

**UNIVERSITY OF ROCHESTER
SCHOOL OF MEDICINE AND DENTISTRY
CURRICULUM VITAE**

PERSONAL INFORMATION

Name: Xueya Cai

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EDUCATION

Ph.D. Biostatistics, SUNY Buffalo, 2008

M.A. Biostatistics, SUNY Buffalo, 2006

B. Medicine Maternal and Child Health, Shanghai Medical University, China, 1997

ACADEMIC APPOINTMENTS

2015 – Present Statistician (IPA)

Canandaigua VA Medical Center. 400 Fort Hill Avenue. Canandaigua, NY, 14244

2015 – Present Research Associate Professor (primary)

Department of Biostatistics and Computational Biology, University of Rochester

2018 – Present Research Associate Professor (secondary)

Department of Ophthalmology

2011 – 2015 Research Assistant Professor

Department of Biostatistics and Computational Biology, University of Rochester

2009 – 2011 Research Assistant Professor

Department of Internal Medicine, University of Iowa Carver College of Medicine

2008 – 2009 Assistant Professor

Division of Biostatistics, Indiana University School of Medicine

2005 – 2008 Research Assistant

Division of Infectious Disease, Buffalo VA Medical Center

2004 – 2005 Research Assistant

Department of Biostatistics, SUNY Buffalo

2003 – 2004 Research Assistant

Periodontal Disease Research Center (PDRC), SUNY at Buffalo

1997 – 2001 Assistant Professor

Department of Biostatistics, Shanghai Medical University, China

1999 – 2001 Biostatistician (Part-time)
Shanghai Sunline Data Scientific Processing Company, China

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Member of the American Statistical Association (2005-present)
Member of the International Chinese Statistical Association (2012-present)
Member of the International Biometric Society (2008)
Member of the American Public Health Association (2004)
Member of the Academy Health (2010)

HONORS AND AWARDS

2018 Research to Prevent Blindness/American Academy of Ophthalmology Award for
IRIS Registry Research
2011 Delta Omega Honorary Society in Public Health
2006 Award for Outstanding PhD's student.
Department of Biostatistics, SUNY Buffalo
2005 Sidney Addelman Award for Outstanding Master's Student.
Department of Biostatistics. SUNY Buffalo
2004 Prize for the Outstanding Student Poster.
*Bayesian Approach and Power Analysis for Temporal Gene Expression Data for
the Treatment of IFN in Relapsing Multiple Sclerosis Patients.* Buffalo Center for
Biomedical Computing Retreat/Symposium

PROFESSIONAL ACTIVITIES

2008: Vice-president of Central Indiana Chapter
2017 – Present: Associated Editor: Health Services and Outcome Research Methodology

RESEARCH REVIEW

Medical Care
International Journal of Biostatistics
International Journal for Quality in Health Care
Health Services and Outcome Research Methodology
Annals of Applied Statistics
PLoS ONE
Journal of Applied Statistics
Communication in statistics – Simulation and Computation
Journal of General Internal Medicine
Journal of Thoracic and Cardiovascular Surgery

EDUCATIONAL CONTRIBUTIONS:

- Committee member: Joyce A Smith, Ph.D. in School of Nursing. 2013
- Lecturing
 - BME221: Biomedical Computation & Statistics. 2017 (4 credits)
Guest lecture
 - BST467: Applied Statistics in the Biomedical Sciences 2014-2019. (3 credits)
Course contents: descriptive statistics, hypothesis testing, and regression
analysis
Students: PhD students in Biosciences
Credit: 3

- PM463: Introduction to Mathematical Statistics 2012-2014 (3 credits)
 Course contents: Probability and distributions, multivariate distributions, statistical inference, maximum likelihood methods, Bayesian statistics
 Students: PhD students in the Division of Health Policy and Outcome Research
 Credit: 3
- PM464: Introduction of Linear Regression Analysis 2012 (3 credit)
 Course contents: Maximum likelihood estimation (MLE), generalized linear model
 Students: PhD students in the Division of Health Policy and Outcome Research
 Credit: 3
- 173:161: Introduction to Patient-Oriented Research: Hands-on Data Analysis 2010 (3 credits)
 Course contents: Data manipulation using SAS, descriptive statistics, hypothesis testing, regression analysis, and survival analysis
 Students: Graduate students in biomedical areas, medical fellows, and junior Faculty members
 Credit: 3
- BIOS651: Biostatistics I 2009 (3 credits)
 Course contents: data description and presentation techniques, probability and probability distribution, sampling distribution, statistical inference, analysis of categorical data, analysis of variance, correlation, and simple linear regression analysis
 Students: Graduate students in biomedical areas, medical fellows, and junior Faculty members
 Credit: 3
- Principles of Biostatistics 1997-2001 (4 credits)
 Course contents: Descriptive statistics, probability, hypothesis testing, and power analysis
 Students: Medical students
 Credit:4
- Clinical Trial Design and Statistical Analysis 2000 (1 credit)
 Course contents: Clinical trial design, randomization, ethics in clinical trials, sample size calculation, quality control, and reporting.
 Students: Medical students
 Credit: 1

RESEARCH INTEREST:

Health services research methodology, machine learning, missing data analysis, Bootstrap sampling, Generalized Linear Models, Mixed/Hierarchical Models, and Clinical Trials.

