

ZHIGUANG (CALEB) HUO

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EDUCATION

University of Pittsburgh,

Pittsburgh, PA, US

- Ph.D. in [Biostatistics](#), *April 2017*
 - Dissertation: *Statistical integrative omics methods for disease subtype discovery*
 - GPA: *3.93/4.00*
 - Advisors: [George C. Tseng](#), ScD and [Yong Seok Park](#), PhD
- M.S. in [Physics](#), *Apr 2012*
 - GPA: *3.86/4.00*

Harbin Institute of Technology,

Harbin, Heilongjiang, China

- B.S. in [Physics](#), *June 2011*
 - GPA: *90.43/100*

RESEARCH INTEREST

My research interest lies in the intersection between statistical methodology and its applications to genomics and bioinformatics. I am currently interested in developing statistical methodology for circadian analysis. I have collaborated with biologists analyzing a broad range of genomic data. These experiences motivate me to develop methodology and software that are practical, user-friendly and easy to use.

PROFESSIONAL EXPERIENCE

- Assistant Professor *July 2017 ~ Now*
 - Department of Biostatistics, University of Florida

PUBLICATIONS ON STATISTICAL METHODOLOGY

[†]: co-first author; *: corresponding author; __: student paper.

Submitted

1. Haocheng Ding, Lingsong Meng, Chengguo Xing, Karyn Esser, **Zhiguang Huo*** Statistical Methods for Detecting Circadian Rhythmicity and Differential Circadian Patterns with Repeated Measurement in Transcriptomic Applications. (Submitted to Bioinformatics)
2. Lingsong Meng, **Zhiguang Huo***. Outcome-guided Bayesian Clustering for Disease Subtype Discovery Using High-dimensional Transcriptomic Data. (Submitted to the Journal of Applied Statistics)

2023

3. Wei Zong, Marianne L. Seney, Kyle D. Ketchesin, Michael T. Gorczyca, Andrew C. Liu, Karyn A. Esser, George C. Tseng*, Colleen A. McClung*, **Zhiguang Huo***. Experimental Design and Power Calculation in Omics Circadian Rhythmicity Detection. *Statistics in Medicine* (Accepted).

⁰Last modified: August 7, 2024

4. Xiangning Xue, Wei Zong, **Zhiguang Huo**, Kyle D. Ketchesin, Madeline R. Scott, Kaitlyn A. Petersen, Ryan W. Logan, Marianne L. Seney, Colleen McClung, and George Tseng. DiffCircaPipeline: A framework for multifaceted characterization of differential rhythmicity analysis *Bioinformatics* 39(1):btad039

2022

5. Lingsong Meng, Dorina Avram, George Tseng, **Zhiguang Huo***. (2022) Outcome-guided Sparse K-means for Disease Subtype Discovery via Integrating Phenotypic Data with High-dimensional Transcriptomic Data. *Journal of the Royal Statistical Society: Series C (Applied Statistics)*, 71(2), 352-375.

2021

6. Haocheng Ding, Lingsong Meng, Andrew C. Liu, Michelle L. Gumz, Andrew J. Bryant, Colleen A. McClung, George Tseng, Karyn A. Esser, **Zhiguang Huo***. (2021) Likelihood-based Tests for Detecting Circadian Rhythmicity and Differential Circadian Patterns in Transcriptomic Applications. *Briefings in Bioinformatics* Nov 5;22(6):bbab224.
7. Chi Song, Shih-Chi Su, **Zhiguang Huo**, Suleyman Vural, James E. Galvin, and Lun-Ching Chang. (2021) HCMMCNVs: Hierarchical Clustering Mixture Model of Copy Number Variants Detection using Whole Exome Sequencing in Cancer Genomes *Bioinformatics*, 37(18), 3026-3028.

2020

8. **Zhiguang Huo**, Shaowu Tang, Yongseok Park, George Tseng. (2020) P-value evaluation, variability index and biomarker categorization for adaptively weighted Fisher's meta-analysis method in omics applications. *Bioinformatics* 36(2), 524-532.
9. **Zhiguang Huo***, Li Zhu, Tianzhou Ma, Hongcheng Liu, Song Han, Daiqing Liao, Jinying Zhao and George Tseng*. (2020) Two-way Horizontal and Vertical Omics Integration for Disease Subtype Discovery. *Statistics in Bioscience* 12, 1-22.

2019

10. **Zhiguang Huo**, Chi Song*, George C. Tseng*. Bayesian latent hierarchical model for transcriptomic meta-analysis to detect biomarkers with clustered meta-patterns of differential expression signals. *The Annals of Applied Statistics* 13, no. 1 (2019): 340-366. (An earlier version won ASA Biometrics Section JSM Travel Award 2018)
11. Li Zhu, **Zhiguang Huo**, Tianzhou Ma, George Tseng. (2019) Bayesian indicator variable selection to incorporate multi-layer overlapping group structure in multi-omics applications. *The Annals of Applied Statistics* 13(4), 2611-2636. (An earlier version won ENAR distinguished student paper award 2018)

2018

12. Tianzhou Ma[†], **Zhiguang Huo**[†], Anche Kuo[†], Li Zhu, Fang Zhou, Xiangrui Zeng, Chien-Wei Lin, Silvia Liu, Lin Wang, Tanbin Rahman, Lun-Ching Chang, Sunghwan Kim, Jia Li, Yongseok Park, Chi Song, Steffi Oesterreich, Etienne Sibille and George C. Tseng. MetaOmics - Comprehensive Analysis Pipeline and Web-based Software Suite for Transcriptomic Meta-Analysis. *Bioinformatics* 35, no. 9 (2018): 1597-1599.
13. Kelly Cahill[†], **Zhiguang Huo**[†], George Tseng, Ryan W. Logan*, Marianne L. Seney*. Improved identification of concordant and discordant gene expression signatures using an updated rank-rank hypergeometric overlap approach. *Scientific Reports* 8.1 (2018): 9588.
14. Wang, Kai Wen, Xiangrui Zeng, Xiaodan Liang, **Zhiguang Huo**, Eric P. Xing, and Min Xu (2018). Image-derived generative modeling of pseudo-macromolecular structures-towards the statistical assessment of Electron CryoTomography template matching. *The British Machine Vision Conference*

2017

15. **Zhiguang Huo**, George C. Tseng. Integrative Sparse K -means with overlapping group lasso in genomic applications for disease subtype discovery. *The Annals of Applied Statistics*, 11(2) (2017): 1011-1039.
16. SungHwan Kim, Dongwan Kang, **Zhiguang Huo**, Yongseok Park, and George C. Tseng. Meta-analytic principal component analysis in integrative omics application. *Bioinformatics* 34, no. 8 (2017): 1321-1328.

