American College of Sports Medicine

## Research/Scholarly/Creative Activities Summary

**Research Peer-reviewed Publication** (‡, Undergraduate advisee; †, graduate advisee; \*, corresponding author): #1-14 publication affiliated with UTSA. IF= impact factor; NC=number of citation as of Sep. 2020 from [google scholar](#)

### 2020

1. **Chung E**, Elmassry MM, Kottapalli P, Kottapalli KR, Kaur G, Dufour JM, Wright K, Ramalingam L, Moustaid-Moussa N, Wang R, Hamood AN, and Shen C-L. Metabolic benefits of annatto-extracted tocotrienol on glucose homeostasis, inflammation, and gut microbiome. *Nutrition Research*. 77: 97-107, 2020 (IF: 2.63) **Received Open Access Award (\$3,000) in April 14, 2020**
2. Elmassry MM<sup>©</sup>, **Chung E**<sup>©</sup>, Cao J, Hamood AN, and Shen C-L. Osteoprotective effect of green tea polyphenols and annatto-extracted tocotrienol in obese mice via enhancing the microbiome vitamin K2 biosynthetic pathways. *Journal of Nutritional Biochemistry*. Accepted on August 18, 2020 <sup>©</sup>co-first author (IF: 4.52)

### 2019

3. **Chung E\***, Grue KA<sup>†</sup>, Kaur G, Mallory B, Serrano CR, Ullevig SL, Kottapalli KR, Lee S-C, Dufour JM, Shen C-L, and Umeda M. Maternal exercise before and during pregnancy alleviates metabolic dysfunction associated with high-fat diet in pregnant mice, without significant changes in gut microbiota. *Nutritional Research*. 69: 42-57, 2019. PMID: 31670066 (IF: 2.63), NC=3
4. **Chung E**, Campise SN<sup>‡</sup>, Joiner HE<sup>‡</sup>, Tomison MD, Kaur G, Dufour JM, Cole L, Ramalingam L, Moustaid-Moussa N, and Shen C-L. Effect of annatto-extracted tocotrienols and green tea polyphenols on glucose homeostasis and skeletal muscle metabolism in obese male mice. *J Nutritional Biochemistry*. 67: 36-43, 2019. PMID: 30852322. (IF: 4.52), NC=2

5. Ullevig SL, Umeda M, **Chung E**, Sesatty AL, Samsuhadi KE, and Fogt DL. Effects of acute cold exposure on plasma inflammatory and lipid biomarkers related to cardiovascular disease risk. *J Integrative Cardiology Open Access Science Repository*. 2: 2-10, 2019. DOI: 10.15761/JIC.1000266 (IF: 1.46)
6. Cruger JR<sup>†</sup>, **Chung E**, and Zhang JQ. Post-myocardial infarction and exercise training on myosin heavy chain and cardiac function. *Journal of Integrative cardiology open-access Science Repository*. 2(1): 2-5, 2019. (IF: 1.46)
7. Garza MA, Watson EA, Cruger JR<sup>†</sup>, **Chung E**, and Zhang JQ. Strength training attenuates post-infarct cardiac dysfunction and remodeling. *J Physiological Sciences*. 69 (3): 525-530, 2019. PMID: 30911900 (IF: 3.34), NC=5

### 2018

8. **Chung E**, Haizlip KM, and Leinwand LA. Pregnancy late in life has a detrimental effect on the heart. *AJP-Heart and Circulatory Physiology*, 315(3): H482-491, 2018. PMID: 29750565 (IF: 3.57), NC=3
9. Shen CL, Kaur G, Wanders D, Sharma S, Tomison MD, Ramalingam L, **Chung E**, Moustaid-Moussa N, Mo H, Dufour JM. Anatto-extracted tocotrienols improve glucose homeostasis and bone properties in high-fat diet-induced type 2 diabetic mice by decreasing the inflammatory response. *Scientific Reports*, 8(1):1-10, 2018. PMID: 30054493 (IF: 4.12), NC=7
10. Fernandez-del-Valle M, Short MJ, **Chung E**, McComb J, Kloiber S, Naclerio F, and Larumbe-Zabala E. Effects of high-intensity resistance training on circulating levels of irisin in healthy adults: a randomized controlled trial. *Asian Journal of Sports Medicine*, 2018 (IF: 1.56).
11. **Chung E**, Mo H, Wang S, Zu Y, Elfakhani M, Rios S<sup>†</sup>, Chyu M, Yang R, and Shen CL. Potential roles of vitamin E in age-related changes in skeletal muscle health. *Nutrition Research*, 49: 23-36, 2018. PMID: 29420990 (IF: 2.983), NC=28; **Ranked 2<sup>nd</sup> for the most downloaded articles from ScienceDirect (2018 YTD)**

### 2017

12. Allen L, Ramalingam L, Menikdiwela K, Scoggin S, Shen L, Tomison M, Kaur G, Dufour J, **Chung E**, and Moustaid-Moussa N. Effects of delta-tocotrienol on obesity-related adipocyte hypertrophy, inflammation, and non-alcoholic fatty liver disease in high fat fed mice. *J Nutr Biochem*, 48:128-137, 2017. PMID: 28825992 (IF: 4.52), NC=24.
13. **Chung E\***, Looten K<sup>‡</sup>, Lunsford T<sup>‡</sup>, Skelton T<sup>†</sup>, and Grue K.<sup>†</sup> Exercise during pregnancy activate cardio-protective genes without a further increase pregnancy-induced cardiac hypertrophy, *Gynecol Gest Surr-UK*, 1(1): 7-15, 2017, NC=1.
14. Stock MS, Mota, JA, DeFranco RN, Grue KA<sup>†</sup>, Jacobo AU<sup>‡</sup>, **Chung E**, Moon JR, DeFreitas JM, Beck TW. The time course of short-term hypertrophy in the absence of eccentric muscle damage, *European Journal of Applied Physiology*, 117 (5):989-1004, 2017. PMID: 28321637 (IF:2.40), NC=23.
15. **Chung E\***, Joiner HE<sup>‡</sup>, Skelton T<sup>†</sup>, Looten KD<sup>‡</sup>, Manczak M, and Reddy PH. Maternal exercise during pregnancy enhances mitochondrial gene expression and increases enzyme activity of fetal mouse hearts. *Physiological Reports*, 5 (5), e13184, 1-11, 2017. PMID: 28292876 (IF:1.61), NC=17.

