

Curriculum Vitae

Contact Information

Department of Biostatistics
College of Public Health
University of Nebraska Medical Center
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Education

- Ph.D. Statistics, August 2006
University of Kentucky, Lexington, KY
Dissertation: *Parameter Estimations and Homogeneity Tests in Mixture Model.*
- M.S. Statistics, December 2004
University of Kentucky, Lexington, KY
- M.S. Mathematics, August 2004
University of Kentucky, Lexington, KY
- B.S. International Economics, July 1997
University of International Business and Economics, P.R. China

Continuing Education

- 2021 mHealth
The NIH mHealth Training Institute
- 2019 Optimization of Behavioral and Biobehavioral Interventions
Pennsylvania State University
- 2018 Exploring and Analyzing Monitoring the Future Data
University of Michigan
- 2017 The Population Assessment of Tobacco and Health (PATH)
University of Michigan
- 2017 The Pediatric Health Information System
Children’s Hospital Association
- 2014 Beyond Bioinformatics
The Statistical and Applied Mathematical Sciences Institute (SAMSI)
- 2014 Nonparametric Statistics for Big Data
University of Wisconsin at Madison
- 2012 Statistical Genetics and Genomics
University of Alabama at Birmingham

Employment

Associate Dean of Research
College of Public Health
University of Nebraska Medical Center

2020 – Present

<i>Professor</i> Department of Biostatistics, College of Public Health University of Nebraska Medical Center	<i>2020 – Present</i>
<i>Associate Professor</i> Department of Biostatistics, College of Public Health University of Nebraska Medical Center	<i>2018 – 2020</i>
<i>Associate Member</i> , the Fred & Pamela Buffett Cancer Center	<i>2018 – Present</i>
<i>Full member</i> , University of Kansas Cancer Center	<i>2018</i>
<i>Associate Professor</i> <i>Assistant Professor</i> Department of Biomedical & Health Informatics, UMKC Department of Pediatrics, University of Missouri Kansas City (UMKC)	<i>2015 – 2018</i> <i>2009 – 2015</i>
<i>Research Faculty</i> Division of Health Services & Outcomes Research Department of Medical Research, Children’s Mercy Research Institute	<i>2009 – 2018</i>
<i>Assistant Professor in Statistics</i> Department of Mathematics, Columbus State University	<i>2006 – 2008</i>

2023 Research Grant Submission

R01	NIH
Role: PI	Health Effects of E-cigarette Use on Brain Functions and Cognitive Development among Adolescents: A US Population-Based Study 4/1/2024-3/31/2028 PI: Dai/Benowitz \$1,575,081 Impact Score: 20, <4 percentile (pending NOA in April 2024)
T32	NIH
Role: PI	Health Equity Training in Central States: Mitigating Disparities Among Rural, Tribal, and Racial Communities 7/1/2024-6/30/2029 PI: Dai/Rautiainen/Ildoate \$1,565,587

Research Funding

R21MD017324 NIH/NIMHD	Dai (PI)	\$435,829	9/25/2023-6/30/2025
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Racial disparities for the effects of parental marijuana use on youth marijuana and other substance use. This intergenerational study aims to assess racial disparities in the influence of parental marijuana use on youth marijuana and other substance drug use in African Americans and Hispanics/Latinos, two NIH-designated health disparity populations. We will further assess the effects of marijuana legalization and other determinants on intergenerational drug use behaviors by racial and ethnic groups. This mixed-methods sequential explanatory study will be pursued by integrating analyses of intergenerational and longitudinal surveys and semi-structured interviews.
Role: Principal Investigator (20% FTE)

R21 DA058328 NIH/FDA	Dai (PI)	\$441,792	9/1/2023-8/31/2025
Effects of Nicotine Concentration Levels in E-cigarettes on Biomarkers of Exposure to Toxicants and Tobacco Use Behaviors This study will use the national and longitudinal biomarker and adult survey data to understand how e-liquid nicotine concentration levels are related to health effects, tobacco use behaviors, and nicotine dependence in the population level. We will examine between-subjects differences in biomarkers to tobacco-related toxicants by e-liquid nicotine concentration levels, and assess the effects of nicotine concentration levels on longitudinal within-subjects transitions in ENDS ↔ cigarettes and nicotine dependence. For both aims, we will further test the interaction effects of nicotine levels and vaping devices on biomarker outcomes and tobacco use behaviors. Role: Principal Investigator (20% FTE)			
R01 DA058992 NIH/NIDA	Dai/Leventhal (PI)	\$1,502,187	6/15/2023-4/30/2027
Title: Discrimination and Racial Inequalities in Drug Use in U.S. Adults: Associations and Mechanisms Displays of racism and discrimination and their impacts have intensified during the COVID-19 pandemic. By leveraging the nationally-representative bi-weekly and monthly Understanding America Study from March 2020 to June 2022 (38 survey waves) and intensive longitudinal data modeling, this mechanistic study aims to elucidate the nature and mechanisms of the association of discrimination with race and ethnicity inequalities in substance use and provide timely evidence to inform public health officials on how to mitigate the addiction crisis and protect vulnerable populations. Role: Principal Investigator (20% FTE)			
U54CA180905 NIH/NCI	Leventhal/Lerman (PI)	\$20,893,890	9/19/2023-8/31/2028
Title: Tobacco Regulatory Science Investigating the Intersections of Products with Diverse Populations This interdisciplinary center of 4 research projects and 3 cores collects data from social media, tobacco product consumers, population-based observational surveys, and laboratory experiments to inform regulatory policies aimed to prevent youth tobacco product use without discouraging adult smokers from transitioning to e-cigarettes. Project 3 tests transition hypotheses in a large Center-wide USC-TCORS cohort (N=6400) overseen by the Population Core. Rich longitudinally collected data, including up to 8 years of cumulative follow-up will span critical developmental windows from 14-24 years of age, during which lifelong tobacco use patterns have historically been established. Project 4 utilizes human laboratory experiments to identify e-cigarette product characteristics and marketing practices that increase product appeal and addiction liability in young adults but have little effect on appeal, adoption, and transition to e-cigarette use among adult smokers. Role: Site PI for Project 1. (25% FTE)			
R21DA054818 NIH/FDA	Dai (PI)	\$434,951	5/1/2021-4/30/2024
Racial disparities in biomarkers, tobacco cessation, and smoking relapse in association with electronic cigarette use The proposed study seeks to examine racial disparities in biomarkers of e-cigarette use by linking the PATH Waves 1-4 restricted biomarker data and adult survey data. The study will extend our knowledge on the heterogeneity in biomarkers of exposure and toxicants across racial and ethnic groups, including use of different vaping products, flavors, and transition between e-cigarettes and cigarettes. We will further develop a bio-socio-psycho risk index score to predict abstinence from cigarette smoking, relapse to cigarette use, and tobacco-related health outcomes using machine learning algorithms across racial and ethnic groups. Role: Principal Investigator (20% FTE)			
76985	Dai (PI)	\$233,688	11/1/2019-8/31/2021

Robert Wood Johnson Foundation

Developing a community-driven policy framework to optimize the impact of Tobacco 21 regulations and to ensure policy-related health equity

This will be the first study to comprehensively assess community-level health equity related to T21 adoption (Aim 1) and impact on youth tobacco use behaviors (Aim 2) through linkage of large-scale national and community data at the zip code level. We propose a novel CDPF to optimally diffuse the effects of T21 through a mixed-method (Aim 3). We will first develop small area modeling (SAE) to estimate the T21 impacts at the local level, and then conduct semi-structured interviews with key stakeholders to identify gaps and opportunities in T21 implementation.

Role: Principal Investigator (20% FTE)

Dai (PI) \$20,000 7/1/2019-12/30/2020

University of Nebraska Collaboration Initiative Planning Grant

“NO ENDS” – Collaborative Research towards Developing a Multifaceted Program in Prevention of Youth Vaping

The tobacco use landscape among youth has substantially changed with fewer adolescents smoking cigarettes and more adolescents vaping e-cigarettes. This study will develop a novel optimization design for a scalable and multifaceted school-based youth vaping prevention program.

Role: Principal Investigator

Innovation Fund Dai (PI) \$25,000 2/1/2020-8/1/2021

College of Public Health

“A Feasibility, Acceptability, and Fidelity Study of School-Based Youth Vaping Prevention Program in Rural and Urban Nebraska”

The prevalence of current e-cigarette use (“vaping”) among U.S. youth substantially increased from 2017 to 2018 with high school and middle school students reporting 48.5% and 77.8% increases, respectively. School is an important venue to educate and prevent youth from substance use. The overarching goal of this study is to design, test, and measure a scalable and multi-faceted school-based youth vaping prevention program.

Role: Principal Investigator

Nebraska Governance and Technology Center

Seed Grant Wang, Dai, Hasan (MPI) \$20,000 1/1/2023-12/30/2023

Using Machine Learning to Analyze Visual E-Cigarette Misinformation on Instagram and TikTok

Role: Co-PI

R25CA221777 Idoate, Godfrey, Solheim (PI) \$2,145,464 9/1/2023 – 8/31/2028

Ignite-Engage-Sustain: A Comprehensive Approach to Motivate, Involve, Educate, and Mentor Native American Students and Their Communities in Cancer Prevention, Treatment, and Research

Leverage the trust and cooperative spirit that has been garnered working with tribal schools and communities in Nebraska, South Dakota, and Arizona to develop, implement, and evaluate cancer-related science curricula and research experiences aimed to support Native American students.

