

CURRICULUM VITAE

Jinying Zhao, MD, PhD, FAHA
Deans Endowed Chair and Professor of Epidemiology
Director, Center for Genetic Epidemiology and Bioinformatics (GeneBio)
University of Florida, Gainesville, FL 32610

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Education

Bachelor of Medicine (Clinical Medicine, equivalent to M.D.), 1989
Zhengzhou University School of Medicine
Zhengzhou, China

Master of Science in Pathology, 1992
Zhengzhou University School of Medicine
Zhengzhou, China

Ph.D. in Molecular Genetics, 1999
Peking Union Medical College and Chinese Academy of Medical Sciences
Beijing, China

Ph.D. in Genetic Epidemiology & Statistical Genetics, 2005
University of Texas Health Science Center at Houston
Houston, TX

Appointments

1992 – 1996	Clinical Pathologist Department of Pathology, Henan People's Hospital Zhengzhou, China
2006 – 2009	Assistant Professor Department of Medicine Emory University School of Medicine Atlanta, GA
2009 – 2012	Associate Professor Department of Biostatistics and Epidemiology

	College of Public Health, University of Oklahoma Health Science Center, Oklahoma City, OK
2012 –2014	Associate Professor (with Tenure) Department of Epidemiology School of Public Health and Tropical Medicine Tulane University, New Orleans, LA
2014 – 2016	Professor (Tenured) Department of Epidemiology School of Public Health and Tropical Medicine Tulane University, New Orleans, LA
2016 – 2020	Dean's Professor (UF Preeminence hire) Director, Division of Genetic Epidemiology Department of Epidemiology, College of Public Health and Health Professions and College of Medicine, University of Florida, Gainesville, FL
2020 –	Deans Endowed Chair and Professor of Epidemiology Director, Center for Genetic Epidemiology and Bioinformatics University of Florida, Gainesville, FL

Leadership Training Experience

2017-2018	Participated in the UF Academy for Emerging Leaders training workshop. This semester length workshop offers extensive training in leadership for approximately 20 UF faculty and professionals selected via a competitive application process.
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Awards and Honors

Elizabeth Barrett-Connor Research Award for Young Investigators, presented by the American Heart Association, 2006

Sandra Daugherty Award for Excellence in Cardiovascular Disease or Hypertension Epidemiology (Finalist), presented by the American Heart Association, 2009

Outstanding Faculty Award in Research or Scholarly Achievement, College of Public Health, University of Oklahoma Health Science Center, 2010

Roger R. Williams Award for Genetic Epidemiology in the Prevention and Treatment of Atherosclerosis, presented by the American Heart Association, 2012

Dean's Citation Award, Public Health and Health Professions, University of Florida, 2018

Professional Membership

1999 -	American Society of Human Genetics
2006 -	American Heart Association

National Professional Services

NIH Study Sections (*ad hoc*)

2011-2012	Special Emphasis - Research on Gulf War Veterans' Illnesses
2011-2012	The Biomedical Computing and Health Informatics (BCHI)
2012 -2013	Small Business Innovation Research (SBIR)
2011-2014	The Clinical and Integrative Cardiovascular Sciences (CICS)
2013	Tobacco Centers of Regulatory Science (TCORS)
2014	IMST-R computational epigenomics study section
2015	The Kidney, Nutrition, Obesity and Diabetes (KNOD) Study Section
2015	Biobehavioral Mechanisms of Emotion, Stress and Health (MESH) Study Section
2016	ZEY1 VSN (02) 1, NEI Data Analysis and Epidemiology Grant Applications
2017	ZDK1-GRB-2-M1 & M2, NIDDK
2017	ZHL1-CSR-1-M1, NHLBI
2017	ZES- LWJ-K-R, NIEHS
2017	ZDK1-GRB-2-O1 & O2, NIDDK
2017	ZRG1-PSE-P-02, CSR
2018	ZDK1-GRB-2-M1 & M2, NIDDK
2019	DEM Fellowship Review Panel, NIDDK
2019	NIDDK ZDK1 GRB-2 (M1&2) Review Panel
2019	R35 (RIVER) Review Panel, NIEHS
2019	ZRG1 MOSS-R (70) NIH Director's New Innovator Award Stage 1 Review Panel, NIH
2020	ZRG1 PSE- E 02 (Chronic disease and epidemiology), NIH
2022	NAME study section, NIH
2022	ZRG1-PSE-H55, NIH
2023	2023/10 ZRG1 MBBC-G (50) R, Second Phase Review
2023	AIMR study section, NIH
2023	NIDDK DDK-E Study Section
2023	NIDDK GI/Liver Centers Grant Review (P30)

American Heart Association

2013-2015	Abstract reviewer, EPI/NPAM Scientific Sessions
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Editorial Board

2009-	Epidemiology: Open Access
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Ad Hoc Journal Reviewer (since 2010, partial list)

American Journal of Human Genetics; American Journal of Epidemiology; International Journal of Epidemiology; Genetic Epidemiology; Diabetes; Diabetes Care; Circulation; International Journal of Obesity; Europe Journal of Human Genetics; Epigenetics; Aging;

Bioinformatics; Molecular Psychiatry; Biological Psychiatry, JACC; PLOS Genetics; PLOS Med; PLOS Computational Biology & (multiple others)

Other National Professional Services

- 2015- The Strong Heart Study (SHS) Steering Committee
- 2018- Member, The National Heart, Lung, and Blood Advisory Council (NHLBAC) Working Group on Emerging Issues in Data Sharing (EIDS), appointed by the Director of NHLBI

Institutional Services

University of Florida

- 2016 - Faculty Search Committee, Department of Epidemiology
- 2016 - Curriculum Committee, Department of Epidemiology
- 2016 -2020 TAC - TL1 Advisory Committee, CTSI
- 2017-2019 Executive/Operations Committee, Department of Epidemiology
- 2017 - Gen Med T32 Executive Committee
- 2018 -2021 Academic Assessment Committee, University of Florida
- 2018 – 2019 Working Group on Faculty Assistance with Proposals, UF Office of Research
- 2018 - 2019 Chair, Faculty Search Committee, Department of Epidemiology
- 2020- Research Opportunity Seed Fund (ROSF) Basic Biomedical Sciences Standing Committee
- 2021 - UF AI Initiative Faculty Search Committee, Health Determinants subcommittee
- 2021 - Promotion and Tenure Committee, PHHP & COM

Tulane University

- 2014 – 2016 Appointment, Promotion and Tenure (APT) Committee, School of Public Health and Tropical Medicine
- 2014 – 2016 Faculty Search Committee, Department of Epidemiology, School of Public Health and Tropical Medicine
- 2015 – 2016 Nominating Committee for the Faculty Reelections, School of Public Health and Tropical Medicine
- 2015 – 2016 Mentor and Co-Lead, MS in Outcomes and Comparative Effectiveness Program School of Public Health and Tropical Medicine
- 2015 – 2016 Mentor and Co-I, COBRE Program, School of Public Health and Tropical Medicine

University of Oklahoma Health Science Center

- 2010 - 2011 Senator, Faculty Senate, OUHSC
- 2010 - 2012 Professional Development Committee, OUHSC

Graduate Courses Taught

University of Florida

2017- Genetic Epidemiology (Course master, 3 credit hours)
Department of Epidemiology, PHHP, University of Florida

Tulane University

2012- 2016 Genetic Epidemiology (Course master, 3 credit hours)
Department of Epidemiology,
School of Public Health and Tropical Medicine, Tulane University

University of Oklahoma Health Science Center

2010-2012 Statistical Methods in Genetic Epidemiology (Course master, 3 credit hours)
Department of Biostatistics and Epidemiology
College of Public Health, University of Oklahoma HSC

2011-2012 Molecular and Genetic Epidemiology (Course master, 3 credit hours)
Department of Biostatistics and Epidemiology
College of Public Health, University of Oklahoma HSC

2009-2012 Cancer Epidemiology (3 credit hours)
Department of Biostatistics and Epidemiology
College of Public Health, University of Oklahoma HSC