### 2016

16. **Chung E\***, Kim Y, and Usen O<sup>†</sup>. Associations between parity, obesity, and cardiovascular risk factors among middle-aged women. *J. of Women's Health*, 25 (8): 818-825, 2016. PMID: 26886718 (IF =2.05)
17. Brisimee JM, Yang S, Lambert ME, Chyu MC, Tsai P, Zhang Y, Han J, Hudson C, **Chung E**, Shen CL. Differences in musculoskeletal health due to gender in a rural multiethnic cohort: a Project FRONTIER study. *BMC Musculoskeletal Disorders*, 17: 181, 2016. PMID:27113571 (IF=1.72), NC=4

### 2015

18. Kim Y and **Chung E**. Descriptive epidemiology of objectively measured walking among U.S. pregnant Women: NHANES 2005-2006. *Preventing Chronic Disease*, 12: E217, 2015. PMID: 26652217 (IF=2.12), NC=6.
19. Shen CL, Han J, Wang S, **Chung E**, and Chyu MC. Green tea supplementation benefits body composition and improves bone properties in obese female rats fed with high-fat diet and caloric restricted diet. *Nutrition Research*, 35 (12): 1095-1105, 2015. PMID: 26525915 (IF=2.72), NC=18.

### 2014

20. **Chung E** and Leinwand LA. Pregnancy as a cardiac stress model. Review focus on pregnancy-mediated heart and vascular disease. Spotlight Review. *Cardiovascular Research*, 101 (4): 561-70, 2014. PMID: 24448313 (IF=6.06), NC=123, **Editor's choice**

### 2013

21. Kang C, **Chung E**, Diffie GM, and Ji LL. Exercise training attenuates age-associated mitochondrial dysfunction in rat skeletal muscle: Role of PGC-1 $\alpha$ . *Experimental Gerontology*, 48 (11): 1343-50, 2013. PMID: 23994518 (IF = 3.91)
22. **Chung E**, Yeung F, and Leinwand LA. Calcineurin is required for cardiac remodeling in pregnancy. *Cardiovascular Research*, 100 (3): 402-10, 2013. PMID:23985902 (IF=6.06), NC=41, **Editor's choice**

### 2012

23. **Chung E**<sup>Ⓢ</sup>, Heilmiler J<sup>Ⓢ</sup>, and Leinwand LA. Distinct cardiac transcriptional profiles during pregnancy and Exercise. <sup>Ⓢ</sup>co-first author, *PLoS ONE*, 7 (7): e42297, 2012. PMID: 22860109 (IF=4.41), NC=29.
24. **Chung E** and Diffie GM. Moderate intensity, but not high intensity, treadmill exercise training alters power output properties in myocardium from aged hearts. *J Gerontology A Biol Sci Med Sci*, 67 (11): 1178-87, 2012. PMID: 22843668 (IF=4.60), NC=20.
25. Kim K, **Chung E**, and Lee S. Swimming exercise during pregnancy alleviates pregnancy-associated long-term memory impairment. *Physiology and Behavior*. 107(1):82-6, 2012. PMID: 22705471 (IF=3.16), NC=29.
26. Yeung F, **Chung E**, Guess M, Bell ML, and Leinwand LA. MYH7b/miR-499 gene expression is transcriptionally regulated by MRFs and EOS. *Nucleic Acids Research*, 40 (15): 7303-18, 2012. PMID: 22638570 (IF= 8.03), NC=33
27. **Chung E**, Yeung F, and Leinwand LA. Akt and MAPK signaling mediate pregnancy-induced Cardiac adaptation. *Journal of Applied Physiology*, 112 (9): 1564-1575, 2012 PMID:22345431 (IF=4.24), NC=71.

## 2011

28. **Chung E** and Diffie GM. Effect of aging on power output properties in rat skinned cardiac myocytes. *J Gerontology A Biol Sci Med Sci*, 66 (12): 1267-73, 2011. PMID: 21896503. (IF=4.60), NC=17.
29. Lemon DD, Cavasin MA, Horn TR, Jeong MY, Haubold KW, Long CS, McCune SA, **Chung E**, Leinwand LA, and McKinsey TA. Cardiac HDAC6 catalytic activity is induced in response to chronic hypertension. *J. Moll. Cell. Cardiol.* 51: 41-50, 2011. PMID: 21539845. (IF=5.50), NC=98.
30. **Chung E** and Leinwand LA. Genetic determinants of exercise performance: Evidence from transgenic and null mouse models. In: Genetic and Molecular Aspects of Sport Performance, 1<sup>st</sup> edition, The Encyclopedia of Sports Medicine. Bouchard, C and Hoffman, EP (Eds.), Ch. 16:185-194, 2011. International Olympic Committee: Blackwell Publishing Ltd.

## 2008

31. **Chung E** and Leinwand LA. Rescuing cardiac malfunction: the roles of the chaperon-like small heat shock proteins. *Circulation Research*, 103:1351-3, 2008. PMID: 19059837 (IF=9.50), NC=4.

## 2003

32. Ji LL, Lay D, **Chung E**, Fu Y, and Peterson DM. Effects of Avenanthramides on oxidant generation and antioxidant enzyme activity in exercise rats. *Nutrition research*, 23 (11): 1579-1590, 2003. (IF=2.72), NC=97
33. Diffie GM and **Chung E**. Altered single cell force-velocity and power properties in exercise trained rat myocardium. *Journal of Applied Physiology*, 94(5): 1941-1948, 2003. PMID: 12524379. (IF=4.24), NC=53

### Submitted and/or Under Revision

1. **Chung E\***, Gonzalez K<sup>†</sup>, Bollinger AV<sup>‡</sup>, and Ullevig SL. A high-fat and a high-sucrose diet in female mice: a dietary model for pre-pregnancy obesity and prediabetes. *Applied Physiology Nutrition and Metabolism*.
2. Umeda M, Ullevig SL, **Chung E**, Escobedo T, and Zeitz C. Depression mediates the effect of food insecurity on pain interference in college students. *Psychology, Health, and Medicine*
3. **Chung E**, Elmassry MM, Kaur G, Dufour JM, Hamood AN, and Shen C-L. Dietary geranylgeraniol changes gut microbiota and contributes to glucose homeostasis and bone health in high-fat diet induced insulin-resistant male mice. *Calcification Tissue International*. Submitted on June 5, 2020.