Role: Co-Investigator

U01DA053624 Fox (PI) \$7,086,755 8/15/2021-6/30/2026

NIH/NIDA

“Uncovering HIV/opioid effects in the brain at the single cell level: transcription, chromatin accessibility, and reservoir analysis in the SIV/cART/morphine/rhesus monkey model”

We will perform studies on the interplay of HIV pathogenesis and opioid abuse in the gold-standard SIV/nonhuman primate system, using single-cell RNA sequencing (scRNAseq) to assess individual cellular transcriptomes. This will give us obtain unparalleled insight into the viral and drug-induced effects on diverse cell types in brain in regions critical for HIV infection and opioid abuse. In addition, we will also focus on primary targets of HIV and drivers of neuropathogenesis, microglia and brain macrophages, using scRNAseq as well as single-cell Assay for Transposase-Accessible Chromatin sequencing (scATACseq)

to gain insight into the epigenetic regulation of gene expression at the single cell level.

Role: Co-Investigator (10% FTE)

K23AG070311 Koll (PI) \$889,170 9/01/2021 - 8/31/2026
NIH/NIA

Promoting physical activity to improve cognitive function in older adults undergoing hematopoietic cell transplantation (HCT)

Major Goal: To develop and test an exercise-based intervention to preserve cognitive function and improve quality of life among older adult hematopoietic cell transplant (HCT) recipients.

Role: Co-Investigator (5% FTE)

R01AR080500 Wang (PI) \$2,392,160 9/01/2021 - 8/31/2026
NIH/NIAMS

Nonaddictive opioid prodrug nanomedicine for musculoskeletal pain

Major Goal: This study seeks to develop and optimize a novel opioid prodrug formulation (ProGel-HMP) that provides potent local analgesia for musculoskeletal pain with minimal adverse opioid side effects and a low risk of developing dependency and addiction.

Role: Co-Investigator (5% FTE)

80599 Kim (PI) \$591,708 2/15/2023-2/14/2026

Robert Wood Johnson Foundation

Using a cross-sectoral partnership to reduce health disparity in colon cancer screening of African Americans

Major Goal: In this randomized controlled trial, the BEAT CANCER project – for Black Equity, Access and Testing for Cancer – will reach out to 2000 African Americans to distribute fecal immunochemical test kits for colorectal cancer screening.

Role: Mentor and Co-Investigator (5.0% FTE)

U54GM115458 Rizzo (PI) \$19,705,557 10/1/2018-06/30/2021
NIH/DHHS/NIGMS

Great Plains IDeA-CTR

The aim of the RIISCC model is to reduce readmissions and emergency room visits in high-risk, high-utilization, and high severity diabetic patients; thus improving quality of care and reducing cost. This program will focus on Innovation Category Four- to improve the health of populations through better prevention efforts, and will have a specific focus on underserved populations. The purpose is to develop and test a new care delivery and payment model utilizing telehealth strategies for targeted case management.

Role: Co-Investigator (10% FTE)

R03AG060095-01A1 Koll (PI) \$228,750 8/15/2019-5/31/2021
An Expanded Framework To Measure Cognitive Function In Older Adults Undergoing Hematopoietic Cell Transplantation

This research will lay the foundation for an NIH career development award application and for a larger, multi-institutional prospective cohort study to identify factors associated with greater risk for poor cognitive outcomes and help design supportive care interventions that consider the interactions between HCT with aging, existing health conditions and multifactorial geriatric concerns to promote and improve function and QOL for older HCT recipients.

Role: Co-Investigator

PO #636D14054 Viswanathan (PI) 04/01/2021-03/31/2025

TP-R: a novel mediator of obesity-linked insulin resistance in humans.

Veterans Administration Medical Center - Omaha

Clinical, biochemical, and molecular approaches will be employed to determine the potential of TP-R as a therapeutic target in obesity-related insulin resistance and investigate the mechanisms by which TP-R

blockade improves insulin resistance, inflammation, and histidine and glucose metabolism in AT.

R21DC018110 Wang (PI) \$460,356 07/01/2019 – 06/30/2022
Neural Predictors of Speech Perception Outcomes in Adults with Cochlear Implants
NIH/NIDCD

Although cochlear implants (CIs) can significantly improve auditory speech perception, their success rate is highly variable across CI users. The proposed project will identify pre-surgical neural and behavioral measures that predict post-surgical CI outcomes and elucidate how brain reorganization occurs before and after implantation, which will ultimately support better post-surgical planning and the optimization of aural rehabilitation plans for CI candidates.

Role: Co-investigator

U411C190009 Trout (PI) \$3,994,904 06/01/2020 – 09/30/2021
U.S. Department of Education Office of Innovation and Improvement
Fostering Educational Success: Reconnecting Families, Empowering Youth

Developed through an iterative process to promote program sustainability, project goals include: (1) develop and adapt existing program components and measures to address the needs of students exiting foster care; (2) pilot-test for feasibility, acceptability, and further refinement; and (3) evaluate FES on student educational engagement and stability through a three-year RCT.

Role: Evaluator

 Guenzel (PI) \$40,000 3/1/2020-2/28/2022

NCARE Pilot Project Funding, Washington State University

Feasibility and impact of distance American Indian peer recovery coaches

The use of peer recovery coaches (PRCs) in assisting with alcohol addiction recovery has been expanding but research regarding their methods and impact has been limited. This study is designed to overcome many of the limitations of previous PRC research including unclear/inconsistent PRC role definitions, lack of a control group/randomization, no attention control group, no verification of relapses, no evaluation of distance-delivered PRC services, and no comparison of AI outcomes in various settings.

Role: Co-investigator

 Guenzel (PI) \$49,989 7/1/2019-6/30/2021

UNMC Health Disparities Pilot Grant

Peer Recovery Coaches to Help Native Americans Recovering from Addiction

Addiction devastates American Indian (AI) communities across the country. One promising solution is training AI peer recovery coaches (PRCs) who have overcome addiction, allowing them to relate to struggling individuals. We believe AI PRC services will be associated with a significantly lower rate of relapse providing support for more widespread training and employment of PRCs in AI communities.

Role: Co-investigator

R03CA228909 Dai (PI) \$165,165 9/14/2018-8/31/2020
NIH/FDA

Effects of the FDA Compliance Inspections of Tobacco Retailers on Youth E-cigarette and Cigar Use: A National Study

This study will develop advanced statistical models and assess the impacts of the FDA retail compliance inspections on youth cigar and e-cigarette use behaviors (e.g., ever, current, and frequency of use). Results from this study are expected to inform appropriate retail compliance inspection strategies and further expand our knowledge of the potential impacts of regulatory actions on youth e-cigarette and cigar use behaviors.

Role: Principal Investigator

33-FY17-5128 Dai & Catley (PI) \$155,398 6/15/2017-12/14/2020
Health Forward Foundation
Impacts of Kansas City Area Tobacco 21 Initiative

The purpose of this proposal is to assess the impact of Tobacco 21 by conducting an annual survey (for 3 consecutive years) of tobacco use, attitudes and awareness of the Tobacco 21 initiative, perception of tobacco harmfulness, and sources of nicotine/tobacco product acquisition in targeted high schools students that are within and outside of cities with Tobacco 21 policies.

Role: Principal Investigator

GOLDSW18A0-1 Goldsweng (PI) \$48,611 07/01/2019 – 06/30/2020

Measurement of Beta Cell Death in Individuals with Cystic Fibrosis

Systic Fibrosis Foundation

This study evaluates the feasibility of using differentially methylated insulin DNA, a biomarker of beta cell death, in determining the time course of beta cell death and development of diabetes in people with cystic fibrosis. If this assay successfully detects beta cell death in individuals with CF, the investigators can identify critical time points of beta cell loss in people with CF.

Role: Co-investigator

3U54HD061939-10S1 Rizzo (PI) \$478,254 10/1/2018-9/30/2019

NIH/ NCATS

Sterol and Isoprenoid Diseases Consortium Supplement 2018

Sjögren-Larsson syndrome is a rare genetic disease that is characterized by congenital ichthyosis, spasticity, intellectual disability and a distinct retinopathy. It is caused by mutations in a gene called *ALDH3A2* and results in abnormal lipid metabolism. The pathogenic mechanisms that are responsible for the symptoms are still not defined. The proposed research will investigate whether a distinctly abnormal group of biochemicals in the blood, which constitute a “metabolomics profile”, will correlate with the severity of symptoms in patients and thereby act as an objective biomarker for disease severity.

Role: Co-investigator

R01DK107490 Srivastava (PI) \$2,006,845 8/27/2016-8/04/2018

NIH/NIDDK

Targeting PGE2 Receptors to attenuate shear stress-induced glomerular injury.

The study is investigating the role of biomechanical forces in hyperfiltration-mediated glomerular injury, and how one can attenuate the injury by targeting prostanoid receptors. The study also is evaluating biomarkers that can be used in clinical trials addressing hyperfiltration-mediated injury in children.

Role: Co-Investigator

R01DK100779 Patton (PI) \$1,776,142 8/1/2014-8/04/2018

NIH (NIDDK)

Longitudinal test of adherence & control in kids new to T1 diabetes & 5-9 yrs old

Summary: The proposed study aims to 1) prospectively identify adherence and glycemic trajectories in families of 5-9 year-olds with new-onset T1DM; 2) identify modifiable parent, child, and family behavior factors that serve as barriers or facilitators of adherence and glycemic trajectories in these families; 3) perform initial efficacy and feasibility testing of a prototype education plus behavioral intervention to improve health outcomes in these children.