2010-2011 Problems in Biostatistics and Epidemiology (3 credit hours)
Department of Biostatistics and Epidemiology
College of Public Health, University of Oklahoma HSC

Academic Advising and Mentoring

PhD Committee Chair

1. Mingjing Chen (2021-)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
2. Xiaoxiao Wen (2021-)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
3. Wenjie Zeng (2019-2022)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
4. Pooja Subedi (2017- 2021)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida

5. Yun Zhu (2014-2016)
Department of Epidemiology
School of Public Health and Tropical Medicine, Tulane University
6. Yun Zhu (2016-2018)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine,
University of Florida
7. Joseph Struzeski (2019-2021)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
8. Qiang An (2013-2016)
Department of Epidemiology
School of Public Health and Tropical Medicine, Tulane University

PhD Committee Member

1. Tianqi Gao (2018-present)
Department of Chemistry
College of Liberal Arts and Sciences, University of Florida
2. Yimei Huang (2018-present)
Department of Pharmaceutical Science
College of Pharmacy, University of Florida
3. Rongzi Liu (2020-present)
Department of Biostatistics
College of Public Health and Health Professions and College of Medicine
University of Florida
4. Meghann Wheeler (2021-present)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
5. Akemi Wijayabahu (2019-2021)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
6. Mmadili N, Ilozumba (2019-2022)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
7. Yi Zheng (2018-2021)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine
University of Florida
8. Zhaoyi Chen (2016 -2019)
Department of Epidemiology, College of Public Health and Health Professions, UF

9. Changwei Li (2013 – 2015)
Department of Epidemiology, School of Public Health and Tropical Medicine, Tulane University, New Orleans, LA
10. Yu Deng (2014 – 2016)
Department of Biostatistics, University of North Carolina at Chapel Hill, NC
11. Weiwei Ouyang (2014 – 2016)
Department of Biostatistics and Bioinformatics
School of Public Health and Tropical Medicine, Tulane University, New Orleans, LA
12. Sheldon Waugh (2016-2017)
Department of Epidemiology
College of Public Health and Health Professions and College of Medicine, UF
13. Tiffany A. Brunson (2006 – 2010)
Cardiovascular Research Institute
Morehouse School of Medicine, Atlanta, GA
14. Isfahan Chambers (2006 – 2010)
Cardiovascular Research Institute
Morehouse School of Medicine, Atlanta, GA

Postdoctoral Fellows Mentored

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| 1. Helena G. Palma, PhD
Current Position | 2021 – present
Postdoc Associate, Department of Epidemiology
University of Florida |
| 2. Cheng Go, PhD
Current Position | 2021 – present
Postdoc Associate, Department of Epidemiology
University of Florida |
| 3. Guanhong Miao, PhD
Current Position | 2021 – present
Postdoc Associate, Department of Epidemiology
University of Florida |
| 4. Tao Xu, PhD
Current Position | 2021 – present
Postdoc Associate, Department of Epidemiology
University of Florida |
| 5. Lewen Yang, PhD
Current Position | 2018-2019
Senior Scientist, Guangzhou Regenerative
Medicine and Health, Guangzhou, China |
| 6. Stefano Nembrini, PhD
Current Position | 2017-2018
Biostatistician, College of Medicine, University of Florida,
Gainesville, FL |
| 7. Hao Peng, PhD
Current Position | 2015-2017
Associate Professor, Soochow University, Suzhou, China |
| 8. Shufeng Chen, MD, PhD
Current Position | 2013-2014
Professor, Peking University Medical College, Beijing,
China |
| 9. Jingyun Yang, PhD | 2009-2011 |

Current Position	Assistant Professor, Rush University Medical Center, Chicago, IL
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Junior Faculty Mentored at UF

1. Hui Hu, PhD (2016 – 2021)
Assistant Professor, Department of Epidemiology, UF PHHP & COM

Hui Hu, PhD (2021-present)
Assistant Professor of Medicine and Associate Epidemiologist
Channing Division of Network Medicine
Brigham and Women's Hospital and Harvard Medical School
2. Huaizhen Qin, PhD (2018 – 2022)
Research Assistant Professor, Department of Epidemiology, UF PHHP & COM
3. Zhiguang Huo, PhD (2017 – 2021)
Assistant Professor, Department of Biostatistics, UF PHHP & COM
4. Yun Zhu, PhD (2019 –2020)
Research Assistant Scientist, Department of Epidemiology, UF PHHP & COM

MS, MPH Students (Academic Advisor, partial list, since 2012)

Department of Epidemiology, Tulane University:

Sai Ma, Sagar Mehta, Yun Zhu, Qiang An, Xiaotao Zhang, Junwei Jiang, Jingxin Li, Oliva Bell, Yunlong Geng, Hayato Oka, Woneata Stallworth

Department of Epidemiology, University of Florida (partial list, since 2016):

Erica Swilley, Dakota Derry, Lara Saikaly, Emily Klann, Yosra Hagag

Active Research Projects

<u>1R01AG083902</u>	(Zhao PI)	09/21/2023-05/31/2028
NIH/NIA		\$3,715,105

Brain glycosphingolipids and Alzheimer's disease

The goal of this project is to identify brain GSLs associated AD pathologies.

<u>1R01DK137254</u>	(Zhao PI)	9/15/2023-05/31/2026
NIH/NIA		\$1,980,756

Sociocultural factors, DNA methylation and risk of diabetes in Hispanics/Latinos

The goal of this project is to identify modifiable genes and biological pathways through which risk and protective socioenvironmental factors become biologically embedded into diabetes risk in Hispanic/Latinos.

<u>1R01AG081375</u>	(Zhao PI)	05/15/2023-03/31/2028
NIH/NIA		\$3,215,699

Brain lipids and Alzheimer's disease

The goal of this project is to generate a detailed map of brain lipidome in relation to AD and identify specific brain lipid species associated with AD pathologies.

1R01AG068865 (Zhao PI) 09/10/2020 - 05/31/2026
NIH/NIA \$3,069,947
Gut microbiome, aging, and cardiometabolic diseases in American Indians

The goal of this project is to identify key gut microbiota features associated with aging and cardiometabolic diseases in American Indians in the Strong Heart Study (SHS). The project will collect fecal samples from about 2,000 participants and conduct deep metagenomic sequencing, followed by sophisticated statistical and bioinformatics analysis to identify functional features associated with accelerated aging and cardiometabolic diseases including diabetes, obesity, cardiovascular disease, chronic kidney disease and their risk factors.

1R01AG064786 (Zhao PI) 09/01/2019 - 08/30/2024
NIH/NIA \$3,676,978
Genome-wide mapping and integrative analysis of DNA 6mA methylome in human AD brain

The goal of this project is to examine the potential causal role of 6mA in AD neuropathology. Innovative statistical and bioinformatics tools for multi-omics data integration will also be developed in this project.

1R01DK107532-01A1 (Zhao PI) 09/01/2016 - 08/30/2023
NIH/NIDDK \$3,076,642
Novel metabolic predictors of diabetes in American Indians

The goal of this project is to identify novel metabolic markers predictive of early onset and progression of type 2 diabetes in American Indians, a minority group suffering from the highest prevalence and incidence of type 2 diabetes. This is the first large-scale longitudinal profiling of lipidomics and metabolomics in over 7,000 plasma samples. Innovative tools for big data and trans-omics will be developed and applied to identify novel mechanistic markers tailored to the American Indian communities.

R01MD011727 (Kertes PI) 08/14/2017-04/30/2024
NIH/NIMHD \$1,895,285
Epigenetic mechanisms of emotional/behavioral health among impoverished African-American youth
Role: Co-Investigator

The goal of this project is to examine whether and how epigenetic mechanisms mediate the effects of negative emotional/behavioral health on chronic disease outcomes among African-American youth.

R56AG075803-01A1 (Chen PI) 09/15/2022-08/31/2023
NIH/NIA \$384,456
Survival genetics methods for detecting sex-dependent genetic effects on Alzheimer's disease
Role: Co-Investigator

The goal of this project is to develop novel statistical methods for detecting sex-dependent genetic effects on risk of AD.