2016

17. **Zhiguang Huo**, Ying Ding, Silvia Liu, Steffi Oesterreich, and George Tseng. Meta-Analytic Framework for Sparse K -Means to Identify Disease Subtypes in Multiple Transcriptomic Studies. *Journal of the American Statistical Association*, 111, no. 513 (2016): 27-42.
18. Zhu, Li, Ying Ding, Cho-Yi Chen, Lin Wang, **Zhiguang Huo**, SungHwan Kim, Christos Sotiriou, Steffi Oesterreich, and George C. Tseng. MetaDCN: meta-analysis framework for differential co-expression network detection with an application in breast cancer. *Bioinformatics* 33, no. 8 (2016): 1121-1129.

2015 and Before

19. Silvia Liu, Wei-Hsiang Tsai, Ying Ding, Rui Chen, Zhou Fang, **Zhiguang Huo**, SungHwan Kim, Tianzhou Ma, Ting-Yu Chang, Nolan Michael Priedigkeit, Adrian V. Lee, Jianhua Luo, Hsei-Wei Wang, I-Fang Chung, George C. Tseng. (2015). Comprehensive evaluation of fusion transcript detection algorithms and a meta-caller to combine top performing methods in paired-end RNA-seq data. *Nucleic Acids Research*, 44(5), e47-e47.
20. SungHwan Kim, **Zhiguang Huo**, YongSeok Park and George Tseng. (2015) MetaOmics: transcriptomic meta-analysis methods for biomarker detection, pathway analysis and other exploratory purposes. Book chapter in Integrating omics data: statistical and computational methods. Edited by George C. Tseng, Debashis Ghosh, Xianghong Jasmine Zhou. *Cambridge University Press*. Page 39-67.
21. Xingbin Wang, Dongwan Kang, Kui Shen, Chi Song, Shuya Lu, Lunching Chang, Serena G. Liao, **Zhiguang Huo**, Naftali Kaminski, Etienne Sibille, Yan Lin, Jia Li and George C. Tseng. (2012) A Suite of R Packages for Quality Control, Differentially Expressed Gene and Enriched Pathway Detection in Microarray Meta-analysis. *Bioinformatics*, 28:2534-2536.

PUBLICATIONS ON BIOMEDICAL APPLICATIONS

Submitted

22. A Novel Regimen for Pancreatic Ductal Adenocarcinoma Targeting MEK, BCL-xL, and EGFR
Song Han, Gerik Tushoski, Peiyi Zhang, Guangrong Zheng, Daohong Zhou, Zhiguang Huo, Jonathan Licht, Thomas George, Carmen Allegra, Jose Trevino, and Steven Hughes (Submitted to Clinical Cancer Research).
23. AB-free kava enhances resilience against the adverse health effects of tobacco smoke in mice.
Author(s): Bian, Tengfei; Lynch, Allison; Ballas, Kayleigh; Mamallapalli, Jessica; Freeman, Breanne; Scala, Alexander; Wang, Yifan; Traboulsi, Hussein; Chellian, Ranjith; Fagan, Amy; Tang, Zhixin; Ding, Haocheng; De, Umasankar; Fredenburg, Kristianna; Huo, Zhiguang; Bagloli, Carolyn; Zhang, Weizhou; Reznikov, Leah R.; Bruijnzeel, Adriaan W.; Xing, Chengguo. (Submitted to ACS Pharmacology & Translational Science).
24. Rukiye Nar; Zhixing Wu; Yafang Li; Alexis Smith; Yutao Zhang; Joe Wang; Fang Yu; Sanhui Gao; Chunjie Yu; Zhiguang Huo; Guangrong Zheng, Zhijian Qian. Targeting METTL3 protein by PROTAC: A Novel Therapeutic Approach for Acute Myeloid Leukemia. (Submitted to Genes & Diseases).