## Scholarly Presentations

### Invited talks

1. “Cardiac adaptation in response to exercise and pregnancy” Department of Kinesiology, Health, and Nutrition. The University of Texas at San Antonio, Dec. 4, 2015
2. “Pregnancy makes your heart bigger: Is that good or bad?” Department of Biological Sciences Seminar Series. Texas Tech University, Nov. 5, 2014

3. “Calcineurin activity is required for cardiac remodeling in pregnancy” Gender-Specific Medicine and Women’s Health Symposium. Texas Tech University Health Science Center. Nov. 14, 2013
4. “Molecular mechanisms that mediate pregnancy-induced cardiac hypertrophy” Korean-United States Applied Physiology Society annual meeting, Denver, Colorado, June 3<sup>rd</sup>, 2011
5. “Molecular mechanisms that mediate pregnancy-induced cardiac hypertrophy” University of Colorado, Boulder: The Signal Transduction and Cell Cycle Regulation Super-group, Sep. 20, 2010
6. “Aging and exercise effects on myocardial function” University of Colorado, Boulder: MCD Biology, Dec. 2005

#### Oral presentations (referred)

1. **Chung E** and Leinwand LA. “Quantitative responses of the mouse heart to pregnancy”. *FASEB JOURNAL* 23:969.7, 2009
2. **Chung E** and Diffie GM. “Low intensity exercise training increases power output properties in myocardium from aged rats.” *American College of Sports Medicine*. 39 (5): S97-S98, 2007.

#### Conference Proceeding/Poster presentations (referred): ‡, Undergraduate advisee; †, graduate advisee; \*, corresponding author)

1. Chinas Merlin A<sup>‡</sup>, Lota J<sup>‡</sup>, Gonzalez K<sup>†</sup>, Chicco AJ, & **Chung E**\*. *Maternal and postnatal diet play important roles on cardiometabolic health of offspring*. FASEB, 34 (S1): 1, 2020, (The annual meeting was canceled due to Covid-19)
2. Elmassry MM, **Chung E**, Hamood AN, & Shen C-L. Supplementation of geranylgeraniol and tocotrienols to high-fat diet shifts the gut microbiome composition and function in type 2 diabetic mice. *Current Developments in Nutrition*, 4 (Suppl2): 393, 2020 (The annual meeting was canceled due to Covid-19, but the abstract was published)
3. Elmassry MM, **Chung E**, Hamood AN, & Shen C-L. Addition of geranylgeraniol and green tea polyphenols to high-fat diet impacts the gut microbiome composition and function in type 2 diabetic mice. *Integrative Health conference*, 2020. (The annual meeting was canceled due to Covid-19, but the abstract was published)
4. Shen C-L, Kaur G, Dufour J, Ramalingam L, **Chung E**, Moustaid-Moussa N, & Cao J. Effect of geranylgeraniol and green tea polyphenols on high-fat-diet induced bone deterioration in male B6 mice *Current Developments in Nutrition*, 3(Supplement\_1): nzz031.P06-025-19, 2019.
5. Elmassry MM, **Chung E**, Hamood AN, & Leslie C-L. Anatto-extracted tocotrienol and green tea polyphenols reshape the gut microbiome of obese male mice. *Obesity week*, Nov. 6, Las Vegas, NV. 2019
6. Shen C-L, Tomison MD, Kaur G, Ramalingam L, **Chung E**, Moustaid-Moussa N, & Dufour J. Synergistic effect of dietary delta-tocotrienol and geranylgeraniol on bone properties in obese C57Bl/6J mice with obesity-associated type 2 diabetes mellitus. *International Congress on Integrative medicine & Health*, May 8-11, 2018. Baltimore, MD