Role: Co-Investigator

Raje (PI) \$141,632 7/1/2015-6/30/2018

New Investigator Award, Children's Mercy

Noncoding RNA and phenotypic variation in chromosome 22q11.2 deletion syndrome

This study promises to advance the limited knowledge about the role of long non-coding RNAs in immune deficiencies. The findings from this study will lead to new ideas for future –omics research to determine the role of epigenetic factors like non-coding RNA in immune deficiencies, particularly 22qDS.

Role: Co-Investigator

Burgert (PI)		\$140,000	7/1/2015-6/30/2018
Katharine Berry Richardson, Children's Mercy			
The Effect of Treating Insulin Resistance & Androgen Excess on Metabolic and Neuro-functional Aspects of Adolescent PCOS			
Polycystic Ovarian Syndrome (PCOS) is the most common endocrinopathy in adolescent females and also one of the most complex. Prior to treatment and 6 months post treatment initiation, we will conduct structural and functional magnetic resonance imaging (MRI) with participants.			
Role: Co-Investigator			
U19HD077693	Kingsmore (PI)	\$5,000,000	9/5/2013-12/31/2016
NIH (NICHD/ NHGRI)			
Clinical and social implications of 2-day genome results in acutely ill newborns			
Summary: The proposed study aims to increase scientific knowledge of whole genome sequencing (WGS) for acutely ill neonates. The proposed clinical study is a prospective, randomized, partially blinded study which has both quantitative and qualitative assessments of the risks and benefits of the use of STATseq, a 2-day genome test, in acutely ill neonates at Children's Mercy Hospital. Study participants include neonates, their parents and clinicians caring for them.			
Role: Co-Investigator			
	Shakhnovich (PI)	\$100,000	1/1/2013 - 8/31/2017
Marion Merrell Down Fund, Children's Mercy			
Effect of obesity on pantoprazole pharmacokinetics and CYP2V19 activity in children and adolescents with GERD: a pilot study.			
The proposed study will examine the effect of obesity on the metabolism of a commonly used medication, the proton pump inhibitor pantoprazole, by exploring the relationships between age, obesity, basal metabolic rate and genetic control of the enzyme primarily responsible for pantoprazole metabolism (CYP2C19).			
Role: Co-investigator			
MOHHU0016-13	Kennedy (PI)	\$748,000	11/01/2013 – 10/31/2017
Housing & Urban Development (HUD) Healthy Home Technical Studies Grant			
Through this effort, KC-HEART will attempt to provide significant advancement in knowledge about the relationship between basic housing conditions and their relationship to the health of occupants as well as new knowledge about the relationship between outdoor and indoor environmental characteristics of homes and the methods and data collected to assess these hazards.			
Role: Co-Investigator			
W81XWH-14-1-0374	Talebizadeh (PI)	\$148,000	9/30/2014-9/29/2016
Department of Defense			
Autism and Obesity: Co-Occurring Conditions or Drug Side-Effects?			
The objective of this pilot project is to better understand the relationship between autism and obesity. Despite recent suggestive links between autism and obesity, it is not clear if obesity is co-occurring with autism or is related to antipsychotic-induced weight gain (AIWG). Weight gain is one of the main side-effects of the commonly used antipsychotics. Since the majority of patients with autism take antipsychotics, a <i>general assumption</i> is that the observed elevated rate of obesity in autism (i.e., 40%) is caused by AIWG. Our hypothesis is that the prevalence of known AIWG associated SNPs in obese and non-obese autistic subjects is comparable; thus, AIWG cannot be the only reason for the observed higher rate of obesity.			
Role: Co-Investigator			
Lyman (PI)		\$5,000	7/1/2015-6/30/2016
Jonathan Rhoads Foundation from ASPEN			
Enteral Feeding Set Handling Techniques: A Comparison of Bacterial Growth, Nursing Time,			

Labor, and Material Cost

This study compared 3 different methods of handling enteral formula delivery sets in between bolus feedings. This study done on nursing units but not with patients demonstrated the use of a ready to hang product or refrigeration of the enteral delivery set to be comparable in terms of nursing time, cost of supplies, and bacterial growth.

Role: Co-Investigator

Yin (PI) \$200,000 7/1/2014-6/30/2016

Marion Merrell Dow Award

Genetic variation and variability in posaconazole pharmacokinetics in children

The main goal of this study is to see how the body breaks down an antifungal drug named posaconazole in children with certain cancers, blood disorders, or transplantation of bone marrow or similar blood cells. This study will also help us learn whether a child's age, genetics, or disease affect how well the body breaks down posaconazole.

Role: Co-Investigator

Raman (PI) 3/1/2013-2/28/2014

Frontiers: The Heartland Institute for Clinical and Translational Research

Role of HbA1c Variability in Risk Prediction Models for Diabetes Mellitus (DM) Nephropathy in Children with Type I Diabetes

To test the hypothesis that HbA1c variability, as measured by standard deviation (SD), is associated with increased risk for incident microalbuminuria and persistent microalbuminuria in pediatric type 1 diabetes (T1D).

Role: Co-Investigator

Bartholomew (PI) \$50,000 6/1/2014-5/31/2015

Kansas City Area Life Sciences Institute

Feasibility of Outpatient High Dose Methotrexate Infusions in Pediatric Patients with B-Lineage Acute Lymphoblastic Leukemia

This pilot aimed to assess the feasibility of a 24hour continuous home methotrexate infusion in adherence to best care practices established by a MTX clearance algorithm while ensuring high level supportive care in a cost effective manner for children with ALL.

Role: Co-Investigator

McCulloh (PI) \$50,000 1/1/2014 – 12/31/2015

The Katharine Berry Richardson (KBR) Award

A national assessment of the microbiology, epidemiology, and resource utilization in infants hospitalized for suspected serious bacterial infection (SBI)

Role: Co-Investigator

R01AR061513 Connelly (PI) \$2,047,717 9/15/2011-6/30/2016

NIH (NIAMS)

WEBSMART: Efficacy and Web-based Pain Self-management for adolescents with JIA.

There is a critical gap in the contemporary treatment of Juvenile Idiopathic Arthritis (JIA) wherein a majority of adolescent patients still experience ongoing pain even with treatments. The project will develop an online training program to produce superior improvements in pain and health-related quality of life outcomes for adolescents with JIA.

Role: Co-Investigator

Abhyankar and Dalal (PI) 12/4/2009 -6/30/2015

Midwest Cancer Alliance

Chronic Graft versus Host Disease Treated with Extracorporeal Photopheresis

Role: Co-Investigator

Talebizadeh (PI) \$50,000 7/1/2013 – 6/29/2014

Kansas City Area Life Sciences Institute

Analysis of circadian genes in autism: characterization of alternative splicing profile of JARID1 genes

Role: Co-Investigator

Ciaccio (PI)

\$20,000

1/1/2013 – 12/31/2013

Paul Henson Award (Children's Mercy Hospital)

The Impact of Dietary Fatty Acids on the Development of Food Allergic Sensitization

The objective of this study is to determine the effect of dietary fat consumption during pregnancy on the development of allergic sensitization to food allergens in offspring. The central hypothesis is that a diet low in n-3-polyunsaturated fatty acids and/or high in saturated fats during pregnancy will lead to an increased risk of food allergic sensitization.

Role: Co-Investigator

HHSN267200603421C & N01-DK-6-3421 Brunstrom (PI)

\$549,528

8/1/2007-6/30/2011

NIH

Use of Oral Baclofen for Treatment of Spasticity of Cerebral Palsy in Children

Cerebral palsy (CP) is a disorder that affects muscle tone, movement, and motor skills and is usually caused by brain damage that occurs in the early stage of a child's life. This is a multicenter study of oral baclofen for the treatment of spasticity in children with CP.

Role: Co-Investigator

Study Sections

- 2024 NIH Review, Special emphasis panel "NIDA REI: Addressing Racial Equity in Substance Use and Addiction Outcomes Through Community-Engaged Research" (January)
- 2023 NIH Review, Special emphasis panel "NIDA, Population Assessment of Tobacco and Health (PATH) Study" (October)
- 2023 NIH Review, Co-Chair, Special emphasis panel "Tobacco Regulatory Science K Awards" (May)
- 2022 CDC Review, Special emphasis panel "Understanding Polydrug Use Risk and Protective Factors, Patterns, and Trajectories to Prevent Drug Overdose." (May)
- 2022 NIH Review, Health Delivery and Methodologies Special Emphasis Panel (Mar)
- 2022 NIH Review, Social Sciences and Population Studies A Study Section, Population Sciences and Epidemiology Integrated Review Group (Feb)
- 2021 NIH Review, ZCA1 SRB-K (J1): National Cancer Institute Special Emphasis Panel (Oct)
- 2021 NIH Review, ZRG1 DKUS-L (51) R: Maximizing the Scientific Value of Existing Biospecimen Collections (June)
- 2021 NIH Review, Epidemiology and Population Sciences Fellowships (Mar)
- 2020 NIH Review, ZRG1 RPHB-U (56): Electronic Nicotine Delivery Systems (Nov)
- 2020 NIH Review, Dissemination and Implementation Research in Health (DIRH) (June, Nov)
- 2019 NIH Review, ZRG1 RPHB-U (56): Electronic Nicotine Delivery Systems (Nov)
- 2019 NIH Review, ZRG1 BST-W (55): Tobacco Regulatory Science - Behavioral (June)
- 2019 NIH Review, Dissemination and Implementation Research in Health (DIRH) (May, Oct)

Editorial Duties and Review Services

- 2020 – present Associate Editor in Statistics, *Tobacco Control* [Impact Factor =6.7]
- 2021 – present American Academy of Pediatrics Tobacco Consortium
- 2019 – 2023 Associate Editor, *Journal of Applied Statistics* [Impact Factor=0.7]
- 2018 – 2022 Associate Editor, *BMC Public Health* [Impact Factor=2.6]
- 2011 – 2018 Editorial Board Member, *Frontiers in Genetics*
- 2011 – 2018 Editorial Board Member, *JP Journal of Biostatistics*
- 2012 – 2016 Editorial Board Member, *Journal of Biometrics & Biostatistics*
- 2020 Review Panel, Sparks Public Health Research Student Award.