25. Xiping Zhang, Spencer Procopio, Haocheng Ding, Maya Semel, Ping Du, Kevin Wu, **Zhiguang Huo**, Brian Delisle, Karyn Esser. New role of cardiomyocyte Bmal1 in the regulation of sex-specific heart transcriptomes. (Submitted to Circulation Research).
26. Chengguo Xing; John Malaty; Melissa Bou Malham; Frank A Orlando; Allison Lynch; **Zhiguang Huo**; Magda François; Roberto Firpi-Morell; Carla L Fisher; Demetra D Christou; Ramzi G Salloum The potential of AB-free Kava in enabling tobacco cessation via management of abstinence-related stress and insomnia:study protocol for a randomized clinical trial (Submitted to Trials).
27. Ann T. Pham, Aline C. Oliveira, Matthew D. Alves, Chunhua Fu, Yutao Zhang, Jimena Alvarez-Castanon, Elnaz Ebrahimi, Harsh Patel, Reeha Patel, **Zhiguang Huo**, Lei Jin, Andrew J. Bryant Opposing role for myeloid and smooth muscle cell STING in modulation of pulmonary hypertension (Submitted to Circulation Research).
28. Qiong Wu, Chunjie Yu, Fang Yu, Yiran Guo, Yue Sheng, Liping Li, Yafang Li, Yutao Zhang, Yong Huang, Hongyu Ni, **Zhiguang Huo**, Wenshu Wu, Greg Wang, Jianxin Lv, Zhijian Qian. Evf1 governs Kdm6b-mediated histone demethylation to regulate the Lptm4b-driven mTOR pathway in hematopoietic progenitor cells. (Submitted to the Journal of Clinical Investigation).
29. FATMAH Alamoudi, Saun-joo Yoon, Thomas George, Ann Horgas, and Zhiguang Huo. Factors Predicting Survival in Patients with Stage II and Stage III Pancreatic Cancer at the Time of Diagnosis. (Submitted to Research Article)
30. Yenisel Cruz-Almeida, Jessie Somerville, Pedro Valdes, Hernandez, Soamy Montesino Goicolea, **Zhiguang Huo**, Roland Staud, Natalie C. Ebner. Understanding Cognition, Oxytocin, and Pain in Elders (UCOPE): protocol for a pilot and feasibility study in chronic knee osteoarthritis pain. (Submitted to Trials)
31. Jessica A. Peterson, Larissa J. Strath, Lingsong Meng, Asha Rani, Johnson, Alisa, **Zhiguang Huo**, Thomas C. Foster, Roger B. Fillingim, Yenisel Cruz-Almeida. Obesity mediates the relationship between Vitamin D and accelerated epigenetic aging in females with knee pain. (Submitted to the Obesity)
32. Iqbal Mahmud, Guimei Tian, Jia Wang, Tarun E. Hutchison, Brandon J. Kim, Allison Moore, Liming Zhao, Jessica Lewis, Aaron Waddell, Julia M. Steger, McKenzie L. Lydon, Lisa Zhao, Jian-Liang Li, Hamsa Thayele Purayil, **Zhiguang Huo**, Yehia Daaka, Timothy J Garrett, Daiqing Liao. The DAXX-SREBP axis promotes oncogenic lipid synthesis and tumorigenesis in triple-negative breast cancer. (Submitted to the Journal of Clinical Investigation)
33. Alisa Johnson, Taylor Buchanan, Chavier Laffitte, **Zhiguang Huo**, James Cole, Tom Buford, Roger Fillingim, Yenisel Cruz-Almeida Added age-like brain patterns with increasing pain impact in persons with knee osteoarthritis pain: considerations by race. (Submitted to Arthritis & Rheumatology)
34. Larissa Strath, Lingsong Meng, Asha Rani, Zhiguang Huo, Thomas C. Foster, Roger B. Fillingim, Yenisel Cruz-Almeida. Differential DNA Methylation Profiles of Enriched Alzheimer's Disease-Related Genomic Pathways in Individuals with High Impact Chronic Pain. (Submitted to Journal of Alzheimer's Disease)
35. Oshins, Regina; Hou, Zhiguang; Poole, Brittney; Clark, Virginia; Zhou, Huiping; West, Jesse; Wheeler, Matthew; Aghaee, Mahya; He, Mei; Brantly, Mark; Khodayari, Nazli, Profiling plasma extracellular vesicle-derived microRNAs for noninvasive diagnosis of alpha-1 antitrypsin deficiency associated liver disease (Submitted to Journal of Extracellular Vesicles)

2024

36. One-Week Kava Dietary Supplementation Increases Both Urinary N - and O -Glucuronides of NNAL, a Lung Carcinogen Major Metabolite, among Smokers. Qi Hu[†], Zhixin Tang[†], Allison Lynch, Breanne Freeman, Naomi Fujioka, Ramzi G. Salloum, John Malaty, Frank A. Orlando, Taimour Langaee*, **Zhiguang Huo*** and Chengguo Xing* *Chemical Research in Toxicology* (Accepted)
37. Mark R. Viggars, Hannah E. Berko, Stuart J. Hesketh, Christopher A. Wolff, Miguel A. Gutierrez-Monreal, Ryan A. Martin, Isabel G. Jennings, Zhiguang Huo, Karyn A. Esser. Skeletal muscle

- BMAL1 is necessary for transcriptional adaptation of local and peripheral tissues in response to endurance exercise training *Molecular Metabolism* (Accepted)
38. Andrew Xing, Zhixin Tang, **Zhiguang Huo***. Lung Cancer Risk Prediction using Current Human Databases: Strengths, Limitations and Future Directions *LOJ Medical Sciences* (Accepted)
 39. Mingjing Chen, Guanhong Miao, **Zhiguang Huo**, Peng Hao, Xiaoxiao Wen, Stephen Anton, Gang Hu, Ricky Brock, Phillip J Brantley, Jinying Zhao Longitudinal profiling of fasting plasma metabolome in response to weight loss interventions in patients with morbid obesity. *Metabolites* (Accepted)
 40. Brittney Poole, Regina Oshins, Zhiguang Huo, Alek Aranyos, Jesse West, Sergio Duarte, Virginia C. Clark, Mark Brantly, Thiago Beduschi, Ali Zarrinpar, Nazli Khodayari. Sirtuin3 Promotes Degradation of Hepatic Z Alpha-1 Antitrypsin through Lipophagy. *Hepatology Communications* 8, no. 2 (2024): e0370.
 41. Emily Bartley, Lingsong Meng, **Zhiguang Huo**, Ellen Terry Examining reactivity and recovery patterns of pain-evoked cortisol and alpha-amylase trajectories: Relations between psychological markers of risk and resilience. *The Journal of Pain* (Accepted)
 42. Francesca Lopez; Andrew O'Shea; **Zhiguang Huo**; Steven T DeKosky; Theodore P Trouard; Gene Alexander; Adam J Woods; Dawn Bowers. Regional patterns of mitochondrial function using phosphorus magnetic resonance spectroscopy in older adults. *GeroScience* (Accepted)
 43. Gregory J Tranah, Haley N Barnes, Peggy M Cawthon, Paul M Coen, Karyn A Esser, Russell T Hepple, **Zhiguang Huo**, Daniel S Evans, Steven R Cummings. Expression of mitochondrial oxidative stress response genes in muscle is associated with mitochondrial respiration, physical performance, and muscle mass in the Study of Muscle, Mobility and Aging (SOMMA) *Aging Cell* (Accepted)
 44. Paul M. Coen, **Zhiguang Huo**, Gregory J Tranah , Haley N Barnes, Peggy M Cawthon, Russell T Hepple, Daniel S Evans, Olaya Santiago Fernandez, Ana Maria Cuervo, Steven R Cummings, Karyn A Esser. Autophagy gene expression in skeletal muscle of older individuals is associated with physical performance, muscle volume and mitochondrial function in the Study of Muscle, Mobility and Aging (SOMMA) *Aging Cell* (Accepted)
 45. Cole J. Lukasiewicz, Gregory J Tranah, Daniel S Evans, Paul Coen, Haley Barnes, **Zhiguang Huo**, Karyn A Esser, Steven Kritchevsky, Anne B. Newman, Steven R Cummings, Peggy M Cawthon, Russell T. Hepple. Higher Expression of Denervation-responsive Genes is Negatively Associated with Muscle Volume and Performance Traits in the Study of Muscle, Mobility and Aging (SOMMA) *Aging Cell* (Accepted)