1K01HL153797-01A1 (Hu PI) 06/01/2021-05/31/2026
NIH/NHLBI \$167,207/YR
Hypertensive Disorders of Pregnancy and Early Risk of Maternal CVD: Influence of the External Exposome
Role: Primary mentor

The goal of this K01 grant is to nurture the career development of Dr. Hui Hu and train him to be an independent investigator in the fields of cardiovascular health, omics and exposome research, biomedical informatics and data science.

1RF1AG074549-01 (Arvanitakis PI) 08/15/2021-07/31/2024
NIH/NIA \$3,275,232
The role of blood and brain 5-hydroxymethylcytosine in linking vascular risk factors to AD in older White and Black persons.
Role: Consultant

The goal of this project is to examine the role of blood and brain DNA 5-hmC in the relationship between vascular risk factors and AD in a biracial population

5T32HG008958 (Johnson PI) 01/01/2018-12/31/2022
NIH/NHGRI
Training Program for Applied Research and Development in Genomic Medicine (Johnson)
Role: Faculty Mentor & Executive Committee Member

The goal of this training grant is to foster the career of junior investigators (MDs, PhDs, PharmDs, and other clinical specialists at the doctoral level) who are interested in genomic/translational science and precision medicine.

Pending Grant Proposals

1R01AG085469-01 (Zhao PI) 12/01/2023-11/30/2028
NIH/NIA \$3,767,451
Brain and blood N-glycome for Alzheimer's disease
The goal of this project is to identify novel circulating glycomic markers predictive of cognitive and identify brain glycomic markers associated with AD pathology.

1R01AG083871-01 (Zhao PI) 07/01/2023-06/30/2028
NIH/NIA \$3,937,741
Longitudinal metabolic profiling of cognitive and brain aging from midlife to early old age
The goal of this project is to identify novel circulating metabolic markers predictive of cognitive and brain aging in midlife and the transition from middle age to early old age in a large twin cohort.

1R01AG084630-01 (Lu PI) 12/01/2023-11/30/2028
NIH/NIA \$3,086,967
AI-based methods and software for causal analysis of omics data

Develop new AI tools that are capable of modeling the complex causal relationship between omics with various types of outcomes, and have many features (e.g., robustness) for causal analysis of omics data.

Role: Co-I

1R01AG085488-01
NIH/NIA

(Lu PI)

12/1/23-11/30/2028
\$3,403,329

Kernel neural networks for analyzing large-scale Alzheimer's Disease genetic data

The major goal of this project is to develop a new Kernel-based method to identify genetic variants associated with Alzheimer's disease.

Role: Co-I

Selected Completed Research Projects

R01MH097018
NIH/NIMH

(Zhao PI)

08/15/13-07/31/2021
\$3,127,223

Epigenetic determinants for depression: a monozygotic discordant twin study

The goal of this project is to decipher the epigenetic mechanisms implicated in the pathogenesis of major depression using a monozygotic discordant twin design. A total of 180 twin pairs discordant on major depression will be recruited and deeply phenotyped (both clinically and molecularly). Innovative statistical and bioinformatics approaches will be used to identify potential causative epigenetic mechanisms underlying major depression.

R01MH097018-06S1
NIH/NIMH

(Zhao PI)

08/15/2013-07/31/2021
\$63,000

Epigenetic determinants for depression: a monozygotic discordant twin study

The goal of this supplementary grant is to request additional funds for a long-term storage of biospecimen collected in the twin study. Partial funds will also be used for novel biomarker assays.

7RF1AG052476
NIH/NIA

(Zhao PI)

06/15/2016 - 08/31/2021
\$3,721,756

Genome-wide profiling of brain DNA hydroxymethylome in Alzheimer's disease

The goal of this project is to generate the first detailed map for a new layer of epigenetic marker (5-hmC) in 1,200 postmortem brain tissue samples and examine its potential role in AD

7RF1AG052476S1
NIH/NIA

(Zhao PI)

01/15/2019-08/31/2021
\$340,882

Genome-wide profiling of brain DNA hydroxymethylome in Alzheimer's disease

The goal of this supplementary grant is to develop novel statistical and bioinformatics algorithms for big data and integrative multi-omics analysis of brain aging and Alzheimer's disease neuropathology.

1R01DK091369
NIH/NIDDK

(Zhao PI)

09/01/2011-05/31/2017
\$1,393,562

Telomere attrition and diabetes risk in American Indians

The goal of this project is to examine the role of accelerated telomere shortening in diabetes pathogenesis, and determine the clinical utility of leukocyte telomere length in predicting diabetes risk among American Indian communities.

<u>1R21HL092363-01A2</u>	(Zhao PI)	09/30/2009-06/30/2013
NIH/NHLBI		\$402,875
Genetic variations in the HPA axis and comorbidity of depression and CVD		

The goal of this project is to identify genetic variants involved in the stress-related pathways and examine their roles in linking depression to cardiovascular disease.

<u>1K01AG034259</u>	(Zhao PI)	09/15/2009-08/31/2013
NIH/NIA		\$525,481
Biological aging, mitochondrial variants and coronary artery disease		

The goal of this grant is to foster the career development of Dr. Zhao as an independent investigator in the fields of genetic epidemiology, statistical genetics, bioinformatics, and data science.

DRPD-ROF2017	(Zhao PI)	06/01/2018-05/31/2021
UF Office of Research		\$95,000
Integrated multiomics analysis of MDS		

The goal of this pilot grant is to collect preliminary data that will support the application of NIH grant proposal(s) for deep molecular phenotyping of MDS.

<u>17SDG33630165</u>	(Hu PI)	07/01/2017-06/30/2020
American Heart Association (AHA)		\$254,100
The Total Environment and Hypertensive Disorders of Pregnancy: A Precision Public Health Approach		
Role: Primary mentor		

The goals of this training grant are to: 1) promote career development for Dr. Hu to become an independent investigator in data science; and 2) generate preliminary data in support of larger grant applications.

<u>AHA 0730100N</u>	(Zhao PI)	01/01/2007 - 08/31/2011
American Heart Association		\$260,000
Common genetic pathways linking depression to cardiovascular disease: a twin study		

The goal of this grant is to foster the career development of Dr. Zhao in the area of cardiovascular genetic epidemiology and statistical genetics.

<u>ACTSI-KL2</u>	(Zhao PI)	04/15/2008 - 03/31/2010
NIH/ACTSI		\$168,668
Role of mitochondrial polymorphisms in CAD and adverse cardiovascular outcomes		

The goal of this career development grant is to accelerate the career development of Dr. Zhao in the area of cardiovascular genetic epidemiology and generate preliminary data in support of NIH grants applications.

R01DK101505

(Kelly PI)

08/21/2015 - 05/31/2020

NIH/NIDDK

Whole-exome sequencing study of diabetic nephropathy

Role: Co-Investigator

The overall objective of this study is to identify novel genes and functional variants associated with diabetic nephropathy (DN) by conducting whole-exome sequencing, follow-up targeted sequencing, and replication studies among DN cases and controls of African and European ancestry. (Relinquished due to leaving Tulane)

P20GM109036-01A1

(He PI)

03/10/2016 - 02/28/2021

NIH/NIGMS

Tulane COBRE for Clinical and Translational Research in Cardiometabolic Diseases

Role: Faculty mentor & Co-Investigator

The long-term goal of this COBRE application is to promote and increase clinical, translational and implementation research in cardiometabolic diseases at Tulane University by establishing a Center of Excellence for Clinical, Translational and Implementation Research in Cardiometabolic Diseases. (Relinquished due to leaving Tulane)

Oklahoma Tobacco Research Center

(Zhao PI)

7/1/2009-6/30/2011

\$55,000

Genotype-specific effect of cigarette smoking on CAD in American Indians

The goal of this project is to examine gene – smoking interactions implicated in coronary artery disease among American Indians.