7. **Chung E**, Joiner HE, Campise SN, Gonzalez K, Kaur G, Dufour JM, Wright K, Ramalingam L, Tomison MD, Mustaid-Moussa N, & Shen C-L. "Effects of delta-tocotrienols and green tea polyphenols on glucose homeostasis and skeletal muscle in obese male mice with insulin resistance. International conference on Frailty & Sacorpenia Research, March 1-3, 2018, Miami Beach, FL
8. **Chung E**, Grue KA<sup>†</sup>, Kottapalli, KR, Kaur G, Dufour J, & Shen C-L. Effects of exercise before and during pregnancy on microbiomes in high-fat fed pregnant mice, *The FASEB Journal*, 31, 890.6, 2017.
9. **Chung E**, Joiner HE<sup>‡</sup>, Skelton T<sup>†</sup>, Looten K <sup>‡</sup>, Manczak M, & Reddy PH. "Maternal exercise activates genes associated with mitochondrial biogenesis in fetal myocardium of mouse" *Medicine & Science in Sports and Exercise*. 48 (5 Suppl 1); 688, 2016
10. Short M, **Chung E**, McComb J, Kloiber S, Larumbe-Zabala E. Ramalingam L, Fernandez del Valle M. "Baseline irisin concentrations not altered by high-intensity resistance training. *The Physiologist*, 2016
11. Shen C-L, Tomison MD, Kaur G, Ramalingam L, Dufour J, Moustaid-Moussa N, **Chung E**, Cao J. Effect of delta-tocotrienols and green tea polyphenols on high-fat-induced bone deterioration in male C57BL/6J mice, *The FASEB Journal*, 31 (1 Supple), 139.5, 2017
12. Shen C-L, Kaur G, Ramalingam L, Tomison MD, **Chung E**, Moustaid-Moussa N, et al. (total 9). Dietary delta-tocotrienols modifies serum metabolite profiles in diet-induced obese mice, *The FASEB Journal*, 31 (1 Suppl), 972.4, 2017
13. Shen C-L, Kottapalli R, Tomiso MD, Koboiev I, Reinoso Web C, Ramalingam L, Moustaid-Moussa N, Kaur G, Dufour JM, **Chung E**, and Grisham M. Dietary delta-tocotrienols favors abundance and diversity of beneficial microbiomes in obese male mice. *The FASEB Journal*, 31(1 Supple), 646.35, 2017
14. Dufour JM, Greer RH, Kaur G, Wright K, Tomison MD, Ramalingam L, **Chung E**, Moustaid-Moussa N, Shen CL., Effect of early type 2 diabetes on male fertility. 42nd Annual American Society of Andrology Meeting, Miami, Florida, 4/22-25, 2017
15. Shen C-L, Tomiso MD, Kaur G, Ramalingam L, **Chung E**, Moustaid-Moussa N, Mo H, and Dufour JM. Dietary geranylgeraniol improved glucose homeostasis, bone turnover biomarkers, and bone quality in obesity-associated type 2 diabetes mellitus C57BL/6J mouse model., 10th International Symposium on Nutritional Aspects of Osteoporosis
16. Fernandez del Valle M, Short M, McComb J, **Chung E**, Kloiber S, Larumbe-Zabala E, and Naclerio F. "Does one bout of high-intensity resistance training change circulatory levels of irisin?" *Medicine & Science in Sports and Exercise*. 48 (5 Suppl 1):864, 2016
17. **Chung E**, Joiner HE<sup>‡</sup>, Skelton T<sup>†</sup>, Looten K<sup>‡</sup>, Manczak M, and Reddy PH. "Maternal exercise activates genes associated with mitochondrial biogenesis in fetal myocardium of mouse" *Medicine & Science in Sports and Exercise*. 48 (5 Suppl 1); 688, 2016
18. Grue KA<sup>†</sup>, Joiner HE<sup>‡</sup>, Shen CL, Kaur G, Dufour J, Ramalingam L, Moustaid-Moussa N, and **Chung E**\*. "Effects of high fat diet and exercise intervention before and during pregnancy on the hearts of C57Bl/6 mothers", *FASEB JOURNAL*. 30: 1239.8, 2016
19. Shen CL, Kaur G, Ramalingam L, Tomison MD, **Chung E**, Moustaid-Moussa N, Guo C, Reinoso-Web C, Mo H, and Dufour JD. "Dietary tocotrienols improve glucose homeostasis



and bone turnover biomarkers in high-fat-diet-induced obese male mice. *FASEB JOURNAL*. 30: 692.2, 2016

20. Ramalingam L, Allen L, Scoggin S, Shen CL, Tomison MD, Kaur G, Dufour JD, **Chung E**, and Moustaid-Moussa N. "Delta-Tocotrienols regulate lipid metabolism in livers of high fat fed mice." *FASEB JOURNAL*. 30:126.6, 2016.
21. Allen L, Ramalingam L, Shen CL, Tomison, MD, Kaur G, Dufour JD, **Chung E**, and Moustaid-Moussa N. "Delta-Tocotrienol dose-dependently improves adiposity and inflammation and increased markers of lipid oxidation in high fat fed mice." *FASEB JOURNAL*. 30:1169.1, 2016.
22. Mallory B, Kaur G.; **Chung E**, Grue KA<sup>†</sup>, Joiner HE<sup>‡</sup>, Dufour J. Examining the beneficial effects of exercise on islet cell function and insulin resistance in pregnant mice as well as fetus. Poster presented Student Research Week 2016 "Molecular basis of Life and Disease", Texas Tech University Health Science Center. March 8-11, 2016.
23. Grue KA.<sup>†</sup>, Joiner HE<sup>‡</sup>, and **Chung E\***. "Effects of high fat diet and exercise on the metabolism of maternal hearts during pregnancy", *International Journal of Exercise Science: Conference Proceedings*: 12 (8): 60, 2016
24. Jacobo AU<sup>‡</sup>, Grue KA<sup>†</sup>, Joiner HE<sup>‡</sup>, and **Chung E\***. "Exercise before and during pregnancy does not alter myosin heavy chain isoforms in pregnant mice," *International Journal of Exercise Science: Conference Proceedings*. 2 (8): 58, 2016.
25. Joiner HE<sup>‡</sup>, Skelton T<sup>†</sup>, Looten KD<sup>‡</sup>, and **Chung, E\***. "Maternal exercise activates genes associated with mitochondrial biogenesis in fetal myocardium of mouse", *International Journal of Exercise Science: Conference Proceedings*. 2 (8): 57, 2016.
26. **Chung E\***, Looten KD<sup>‡</sup>, Lunsford T<sup>‡</sup>, and Skelton T<sup>†</sup>. "Cardiac adaption to exercise during pregnancy." *Medicine & Science in Sports and Exercise*. 47(5S):154, 2015.
27. Lee Y<sup>†</sup>, Park Y, Leinwand LA, and **Chung E\***. "The Akt/FoxO3a/Atrogin-1 signaling pathways underlying cardiac regression after detraining in a mouse heart." *Medicine & Science in Sports and Exercise*. 46 (5S):337, May 2014
28. Looten KD<sup>‡</sup>, Lunsford T<sup>‡</sup>, and **Chung E\***. "Cardiac adaptation to exercise during pregnancy". National Council on Undergraduate Research (NCUR), Cheney, WA. (4/15-4/18/15)
29. Lunsford T<sup>‡</sup>, and **Chung E\***. "The regression of pregnancy-induced cardiac hypertrophy in C57BL/6 mice". Texas Tech University Undergraduate Research Conference, 2014
30. **Chung E**, Luckey SW, and Leinwand LA. "Signaling pathways differ in pregnancy and exercise-induced cardiac hypertrophy." *FASEB JOURNAL*. 25 (1): 1059.11, April 2011.
31. **Chung E**, Heimiller J, and Leinwand LA. "Pregnancy and exercise-induced cardiac hypertrophy are distinct." *Medicine & Science in Sports and Exercise*. 42(10):5, October 2010
32. **Chung E**, Heimiller J, and Leinwand LA. "Pregnancy and exercise-induced cardiac hypertrophy are distinct." 4<sup>th</sup> annual meeting of the Organization for the Study of Sex Differences, June 2010.