2023

46. Christopher A. Wolff[†], Miguel A. Gutierrez-Monreal[†], Lingsong Meng, Xiping Zhang, Lauren G. Douma, Hannah M. Costello, Collin M. Douglas, Elnaz Ebrahimi, Bryan R. Alava, Andrew R. Morris, Mehari M. Endale, G. Ryan Crislip, Kit-yan Cheng, Elizabeth A. Schroder, Brian P. Delisle, Andrew J. Bryant*, Michelle L. Gumz*, **Zhiguang Huo***, Andrew C. Liu*, Karyn A. Esser*. Defining the age-dependent and tissue-specific circadian transcriptome in male mice. *Cell Reports* vol. 42,1 (2023): 111982.
47. Eric Helm, Xianghong Chen, Beatrice Zitti, Timothy Holmes, Christine Tao, Alexander Kwiakowski, Theodore, Drashansky, Joseph Dean, Benjamin Keselowsky, Weizhou Zhang, **Zhiguang Huo**, Inna Smalley, Keiran Smalley, Liang Zhou, Yenan Bryceson, Dorina Avram. The transcription factor Bcl11b restricts memory CD8+ T cell residency program and sustains tissue exit program in infection and cancer *Science Immunology* 8, no. 82 (2023): eabn0484.
48. Iqbal Mahmud, Guimei Tian, Jia Wang, Tarun Hutchison, Brandon Kim, Nikee Awasthee, Seth Hale, Chengcheng Meng, Allison Moore, Liming Zhao, Jessica Lewis, Aaron Waddell, Shangtao Wu, Julia Steger, McKenzie Lydon, Aaron Chait, Lisa Zhao, Haocheng Ding, Jian-Liang Li, Hamsa Thayelee Purayil, **Zhiguang Huo**, Yehia Daaka, Timothy Garrett, and Daiqing Liao. DAXX drives de novo lipogenesis and contributes to tumorigenesis *Nature Communication* 14, no. 1 (2023): 1927.

49. Yufeng Xiao, Seth Hale, Nikee Awasthee, Xuan Zhang, Yi Liu, Haocheng Ding, **Zhiguang Huo**, Dongwen Lyu, Weizhou Zhang, Mei He, Daiqing Liao, Guangrong Zheng. HDAC3 and HDAC8 PROTAC dual degrader reveals roles of histone acetylation in gene regulation *Cell Chemical Biology* 30, no. 11 (2023): 1421-1435.
50. Fatmah A. Alamoudi, Thomas J. George, Ann Horgas, **Zhiguang Huo**, Saunjoo L. Yoon. Application of Allostatic Load Theory in Cancer Management and Treatment Outcomes. *JCO Oncology Practice* 19, no. 11 (2023): 967-972.
51. Breanne Freeman, Jessica Mamallapalli, Tengfei Bian, Kayleigh Ballas, Allison Lynch, Alexander Scala, **Zhiguang Huo**, Kristianna M. Fredenburg, Adriaan W. Bruijnzeel, Carolyn J. Baglole, Junxuan Lu, Ramzi G. Salloum, John Malaty, and Chengguo Xing. Opportunities and Challenges of Kava in Lung Cancer Prevention. *International Journal of Molecular Sciences* 24, no. 11: 9539.
52. Pamela Jackson, Antoinette Spector, Larissa J. Strath, Lisa Antoine, Peng Li, Burel R. Goodin, Bertha Hidalgo, Mirjam-Colette Kempf, Cesar E. Gonzalez, Alana C. Jones, Thomas C. Foster, Jessica A. Peterson, Tammie Quinn, Zhiguang Huo, Roger Fillingim, Yenisel Cruz-Almeida, Edwin N. Aroke. Epigenetic age acceleration mediates the relationship between neighborhood deprivation and pain severity in adults with or at risk for knee osteoarthritis pain. *Social Science & Medicine* 331 (2023): 116088.
53. Pedro A. Valdes-Hernandez, Chavier Laffitte Nodarse, Alisa J. Johnson, Soamy Montesino-Goicolea, Vishnu Bashyam, Christos Davatzikos, Julio A. Peraza, James H. Cole, **Zhiguang Huo**, Roger B. Fillingim, Yenisel Cruz-Almeida. Brain-predicted age difference estimated using DeepBrainNet is significantly associated with pain and function—A multi-institutional and multiscanner study. *Pain* (2022): 10-1097.
54. Helena Palma-Gudiel, Lei Yu, **Zhiguang Huo**, Jingyun Yang, Tongjun Gu, Cheng Gao, Philip L. De Jager, Peng Jin, David A. Bennett, Jinying Zhao. Fine-mapping and replication of EWAS loci harboring putative epigenetic alterations associated with AD neuropathology in a large collection of human brain tissue samples. *Alzheimer's & Dementia* vol. 19,4 (2023): 1216-1226.
55. Soamy Montesino-Goicolea, Olga Nin, Barbara M. Gonzalez, Nathalie J. Sawczuk, Chavier Laffitte Nodarse, Pedro Antonio Valdes-Hernandez, Elijah Jackson, **Zhiguang Huo**, Jessie Elise T. Somerville, Eric C. Porges, Cameron Smith, Roger B. Fillingim, Yenisel Cruz-Almeida. Protocol for a pilot and feasibility randomized-controlled trial of four weeks of oral γ -aminobutyric acid (GABA) intake and its effect on pain and sleep in middle-to-older aged adults. *Contemporary Clinical Trials Communications* vol. 32 101066
56. Jessica A. Peterson, Alisa Johnson, Chavier Laffitte Nordarse, **Zhiguang Huo**, James Cole, Roger B. Fillingim, Yenisel Cruz-Almeida. Brain predicted age difference mediates pain impact on physical performance in community dwelling middle to older aged adults. *Geriatric Nursing* 50:181-187
57. Larissa J Strath, Lingsong Meng, Alisa Johnson, Asha Rani, **Zhiguang Huo**, Thomas C Foster, Roger Fillingim, Yenisel Cruz-Almeida. Vitamin D Metabolism Genes are Differentially Methylated in Individuals with Chronic Knee Pain. *Lifestyle Genomics* 16:98?105.
58. Jessica Peterson; Josh Crow; Alisa Johnson; Lingsong Meng; Asha Rani; Zhiguang Huo; Thomas C Foster; Roger Fillingim; Yenisel Cruz-Almeida. Pain Interference Mediates the Association between Epigenetic Aging and Grip Strength in Middle to Older Aged Males and Females with Knee Pain. *Frontiers Aging Neuroscience* vol. 15 1122364.
59. Chengguo Xing, John Malaty, Melissa Bou Malham, Anna Maria Abi Nehme, Breanne Freeman, **Zhiguang Huo**, Roberto Firpi-Morrel, Ramzi G. Salloum. Reducing tobacco-associated lung cancer risk: A study protocol for a randomized clinical trial of AB-free kava. *Trials* vol. 24, 36
60. Xiaoxiao Wen, Helena Palma-Gudiel, Guanhong Miao, Mingjing Chen, **Zhiguang Huo**, Hao Peng, Stephen Anton, Gang Hu, Ricky Brock, Phillip J. Brantley, Jinying Zhao. DNA methylation is differentially associated with glycemic outcomes by different types of weight-loss interventions: an epigenome-wide association study. *Clinical Epigenetics* 15, no. 1 (2023): 108.