Emory University Heart and Vascular Center

(Zhao PI)

7/1/2007-6/30/2009

\$300,000

Blood and tissue-banking for heart and vascular diseases: The Emory Heart and Vascular Center's Genomic Platform

The goal of this project is to establish a biobank of heart and vascular tissues that can be used for multiomics analysis and precision medicine of cardiovascular diseases.

Emory Center for Research on Symptoms Interactions and Health Outcomes

Emory University

(Zhao PI)

7/1/07-6/30/08

\$30,000

Genetic pathways in depressive symptoms susceptibility

The goal of this project is to generate preliminary data and identify genetic pathways associated with depressive symptoms.

Emory University Research Committee

(Zhao PI)

01/01/2008 -12/30/2008

Emory University

\$25,000

Genetic pathways in coronary artery disease susceptibility

The goal of this project is to collect pilot data and identify genetic pathways implicated in CVD.

Peer-Reviewed Publications (After 1992. In reverse-chronological order. *Corresponding author*^{*}; *Trainee*[†])

1. Miao G,[†] Roman MJ, Devereux RB, Howard BV, Lee ET, Fiehn O, **Zhao J.**^{*} Longitudinal Lipidomic Signature of Carotid Atherosclerosis in American Indians: Findings from the Strong Heart Family Study. *Atherosclerosis* (in press)

2. Hu Z, Hu X, Xu T,[‡] Zhang K, Lu H, **Zhao J**, Boerwinkle E, Jin L, Xiong M. The equilibrium and pandemic waves of COVID-19 in the US. *International Journal of Health Policy and Planning* (*in press*)
3. Wen X,[‡] Palma-Gudiel H,[‡] Miao G,[‡] Chen M,[‡] Huo Z, Peng H,[‡] Anton S, Hu G, Brock R, Brantley PJ, **Zhao J**.^{*} DNA methylation predicts differential metabolic outcomes of weight-loss intervention: an epigenome-wide association study. *Clinical Epigenetics* (accepted)
4. Peng H,[‡] Palma-Gudiel H,[‡] Soriano-Tarraga C, Jimenez-Conde J, Zhang M, Zhang Y, and **Zhao J**.^{*} Epigenome-wide association study identifies novel genes associated with ischemic stroke. *Clinical Epigenetics* (accepted)
5. Chen M,[‡] Miao G,[‡] Zhang Y, Umans JG, Lee ET, Howard BV, Fiehn O, **Zhao J**.^{*} Longitudinal lipidomic profile of hypertension in American Indians: Findings from the Strong Heart Family Study. (accepted)
6. Miao G,[‡] Deen J, Struzeski JB,[‡] Chen M,[‡] Zhang Y, Cole SA, Fretts AM, Lee ET, Howard BV, Fiehn O, **Zhao J**.^{*} Plasma Lipidomic Signatures of Major Depression: Findings from a Longitudinal Study in a Large Sample of Community-dwelling American Indians in the Strong Heart Study. *Molecular Psychiatry* 2023 Jan 19. doi: 10.1038/s41380-023-01948-w. Epub ahead of print. PMID: 36653676.
7. Miao G,[‡] Fiehn O, Malloy KM, Zhang Y, Lee ET, Howard BV, **Zhao J**.^{*} Longitudinal lipidomic signatures of all-cause and CVD mortality in American Indians: findings from the Strong Heart Study. *Geroscience*. 2023 Apr 13. doi: 10.1007/s11357-023-00793-7. Epub ahead of print. PMID: 37055600
8. Oveisgharan S, Yang J,[‡] Yu L, Tasaki S, Grodstein F, Wang Y, **Zhao J**, De Jager PL, Schneider JA, Bennett DA. Estrogen-receptor genes, cognitive decline, and Alzheimer's disease in community-dwelling women. *Neurology* 2023 Jan 25;10.1212/WNL.0000000000206833. doi: 10.1212/WNL.0000000000206833. Epub ahead of print. PMID: 36697247.
9. Ilozumba MN, Yaghjyan L, Datta S, **Zhao J**, Hong C, Lunetta KL, Zirpoli G, Bandera EV, Palmer JR, Yao S, Ambrosone CB, Cheng TY. mTOR pathway candidate genes and obesity interaction on breast cancer risk in Black women from the Women's Circle of Health Study. *Cancer Causes Control*. 2023 Feb 15. doi: 10.1007/s10552-022-01657-9. Epub ahead of print. PMID: 36790512.
10. Ilozumba MN, Yaghjyan L, Datta S, **Zhao J**, Gong Z, Hong C, Lunetta KL, Zirpoli G, Bandera EV, Palmer JR, Yao S, Ambrosone CB, Cheng TY. mTOR pathway candidate genes and physical activity interaction on breast cancer risk in black women from the women's circle of health study. *Breast Cancer Res Treat*. 2023. <https://doi.org/10.1007/s10549-023-06902-6>
11. Ilozumba MN, Yaghjyan L, Datta S, **Zhao J**, Hong C, Lunetta KL, Zirpoli G, Bandera EV, Palmer JR, Yao S, Ambrosone CB, Cheng TY. mTOR pathway candidate genes and energy intake interaction on breast cancer risk in black women from the women's circle of health study. *Eur J Nutr*. 2023 May 20. doi: 10.1007/s00394-023-03176-y. Epub ahead of print. PMID: 37209192.
12. Palma-Gudiel H,[‡] Yu L, Huo Z, Yang J, Gu T, Gao C,[‡] De Jager PL, Jin P, Bennett DA, **Zhao J**.^{*} Fine-mapping and replication of EWAS loci harboring putative epigenetic alterations associated with AD neuropathology in a large collection of human brain tissue samples. *Alzheimers Dement*. 2022 Aug 12. doi: 10.1002/alz.12761. Epub ahead of print. PMID: 35959851.

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Manuscripts submitted, under review or in preparation (*Trainee; *Corresponding author)

133. Miao G,* Yu L, Yang J, Bennett DA, **Zhao J.**, Wu SS. Learning from vertically distributed data across multiple sites: An efficient privacy-preserving algorithm for Cox proportional hazards model with variable selection (under review)
134. Miao G,* Chen M,* Zhang Y, Cole SA, Franceschini N, Umans JG, Lee ET, Howard BV, Fiehn O, **Zhao J.*** Plasma lipidomic profiling of risk for coronary heart disease in American Indians (revised)
135. Chen M,* Huo Z, Peng H,* Miao G,* Wen X,* Anton S, Gang Hu, Brock R, Brantley PJ, **Zhao J.*** Longitudinal profiling of fasting plasma metabolome in response to weight loss interventions in patients with morbid obesity. (under review)
136. Xu T,* **Zhao J.*** Xiong M. Graphical learning and causal inference for drug repurposing. (submitted)
137. Miao G,* Fiehn O, Zhang Y, Best LG, Lee ET, Howard BV, Fiehn O, **Zhao J.*** Longitudinal plasma lipidomic signature of obesity in American Indians. (in preparation)
138. Miao G,* Zhang Y, Lee ET, Howard BV, Fiehn O, **Zhao J.*** Obesity mediates the effect of plasma lipidome on diabetes: a longitudinal study in American Indians (in preparation)