2019 Review Panel, Health Disparities Pilot Grant, UNMC
 2019 – 2020 Review Panel, Suzanne and Ward Chambers Global Health Fellowship Evaluation
 2018 Judge, 5th Annual Vijay Babu Rayudu Quality & Patient Safety Day, University of Missouri Kansas City
 2018 Judge, CMH Research Days
 2017 Judge, 9th Annual Quality Poster Session, CMH Center for Clinical Effectiveness
 2017 External Reviewer, Arkansas Children’s Hospital Research Institute Special Grant
 2015 Interview Pane, B.A./M.D. program in School of Medicine at University of Missouri Kansas City.
 2010 Special Emphasis Panel, Clinical Scholar Awards
 2010 Reviewer, Katharine B. Richardson (KBR) Foundation Award.
 2010 Reviewer, Young Investigator Award in Clinical/Translational Research

Referee for *New England Journal of Medicine*
Annals of Internal Medicine
JAMA Network Open
Biostatistics
Frontiers in Bioengineering and Biotechnology
IEEE/ACM Transactions on Computational Biology and Bioinformatics
Frontiers in Genetics
Computers in Biology and Medicine
Medical Science Monitor
Journal of Data Science
Journal of Probability and Statistical Science
Journal of Statistical Theory and Practice
Journal of Statistical Planning and Inference
Journal of Biometrics & Biostatistics
Tobacco Control
Nicotine and Tobacco Dependence
Drug and Alcohol Dependence
Journal of Adolescent Health
Behavioral Sleep Medicine
Addictive Behaviors
American Journal of Preventive Medicine
American Journal of Public Health
Pediatrics
Tobacco Induced Disease

Media Outreach and Community Service

2023 Media interviews on “Adoption of Vaping Cessation Methods by US Adolescent E-Cigarette Users” published in *Pediatrics*, including [American Academy of Pediatrics](#), [Altmetrics](#), [HealthDay](#), [Forbes](#), [Drugs.com](#)
 2023 Media interviews on “Examining the Prevalence and Factors Associated with Vaping of Cannabidiol (CBD) among U.S. Adolescents” published in *JAMA Network Open*, including [Altmetric](#), [HealthDay](#), [USNews](#), [MedicalExpress](#), [The Messenger](#), [Drugs.com](#)
 2023 [Research to examine impacts of social factors on substance use](#)
 UNMC Today
 2022 [Brain Structure, Cognitive Performance Linked With Tobacco Use in Kids](#) by MedPageToday
[Tobacco Use in Children Affects Cognitive Function and Brain Structure Long-Term](#) by Neurology Advisor
 2021 September Invited presentation to American Academy of Pediatrics E-cigarette Chapter Champions, “Vaping Cessation Intention and Quit Attempts among Adolescents.”

- 2021 August Media interviews on “Prevalence and Factors Associated with Vaping Cessation Intention and Quit Attempts among U.S. Adolescent E-cigarette Users” published in *Pediatrics*, including [Altmetric](#), [Medpage Today](#), [HealthDay](#), [Drugs.com](#), [MedicalExpress](#), [Medscape \(Reuters Health\)](#), and [Psychiatric News](#).
- 2021 April Media interviews on “Rural-Urban Differences in Changes and Effects of Tobacco 21 in Youth E-cigarette Use” published in *Pediatrics*. American Academy of Pediatrics. [Are Laws Regulating Minimum Age for Tobacco Sales Uniformly Effective?](#)
- 2021 March Testimony to Nebraska Legislature Revenue Committee Hearing on LB 459 – Increase in Tobacco Tax.
- 2020 January Media interviews on “Exposure to Secondhand Aerosol from Electronic Cigarettes Among U.S. Youth: 2015 to 2018” published in *JAMA Pediatrics*. MedicalResearch.com. [Many more young people exposed to secondhand aerosol from electronic cigarettes.](#)
- 2019 December Organization Committee Chair, School-based Vaping Prevention Retreat. Over 50 Nebraska middle and high school superintendents, principals, nurses, health teachers, and counselors attended this retreat to develop a multi-faceted program to prevent youth vaping.
- 2019 December Media interviews on “Self-Reported E-cigarette Use for Nicotine, Marijuana, and Flavoring among U.S. Youth, 2017” published in *American Journal of Preventive Medicine*. Including, [Altmetric](#); [Elseview.com](#), reposted at [7thsapce.com](#), [Medicalxpress.com](#), [sciencecodex.com](#), and [medindia.net](#); UPI.com: [UPI.com](#), reposted at [Breitbart.com](#), and [medicalhealthnews.net](#); [AOL.com](#), reposted at [7news.com](#), and [weatherherald.com](#).
- 2019 December Media interviews on “Marijuana Use in Electronic Cigarettes Among U.S. Youth: 2017 to 2018” published in *JAMA*. Including, [Altmetric](#); [UNMC Today](#); [Wall Street Journal](#); [Philadelphia Inquirer](#); [UPI.com](#); [HealthDay.com](#).
- 2019 December Expert commentary on “Vaping is taking off among younger children and 'tweens' reported in [Reuters](#), reposted at [Yahoo News](#), [kfgo.com](#), [channelnewsasia.com](#).
- 2019 November ASPPH (Association of Schools & Programs of Public Health) reported “[UNMC: Prevalence of E-Cigarette Use Among Adults in the United States, 2014-2018](#)”.
- 2019 September Testimony of health effects of e-cigarette aerosol for Nebraska Legislature, Health and Human Services Committee Hearing on LR 173 – An interim study to examine health concerns related to the public use of and secondhand exposure to electronic nicotine delivery systems.
- 2019 September Media interviews on “A National Survey of Marijuana Use among US Adults with Medical Conditions: 2016-2017” published in *JAMA Network Open*, including, [Altmetric](#), [phillyvoice.com](#), [reuters.com](#), [MedicalResearch.com](#), [HealthDay](#), reposted at [medicalxpress.com](#), [drugs.com](#), [physiciansbriefing.com](#), [doctorslounge.com](#), [empr.com](#).
- September 2019, Media interviews on “Prevalence of E-Cigarette Use among Adults in the United States, 2014-2018.” published in *JAMA*, including [Altmetric](#), [Digital Journal](#), [Vox.com](#), [Medical Health News](#), and [MedicalResearch.com](#).
- 2019 August APPPH (Association of Schools & Programs of Public Health) reported: [UNMC: Study Highlights Importance of Marijuana Prevention Among Youth](#)
- 2019 August Expert commentary on “Teen vaping tied to marijuana use”, [Reuters](#), reposted at [Yahoo News](#), [Physician’s Weekly](#), [WeatherHerald](#), [AsianAge](#), [DeccanChronicle](#), [iAfrica](#).
- 2019 June Media interview on “Trends in Single, Dual, and Poly use of Alcohol, Cigarette, and

Marijuana among U.S. High School Students: 1991-2017.” Published in *American Journal of Public Health*. This study received multiple media citations: [Altmetric](#), [AJPH Research](#), [ASPPH \(Association of Schools & Programs of Public Health\)](#), [HealthDay.com](#), reposted at [UPI.com](#), [WebMD.com](#), [Sheknows.com](#), [Medicinenet.com](#), [Yahoo.com](#), [USNews.com](#), and [Drugs.com](#), [PR Industry News](#), [Healthline](#).