61. Jessica A Peterson, Lingsong Meng, Asha Rani, Puja Sinha, Alisa J Johnson, **Zhiguang Huo**, Thomas C Foster, Roger B Fillingim, Yenisel Cruz-Almeida. Epigenetic aging, knee pain and physical performance in community-dwelling middle-to-older age adults. *Experimental Gerontology* 166:111861
62. Soamy Montesino-Goicolea[†], Lingsong Meng[†], Asha Rani, **Zhiguang Huo**, Thomas C. Foster, Roger B. Fillingim. Enrichment of genomic pathways based on differential DNA methylation profiles associated with knee osteoarthritis pain. *Neurobiology of pain* 2022 Nov 3;12:100107
63. Tengfei Bian[†], Haocheng Ding[†], Yuzhi Wang, Qi Hu, Jin Koh, Sixue Chen, Naomi Fujioka, F. Zahra Aly, Junxuan Lu*, **Zhiguang Huo*** and Chengguo Xing*. Suppressing the activation of protein kinase A as a DNA damage-independent mechanistic lead for dihydromethysticin (DHM) prophylaxis of NNK-induced lung carcinogenesis. *Carcinogenesis* 2022 Aug 30;43(7):659-670.
64. Jessica A. Peterson, Larissa J. Strath, Chavier Laffitte Nodarse , Asha Rani, **Zhiguang Huo**, Lingsong Meng, James Cole, Thomas C. Foster, Roger B. Fillingim, Yenisel Cruz-Almeida. Epigenetic Aging Mediates the Association between Pain Impact and Predicted Brain Age Difference in Middle to Older Age Individuals with Knee Pain. *Epigenetics* 2022 Dec;17(13):2178-2187.
65. Yenisel Cruz-Almeida, Alisa Johnson, Lingsong Meng, Puja Sinha, Asha Rani, Sean Yoder, **Zhiguang Huo**, Thomas C Foster, Roger B Fillingim Epigenetic Age Predictors in Community-Dwelling Adults with High Impact Knee Pain. *Molecular Pain* 2022 Apr;18:17448069221118004.
66. Alisa J Johnson, Taylor Buchanan, Chavier Laffitte Nodarse, Pedro A Valdes Hernandez, **Zhiguang Huo**, James H Cole, Thomas W Buford, Roger B Fillingim, Yenisel Cruz-Almeida Cross-Sectional Brain-Predicted Age Differences in Community-Dwelling Middle-Aged and Older Adults with High Impact Knee Pain. *J Pain Res* 2022 Nov 16;15:3575-3587
67. Tengfei Bian, Yuzhi Wang, Jordy Botello, Qi Hu, Yunhan Jiang, Adriana Zingone, Haocheng Ding, Yougen Wu, F. Aly, Ramzi Salloum, Graham Warren, **Zhiguang Huo**, Brid Ryan, Lingtao Jin, and Chengguo Xing. LKB1 phosphorylation and deactivation in lung cancer by NNAL, a metabolite of tobacco-specific carcinogen, in an isomer-dependent manner. *Oncogene* 41, 4042-4054 (2022).
68. Edwin N. Aroke, Lingsong Meng, **Zhiguang Huo**, Yenisel Cruz-Almeida, Burel Goodin. Differential DNA Methylation in Black and White Individuals with Chronic Low Back Pain Enrich Different Genomic Pathways. *Neurobiology of Pain* 2022 Feb 25;11:100086.
69. Larissa Jane Strath; Lingsong Meng; Asha Rani; Puja Sinha; Alisa Johnson; Ricarrdo Marioni; **Zhiguang Huo**; Thomas Foster; Roger Fillingim; Yenisel Cruz-Almeida. Accelerated Epigenetic Aging Mediates the Association between Vitamin D Levels and Knee Pain in Community-Dwelling Individuals. *Journal of nutrition, health & aging*, 26(4), 318-323.
70. Yuzhi Wang, Tengfei Bian, Lina Song, Yunhan Jiang, **Zhiguang Huo**, Ramzi Salloum, Graham Warren, Frederic J. Kaye, Naomi Fujioka, Lingtao Jin, Chengguo Xing. Reducing chemotherapy-induced DNA damage via nAChR-mediated redox reprogramming - a new mechanism for SCLC chemoresistance boosted by nicotine. *Cancers*, 14(9), 2272.
71. Santanu Hati[†], Qi Hu[†], **Zhiguang Huo**, Junxuan Lu, Chengguo Xing. In vivo structure-activity relationship of dihydromethysticin in reducing NNK-induced lung DNA damage against lung carcinogenesis. *ChemMedChem* 2022 Apr 5;17(7):e202100727.
72. Qi Hu, Pedro Corral, Stephen S. Hecht, F. Zahra Aly, **Zhiguang Huo**, Chengguo Xing. Characterization of adductomic totality of NNK, (R)-NNAL, and (S)-NNAL in A/J mice, and their correlations with distinct lung carcinogenicity. *Carcinogenesis*, 43(2), 170-181.
73. Brendan M. Gabriel, Ali Altintas, Richard Tj  rnhammar, Laura Sardon-Puig, Jonathon A.B. Smith, Xiping Zhang, Astrid L. Basse, Rhianna C. Laker, Carles Canto, Hui Gao, Jonas T. Treebak, Antonio Zorzano, **Zhiguang Huo**, Mikael Ryd  n, Karyn A. Esser, Nicolas J. Pilon, Romain Barr  ss, Anna Krook, Juleen R. Zierath. Disrupted Circadian Oscillations in Type 2 Diabetes are Linked to Altered Rhythmic Mitochondrial Metabolism in Skeletal Muscle *Science Advances*, 7(43), eabi9654.