33. Kang C, **Chung E**, Diffie DM, and Ji LL. “Exercise training attenuates aging-associated reduction in mitochondrial biogenesis in rat skeletal muscle”. *Medicine & Science in Sports and Exercise* 41(5):S59. May 2009
34. **Chung E** and Leinwand LA. “Quantitative responses of the mouse heart to pregnancy”. *FASEB JOURNAL* 23:969.7, April 2009
35. Kang C, **Chung E**, Diffie GM, and Ji LL. “Exercise training stimulates PGC-1 and mitochondrial biogenic pathway in skeletal muscle of aged rats”. *Medicine & Science in Sports and Exercise*. 40 (5): S193, May 2009
36. **Chung E** and Diffie GM. “Low intensity exercise training increases power output properties in myocardium from aged rats”. *Medicine & Science in Sports and Exercise*. 39 (5): S97-S98, May 2007.
37. **Chung E**, Dorton BJ, and Diffie GM. “Regional myosin heavy chain isoform expression in response to exercise training in old rat myocardium” *FASEB JOURNAL* 20(5): A1447, 2006.
38. **Chung E** and Diffie GM. “Exercise training increases cardiac alpha-myosin heavy chain isoform in old rat myocardium” *FASEB JOURNAL* 19 (5): A1570-A1571, March 2005.
39. **Chung E** and Diffie GM. “Force-velocity and power properties in adult and senescent rat myocardium” *The Physiologist* 47(4):287, 2004.
40. **Chung E** and Diffie GM. “Altered single cell force-velocity and power properties in exercise trained rat myocardium” *FASEB JOURNAL* 17 (5): A1269, March 2003.
41. Ji LL, Lay D, **Chung E**, Fu Y, Brickson S, Parkin K, Hahn M, Peterson DM. “Effects of Avenanthramide supplementation on oxidant and antioxidant status in rats” *FASEB JOURNAL* 16 (5): A981, April 2002.

## Granting Activities

### Ongoing Research Support

**Support of Competitive Research Advancement Award (SC1)** Chung (PI) 7/7/2020-04/30/2024

Sex differences in cardiometabolic health of offspring born from obese mothers with and without exercise. The goal of this study is to determine the potential cardiovascular benefits of maternal exercise for the offspring born from obese mothers.

Total award amount: \$1,418,950.00

**Internal Research Awards (INTRA)** Chung (PI) 9/1/2020-8/31/2021

Exercise and Bioactive Compound to alleviate skeletal muscle atrophy in type 2 diabetic mice, Vice President of Research, University of Texas at San Antonio. The goals of this study are to investigate the signaling molecules important in protein degradation in type 2 diabetic-associated with skeletal muscle disorders and how diet, exercise, and functional food will modulate skeletal muscle remodeling.

Total award amount: \$5,000 (no indirect cost support)

### Completed Research Support

**The Grants for Research Advancement and Transformation (GREAT)**

Chung (PI) 9/1/2018- 8/31/2019

The role of maternal exercise on microbiota and inflammation in pregnant dams and their offspring. Vice President of Research, University of Texas at San Antonio.

The goal of this project is to understand the mechanisms underlying the potential beneficial effects of maternal exercise on the life-long cardiometabolic consequences of offspring.

Total award amount: \$20,000 (no indirect cost support)

**Research Career Enhancement Award,** Chung (PI) 10/1/2017-7/30/2018

The effect of diet and exercise on muscle mitochondrial function, The American Physiological Society.

The goal of this support is to develop the technical considerations and skills necessary to measure muscle mitochondrial function under various physiological conditions.

Total award amount: \$10,998 (no indirect cost support)

**Internal Research Awards (INTRA)** Chung (PI) 9/1/2017-8/31/2018

The role of western obesogenic diet on pregnancy outcomes and fetal development, Vice President of Research, University of Texas at San Antonio

The goal of this study is to establish a mouse model of pre-pregnancy and gestational obesity and determine its links to the development of cardiometabolic diseases in offspring.

Total award amount: \$5,000 (No salary and no indirect cost support)

**COEHD Faculty Research Award** Chung (PI) 11/1/2017-7/31/2018

The effects of Western diet on pregnancy outcomes and implications on offspring health, College of Education and Human Development, the University of Texas at San Antonio.

The goal of this study is to test the hypothesis that western diet will induce gestational diabetes and negatively affect cardiometabolic health of offspring.

Total award amount: \$5,000 (No salary and no indirect cost support)

**American River Nutrition Inc.** Shen (PI) 2/1/2015-8/31/2016

Effects of Bioactive Compounds (tocotrienols and geranylgeraniol) on Type 2 diabetic rats.

The goal of this study was to evaluate the potential benefits of tocotrienols and geranylgeraniol on glucose metabolism, musculoskeletal health, energy homeostasis, and gut microbiota composition in type 2 diabetic mice.

Role: Co-PI (investigate the skeletal muscle properties)

Total Award amount: \$99,830 (No salary and no indirect cost support).

**Not funded;****Support of Competitive Research Advancement Award (SC1)** Chung (PI) 9/1/2019-08/31/2023

Maternal Exercise alleviates cardiac dysfunction in offspring born from obese mothers

The goal of this study is to determine the potential cardiovascular benefits of maternal exercise for the offspring born from obese mothers.

Total award amount: \$1,396,210.

**NICHD Exploratory/Developmental Research Grant (R21)** Chung (PI) 7/1/2019-06/30/2021

Gut bacteriome and myobiome and their interactions in metabolic diseases in offspring born from obese mothers.

The goal of this study is to determine the lifelong effects and mechanisms of an underlying abnormal

maternal metabolic environment on the cardiometabolic disease in offspring.

Total award amount: \$411,642.

**Voelcker Fund Young Investigator Awards** Chung (PI) 9/1/2019-8/30/2022

Effects of maternal exercise on cardiac mitochondrial function in the offspring.

The goal of this study is to test the hypothesis that mitochondrial dysfunction predisposes devastating cardiac complications, such as cardiac remodeling and contractile dysfunction in offspring born obese mothers, and maternal exercise before and during pregnancy will attenuate the cardiac dysfunction of offspring by modulating mitochondrial quality control.