- 2019 May ASPPH (Association of Schools & Programs of Public Health) reported [the study “Association of Electronic Cigarette Vaping and Subsequent Smoking Relapse Among Former Smokers”](#) published in *Drug and Alcohol Dependence*.
- 2019 February [E-cigarette use among teens is on the rise](#) UNMC's Hongying Dai, Ph.D., publishes data analysis of the National Youth Tobacco Survey.
- 2019 January Media interview on [“Hookah smoking increasing in popularity according to CDC”](#). Omaha KMTV News Now.
- 2019 January Six media interviews on “Changes in Flavored Tobacco Product Use among Current Youth Tobacco Users in the United States: 2014 – 2017” published in *JAMA Pediatrics*, including [Reuters](#), [MedicalResearch](#), [MEDPAGETODAY](#), [United Press International](#), [MD Magazine](#)
- 2018 October UNMC: [E-cigarette, cigar use among youth focus of study](#) - Hongying Dai, Ph.D., associate professor of biostatistics, UNMC College of Public Health, will conduct the NIH-funded study.
- 2018 August Expert commentary on “Vaping, other tobacco products tied to higher risk that teens will try marijuana”, [Reuters](#) and “Teens who vape or use hookah are more likely to use marijuana later, study finds”, [CNN.com](#).
- 2018 April Media interview on “Electronic Cigarettes and Future Marijuana Use: A Longitudinal Study.” published in *Pediatrics*. This study received multiple media citations, including [Altmetric](#), [Reuters](#), [Yahoo! 7 News](#), [Aol.](#), [Business Insider](#), [HealthDay News](#), [U.S. News & World Report](#), [Newsmax](#), [Doctors Lounge](#), [Medical Xpress](#), [The Inquirer](#), [MD Edge](#), [2-Minute Medicine](#), [WITN-TV](#) and [WTHR-TV](#).
- 2018 March Expert commentary on “More U.S. schools offering safe spaces for LGBTQ youth”, [Reuters](#).
- 2017 December Expert commentary on “One in four gay, lesbian, bisexual teens attempt suicide”, [Reuters](#).
- 2017 June Media interview on “Attitudes toward Tobacco 21 among U.S. Youth” published in *Pediatrics*. This study received multiple media citations, including [Altmetric](#), [Health Day](#), [Medical Xpress](#), [Doctors Lounge](#), [The Philadelphia Inquirer](#), [WGAL-TV](#), [American Academy of Pediatrics](#), [medworm](#), [Merkmanual](#), [PennstateHershey](#), [Hola Doctor](#).
- 2017 March Media interview on “Tobacco Product Use Among Lesbian, Gay, and Bisexual Adolescents” published in *Pediatrics*. This study received multiple media citations, including [Altmetric](#), [Reuters](#), [Physician’s Briefing](#), [International Business Times](#), [Huffington Post](#), [Health Newsline](#), [KDAL-FM](#), [WHTC-AM](#), [M.D. Alert](#), [New England Cable News](#), [WNYT-TV](#) ! [NBC News](#), [Business Insider](#), [Pink News](#), [Doctor’s Lounge](#), [WTAG-FM](#).

- 2016 December Media interview on “Exposure to Advertisements and Susceptibility to Electronic Cigarette Use Among Youth.” published in *Journal of Adolescent Health*. [Science News for Students](#)
- 2016 November Media interview on “Flavored Electronic Cigarette Use and Smoking Among Youth” published in *Pediatrics*. This study received 100 media citations, including [Altmetric](#), [NewYork Times](#), [HealthDay News](#), [Yahoo News](#), [Fox News](#), [2minutesmedicine](#), [MedPage Today](#), [Reuters Health](#), [WebMD.com](#), [Health.com](#).

Publications

1. Articles published in scholarly journals

Statistical Methodology and High Dimensional Data Research

1. Dai H, Qiu F, Jackson K, Fruttiger M, Rizzo W. Untargeted Metabolomic Analysis of Sjögren-Larsson Syndrome Reveals a Distinctive Pattern of Multiple Disrupted Biochemical Pathways. *Metabolites* 2023, 13(6), 682; doi: 10.3390/metabo13060682.
2. Rathnayake N, **Dai H**, Charnigo R, Schmid K, Meza J. A General Class of Small Area Estimation Using Calibrated Hierarchical Likelihood Approach With Applications to COVID-19 Data. *Journal of Applied Statistics*. 2022.
3. M Bhandary, **Dai H**, N K Bansal, H Shin. Bayes estimation of autocorrelation coefficient. *Journal of Statistics and Management Systems*, 2022. DOI: 10.1080/09720510.2021.1936905.
4. Herath S,* **Dai H***, Au A*, Taylor K, Succar L, Endre Z, Erlich J. Validation of housekeeper genes for normalisation for RT-qPCR gene expression studies in ischaemic and toxicological conditions in rat models. *PLOS ONE*, 2020. doi.org/10.1371/journal.pone.0233109. *authors with equal contribution.
5. **Dai H**. Review of Asymptotic Analysis of Mixed Effects Models, by Jiming Jiang. *Journal of the American Statistical Association*, 2019. [Impact Factor=2.3]
6. **Dai H**, Charnigo, R. A Sentiment Analysis of MERS-COV Outbreak through Twitter Social Media Monitoring. *JP Journal of Biostatistics*. 2018, 15 (2): 107-125.
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11. Fan Q, Charnigo R, Talebizadeh Z, **Dai H**. Hypothesis Testing in Normal Admixture Models to Detect Heterogeneous Genetic Signals. *Journal of Biometrics and Biostatistics*. 2014, 5:5.
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15. Bhandary M and **Dai H**. An Alternative Test for the Equality of Variances for Several Populations in Randomized Complete Block Design. *Statistical Methodology*. 2013, 11, 22-35.
16. Charnigo R, Qian F, Bittel D, **Dai H**. Testing Unilateral versus Bilateral Normal Contamination. *Statistics and Probability Letters*. 2013, 83 (1): 163-167.

17. Charnigo R, Zhou F, **Dai H**. Contaminated Chi-Square Modeling and Large-Scale ANOVA Testing. *Journal of Biometrics and Biostatistics*. 2013, 4:1.
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41. **Dai H**, Pierce J, Beseler C, Abadi A, Zoucha K, Johnson R, Buckley J*, Ramos A. "Hierarchical Modeling of Psychosocial, Parental, and Environmental Factors for Susceptibility to Tobacco Product Use in 9-10 Year-Old Children." *Journal of Adolescent Health*. 2022. DOI: 10.1016/j.jadohealth.2022.09.021. Impact factor = 7.4.
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48. **Dai H**, Barrington-Trimis JL, Unger JB, Baezconde-Garbanati L, Leventhal, AM "Patterns and Mediators of Racial and Ethnic Disparities in COVID-19 Vaccine Hesitancy among Young Adults." 2022. *Preventive Medicine*. PMID: 35526673. Impact factor = 4.0.
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2. Articles accepted for publication in scholarly journals

1. Guenzel N, **Dai H**, Dean L. "Historical trauma, substance use, and mental health symptoms among a sample of urban American Indians." *Peer J*. 2023.
2. **Dai H**, Guenzel N, Michaud T, Morgan M, Cohen S. "Biomarker Assessment of Nicotine Exposure among Adolescent E-cigarette Users: 2018–2021." Accepted in *Pediatrics*. Impact factor, 9.7.

3. Articles submitted for publication in scholarly journals

1. Ordonez M, Bae D, Wong M, Leventhal A, **Dai H**, Cho J. "Association of Discrimination Experiences with Rapid Subsequent Changes in Anxiety and Depressive Symptoms in U.S. Adults." Submitted to *American Journal of Public Health*.
2. **Dai H**, Young B, Beseler C. "Mechanism That Links Perceived Racism and Discrimination and Youth Marijuana Use, A Structural Equation Modeling Approach." Submitted to *American Journal of Public Health*.
3. Michaud T, Tamrakar N, Samson K, **Dai H**. "Decoding Vaping: Empowering Youth through Media Literacy Based E-Cigarette Educational Program", Revision in *Nicotine & Tobacco Research*.
4. **Dai H**. "Trends in Marijuana and Tobacco Use by Racial and Ethnic Groups among U.S. Youth: 1991-2021." Submitted to *JAMA Pediatrics*
5. E Kerns*, McCulloh R, **Dai H**, Eysenbach G. "Reach, Adoption and Sustainability of a Mobile Clinical Decision Support Tool Paired with a National Quality Improvement Project Targeting

- Emergency Department Febrile Infant Management.” Revision, JMIR Medical Education (JME).
6. **Dai H.** Changes in Vaping Duration among U.S. Adolescent E-cigarette Users: 2019 to 2022. Submitted to *Pediatrics*
 7. Kusi A*, **Dai H**, Haynatzki, G. “Bias reduction methods in the hierarchical likelihood approach for shared frailty model of clustered failure time data.” Submitted to *Statistics in Medicine*.
 8. Guenzel N, **Dai H**, Dean L. “Low fidelity simulation in the education of psychiatric nurse practitioner students.” Revision in *SAGE Open Nursing*.
 9. Adeyeba M, De Alba A, Su D, **Dai H**, Tibbits M. “The Content and Process of Parent-Child Communication About Sex Among Mexican-Origin Mothers in The United States.” Submitted to *Qualitative Health Research*.
 10. Kochhar A, Connelly A, Hao G, **Dai D**. “Biomarkers of Heavy Metal Exposure in Adolescent E-cigarette Users: Correlations with Vaping Frequency and Flavoring.” Revision at *Tobacco Control*.
 11. Kim JY, **Dai H**, Michaud T, Verma S, King K, Estabrooks P. “A Cross-Sectoral Partnership to Reduce Structural Barriers for Colorectal Cancer Screening Among African Americans: A Pilot Randomized Controlled Trial.” Submitted to *Journal of Racial and Ethnic Health Disparities*.
 12. Wang R, Dai R, **Dai H**, Zheng C. “Controlling FDR in selecting group-level simultaneous signals from multiple data sources with application to the National Covid Collaborative Cohort data.” Submitted to *Statistics in Medicine*.
 13. Zhang XT, Anzalone AJ, **Dai H**, Cochran G, Dai R, Rupp R. Chronic Lung Disease as a Risk Factor for Long COVID in Patients Diagnosed with COVID-19: A Retrospective Cohort Study.
 14. Wang XQ, Anzalone AJ, **Dai H**, Marx CM, Rupp M, Zheng C, Dai R. Exploring COVID-19 Recurrent Hospitalizations Using National COVID Cohort Collaborative (N3C) Enclave Data
 15. Chen N, Wei X, Zhao G, Fu X, Arash S, Du X, Ransdell-Green E, Jiang H, Zhao Z, **Dai H**, Otero M, Goldring M, Goldring S, and Wang D. “Single Dose Thermoresponsive Dexamethasone Prodrug Completely Mitigates Joint Pain for 15 Weeks in a Murine Model of Osteoarthritis.” Revision.
 16. Dong J, Nyandemoh A, Anzalone J, **Dai H**, Mannon R. “What Risk Factors to Cause Long COVID and Its Impact on Patient Survival Outcomes when Combined with the Effect from Organ Transplantation in the Acute COVID.” Submitted to PLOS ONE.
 17. Michaud T, Samson K, Chang S, Gustafson C, **Dai H**, “A Discrete Choice Experiment of Contingency Management and Financial Incentives for Engaging Young Adults in Vaping Cessation Programs.” Submitted to *Drug and Alcohol Dependence Report*.
 18. **Dai H**, Idoate R, Mahroke A, Abresch C. “Racial Disparities in Parental Marijuana Use: Patterns and Modes of Current and Daily Use Among Adults Living with Children.” Submitted to *Journal of Racial and Ethnic Health Disparities*.
 19. Beseler C, Leventhal A, Cho J, **Dai H**. “Trajectories in Exposure to Discrimination among U.S. Adults, a Nationally Longitudinal Study.” Submitted to *Preventive Medicine*.
 20. Ma H, **Dai H**. “Factors Associated with Intentions to Quit Vaping and Quit Attempts among Adolescents: A Structural Equation Modeling Approach.” Submitted to *Addictive Behaviors*.