139. Chen M,[‡] Miao G,[‡] Zhang Y, Cole SA, Devereux RB, Roman MJ, Lee ET, Howard BV, Fiehn O, **Zhao J.*** Plasma lipidomic profiling of cardiac structure and function in American Indians (in preparation)
140. Chen M,[‡] Miao G,[‡] Roman MJ, Lee ET, Howard BV, Devereux RB, Oliver F, **Zhao J.*** Plasma lipidome of peripheral artery disease: a large-scale longitudinal study in American Indians. (in preparation)
141. Palma-Gudiel H,[‡] Miao G,[‡] Gao C,[‡] Gu T,[‡] De Jager P, Jin P, Bennett DA, and **Zhao J.*** DNA hydroxymethylation, social network size and Alzheimer's disease (in preparation)
142. Gu T,[‡] Gao C,[‡] Yang J,[‡] Yu L, De Jager P, Jin P, Bennet DA, **Zhao J.*** Large-scale genome-wide mapping of brain DNA hydroxymethylation in human AD brain (in preparation)
143. Gao C,[‡] Gu T,[‡] Yang J,[‡] Yu L, Jin P, Bennet DA, **Zhao J.*** QTL mapping for brain DNA hydroxymethylation (in preparation)
144. Eisele M, Miao G,[‡] Fiehn O, Ali T, Cole SA, Fretts AM, Umans JG, Reese J, Malloy K, Best LG, Devereux RB, Howard BV, Lee ET, Zhang Z, **Zhao J.*** Lipidomic profiling and perceived stress in American Indians: The Strong Heart Family Study (in preparation)
145. Gu T,[‡] Zhao Y, Gao C,[‡] Miao G,[‡] Bennett DA, He C, **Zhao J.*** Genome-wide mapping of brain m6A in human AD brains. (in preparation)
146. Hu H,[‡] Wen X,[‡] Zheng Y, Fowler E, Glen D, Strachan E, **Zhao J.** An External Exposome-Wide Association Study of Depressive Symptoms: A Monozygotic Twin Study (in preparation)
147. Subedi P[‡], Qin H,[‡] Cole SA, Plaza MT, Domingo-Relloso A, Haack K, Fallin D, Tang WY, Liu S, Needham BL, Lee ET, Umans JG, Howard BV, Liu Y, Aviv A, Levy D, Vasan RS, Navas-Acien A, **Zhao J.*** Telomere length, DNA methylation and risk for cardiovascular disease: meta-analysis in multi-ethnic groups. (in preparation)
148. Huang F, Bailey LS, Gao T, Jiang W, Yu L, Bennett DA, **Zhao J.** Basso KB, Guo Z. Analysis of biologically derived glycosphingolipids through two-stage matching of MS/MS spectra (in preparation)
149. Goode C, **Zhao J.** Devereux RB, Murthy S, Merkler AE, Singh P, Umans JG, Howard BV, Cole SA, Fretts AM, Best LG, Ali T, Lee ET, Zhang Y. Leukocyte Telomere Length and the Risk of Stroke: The Strong Heart Study (in preparation)

Selected published abstracts and presentations *(In reverse chronological order.*

**Correspondence; [‡]Trainee)*

1. Wen X,[‡] Fretts AM, Miao G,[‡] Molly K, Zhang Y, Umans JG, Cole SA, Best LG, Fiehn O, **Zhao J.*** Plasma lipidomic markers of diet quality are associated with risk of CHD in young and middle-aged American Indians. The American Heart Association Scientific Sessions, Nov 11-13, Philadelphia, 2023
2. Miao G,[‡] **Wu C.** Strachan E, Fowler E, Bacus T, Zhao J.* Gut microbiota-derived metabolites and cardiometabolic traits: findings from a monozygotic twin study. The American Heart Association Scientific Sessions, Nov 11-13, Philadelphia, 2023
3. Chen M,[‡] Miao G,[‡] Molly K, Zhang Y, Umans JG, Cole SA, Best LG, Fiehn O, **Zhao J.*** Plasma lipidomic signature of peripheral artery disease in young and middle-aged

American Indian individuals: a longitudinal study in the Strong Heart Family Study. The American Heart Association Scientific Sessions, Nov 11-13, Philadelphia, 2023

4. Miao G[‡], Malloy KM, Zhang Y, Cole SA, Umans JG, Best LG, Fiehn O, **Zhao J.*** Lipidomics profiling of risk for subclinical atherosclerosis: a longitudinal study in American Indians in the Strong Heart Study. The American Heart Association Scientific Sessions, 2023
5. Chen M,[‡] Huo Z,[‡] Peng H,[‡] Miao G,[‡] Wen X,[‡] Anton S, Hu G, Brock R, Brantley PJ, **Zhao J.*** Longitudinal profiling of fasting plasma metabolome in response to weight-loss interventions in patients with morbid obesity. Presented at the American Heart Association Scientific Sessions 2022
6. Wen X,[‡] Palma-Gudiel H,[‡] Miao G,[‡] Chen M,[‡] Huo Z,[‡] Peng H,[‡] Anton S, Hu G, Brock R, Brantley PJ, **Zhao J.*** Blood DNA methylation predicts differential metabolic outcomes induced by different types of weight-loss intervention: findings from an epigenome-wide association study. Presented at the American Heart Association Scientific Sessions, 2022
7. Xiong M, Fan R, Luo L, Xu T,[‡] Sun X, **Zhao J**, Bowerwinkle E. New Paradigm for Uncovering the Clinical Consequences of Genetic Variation. Presented at the American Society of Human Genetics, 2022
8. **Zhao J**, Xu T,[‡] Xiong M. Transformer generative adversarial networks and variational autoencoder for causal analysis of genetic variation in the presence of unobserved confounding. Presented at the American Society of Human Genetics, 2022
9. Zeng W[‡], Miao G[‡], Chen M[‡], Zhang Y, Umans JG, Cole SA, Lee ET, Howard BV, Fiehn O, **Zhao J.** Longitudinal lipidomics profiling of risk for hypertension in American Indians: The Strong Heart Study. Presented at the American Heart Association Scientific Sessions 2021, Nov 13-15, 2021
10. Zeng W[‡], Miao G[‡], Chen M[‡], Zhang Y, Umans JG, Cole SA, Lee ET, Howard BV, Fiehn O, **Zhao J.** Lipidomics profiling and risk for cardiovascular disease: a longitudinal study in American Indians. Presented at the American Heart Association Scientific Sessions 2021, Nov 13-15, 2021
11. Miao G[‡], Zeng W[‡], Roman MJ, Devereux RB, Zhang Y, Lee ET, Howard BV, Fiehn O, **Zhao J.** Lipidomics profiling of risk for subclinical atherosclerosis: a longitudinal study in American Indians in the Strong Heart Study. Presented at the American Heart Association Scientific Sessions, 2021, Nov 13-15, 2021
12. Goode C, **Zhao J**, Devereux R, Murthy S, Merkler A, Singh S, Umans J, Howard BV, Cole S, Fretts A, Best LG, Ali T, Lee E, Stoner J, Zhang Y. Leukocyte Telomere Length And Risk Of Stroke: The Strong Heart Family Study. Presented at the American Heart Association Scientific Sessions, 2020, Nov 13-17
13. Zhu Y[‡], Zhang Y, Zhu J, Umans JG, Cole SA, Lee ET, Howard BV, Fiehn O, **Zhao J.*** Novel plasma lipids predict risk of diabetes: a longitudinal lipidomics study in American Indians. Platform presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ

***This abstract won the Scott Grundy Fellowship Award for Excellence in Metabolism Research, presented by the AHA.**

14. Almuwaqqat Z, Nye J, Moazzami K, Brookhaven GA, Lima BB, Shah AJ, Blackburn E, **Zhao J**, Lin J, Sun Y, Quyyumi AA, Vaccarino V, Bremner JD. Brain regions activation

during stress and accelerated biological aging. Platform presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ

15. Navas-Acien a, Domingo-Relloso A, Tellez-Plaza M, Gomez L, Herreros M, Devereux RB, Baccarelli A, Umans JG, Howard BV, **Zhao J**, Cole SA. Blood DNA methylation signatures of incident coronary heart disease: an epigenome-wide analysis in the Strong Heart Study. Moderated presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ
16. Subedi S[‡], Qin H[‡], Cole SA, Plaza MT, Domingo-Relloso A, Haack K, Fallin D, Tang WY, Liu S, Needham BL, Lee ET, Umans JG, Howard BV, Liu Y, Aviv A, Levy D, Vasan RS, Navas-Acien A, **Zhao J**. Telomere length, DNA methylation, and risk of CVD: a meta-EWAS of four multi-ethnic prospective cohorts. Poster presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ
17. Zheng Y[‡], Bian J, Lipkinid HS, **Zhao J**, Pearson TA, Hu H[‡]. Racial/ethnic and geographic disparities in cardiovascular health among pregnant women in the U.S. Poster presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ
18. Hu Hi[‡], Bian J, Pearson TA, Lipkind HS, Zheng Y[‡], **Zhao J**. Development of predictive models for cardiovascular health to support its use in real-world data. Poster presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ
19. Hu H[‡], **Zhao J**, Bian J, zheng Y[‡], Pearson TA. A polyexposomic risk score for hypertensive disorders of pregnancy using external exposome data. Poster presentation at the American Heart Association EPI/LIFESTYLE Scientific Sessions 2020, March 3-6, Phoenix, AZ
20. Subedi P[‡], Nembrini S, An Q, Peng H, Yeh F, Cole SA, Rhoades DA, Lee ET & **Zhao J**.^{*} Telomere length and cancer mortality in American Indians: The Strong Heart Study. Poster presentation at APHA, Oct 2018
21. Zhu Y[‡], Strachan E, Fowler E, Bacus T, Roy-Byrne P, **Zhao J**.^{*} EWAS for major depression: a monozygotic discordant twin study. Poster presentation at ASHG, Oct 2018
22. Huo Z[‡], Zhu Y[‡], Yu L, Yang J, De Jager P, Bennett DA, **Zhao J**.^{*} Altered DNA methylation variability associated with Alzheimer's disease. Poster presentation at ASHG, Oct 2018
23. **Zhao J**,^{*} Zhu Y[‡], Eric Strachan, Emily Fowler, Tamara J. Bacus, Peter Roy-Byrne. Genome-wide profiling of DNA methylome and transcriptome in peripheral blood monocytes for major depression: a monozygotic discordant twin study. Platform presentation at the 2017 Behavioral Genetics Meeting, Oslo, Norway June 28-July 1, 2017
24. Zhu Y[‡], Eric Strachan, Emily Fowler, Tamara J. Bacus, Peter Roy-Byrne, **Zhao J**.^{*} An Epigenomewide Association Study (EWAS) on Alcohol Consumption: A Monozygotic Twin Study. Platform presentation at the 2017 Behavioral Genetics Meeting, Oslo, Norway June 28-July 1, 2017
25. Peng H[‡], Yeh F, Zhang Y, de Simone G, Best LG, Lee ET, Howard BV, **Zhao J**.^{*} Plasminogen Activator Inhibitor-1 Predicts the Risk of Hypertension in American Indians: Findings from the Strong Heart Study. Accepted for oral presentation at the American Heart Association Scientific Sessions, New Orleans Nov 12-16, 2016
26. Zhao Q, Zhu Y[‡], Yeh F, Lin J, Zhang Y, Calhoun D, Cole SA, Lee ET, Howard BV, **Zhao J**.^{*} Depression Is Associated with Leukocyte Telomere Length in American Indians:

Findings from the Strong Heart Family Study. Accepted for poster presentation at the American Heart Association Scientific Sessions, New Orleans Nov 12-16, 2016

27. Hu Z[‡], Wan P, Zhu Y, [‡] Bennett DA, **Zhao J**, Xiong M. A novel causal methylation network approach to Alzheimer's disease. Human Genome Meeting 2016, Houston, February 28-March 2, 2016
28. Lin N, Wang P, Zhu Y, [‡] **Zhao J**, Calhoun VD, Xiong M. Integrative large-scale causal network analysis of brain imaging and genomic data and its application to schizophrenia. Human Genome Meeting 2016, Houston, February 28-March 2, 2016
29. Peng H, [‡] Fawn Y, Cole SA, Best LG, Roman MJ, Lee ET, Howard BV, **Zhao J**.^{*} Prospective Association of Allostatic Load with Incident CVD in American Indians: The Strong Heart Study. EPI/Lifestyle, American Heart Association, Phoenix, February 29-March 4, 2016.
30. Li C, [‡] He J, Hixson JE, Gu D, Rao DC, Shimmin LC, Huang J, Gu CC, Chen J, Li J, Chen J, **Zhao J**, Kelly KN. Genomewide Gene-Potassium Interaction Analyses on Blood Pressure: the GenSalt study. EPI/Lifestyle, American Heart Association, Phoenix, February 29-March 4, 2016.
31. Kelly TN, Ajami NJ, Bazzano LA, **Zhao J**, He J. Gut microbiota diversity and specific microbial genera associate with cardiovascular disease risk: Findings from the Bogalusa Heart Study. EPI/Lifestyle, American Heart Association, Phoenix, February 29-March 4, 2016.
32. An Q, [‡] Zhu Y, [‡] Goldberg J, Vaccarino V, **Zhao J**.^{*} Alterations in DNA methylation of circadian-related genes are associated with metabolic traits: a gene promoter-based and gene-set analysis in monozygotic twins. EPI/Lifestyle, American Heart Association, Phoenix, February 29-March 4, 2016.
33. Pimple PM, Wilmut K, Mheid IA, **Zhao J**, Lin J, Blackburn E, Rooks C, Goetz M, Sun Y, Bremner JD, Quyyumi AA, Vaccarino V. Adherence to the Mediterranean diet is associated with longer telomere length in patients with coronary artery disease. EPI/Lifestyle, American Heart Association, Phoenix, February 29-March 4, 2016.
34. **Zhao J**, ^{*} Zhu Y, Xiong M. A novel quadratically regularized canonical correlation analysis for genetic pleiotropic analysis of multiple phenotypes. The Human Genome Meeting, Houston, February 28 – March 2, 2016
35. Zhu Y, [‡] An Q, [‡] Best, LG, Lee ET, Howard BV, Devereux RB, Roman MJ, **Zhao J**.^{*} Novel metabolic markers for the risk of carotid plaque progression in American Indians. EPI/Lifestyle, American Heart Association, Baltimore, March 3-6, 2015.
36. An Q, [‡] Vaccarino V, Goldberg J, **Zhao J**.^{*} Promoter Methylation of the MAOA Gene Is Associated with Fasting Plasma Glucose: A Monozygotic Twin Study. EPI/Lifestyle, American Heart Association, Baltimore, March 3-6, 2015.
37. **Zhao J**, ^{*} Mete M, Desale S, Fretts AM, Cole SA, Best LG, Lin J, Matsuguchi T, Blackburn E, Lee ET, Howard BV. Life's simple 7 and telomere length in American Indians. EPI/Lifestyle, American Heart Association, Baltimore, March 3-6, 2015.
38. Zhu Y, [‡] He J, Best LG, Lee ET, Howard BV and **Zhao J**.^{*} Metabolic predictors of type 2 diabetes in American Indians: The Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Francisco, March 18-21, 2014.