Total award amount: \$ 45,000. (Pre-proposal was submitted on Dec. 7, 2018, and waiting for the invitation for full proposal)

**American Heart Association Collaborative Sciences Award** Chung (PI) 7/1/2019-06/30/2022

Gut bacteriome during pregnancy in obese mice as a risk factor for the metabolic disease of male and female offspring.

The goal of this study is to test the overarching hypothesis that gut microbiome compositions are key regulators of metabolic disorders in offspring born from obese mothers.

Total award amount: \$825,000.

**NIA R 21 (PAR-15-190)** Shen (PI) 4/1/2018-3/31/2019

A pilot clinical study: tocotrienols supplementation for postmenopausal women with sarcopenia.

Role: Co-I Total award: \$84,604.00 to UTSA

**NIH, R21** Shen (PI) 9/1/2017-8/31-2019

Delta-tocotrienols for skeletal muscle health of postmenopausal women.

Total cost for 2 years: \$84,604.00 to UTSA; Role: Co-I

**March of Dimes** Chung (PI) 6/1/2016-5/31/2019 The

effect of exercise before and during pregnancy on pregnancy outcomes and fetal metabolic programming.

The goal of this project is to understand the mechanisms by which exercise before and during pregnancy attenuate maternal obesity-related negative health outcomes of pregnant dams and their offspring.

Total Award Amount: \$300,000

**USDA** Shen (PI) 1/1/2016-12/31/2018

Function and Efficacy of Nutrients-Program Area Priority Code-A1341

Impact of vitamin E tocotrienol on maternal obesity and offspring in gut microbiota and inflammation

Role: Co-PI

Total Award amount: \$499,996

**Beginning Grant-in-Aid # 15BGIA21670003** Chung (PI) 1/1/2015-12/31/2016

American Heart Association SouthWest Affiliate

Cardiac adaption to exercise during pregnancy

Total Award Amount: \$140,000

## Teaching Activities

### University of Texas, San Antonio (Excluding theses and dissertations)

- 2016- Instructor, KIN 3433 Exercise Physiology (Undergraduate)
- Instructor, KIN 3453 Fitness Program & Exercise Prescription (Undergraduate)
- Supervisor, KIN4936 Internship (Undergraduate)

### Teaching Experience at other institutes

#### Texas Tech University (Excluding theses and dissertations): Face-to-face teaching

- 2013- 2016 KIN 3305 Exercise Physiology (Undergraduate)
- KIN 5339 Laboratory Techniques in Exercise Physiology (Graduate)
- KIN 5336 Skeletal Muscle Physiology (Graduate)
- KIN 4000 Independent studies in Kinesiology (Undergraduate)
- KIN 7000 Mentored research for graduate students (Graduate)

#### University of Wisconsin, Madison

- 2000- 2003 Project Assistant, Senior Women's Aerobics and Weight Training
- 2000- 2002 Instructor, Physical Education: Rhythmic/Step Aerobics
- 2000- 2002 Teaching Assistant, Physical Education: Adaptive Fitness and Personal Training

### Mentoring and Supervising Master's thesis Students

#### Master Thesis Chair at UTSA

1. Kassandra Gonzalez (Fall 2018-Summer 2020) "The maternal and postweaning diet on cardiometabolic function of dams and offspring"
2. Justin Cruger (Fall 2016-Summer 2017) "Myosin heavy chain isoform remodeling in the post-infarct myocardium" Role: Co-Chaired with Dr. John Q. Zhang

#### Master Thesis Chair at Texas Tech University

3. Wanseok Lee (Fall 2012-Summer 2013) "The Akt/FoxO/Atrogin-1 signaling pathways underlying cardiac regression after detraining in male mice".

#### Master Thesis committee member at UTSA

4. Shirley Adeniji (Fall 2017-Summer 2018) "Sex differences among physical activity, dietary intake, weight-related health risks, and food security in racially-diverse college students" Role: Committee member

#### Master Thesis Committee member at Texas Tech University

5. Oduware Usen (Fall 2014-Spring 2016), "Role of physical activity as a moderator for chronic pain conditions in non-Hispanic Whites and non-Hispanic Blacks"

#### Graduate Students Project Advisor at Texas Tech University

6. Katherine A. Grue Kathrine Glue (Fall 2014-Spring 2016) "Pathological cardiac hypertrophy and cardiac oxidative stress associated with high-fat diet consumption is attenuated by exercise during pregnancy"

- Second Place in Basic Research Award, Gender-Specific Medicine & Women’s Health Symposium. Laura Bush Institute for Women’s Health, Texas Tech Health Science Center, 2015 annual meeting.
  - Awarded a Grant-in-aid. Texas Tech University Office of Parent and Family Relations, the Graduate Student Advisory Council and the Graduate School (\$500)
7. Tracer Skelton (Spring 2014-Fall 2015) “Signaling pathways underlying cardiac regression after exercise cessation in female mice”.