74. Dottington Fullwood, Rebecca N Gomez, **Zhiguang Huo**, Josue S Cardoso, Emily J Bartley, Staja Q Booker, Keesha L Powell-Roach, Alisa J Johnson, Kimberly T Sibille, Adriana S Addison, Burel R Goodin, Roland Staud, David T Redden, Roger B Fillingim, Ellen L Terry A mediation appraisal of catastrophizing, pain-related outcomes, and race in adults with knee osteoarthritis. *The Journal of Pain*, 22(11), 1452-1466.

2021

75. **Zhiguang Huo**, Brinda K. Rana, Jeremy A. Elman, Ruocheng Dong, Corinne D. Engelman, Sterling C. Johnson, Michael J. Lyons, Carol E. Franz, William S. Kremen, Jinying Zhao. Metabolic profiling of cognitive aging in midlife. *Frontier in Aging Neuroscience* 12 (2020): 397.
76. Alisa J Johnson, Chavier Laffitte Nodarse, Julio A Peraza , Pedro A Valdes-Hernandez, Soamy Montesino-Goicolea, **Zhiguang Huo**, Roger B Fillingim, Yenisel Cruz-Almeida Psychological profiles in adults with knee OA-related pain: A replication study. *Therapeutic Advances in Musculoskeletal Disease* 2021 Dec 8;13:1759720X211059614.
77. Aaron R Waddell, Iqbal Mahmud, Haocheng Ding, **Zhiguang Huo**, Daiqing Liao. Pharmacological inhibition of CBP/p300 blocks estrogen receptor alpha (ERα) function through suppressing enhancer H3K27 acetylation in luminal breast cancer. *Cancers* 13, no. 11 (2021): 2799.
78. Theodore Drashansky, Eric Helm, Nina Curkovic, Jaimee Cooper, Xiaoping Luo, Lingsong Meng, William Collins, Benjamin Keselowsky, Derek Sant'Angelo, **Zhiguang Huo**, Liang Zhou, Dorina Avram. BCL11B is positioned upstream of PLZF and RORγt to control thymic development of mucosal-associated invariant T cells and MAIT17 program. *iScience* 24, no. 4 (2021): 102307.
79. Yang Shen, Wei Wang, Mehari Endale, Lauren J Francey, Rachel L Harold, David W Hammers, **Zhiguang Huo**, Carrie L Partch, ProfileJohn Hogenesch, Zhao-Hui Wu, Andrew C Liu. NF-κB modifies the mammalian circadian clock through interaction with the core clock protein BMAL1. *PLOS Genetics* 17, no. 11 (2021): e1009933.
80. Pedro Valdes-Hernandez; Soamy Montesino-Goicolea; Lorraine Hoyos; Eric C Porges; **Zhiguang Huo**, Natalie C Ebner; Adam J Woods; Ronald Cohen; Joseph L Riley III; Roger B Fillingim; Yenisel Cruz-Almeida. Resting State Functional Connectivity Patterns are Associated with Chronic Pain Duration in Community-Dwelling Older Adults. *Pain Report*, 6, no. 4 (2021).
81. Lei Yu, **Zhiguang Huo**, Jingyun Yang, Patricia A. Boyle, Julie A. Schneider, David A. Bennett, Jinying Zhao. Human brain and blood N-glycome profiling in AD/ADRD. *Frontiers in Aging Neuroscience* (2021) 13, 765259.
82. Guanhong Miao, Ying Zhang, **Zhiguang Huo**, Wenjie Zeng, Jianhui Zhu, Jason G. Umans, Gert Wohlgemuth, Diego Pedrosa, Brian DeFelice, Shelley A. Cole, Elisa T. Lee, Barbara V. Howard, Oliver Fiehn, Jinying Zhao. Longitudinal Plasma Lipidome and Risk for Type 2 Diabetes in a Large Sample of American Indians with Normal Fasting Glucose: The Strong Heart Family Study. *Diabetes Care* 44, no. 12 (2021): 2664-2672.
83. Nicole Welch, Shashi Shekhar Singh, Avinash Kumar, Saugato Rahman Dhruba, Saurabh Mishra, Jinendiran Sekar, Annette Bellar, Amy H Attaway, Aruna Chelluboyina, Belinda B Willard, Ling Li, **Zhiguang Huo**, Sadashiva S Karnik, Karyn Esser, Michelle S Longworth, Yatrik M Shah, Gangarao Davuluri, Ranadip Pal, Srinivasan Dasarathy Integrated multiomics analysis identifies molecular landscape perturbations during hyperammonemia in skeletal muscle and myotubes. *Journal of Biological Chemistry*, 297, no. 3 (2021).
84. Nicholas J. Saner, Matthew JC Lee, Jujiao Kuang, Nathan W. Pitchford, Gregory D. Roach, Andrew Garnham, Amanda J. Genders; Tanner Stokes; Elizabeth A Schroder; **Zhiguang Huo**; Esser A Karyn; Stuart M Phillips; David J Bishop; Jonathan D Bartlett. Exercise mitigates sleep-loss-induced changes in glucose tolerance, mitochondrial function, sarcoplasmic protein synthesis, and diurnal rhythms. *Molecular Metabolism* 43 (2021): 101110.
85. Burcu F. Darsta, **Zhiguang Huo**, Erin M. Jonaitis, Rebecca L. Kosciak, Lindsay R. Clarkc, Qiongshi Lu, William S. Kremen, Carol E. Franz, Brinda Rana, Michael J. Lyons, Kirk J. Hogan, Jinying Zhao, Sterling C. Johnsonc, Corinne D. Engelman. Metabolites Associated with Early Cognitive Changes Implicated in Alzheimer's Disease. *Journal of Alzheimer Disease JAD* 79, no.