39. **Zhao J**, * Zhu Y,[‡] He J, Lin J, Matsuguchi T, Blackburn E, Lee ET, Howard BV. Metabolic profiles of biological aging in American Indians: The Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Francisco, March 18-21, 2014.
40. Chen S,[‡] Yeh F, Lin J, Matsuguchi T, Blackburn E, Lee ET, Howard BV, **Zhao J**. * Short leukocyte telomere length is associated with obesity in American Indians: The Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Francisco, March 18-21, 2014.
41. Li S, Zhu Y, * Wang G, Yun M, McLachlan JA, Chen W, He J, Whelton PK, **Zhao J**. * Urinary triclosan concentrations are associated with body mass index and waist circumference in US population, NHANES 2003-2010. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Francisco, March 18-21, 2014.
42. **Zhao J**, * Zhu Y,[‡] Xiong M. Gene-gene interaction analysis for next-generation sequencing. The 63rd Annual Meeting of the American Society of Human Genetics in Boston, October 22-26, 2013. (*Platform presentation*)
43. Chen S,[‡] Roman RJ, Yeh F, Lin J, Matsuguchi T, Blackburn E, Devereux RB, Lee ET, Howard BV, and **Zhao J**. * Prospective association of leukocyte telomere length and incident carotid atherosclerosis in American Indians. The American Heart Association Scientific Session, Dallas, Nov 16-20, 2013. (*Platform presentation, this abstract has been interviewed by the American Heart Association*)
44. Zhu Y,[‡] Lee ET, Cole SA, Haack K, Best LG, Howard BV, **Zhao J**. * Genetic variants involved in telomere maintenance and type 2 diabetes in American Indians: a pathway association analysis. The American Heart Association Scientific Session, Dallas, Nov 16-20, 2013.
45. Zhu Y,[‡] Lee ET, Cole SA, Haack K, Best LG, Howard BV, **Zhao J**. * Joint association of 31 mitochondrial variants with type 2 diabetes: The Strong Heart Family Study. The 63th Annual Meeting of the American Society of Human Genetics, Boston, Oct 22-26, 2013.
46. Yang J,[‡] Zhu Y,[‡] Cole SA, Haack K, Howard BV, Best LG, Mary RJ, Devereux RB, Lee ET and **Zhao J**. * Joint impact of 61 genetic variants in seven nicotinic acetylcholine receptor genes on subclinical atherosclerosis in American Indians: a gene-set analysis. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, New Orleans, March 19-22, 2013 (*Platform presentation, Hot Of Press*)
47. **Zhao J**, * Zhu Y,[‡] Xiong M. A smooth functional principle component analysis of next generation sequencing data. The 62th Annual Meeting of the American Society of Human Genetics, San Francisco, Nov 6-10, 2012. (*Platform presentation*)
48. **Zhao J**, * Goldberg J, Vaccarino V. Promoter methylation of glucocorticoid receptor gene is associated with subclinical cardiovascular disease: a monozygotic twin study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Diego, March 13-16,

2012. (Platform presentation. This abstract won the Rogers R. Williams Award for Genetic Epidemiology, presented by the American Heart Association, 2012)

49. Yang J,[‡] Cole SA, Haack K, Howard BV, Best LG, Mary RJ, Devereux RB, Lee ET and **Zhao J.**^{*} Joint impact of 61 genetic variants in seven nicotinic acetylcholine receptor genes on subclinical atherosclerosis in American Indians: a gene-set analysis. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Diego, March 13-16, 2012
50. Yang J,[‡] Cole SA, Haack K, Howard BV, Best LG, Roman RJ, Devereux RB, Lee ET and **Zhao J.**^{*} A pathway analysis of 32 genetic variants in leukotriene genes and subclinical atherosclerosis in American Indians: the Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, San Diego, March 13-16, 2012.
51. Yang J,[‡] Cole SA, Haack K, Howard BV, Best LG, Devereux RB, Lee ET and **Zhao J.**^{*} Gene and pathway-based analysis of 61 genetic variants in the nicotinic acetylcholine receptor genes and insulin resistance in American Indians. The 61th Annual Meeting of the American Society of Human Genetics, Montreal, Quebec, Canada, October 11-15, 2011
52. **Zhao J.**^{*} Cowan LD, Yang J,[‡] Zhang Y,[‡] Cole SA, Haack K, Howard BV, Lee ET. Leukotriene haplotype, diet and insulin resistance: the Strong Heart Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Atlanta, March 22-25, 2011
53. Yang J,[‡] Cowan LD, Zhang Y,[‡] Cole SA, Haack K, MacCluer JW, Howard BV, Lee ET, **Zhao J.**^{*} NOS3 genotype, dietary intake and insulin resistance: The Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Atlanta, March 22-25, 2011
54. Yang J,[‡] Zhang Y,[‡] Cowan LD, Cole SA, Haack K, MacCluer JW, Howard BV, Lee ET and **Zhao J.**^{*} Cumulative association of 62 genetic variants in a smoking-metabolizing pathway with insulin resistance in American Indians: The Strong Heart Family Study. The Nutrition, Physical Activity and Metabolism and the Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Atlanta, March 22-25, 2011
55. **Zhao J.**^{*} Forsberg CF, Yang J,[‡] Goldberg J, Smith NL, Vaccarino V. MAOA methylation is associated with subclinical atherosclerosis in a monozygotic twin sample. American Heart Association Scientific Session, Chicago, IL, Nov 13-17, 2010
56. **Zhao J.**^{*} Wu X, Zhu Y,[‡] Xiong M. A novel statistic for testing genetic interactions between linked loci. The 60th Annual Meeting of the American Society of Human Genetics, Washington, DC, Nov 2-6, 2010
57. Yang J,[‡] Bouzyk M, Goldberg J, Vaccarino V, **Zhao J.**^{*} Interaction between monoamine oxidase A gene polymorphism and childhood emotional abuse on susceptibility to early

atherosclerosis: a twin study. The 60th Annual Meeting of the American Society of Human Genetics, Washington, DC, Nov 2-6, 2010

58. **Zhao J**, * Goldberg J, Bremner JD, Jones L, Bouzyk M, Tang W, Vaccarino V. Dietary intake modifies the effect of leukotriene A4 hydrolase gene on subclinical atherosclerosis. The 49th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Palm Harbor, FL, March 10-14, 2009 (Platform presentation. *This abstract was selected as Finalist for the Sandra Daugherty Award for Excellence in Cardiovascular Disease or Hypertension Epidemiology, presented by the American Heart Association, 2009*)
59. **Zhao J**, * Goldberg J, Su S, Bouzyk M, Tang W, Bremner JD, Jones L, Murrah N, Vaccarino V. Leukotriene A4 hydrolase gene polymorphism is associated with subclinical atherosclerosis. The 49th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Palm Harbor, FL, March 10-14, 2009
60. Su S, **Zhao J**, * Bremner JD, Miller AH, Bouzyk M, Snieder H, Goldberg J, Vaccarino V. haplotypes of serotonin transporter gene associated with both depressive symptoms and interleukin-6 in middle-aged males: the twins heart study. The 49th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Palm Harbor, FL, March 10-14, 2009
61. **Zhao J**, * Bremner JD, Bouzyk M, Tang W, Goldberg J, Afzal N, Murrah N, Jones L, Vaccarino V. Tryptophan hydroxylase gene haplotypes modify the effect of childhood emotional abuse on symptoms of depression, American Heart Association Scientific Session, Orlando, FL, Nov 14-18, 2009
62. **Zhao J**, * Riyaz Patel,[‡] A. Maziar Zafari, Viola Vaccarino, Arshed A. Quyyumi. A potential common genetic pathway linking depression to cardiovascular disease. The 58th Annual Meeting of the American Society of Human Genetics, Philadelphia, Nov 11-15, 2008
63. Luo L, Peng G, Siu H, Zhu Y,[‡] Hu P, Hong S, **Zhao J**, Zhou X, Reveille J, Amos C, Jin L, Xiong M. Gene and pathway-based analysis second wave of GWAS. The 58th Annual Meeting of the American Society of Human Genetics, Philadelphia, Nov 11-15, 2008
64. **Zhao J**, * Quyyumi AA, Patel R, Qureshi I, Warren F, Zafari AM, Veledar E, Onufrak S, Gulcher JR and Vaccarino V. Gender-Specific Association of Depression and a Haplotype in Leukotriene A4 Hydrolase Gene. The 48th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Colorado Springs, CO, March 13-15, 2007
65. Veledar E, Narayan V, Wenger N, **Zhao J**, Shaw L, Wilson P, Vaccarino V. Trends in Coronary Heart Disease (CHD) Incidence and Mortality Rates in US Women. The 48th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Colorado Springs, CO, March 13-15, 2007
66. **Zhao J**, * Cheema FA, Bremner JD, Goldberg J, Su S, Snieder H, Maisano C, Jones L, Murrah N and Vaccarino V. Heritability of carotid intima-media thickness: a twin study. American Heart Association Annual Meeting, Chicago, Illinois, Nov 12-15, 2006 (*Platform presentation. This abstract won the Elizabeth Barrett-Connor Research Award*)

in Epidemiology for Young Investigator, presented by the American Heart Association, 2006)