### **Undergraduate Work Directed at UTSA (bulleted student’s achievement under advisement)**

1. Yessenia Perez (Summer 2020-), Undergraduate Research Assistant
  - Awarded the Summer 2020 Provost’s Undergraduate Research Fellowship (\$3,000) from the Office of Undergraduate Research (OUR), University of Texas at San Antonio, Summer 2020 (6/8/2020-07/31/2020)
  - 1<sup>st</sup> place, 3M Ready, Set, Research Competition, Virtual Research Event at UTSA, 8/19/2020.
2. Sarah Mockler (Summer 2019-), Undergraduate Research Assistant, “Permealized skeletal muscle fibers and mitochondrial function”
3. Kayla Lackey (Spring 2020-Summer 2020), Undergraduate Internship-Due to COVID-19, research project (mitochondrial enzyme activity in response to maternal obesity) were switched to remote research data analyses.
4. Jake Lota (Spring 2019-Fall 2019), Undergraduate Research Assistant, “Determine oxidative stress and the mitochondrial function as the underlying mechanisms of maternal obesity and exercise on altered cardiometabolic health of offspring”
  - Awarded a scholarship (\$2000) from the Office of Undergraduate Research (OUR), University of Texas at San Antonio, Summer 2018
3. Miguel Faller (Fall 2019), Undergraduate Internship “Effects of Diet & Maternal Exercise in Adiposity of Offspring in Mice.
4. Thy Vu (Summer 2019), Volunteer, “Sex differences in cardiometabolic health of offspring born from obese mothers with and without exercise”
5. Christina Perez (Spring 2019 –Summer 2020), Undergraduate Internship and volunteer, “Insulin tolerance test in offspring born from obese dams.”
6. Jake Sansom (Fall 2018), Undergraduate Internship, “Gut microbiota, exercise, type 2 diabetes, cardiovascular disease, and their relationship.
7. Andrea Chinas Merlin (Summer 2018, 7 from Monterrey Institute of Technology, Mexico “Cardiometabolic health of offspring born from obese mothers”
  - Presented the poster in UTSA Undergraduate Research & Creative Inquiry Showcase, July 28, 2018
  - Scheduled to present the poster titled “Maternal and postnatal diet play important roles on cardiometabolic health of offspring” in 2020 Experimental Biology meeting (the meeting was canceled due to COVID-19, but the abstract was published in
8. Erin Roye (Spring 2018-Spring 2019), Volunteer and Undergraduate Internship. “The effects of a high-fat diet on metabolic syndrome on mice”.
  - Awarded a Best in College at the annual Undergraduate Research and Creative Inquiry Showcase, April 2019
9. Jacqueline Gonzalez (Spring 2018-Fall 2018), Volunteer, “The role of maternal exercise on microbiota effects of a high-fat diet on metabolic syndrome on mice”.

- Awarded a scholarship (\$1,000) from the Office of Undergraduate Research (OUR), University of Texas at San Antonio, Fall 2018
10. Antonio Bollinger (Fall 2017-Spring 2019), Volunteer, "The effects of high-fat and high-sucrose diet on Skeletal muscle properties"
    - Presented the poster in UTSA Undergraduate Research & Creative Inquiry Showcase, April 2019.
  11. Analiza Morales (Summer 2017-Fall 2018) Volunteer and Honor's contract. "Glucose and insulin tolerance tests in mouse obese model."
  12. Kassandra Gonzalez (Spring 2017-Spring 2018), Undergraduate Research Assistant, "The role of Western diet on pregnancy outcomes and fetal development"
    - Awarded a scholarship (\$1,000) from the Office of Undergraduate Research (OUR), University of Texas at San Antonio, Spring 2018
  13. Sal Campise (Spring 2017-Fall 2017), Volunteer, "Skeletal muscle fiber type composition in type 2 diabetic mice"
    - Awarded a scholarship (\$1,000) from the Office of Undergraduate Research (OUR), University of Texas at San Antonio, Fall 2017

**Undergraduate Work Directed at Texas Tech University (bulleted student's achievement under advisement)**

13. A. Unique Jacobo (Fall 2015-Summer 2016), Undergraduate Honors Research Assistant through URF (Undergraduate Research Fellowship), "Myosin heavy chain isoform profiles of cardiac and skeletal muscle in response to high-fat diet and exercise"
  - Awarded Travel fund (\$435) to present the poster at Texas Chapter American College of Sports Medicine 2016 annual meeting at College Station, TX. March 2-4, 2016
14. Hayli Joiner (Fall 2015-Summer 2016), Undergraduate Research Assistant, "Fetal gene expression in response to maternal exercise during pregnancy"
  - Awarded project fund (\$1,580) from the Center for Active Learning and Undergraduate Engagement (CALUE) to support laboratory supply for her research.
  - Received Travel fund (\$500) to present the poster at Texas Chapter American College of Sports Medicine 2016 annual meeting at College Station, TX. March 2-4, 2016
  - Received the members' choice award from Texas Chapter American College of Sports Medicine 2016 annual meeting
15. Casey Perez (Fall 2014-Spring 2015), Project Assistant, "Skeletal muscle adaptation in response to Type II diabetic rats"
16. Kalli Looten (Fall 2013-Spring 2015), Volunteer, "Cardiac adaptation to exercise during pregnancy"
  - Awarded project fund from CALUE (\$2,000) to support laboratory supply for her research.
  - Presented her poster at the National Council on Undergraduate Research (NCUR) in Cheney, WA. (4/15-4/18/15); Kalli received Travel Award (\$700) to assist with registration fees, airfare, and hotel costs from the CALUE

17. Taylor Lunsford (Fall 2013-Fall 2014), Undergraduate Honors Thesis student and the recipient of the Undergraduate Research Fellowship
  - Honor's thesis, "Cardiac hypertrophy and regression during postpartum".
18. Kendall Kennedy (Fall 2013-Spring 2014), Independent Study, "Cardiac muscle myosin heavy chain isoform profiles in response to multiple pregnancies."

#### **Undergraduate Work directed at University of Colorado, Boulder**

19. Tae Chang (Spring 2010-Fall 2010), Undergraduate Research assistant through BURST (Bioscience Undergraduate Skills and Training) program. "The role of calcineurin in pregnancy-induced cardiac hypertrophy"
20. Amy C. Doubet (Fall 2019), Undergraduate Independent Study, "The role of GSK3 $\beta$  in pregnancy-induced cardiac hypertrophy".

#### **Undergraduate Work directed at University of Wisconsin, Madison**

21. Carla J. Carlson (Fall 2006), Undergraduate practicum student, "Mechanical properties of skinned cardiac myocytes".
22. Matthew Mestelle, and Melissa A. Taavola (Fall 2005), Undergraduate practicum students, "Treadmill exercise training on aged rats- titrating exercise intensity and duration".
23. Eric H. Sullivan (Fall 2005), Senior Honors Research Thesis Student, "Hypertension and exercise: effects on cardiac contractile proteins".
24. Benjamin J. Dorton (Fall 2004- Fall 2005), Undergraduate Independent Study student, "Effect of aging on myosin light chain 1 expression".

#### **High school Summer Research at Texas Tech University**

25. Juhyun J. Hahm, and Juyoung L. Hahm. (summer 2015), Lubbock High School volunteers, Students learn about scientific thought and methods including collecting and analyzing data.