4. Articles in preparation for publication in scholarly journals

1. **Dai H**, Young B, Beseler C. “Mechanism That Links Perceived Racism and Discrimination and Youth Marijuana Use, A Structural Equation Modeling Approach.”
2. Dinkel D, Lujan C, Johnson J, Dyksterhuis D, Armstrong J, **Dai H**, Qiu F, Bice M. Feasibility and Acceptability of a Mental and Physical Wellbeing Program for Rural Family Childcare Home Providers.
3. **Dai H**, Kerns E, Guenzel N, Samson K, Niebur H, Deschamp A, Johnson R, Michaud T, “Integrating Youth Vaping Prevention in Pediatric Primary Care Setting – A Pilot and Feasibility Study”
4. **Dai H**, Samson K, Woolsey S, Tamrakar N, Ramos A. “Adoption and Effects of Youth Access Control Policies, A Discrete Choice Experiment.”
5. **Dai H**, Beseler C, Xiao P, Zheng C, Ali Khan. The Intersection of Polygenic Risk Score and Race/Ethnicity on Youth Tobacco Initiation: the ABCD Study.

6. **Dai H** “Urinary Nicotine Metabolites in Prediction of Relapse to Combustible Cigarette Smoking among Post-Quit E-cigarette Users.”

*: Current or former graduate students.

Presentations (selected from 110 presentations) * Mentee, # Mentor, & Committee Member

- [1] Pham H, Dai H, Morgan M, Khan A. “Adoption of vaping cessation methods by u.s. adolescent e-cigarette users”. Poster Presentation, American Public Health Association Annual Meeting, Atlanta, GA, November 12-15, 2023.
- [2] Kochvar A, Dai H, Pham H, Khan A. “Racial and ethnic disparities in biomarkers of exposure and potential harm among u.s. adult exclusive e-cigarette users”. Oral Presentation, American Public Health Association Annual Meeting, Atlanta, GA, November 12-15, 2023.
- [3] Wang Y, Bollinger J, Secilmis L, Hughes M, **Dai H**. “White-Matter Microstructure Differences Between Cochlear Implant Candidates and Their Hearing Peers: A Pilot Diffusion Tensor Imaging Study.” Submitted to CIAP 2023.
- [4] **Dai H**, Benowitz N, Rogan E, Mengist A, Buckley J,* Khan A. “Biomarkers of Toxic Exposure and Oxidative Stress among U.S. Adult Users of Premium Cigar versus Other Cigar Subtypes: 2013-2019.” Podium presentation at Society For Research On Nicotine and Tobacco (SRNT), San Antonio, TX, March 1-4, 2023.
- [5] **Dai H**[#], Buckley J*, Khan A. “Biomarkers of Exposure to Tobacco-Related Toxicants among U.S. Adult Premium Cigar Users: 2013-2019”. Poster Presentation, American Public Health Association Annual Meeting, Boston, MA, November 6-9, 2022.
- [6] **Dai H**[#], Doucet G, Wang Y, Puga T*, Samson K, Xiao P, Ali Khan. “Longitudinal Assessments of Neurocognitive Performance and Brain Structure Associated With Initiation of e-Cigarette and Tobacco Initiation Use in Children”. 2022. Oral Presentation, American Public Health Association Annual Meeting, Boston, MA, November 6-9, 2022.
- [7] **Dai H**, Benowitz N, Achutan C, Farazi P, Degarege A, Khan A. “Exposure to Toxicants Associated With Use and Transitions Between Cigarettes, e-Cigarettes, and No Tobaccos.” Poster Presentation, 2022 National Conference on Tobacco or Health (NCTOH), New Orleans, June 28-30, 2022.
- [8] **Dai H**, Tamraker N, Rathnayake N, Samson K. “Geographical distribution and social determinants of Tobacco 21 policy adoption and retail inspections in the United States: 2015-2019,” Poster Presentation, American Public Health Association 2021 Annual Meeting, Denver, Colorado, October 24-37, 2021
- [9] **Dai H**, Henriksen L, Xu Z, Rathnayake N. “Using Place-based Characteristics to Inform FDA Tobacco Sales Inspections: Results from a Multi-level Propensity Score Model,” Oral Presentation, American Public Health Association Annual Meeting, Denver, Colorado, October 24-27, 2021.
- [10] Guenzel N, **Dai H**, Dean L. “Strategies to Facilitate Graduate Student Learning of Symptom Identification and Documentation”, American Psychiatric Nursing Association 35th Annual Conference, Louisville, Kentucky, October 13-16, 2021
- [11] Li Q, Abadi A, **Dai H**, Bell J. “Modeling Coccidioidomycosis (Valley Fever) in Relation to Climate in Arizona and California” AGU Fall Meeting 2020, December 1-17, 2020.
- [12] Guenzel N, **Dai H**, “Historical Trauma, Substance and Psychiatric Problems in an Urban Sample of American Indians”, the 2020 Symposium on Substance Use Research, November 10-12, 2020.
- [13] Kusi Appiah A,* **Dai H**[#]. “Machine Learning Techniques for Prediction of Retail Violation of Tobacco Products”, oral presentation at Joint Statistical Meeting (JSM), August 1-6, 2020.
- [14] **Dai H**. “A Multilevel Propensity Score Model to Predict U.S. Underage Sales of Tobacco”, oral presentation at Society For Research On Nicotine and Tobacco (SRNT), New Orleans, LA, March 11-14, 2020.
- [15] **Dai H**, Chaney L, Ellerbeck E, Friggeri R, White N, Catley D. “Urban versus Non-urban Changes in Youth E-cigarette Use: 2018-2019”, Poster presentation at Society For Research On Nicotine and Tobacco (SRNT), New Orleans, LA, March 11-14, 2020.
- [16] **Dai H**. “Modeling Retail Violation of FDA Compliance Inspections”, Oral Presentation at 2019 The National Conference on Tobacco or Health (NCTOH), Minneapolis, MN, August 27-29, 2019.
- [17] Appiah A*, Haynatzki G[&], **Dai H**[#]. “H-Likelihood Estimation for Survival Analysis with Log-Skew-