67. **Zhao J**,* Cheema FA, Reddy U, Bremner JD, Su S, Goldberg J, Snieder H, and Vaccarino V. Heritability of flow-mediated dilation: a twin study. The 47th Cardiovascular Disease Epidemiology and Prevention, American Heart Association, Orlando, FL, Feb 28-Mar 3, 2006
68. **Zhao J**, Jin L and Xiong M. Nonlinear tests for genome-wide association studies. The 55th Annual Meeting of the American Society of Human Genetics, Salt Lake City, Utah, Oct 25-29, 2005
69. Wang Y, **Zhao J**, Zhou X, Wang W, Jin L and Xiong MM(2005) Identification of genetic interaction networks. The 55th Annual Meeting of the American Society of Human Genetics, Salt Lake City, Utah, Oct 25-29, 2005
70. Xiong M, **Zhao J**, Boerwinkle E and Amos C. Nonlinear transmission/disequilibrium test. The 55th Annual Meeting of the American Society of Human Genetics, Salt Lake City, Utah, Oct 25-29, 2005
71. **Zhao J** and Xiong M. Global test for genome-wide association studies. The American Journal of Human Genetics, A511. The 54th Annual Meeting of the American Society of Human Genetics, Toronto, Ontario, Canada, 2004
72. Xiong M, **Zhao J**, Boerwinkle E. Dynamic models for quantitative genetics. The American Journal of Human Genetics, A511. The 54th Annual Meeting of the American Society of Human Genetics, Toronto, Ontario, Canada, Oct 26-30, 2004
73. Zhou X, **Zhao J**, Arnett FC, Xiong M. Candidate pathway approach to genetic studies of complex traits. The 53th Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, Nov 4-8, 2003
74. Xiong M and **Zhao J**. Genetic and transcriptional analysis of metabolic networks. The 53th Annual Meeting of the American Society of Human Genetics, Nov 4-8, Los Angeles, CA, Nov 4-8, 2003
75. Li Y, Liu L, **Zhao J**, Zuo J, Fang F. *Pank4*, a novel pantothenate kinase gene is a candidate gene for type 2 diabetes mellitus. The 53th Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, 2003
76. Wu G, **Zhao J**, Yang C, Wang H, Zuo J, Wang Y, Liu Z, Zhang Y, Shen Y, Qiang B, Huang W, Zhu C, Fang F. Association analysis of genetic polymorphisms in *sac*, *pank4*, *casp9*, and *cdc22* genes with type 2 diabetes in Han Chinese of Northern China. The 53th Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, Nov 4-8, 2003
77. **Zhao J** and Xiong M. Genetic analysis of function-valued traits. The 53th Annual Meeting of the American Society of Human Genetics, Los Angeles, CA, Nov 4-8, 2003

78. **Zhao J** and Xiong M. Unbiased quantitative population association test. The 52th Annual Meeting of the American Society of Human Genetics, Baltimore, Maryland, Oct 15-19, 2002
79. Sun H, **Zhao J**, Du W, Wang H, Zuo J, Qiang B, Shen Y, Yao Z, Huang W, Chen Z, Xiong M, Fang F. SNP analysis of candidate genes associated with type 2 diabetes in Chinese Han population. The 52th Annual Meeting of the American Society of Human Genetics, Baltimore, Maryland, Oct 15-19, 2002
80. **Zhao J** and Xiong M. The generalized T^2 test for biomarker identification using gene expression data. The 51th Annual Meeting of the American Society of Human Genetics, San Diego, CA, Oct 12-16, 2001
81. Xiong M, **Zhao J**, Li J, E Boerwinkle. Dynamic models for mapping quantitative traits with time-dependent genetic effects. The 51th Annual Meeting of the American Society of Human Genetics, San Diego, CA, Oct 12-16, 2001
82. Xiong M, **Zhao J**, Jin L, Boerwinkle E. Fine-scale mapping of quantitative traits loci by internal mapping in human population. The 50th Annual Meeting of the American Society of Human Genetics, Philadelphia, PA, Oct 3-7, 2000
83. **Zhao J**, Amos C, Boerwinkle E, Xiong M. Multiple-marker locus and multiple trait-locus linkage disequilibrium mapping of quantitative trait loci with epistasis. The 50th Annual Meeting of the American Society of Human Genetics, Philadelphia, PA, Oct 3-7, 2000
84. **Zhao J**, Xiong M, Huang W, Wang H, Zuo J, Chen Z, Qiang B, Zhang ML, Du WN, Chen JL, Ding W, Yuan WT, Zhao Y, Xu HY, Jin L, Li YX, Sun Q, Liu QY, Fang FD. Type 2 diabetes susceptibility loci maps on chromosomes 1 and 20 in Chinese Han families. The 49th Annual Meeting of the American Society of Human Genetics, San Francisco, CA, Oct 19-23, 1999

Book Chapters Published

Qin H, Ouyang W, and **Zhao J** (2020). High-order association mapping for expression quantitative trait loci. In: Xinghua Mindy Shi (1st edition): eQTL Analysis. Methods in Molecular Biology. 2020; 2082: 147–156. Springer Protocols. Humana, New York, NY. ISBN 978-1-0716-0025-2.

Selected External Lectures/Seminars

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| 2008 | <i>Genetic Linkage and Association Analysis for Human Complex Disorders</i>
Cardiovascular Research Institute, Morehouse School of Medicine, Atlanta, GA |
| 2008 | <i>Genetic Susceptibility to Coronary Artery Disease</i>
Division of Biostatistics and Epidemiology
Medical University of South Carolina, Charleston, SC |
| 2009 | <i>Genetic Determinants of Type 2 Diabetes and Its Related Phenotypes</i>
Clinical Endocrinology and Metabolism Forum, Chinese Academy of Medical Science, Beijing, China |
| 2009 | <i>Genome-wide Linkage and Association Studies of Type 2 Diabetes</i> |

- Endocrinology Research Conference
University of Oklahoma Health Science Center, Oklahoma City, OK
- 2010 *Genetics of Type 2 Diabetes and Its Risk Factors*
School of Medicine, University of Oklahoma HSC, Oklahoma City, OK
- 2012 *Genetic mechanisms in Metabolic Disorders*
Emory University School of Public Health, Atlanta, GA
- 2013 *Telomeres and epigenetic factors in CVD risk*
Department of Biostatistics, University of North Carolina, Chapel Hill, NC
- 2013 *Biological aging and diabetes risk in American Indians*
Department of Biostatistics, Tulane University School of Public Health and Tropical Medicine, New Orleans
- 2013 *Genetic and epigenetic determines for CVD and type 2 diabetes*
Hayward Genetics Center, Tulane University School of Medicine, New Orleans,
- 2014 *Novel 'omics' markers for CVD, diabetes and their risk factors*
Department of Preventive Medicine, Northwestern University, Chicago, IL
- 2014 *Metabolomic profiling of CVD and diabetes: Findings from American Indians*
Chinese Heart Conference, Beijing, China
- 2015 *Novel Biomarkers for CVD and its Risk Factors*
Emory University School of Medicine, Atlanta, GA
- 2015 *Brain DNA hydroxymethylome in Alzheimer's disease: a pilot study*
Rush University Medical Center, Chicago, IL.
- 2016 *Novel 'Omics' Biomarkers for Human Complex Diseases: Genomics, Epigenomics, Transcriptomics, and Metabolomics*
Department of Epidemiology & Community Health, University of Minnesota, Minneapolis, MN
- 2019 *A longitudinal lipidomics profiling of diabetes risk in American Indians*
Rush University Medical Center, Chicago, IL
- 2019 *Precision Health to Human Complex Diseases: A Multi-Omics Approach*
Tulane University, New Orleans, LA
- 2020 *Identifying Novel Omics Markers for Human Complex Diseases*
Presented to the Department of Biostatistics, University of Florida, Gainesville FL
- 2023 Gut microbiome, diet and cardiometabolic disorders
Invited late-breaking speaker, The Geological Society of Aging, Tampa, FL, Nov 8-12, 2023
- 2023 Lipidomics and metabolomics in Native Americans
Invited speaker, NIH Advancing Health Equity Through Culture-Centered Dietary Interventions to Address Chronic Diseases Workshop, Sept 28-29, 2023.