### **Service activities**

#### **UTSA, San Antonio, TX.**

1. Scholarship Committee Chair, College of Education and Human Development, the University of Texas at San Antonio, 2016-2019
2. Conference-related: served as a faculty reviewer for Undergraduate Student Research Showcase at the University of Texas at San Antonio, TX. April 20, 2017; April 19, 2018; April 22, 2019
3. Student Response System Standardization Exploratory Committee, the University of Texas at San Antonio, 2017

#### **College for Health, Community, and Policy, UTSA, San Antonio, TX.**

1. Spring 2020- present                      Member, HCaP Research Committee

#### **Department of Kinesiology, Health, and Nutrition, UTSA, San Antonio, TX.**

1. UTSA Day, October 20, 2018; met potential UTSA freshmen and explained overall degree plan.
2. Exercise Physiology Tenure Track Professor Search Committee, Department of Kinesiology, Health, and Nutrition, the University of Texas at San Antonio, 2017.



3. Exercise Science Undergraduate Curriculum Task Force committee chair, Department of Kinesiology, Health, and Nutrition, the University of Texas at San Antonio, 2016-
4. Achievement Recognition Committee, Department of Kinesiology, Health, and Nutrition, the University of Texas at San Antonio, 2016-
5. Southern Association of Colleges Committee, Department of Kinesiology, Health, and Nutrition, the University of Texas at San Antonio, 2016-

### Professional Service Activities

1. Grant reviewer
  - a. a peer review on the Cardiac Biology Basic Science 3 committee for the 2018-2019 Fellowship Program Awards review session, American Heart Association, Sep. 28, 2018; Oct. 8, 2019
  - b. A peer reviewer. Served as a review panel for American Heart Association Lipids Basic Science 2 (BSC2) Oct. 24, 2013
2. Ad Hoc Reviewer
  - a. Open Access Journals, 6/15/2017
  - b. SOJ Gynecology, Obstetrics and Women's health, 7/7/2017
  - c. Journal of Gerontology: Biological Sciences, 02/5/2016, "
  - d. Experimental Biology and Medicine, 8/26/2016,
  - e. Journal of Experimental Biology and Medicine, 2016-present
  - f. Journal of Gerontology: Biological Sciences, 2015-present
  - g. Journal of Exercise Nutrition and Biochemistry, 2016-present
  - h. Journal of Thermal Biology, 2020- present
3. Board Member, Korea United States Applied Physiological Society, 2003-present
4. Annual meeting modulator:
  - a. A Moderator for Basic Science session. The 14<sup>th</sup> Korean-United States Applied Physiology Society Annual Meeting. May 31<sup>st</sup>, 2014
  - b. An abstract Reviewer. Served as a reviewer for research award in Basic science in Korean-United States Applied Physiology Annual Meeting, 2014-present
  - c. A Moderator for Basic Science session. The 9<sup>th</sup> Korean-United States Applied Physiology Society Annual Meeting. May 29<sup>th</sup>, 2014

## Faculty Development Activities Attended

### Research Enhancement

1. September 2, 2020. [Cravings and Weightlifting Squats: Technologies that explore new metabolic and behavioral Research](#), Obesity Webinar Series, 2020.
2. August 19, 2020. Research Budget Issues, Interactive Mentoring to Enhance Research Skills, Distance Learning Series via ZOOM, NIH grantsmanship session sponsored by the University of Kentucky NIGMS Grant-Writing Team.
3. June 10, 2020. Brain Circuits Driving Appetite, Obesity Webinar Series 2020
4. March 11-13, 2019. Interactive Mentoring to enhance research skills, NIGMS, Lexington, Kentucky

5. November 9-10, 2018. Biostatistics and Meta-Analysis, Korea United State Applied Physiological Society, Texas A&M University, San Antonio, TX
6. October 3-8, 2017. Oroboros O2k-Workshop on high-resolution O2k-FluoRespirometry, MiPNet22.07 IOC124 Schoroecken, Austria
7. September 27, 2016. Grantsmanship Lunch & Learn: Funding for Early Career Faculty, University of Texas at San Antonio, TX.
8. August 10-13, 2015. Summer school, 9th Mitochondrial Physiology School, Greenville, North Carolina
9. October 17, 2014. Grant Workshops, The Office of Research Services, Texas Tech University, Lubbock, TX. ()
10. May 14, 2014. Faculty Fellowship, "Obesity Research Cluster meeting," Human Science and VPR, Texas Tech University, Lubbock, TX.
11. April 2, 2014. Tutorial, "USDA Emergency Preparedness training," Animal Care and User Committee, Texas Tech University, Lubbock, TX.
12. October 3, 2013 - May 2, 2014. Faculty proposal development program, Office of the Vice President for Research, Texas Tech University, Lubbock, TX.
13. March 25, 2014. Young Investigator Forum, Office of the Vice President for Research, Texas Tech University, Lubbock, TX.
14. January 7, 2014. DigitalMeasures BibTex/PubMed Intro, Texas Tech University, Lubbock, TX.

### **Teaching Enhancement.**

1. July 30, 2020. Panopto Beginner Training for UTS, Zoom training,
2. June 2-June 16, 2020. Applying the Quality Matters Rubric (APPQMR) workshop, University of Texas at San Antonio, TX.
3. May 28, 2020, "Are we there yet?" QM success stories, 1hour Zoom Webinar, Patti Brown From Stark State College.
4. May 15-17, 2017, Provost Academy, University of Texas at San Antonio, Sa, TX
5. March 20, 2017. "It's a textbook case: getting students engaged with learning materials", University of Texas at San Antonio, TX.
6. February 24, 2017. "Making Slides that have Power and Point!", University of Texas at San Antonio, TX.
7. September 19, 2016. "Creating and Managing Testing using Respondus", University of Texas at San Antonio, TX.
8. September 13, 2016. Managing Attendance in Blackboard Learn, University of Texas at San Antonio, TX.
9. August 22, 2014; December 11, 2014; August 21, 2015, "Teaching Workshop," The Department of Kinesiology and Sport Management, Lubbock, TX.
10. October 30, 2014, "Turning Technologies Lunch-n-Learn," Teaching, Learning, and Professional Development Center (TLPDC), Lubbock, TX.
11. October 30, 2014, "Turning Technologies Lunch-n-Learn," TLPDC, Lubbock, TX.