- Normal Shared Frailty”, Contributed Oral Presentation at 2019 Joint Statistical Meeting, Denver, CO, August 1-6, 2019.
- [18] Bisslou K*, **Dai H**[#], Haynatzki G[#]. “Hierarchical Likelihood Approach for Joint Models of Longitudinal Non-Survival Responses and Survival Data: a Semiparametric Model with Gamma Shared Random Effects”, Contributed SPEED Talk at 2019 Joint Statistical Meeting, Denver, CO, August 1-6, 2019.
- [19] **Dai H**. “The Impact of Assurance of Voluntary Compliance on Retail Sales to Minors”, Invited Oral Presentation, 2019 Tobacco Policy and Responsible Retailing Conference, National Association of Attorneys General, Tampa, FL, May 6-8, 2019.
- [20] Guo I*, Noel-MacDonnell J, Chew W*, Lee B, **Dai H**[#]. “Can Social Media Reliably Predict Trends in Pediatric Asthma-related Emergency Department Visits?” poster presentation at American Academy of Allergy Asthma & Immunology, San Francisco, CA, February 22-25, 2019.
- [21] **Dai H**, Chaney L, Ellerbeck E, Cupertino P, Friggeri R, White N, Catley D. “Youth Knowledge of Minimum Legal Age to Purchase Tobacco Products and Its Association with Susceptibility to Tobacco Use”, poster presentation at Society For Research On Nicotine and Tobacco (SRNT), San Francisco, CA, February 20-23, 2019.
- [22] **Dai H**, “Changes in Flavored Tobacco Product Use among Current Youth Tobacco Users in the United States: 2014 – 2017”, poster presentation at Society For Research On Nicotine and Tobacco (SRNT), San Francisco, CA, February 20-23, 2019.
- [23] Herath S, **Dai H**, Au A, Taylor K, Succar L, Endre Z, Erlich J. “Validation of housekeeper genes for normalisation for RT-qPCR gene expression studies in ischaemic and toxicological conditions in rat models” **scientific award** and oral presentation, the Australia New Zealand society of nephrology conference, September 10 – 13, 2018. [The study compared our novel statistical method with existing methods and perform biological validation]
- [24] **Dai H**, “Effects Of Tobacco 21 On Underage Sales Violation In California: 2015-2017”, oral presentation at Society For Research On Nicotine and Tobacco (SRNT), Baltimore, MD, February 21-24, 2018.
- [25] **Dai H**, Chaney L, Ellerbeck E, Cupertino P, Friggeri R, White N, Catley D. “A quasi-experimental study of the effect of Tobacco 21 on Youth Smoking Prevalence in Kansas”, poster presentation at Society For Research On Nicotine and Tobacco (SRNT), Baltimore, MD, February 21-24, 2018.
- [26] **Dai H**, Catley D “FDA Compliance Inspections on Retail Sales to Minors of Cigars and Electronic Cigarettes in the United States: 2016-2017”, poster presentation at the 5th Annual VCBH Conference on Tobacco Regulatory Science, Burlington VT, October 4-6, 2017.
- [27] Noel-MacDonnell J*, **Dai H**[#], Lee B. Utilization of Multi-level Data to Forecast Asthma Related Emergency Department Visits. 2nd Annual Midwest Bioinformatics Conference, Kansas City, MO, April 13-14, 2017.
- [28] **Dai H**, Wu G, Wu M, Zhi D. “An Optimal Bahadur-efficient Method in Detection of Sparse Signals with Applications to Pathway Analysis in Sequencing Association Studies”, oral presentation at Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods – KS-Western MO Chapter of ASA Annual Symposium, Kansas City, MO, April 28 - 29, 2016.
- [29] **Dai H**, Lee B, Hao J. “Predicting the Community Level Burden of Asthma Using Novel Linkages of Social Media, Social Economic and Air Quality Sensor Data”, invited oral presentation at the SOCN New Data Linkages Conference, Washington DC, March 24-25, 2016.
- [30] **Dai H**, Deem M, Hao J. “Socioeconomic Disparities In Marketing Of Electronic Cigarettes On Twitter”, poster presentation at SRNT, Chicago, IL, March 2-5, 2016.
- [31] Charnigo R, Fan Q, Yoshida R, Drton M, **Dai H**. “Altered Singular Bayesian Information Criteria for Bivariate Mixture Models”, contributed oral presentation at ENAR, Austin TX, March 6 - 9, 2016.
- [32] **Dai H**. “Compound Hierarchical Correlated Beta Mixture with an Application to Cluster Mouse Transcription Factor DNA Binding Data”, invited oral presentation at First Annual Bioinformatics Conference, Kansas City, MO, October 15 - 16, 2015.
- [33] **Dai H**. “D_CDF Test of Negative Log Transformed P-values with Application to Genetic Pathway

- Analysis", invited oral presentation at 2015 IMS-China International Conference on Statistics and Probability, Kunming, China, July 1 - 4, 2015.
- [34] **Dai H**, Charnigo R. "Test of Negative Log Transformed P-values with Application to Genetic Pathway Analysis", invited poster presentation at the Beyond Bioinformatics Opening Workshop, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, September 8-12, 2014.
- [35] **Dai H**, Charnigo R. "Test of Negative Log Transformed P-values with Application to Genetic Pathway Analysis", invited poster presentation at 2014 Conference on Nonparametric Statistics for Big Data, Madison, Wisconsin, June 4-6, 2014.
- [36] **Dai H**, Charnigo R. "Test of Negative Log Transformed P-values with Application to Genetic Pathway Analysis", invited oral presentation at Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods – KS-Western MO Chapter of ASA Annual Symposium, Kansas City, MO, April 24 - 25, 2014.
- [37] Fan Q, **Dai H**, Charnigo R. "Bilaterally Contaminated Normal Model with Nuisance Parameter and Its Applications", oral presentation at 2014 ENAR, Baltimore MD, March 16 - 19, 2014.
- [38] Zhou F, **Dai H**, Charnigo R. "An EM Test for the Contaminated Chi-Square Model", oral presentation at 2014 ENAR, Baltimore MD, March 16 - 19, 2014.
- [39] Charnigo R, Zhou F, and **Dai H**. "The Contaminated Chi-Square Model and Its Application to Microarray Data Analysis", Biometrics conference (2nd International Conference and Exhibition on Biometrics & Biostatistics), Hilton Chicago/Northbrook, June 10-12, 2013.
- [40] **Dai H**, Charnigo R, Vyhlidal C, Jones B, Bhandary M. "Mixed Modeling and Sample Size Calculations for Identifying Housekeeping Genes", Oral Presentation at Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods – KS-Western MO Chapter of ASA Annual Symposium, Kansas City, MO, April 18-19, 2013.
- [41] **Dai H**, Charnigo R, Vyhlidal C, Jones B, Bhandary M. "Mixed Modeling and Sample Size Calculations for Identifying Housekeeping Genes in RT-PCR Data", poster presentation at 2013 ENAR, Orlando FL, March 10-13, 2013.
- [42] **Dai H**, Charnigo R, Becker M, Leeder S. "Epistasis Enriched Network and Risk Score Modeling of Continuous Multifactor Dimensionality Reduction", Oral Presentation at ENAR, Washington DC, April 1-4, 2012.
- [43] **Dai H**. "Incorporating Global Tests of P-values in Multifactor Dimensionality Reduction Models for Genotyping Data", invited talk at the 18th Annual Biopharmaceutical Applied Statistics Symposium (BASS XVIII), Savannah, GA, November 7-11, 2011.
- [44] Charnigo R, Fan Q, **Dai H**. "The Doubly Contaminated Normal Model and Its Application to Microarray Data Analysis", contributed talk at the Joint Statistical Meetings (JSM), Miami, FL, July 30-August 4, 2011.
- [45] Kharod A, **Dai H**, Raghuveer G. "Pre-Hypertensive Children Have Similar Cardiac Sequelae as Hypertensive Children", platform presentation at the Pediatric Academic Societies' & Asian Society for Pediatric Research (PAS/ASPR) Joint Meeting, April 30-May 3, 2011.
- [46] **Dai H** "Epistasis Enriched Network and Risk Score Modeling of Continuous Multifactor Dimensionality Reduction", invited talk at Department of Mathematics and Statistics, University of Missouri at Kansas City, April 22, 2011.
- [47] **Dai H**. "Incorporating Global Tests of P-values in Multifactor Dimensionality Reduction Models for Genotyping Data", contributed talk at ENAR, Miami, FL, March 20-23, 2011.
- [48] **Dai H** "Omnibus testing in detection of gene variation patterns", invited talk at Department of Mathematics and Statistics, University of Missouri at Kansas City, December 3, 2011.
- [49] **Dai H**, Richard Charnigo. "Testing Contamination in Normal Mixtures with Application in Microarray Experiments" Contributed Talk at WNAR, Seattle, WA, June 22, 2010.
- [50] **Dai H**, Herskovic J, Anton M. "Comparison of Experimental Designs and Measurement Types: Two Satiety Case Studies" Poster at Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods – 3rd KS-Western MO Chapter of ASA Annual Symposium, Kansas City, MO, April 8, 2010.
- [51] **Dai H** and Charnigo R. "Omnibus Testing and Gene Filtration in Microarray Data Analysis"

Contributed Talk at MAA-SE, Statesboro, GA, March 16, 2007.

- [52] **Dai H** and Charnigo R. "L²-Based Homogeneity Tests for Mixtures with Structural Parameters" Contributed Talk at ENAR, Atlanta, GA, March 13, 2007.
- [53] **Dai H** and Charnigo R. "Testing Homogeneity in Finite Mixtures and Mixture Regression Models" Contributed Talk at the ENAR, Tampa, FL, March 27, 2006.
- [54] **Dai H** and Charnigo R. "Estimation and Testing Procedures in General Contamination Models" Invited talk at SCMA 2005/ FIM XII International conference on Statistics, Combinatorics, Mathematics and Applications, Auburn, Alabama, December 4, 2005.
- [55] **Dai H** and Charnigo R. "L²-Based Homogeneity Tests for Mixtures with Structural Parameters" Contributed Talk at the Joint Statistical Meetings, Minneapolis, MN, August 8, 2005.