3 (2021): 1041-1054.

86. Joseph Collins, **Zhiguang Huo**, Danxin Wang, ESR1 ChIP-Seq Identifies Distinct Ligand-Free ESR1 Genomic Binding Sites in Human Hepatocytes and Liver Tissue. *International journal of molecular sciences* 22, no. 3 (2021): 1461.

2020

87. **Zhiguang Huo**, Lei Yu, Jingyun Yang, Yun Zhu, David A. Bennett, Jinying Zhao. (2020) Brain and blood metabolome for Alzheimer's dementia: Findings from a targeted metabolomics analysis. *Neurobiology of aging* 86, 123-133.
88. Ryan W. Logan, Angela R. Ozburn, Rachel N. Arey, Kyle D. Ketchesin, Alicia Winkquist, Andrew Crain, Brian T. D. Tobe, Darius Becker-Krail, Matthew B. Jarpe, Xiangning Xue, Wei Zong, **Zhiguang Huo**, Puja K. Parekh, Xiyu Zhu, Ethan Fitzgerald, Hui Zhang, Jeffrey Oliver-Smith, Lauren M. DePoy, Mariah Hildebrand, Evan Y. Snyder, George C. Tseng, and Colleen A. McClung. Valproate reverses mania-like behaviors in mice via preferential targeting of HDAC2. *Molecular Psychiatry* (2020): 1-19.
89. Marianne Seney, William Paden, Kelly Barko, Rachel Puralewski, Kelly Cahill, **Zhiguang Huo**, Micah Shelton, George Tseng, and Ryan Logan (2020) Sex differences in adult mood and in stress-induced transcriptional coherence across mesocorticolimbic circuitry. *Translational Psychiatry* 10(1), pp.1-14.
90. Nader Shaikh, Judith M Martin, Alejandro Hoberman, Megan Skae, Linette Milkovich, Christi McElheny, Robert W Hickey, Diana Kearney, Massoud Majd, Eglal Shalaby-Rana, George Tseng, John F Alcorn, Jay Kolls, Marcia Kurs-Lasky, William Horne, **Zhiguang Huo**, Timothy R Shope. (2020) Biomarkers that differentiate false positive urinalyses from true urinary tract infection. *Pediatric Nephrology* 35(2), 321-329..
91. Ali Zarrinpar, Ting-Yuan D Cheng, **Zhiguang Huo**. (2020) What Can We Learn About Drug Safety and Other Effects in the Era of Electronic Health Records and Big Data That We Would Not Be Able to Learn from Classic Epidemiology? *Journal of Surgical Research* 246, 599-604.
92. Saunjoo L. Yoon, Oliver Grundmann, Joseph J. Williams, Samuel S. Wu, Christiaan Leeuwenburgh, **Zhiguang Huo**, and Thomas J. George Jr. (2020) Differential response to targeted acupuncture by gender in patients with gastrointestinal cancer cachexia: secondary analysis of a randomized controlled trial. *Acupuncture in Medicine* 38(1), 53-60.
93. Kristin Curry Greenwood, Jennifer Kirwin, **Zhiguang Huo**. (2020) Design and Implementation of the Health Professions Simulation Assessment, a Tool to Assess Students' Perceptions of Simulation Experiences. *Journal of Acute Care Physical Therapy*, 11(2), 70-78.
94. Yonghan He, Sajid Khan, **Zhiguang Huo**, Dongwen Lv, Xuan Zhang, Xingui Liu, Yaxia Yuan, Robert Hromas, Mingjiang Xu, Guangrong Zheng, Daohong Zhou. (2020) Proteolysis targeting chimeras (PROTACs) are emerging therapeutics for hematologic malignancies. *Journal of Hematology & Oncology*, 13(1), 1-24.
95. Soamy Montesino-Goicolea, Pedro A Valdes-Hernandez, Lorraine Hoyos, Adam J. Woods, Ronald Cohen, **Zhiguang Huo**, Joseph L. Riley III, Eric C. Porges, Roger B. Fillingim, Yenisel Cruz-Almeida. (2020) Cortical thickness mediates the association between self-reported pain and sleep quality in community-dwelling older adults. *Journal of Pain Research*, 13:2389-2400.
96. Soamy Montesino-Goicolea, Puja Sinha, **Zhiguang Huo**, Asha Rani, Thomas Foster, Yenisel Cruz-Almeida. (2020) Enrichment of Genomic Pathways Based on Differential DNA Methylation Profiles Associated With Chronic Musculoskeletal Pain in Older Adults: An Exploratory Study *Molecular Pain*, 16, 1744806920966902.
97. Tengfei Bian, Pedro Corral, Yuzhi Wang, Jordy Botello, Rick Kingston, Tyler Daniels, Ramzi Salloum, Edward Johnston, **Zhiguang Huo**, Andrew Liu, Junxuan Lu, Chengguo Xing. (2020) Kava as a clinical nutrient: promises and challenges. *Nutrients*, 12(10), 3044.

2019

98. **Zhiguang Huo**, Yun Zhu, Lei Yu, Jingyun Yang, Philip De Jager, David A. Bennett, Jinying

- Zhao. DNA methylation variability in Alzheimer’s Disease. *Neurobiology of aging* 76 (2019): 35-44.
99. Song Han*, **Zhiguang Huo***, Kathy Nguyen, Fanchao Zhu, Patrick W Underwood, Kari Basso, Thomas George, and Steven Hughes. (2019) The Proteome of Pancreatic Cancer-Derived Exosomes Reveals Signatures Rich in Key Signaling Pathways. *Proteomics*, 19(13), 1800394.
 100. Marianne L. Seney, Kelly Cahill, John F. Enwright III, Ryan W. Logan, **Zhiguang Huo**, Wei Zong, George Tseng, and Colleen A. McClung. (2019) Diurnal rhythms in gene expression in the prefrontal cortex in schizophrenia. *Nature Communications* 10, no. 1 (2019): 1-11.
 101. Nader Shaikh, Judith M Martin, Alejandro Hoberman, Megan Skae, Linette Milkovich, Andrew Nowalk, Christi McElheny, Robert W Hickey, Diana Kearney, Massoud Majd, Eglal Shalaby-Rana, George Tseng, John F Alcorn, Jay Kolls, Marcia Kurs-Lasky, **Zhiguang Huo**, William Horne, Greg Lockhart, Hans Pohl, Timothy R Shope. (2019) Host and Bacterial Markers that Differ in Children with Cystitis and Pyelonephritis. *The Journal of pediatrics* , 209, 146-153.
 102. Yenisel Cruz-Almeida, Puja Sinha, Asha Rani, **Zhiguang Huo**, Roger Benton Fillingim, Thomas C Foster. (2019) Epigenetic Aging is Associated with Clinical and Experimental Pain in Community-Dwelling Older Adults. *Molecular Pain*, 15 (2019): 1744806919871819.
 103. Theodore Drashansky[†], Eric Helm[†], **Zhiguang Huo**, Upasana Parthasarathy, Ashley Zuniga, Jonathan Cho, Zhiwei Xu, Mohammad Uddin, Kyle Lorentsen, Safiekhatoon Moshkani, Liang Zhou, Nina Curkovic, Preet Kumar, Xiaoping Luo, Dorina Avram. (2020) Bcl11b prevents fatal autoimmunity by promoting Treg cell program and constraining innate lineages in Treg cells. *Science Advances*, 5(8), eaaw0480.

2018

104. Marianne Seney, **Zhiguang Huo**, Kelly Cahill, Leon French, Rachel Puralewski, Joyce Zhang, Ryan W. Logan, George Tseng, David A Lewis, Etienne Sibille. Opposite molecular signatures of depression in men and women. *Biological Psychiatry* 84, no. 1 (2018): 18-27.
105. John Enwright, **Zhiguang Huo**, Dominique Arion, John P. Corradi, George Tseng, and David A. Lewis. Transcriptome alterations of prefrontal cortical parvalbumin neurons in schizophrenia. *Molecular psychiatry* 23, no. 7 (2018): 1606.
106. Cynthia R. Johnson, Kimberly Brown, Susan Hyman, Maria M. Brooks, Courtney Aponte, Lynne Levato, Brianna Schmidt, Victoria Evans, **Zhiguang Huo**, Roxanna Bendixen, Heather Eng, Theresa Sax, Tristram Smith. Parent Training for Feeding Problems in Children with Autism Spectrum Disorder: Initial Randomized Trial. *Journal of pediatric psychology* 44, no. 2 (2018): 164-175.

2017

107. Dominique Arion, **Zhiguang Huo**, John F. Enwright, John P. Corradi, George Tseng, and David A. Lewis. Transcriptome alterations in prefrontal pyramidal cells distinguish schizophrenia from bipolar and major depressive disorders. *Biological psychiatry* 82, no. 8 (2017): 594-600.

2016 and before

108. Tiffany A. Katz, Serena G. Liao, Vincent J. Palmieri, Robert K. Dearth, Thushangi Pathiraja, **Zhiguang Huo**, Patricia Shaw, Sarah Small, Nancy E. Davidson, David G. Peters, George C. Tseng, Steffi Oesterreich, Adrian V. Lee. Targeted DNA Methylation Screen in the Mouse Mammary Genome Reveals a Parity-Induced Hypermethylation of IGF1R That Persists Long after Parturition. *Cancer Prevention Research* 8, no. 10 (2015): 1000-1009.
109. Yan P. Yu, Silvia Liu, **Zhiguang Huo**, Amantha Martin, Joel B. Nelson, George C. Tseng and Jian-Hua Luo. (2015) Genomic copy number variations in the genomes of leukocytes predict prostate cancer clinical outcomes. *PloS one*, 10(8):e0135982.