Honors and Awards

- 2023 Distinguished Scientist Award, University of Nebraska Medical Center
- 2022 Top 2% of all researchers in the world, Stanford University
- 2019 New Investigator Award, University of Nebraska Medical Center
- 2017 Research Impact Award, Children's Mercy Research Institute
- 2016 Honorarium and Travel Award for an invited presentation at the 2016 SOCN New Data Linkages Conference (sponsored by NSF)
- 2014 Travel Award for the Beyond Bioinformatics Opening Workshop, Statistical and Applied Mathematical Sciences Institute (NSF, Duke, NCSU, UNC, NISS)
- 2014 Travel Award for 2014 Conference on Nonparametric Statistics for Big Data
- 2013 Travel Award for 2013 ENAR Workshop for Junior Researchers in Biostatistics
- 2012 Bursary Award for research collaboration, issued by 1st Short Course on Statistical Genetics and Genomics, University of Alabama at Birmingham
- 2011 Travel Award for NIH Funded 1st Short Course on Statistical Genetics and Genomics, University of Alabama at Birmingham
- 2006 Biopharmaceutical Student Paper Competition Award (first place), Joint Statistical Meeting of American Statistical Association
- 2006 R.L. Anderson Award for Best Student, Department of Statistics, University of Kentucky

Service in Committee

- 2021-present Nomination Committee, the American Academy of Pediatrics (AAP) Tobacco Consortium
- 2021-present Electronic Health Record Core Access Core Advisory Committee, UNMC
- 2020-present Center for Patient, Family, and Community Engagement in Chronic Care Management (CENTRIC) Professional Development committee.
- 2020 CHRI Heart Diseases Area of Emphasis Group
- 2019 CHRI Health Policy / Population Health Emphasis Group
- 2019-2021: Research & Development Committee, College of Public Health, UNMC
- 2019-present Ph.D. Admission Committee Chair, Department of Biostatistics, UNMC
- 2019-present Curriculum Committee, Department of Biostatistics, UNMC
- 2019-2021 Exam Committee, Department of Biostatistics, UNMC
- 2019-2020 COPH cancer workgroup for the Center for Cancer Prevention and Population Science (CCPPS), UNMC
- 2018-present Data and Safety Monitoring Committee at the Buffett Cancer Center, UNMC
- 2018 Search Committee for Chair, Department of Biostatistics, COPH, UNMC.
- 2014 – 2018: Committee for medical project review system at CMRI
- 2015: Interview Panel for B.A./M.D. program in School of Medicine at University of Missouri Kansas City.

Academic Advising

Student	Role	Program	Time Period	Status
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Adam Kusi Appiah	Chair	Biostatistics, PhD	2018-2020	Graduated
Nirosha Rathnayake	Chair	Biostatistics, PhD	2018-2020	Graduated
Karl Bisselou	Committee	Biostatistics, PhD	2018-2021	Graduated
Ali Al-Ghaithi	Chair	Data Science, MS	2020-2022	Graduated
Jabeen Taiba	Committee	Epidemiology, PhD	2021-2022	Withdrew
Emiliane Pereira	Committee	Health Promotion, PhD	2021-	In progress
Louis Fok	Committee	Epidemiology, PhD	2020-	In progress
Krishtee Napit	Committee	Epidemiology, PhD	2020-	In progress
Ellen Kerns	Committee	Biomedical Informatics	2018-2021	Graduated
Mariam Taiwo	Committee	Health Promotion, PhD	2018-2022	Graduated
Qianqian Li	Committee	EAOH, PhD	2019-	In progress
Vand Molnar	Chair	Biostatistics, MPH	2019-2021	Graduated
Rachelle Flick	Committee	Biostatistics, MPH	2019-2021	Graduated
Dunia Zahrieh	Chair	Biostatistics, MPH	2018-2020	Graduated
Ping Liu	Chair	Biostatistics, MPH	2018-2020	Graduated
Dylan Scoggins	Chair	Biostatistics, MPH	2018-2020	Graduated
Natalia Trinidad	Committee	Epidemiology, MPH	2018-2019	Graduated
Sierra Garth	Committee	Epidemiology, MPH	2018-2019	Graduated
Nick Guenzel	Committee	clinical translational research, MS	2019-	In progress
Summer Woolsey	Advisor	Health Promotion, MPH	2020-2022	Graduated
Niran Tamrakar	Advisor	Epidemiology, MPH	2020-	In progress
Troy Puga	Advisor	Public Health, Certification	2022-	In progress
Yadi Liu	Chair	Biostatistics, MPH	2021-	In progress
James Buckley	Advisor	EAOH, MPH	2021-	In progress
Eleanore Neanore	Advisor	Biostatistics, MPH	2020-2022	Graduated
Ahmed Nyandemoh	Committee	Biostatistics, MPH	2020-2022	Graduated
Mehnaz Tabassum	Committee	Bioinformatics and	2022-	In progress

Runqiu Wang	Committee	Systems Biology, PhD Biostatistics, PhD	2022-	In progress
Xiaotong Zhang	Committee	Biostatistics, MPH	2022-	In progress
Xiaoqing Wang	Committee	Biostatistics, MPH	2022-	In progress
Andrew Gard	Advisor	Biostatistics, MPH	2022-2023	In progress
Michael Striebich	Advisor	Biostatistics, MPH	2022-2023	In progress

KCU DO-MPH Student Advising and Publications

Student	Year	My Role	Manuscripts	Student Awards
Troy Puga	2021-2023	Mentor	3	2
Andrew Kochvar	2022-2023	Mentor	2	
Hanh Pham	2022-2023	Mentor	2	
Grace Thiel	2022-2023	Mentor	Literature	review
Avina Mahroke	2022-2023	Mentor	1	
Mathuri Morgan	2022-2023	Mentor	1	
Alex Connelly	2022-2023	Mentor	Literature	review
Dylan Hafer	2022-2023	Mentor	Literature	review

2022 COPH Faculty Mentoring for Grant Applications (23: 5 BIO, 3 EAOH, 5 EPI, 4 HSRA, 6 HP)

Faculty	Dept	My role	Grant Title	Status
Su Chen	BIO	Mentor	Long-term Effects of Healthy Pregnancy on Maternal Health: a pilot study	Funded
Ran Dai	BIO	Mentor		Funded
James Dong	BIO	Mentor /MPI		Under Review
Junghyae Lee	BIO	Mentor		Funded
Cheng Zheng	BIO	Mentor		Under Review
Azar Abadi	EAOH	Mentor /MPI		Submit

Cheryl Beseler	EAOH	Mentor	Resubmit
Aaron Yoder	EAOH	Mentor	Pending
Evi Farazi	Epi	Mentor	Funded
Sharon Medcalf	Epi	Mentor	Funded
Abraham Mengist	Epi	Mentor	Funded
Kendra Ratnapradipa	Epi	Mentor	Submit
Shinobu Watanabe	Epi	Mentor	Resubmit
Melanie Cozad	HSRA	Mentor	Submit
Ronnie Horner	HSRA	Mentor	Submit
Katy	HSRA	Mentor	Submit
JY Kim	HSRA	Mentor	Funded
Gina Idoate	HP	Mentor	Pending
Shannon Maloney	HP	Mentor	Pending
Tzeyu Michaud	HP	Mentor /MPI	Funded
Shireen Raj	HP	Mentor	Pending
Shelly Strong	HP	Mentor	Submit
Siobhan Wescott	HP	Mentor	Submit

Statistical Software Development

R package "[CombinePValue](#)" to test whether a vector of p-values are jointly significant when we combine them together, available in cran.r-project.org.

Teaching Activities

Teaching at UNMC

Spring 2021

BIOS 825/CPH 655, Correlated Data Analysis (in class), 3 credit hours

BIOS 825/CPH 655, Correlated Data Analysis (online), 3 credit hours

Summer 2020

BIOS 999 Biostatistics Doctoral Dissertation, 1 credit hour

Spring 2020

BIOS 825/CPH 655, Correlated Data Analysis (in class), 3 credit hours

BIOS 825/CPH 655, Correlated Data Analysis (online), 3 credit hours

Fall 2019

BIOS 823/CPH 653, Categorical Data Analysis (in class), 3 credit hours

BIOS 823/CPH 653, Categorical Data Analysis (online), 3 credit hours
BIOS 999 Biostatistics Doctoral Dissertation, 2 credit hours
Invited Oral Cancer Prevention Lecture “E-cigarette Use Among Youth” for the Preventive Dentistry Course, Creighton University, October 8, 2019 (in class)

Summer 2019

BIOS 996 Directed Readings and Research: Time Series Analysis of Health Data, 1 credit hour
BIOS 999 Biostatistics Doctoral Dissertation, 1 credit hour

Spring 2019

BIOS 825/CPH 655, Correlated Data Analysis (in class), 3 credit hours
BIOS 825/CPH 655, Correlated Data Analysis (online), 3 credit hours
4 online-lectures with videos of “Quantitative research methods”, invited lecture for HPRO 830 / CPH 500: the Foundations in Public Health course (online)
BIOS 999 Biostatistics Doctoral Dissertation, 2 credit hours

Fall 2018

BIOS 823/CPH 653, Categorical Data Analysis (in class), 3 credit hours
BIOS 823/CPH 653, Categorical Data Analysis (online), 3 credit hours
“The Role of Quantitative Analysis”, invited lecture for HPRO 830 / CPH 500: the Foundations in Public Health course (in class).
“The Genetic Analysis of Family-Based Studies”, Invited Lecture for EPI 941 / CPH 741: Epidemiologic Methods in Applied Clinical Genetics (in class).

Teaching at CMH/UMKC

- Biostatistics for Medical Research (Fall 2010 - 2017), 3 credit hours
- Categorical Data Analysis (Spring 2010, Spring 2012, Spring 2014, Spring 2016), 3 credit hours
- Meta Data Analysis (Fall 2015), 1 credit hour

Teaching at Columbus State University

- Advanced Categorical Data Analysis (Spring 2007), 3 credit hours
- Introductory Statistics (Fall 2007, Spring 2007, Fall 2006), 3 credit hours
- College Algebra (Fall 2007, Spring 2007, Fall 2006), 3 credit hours
- Calculus I (Fall 2006), 3 credit hours

Professional Memberships

American Public Health Association

American Statistical Association

The Society of Nicotine and Tobacco Research (SNRT)

The International Biometric Society: The East North American Region (ENAR)