RESEARCH ACTIVITIES:

Active Grants:

NIH/NIMH (1RF1MH117528-01) PI: Yue Li / Xueya Cai 07/01/18 – 8/22/2022
Suicide Death Among Older Adults Receiving Residential Long-Term Care
Role: Multiple PI 15% FTE

Department of Ophthalmology PI: Kyrstal Huxlin 01/01/18 – 12/31/2019
Population Health of Ophthalmology
Role: Co-Investigator 10% FTE

American Academy of Ophthalmology PI: Xueya Cai 10/01/2018 – 09/30/2019
Research to Prevent Blindness/American Academy of Ophthalmology Award for IRIS Registry
Research
Role: Principal Investigator 5% FTE

NIH (1 R01 MD012422-01) PI: Caroline Thirukumaran 09/20/2017 – 04/30/2021
Impact of Bundled Payment Reforms on Racial and Socioeconomic Disparities in Hip and Knee
Replacement Surgeries
Role: Co-Investigator 15% FTE

The aims of our proposal are to evaluate the impact of the CJR on racial and socioeconomic disparities in utilization (Aim 1), inpatient outcomes (Aim 2), and post-acute care outcomes (Aim 3) of hip and knee replacement care. Furthermore, we will identify key mechanisms that influence CJR's impact on disparities, and investigate if the changes in outcomes and disparities that we expect to note are likely mediated by choice of post-acute care facility to which a patient is discharged (Aim 4). We will conduct rigorous longitudinal analyses to address the specific aims and test associated hypotheses. The knowledge gained from our study will inform the design of current and future bundled payment reforms such that these reforms can prevent the exacerbation of and contribute in reducing pre-existing disparities in hip and knee replacement surgeries

NIH (5 R01 AG052451-02) PI: Shubing Cai 08/15/16 – 05/31/19
Disparities in Quality of Care for Obese Nursing Home Residents
2% FTE

The proposed study will be the first to comprehensively examine whether disparities, in multiple health outcomes exist with regard to care provided to obese versus non-obese NH residents. The proposed study has two specific aims (SA). SA1: Examine disparities in quality of care between obese and non-obese residents within a NH. SA2: Investigate disparities in access to high quality NHs between obese and non-obese residents.
Role: Co-Investigator

Department of Orthopedics PI: James Sanders 10/01/2016 – 6/30/2019
Growth of the Spine Children
Role: Co-Investigator 10% FTE

AHRQ (1R01 HS024923-01) PI: Yue Li 09/30/2016 – 08/31/2019
Impact of the State Policies on Nursing Home Patient Safety Culture
Role: Co-Investigator

This study is designed to fill a significant knowledge gap by evaluating the impact of these broad state quality-of-care policies on the development of safety culture in nursing homes. The overall goal is to identify those aspects of state regulatory & payment policies that may foster or prevent the development of nursing home patient safety culture. To achieve this goal we will measure multiple domains of safety culture performance using the AHRQ developed and validated Nursing Home Survey on Patient Care instrument to be administered to top managers in a nationally-representative sample of nursing homes. We will employ administrative and public use data for 2016, as well as collect primary data from state officials responsible for state nursing home quality regulations and state Medicaid programs. These data will be used to construct nursing home safety culture measures, and measures of state policies, facility covariates, and market conditions. Hypotheses will be tested using multivariate instrument variable analyses and structural equation modeling performed at the nursing facility level.

Role: Co-Investigator

25% FTE

SMA Foundation

PI: Rabi Tawil

07/01/2012 – 6/30/2019

Pediatric Neuromuscular Clinical Research Network for SMA Clinical Trials

Role: Co-Investigator

15% FTE

Completed Grants:

ACTTION 9-account Funds (FDA) PI: Robert Dworkin 07/01/2015- 06/31/2018

Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION) Public-Private Partnership 25% FTE

The primary objective is to facilitate the development of novel analgesic, anesthetic, addiction, and peripheral neuropathy interventions with improved efficacy and safety. ACTTION is a multidisciplinary collaboration that prioritizes research and other initiatives to achieve this objective. The major activities of the ACTTION partnership include conducting systematic reviews, consensus meetings, and methodologically-focused studies as well as developing and qualifying novel clinical outcome assessments with the aim of increasing the assay sensitivity and informativeness of clinical trials. The results of these efforts have the potential to inform and accelerate the development of improved treatments for pain, anesthesia and sedation, addiction, and peripheral neuropathy

Role: Co-Investigator

Veterans Affairs

PI: Tobie Olsan

07/01/15 – 6/30/18

Factors Associated with Institutional Use by Veterans in Home-Based Primary Care

Role: Co-Investigator

PCORI

PI: Temkin-Greener

03/01/2013 – 04/30/2017

Improving Palliative and End-of-Life Care in Nursing Homes

\$375,723

Our objective is to demonstrate, using a randomized controlled trial design and a difference in difference analytic approach, that nursing home-based palliative care practice guidelines implemented through PCTeams will improve quality of care processes and outcomes for residents at the end of life.

Role: Co-Investigator

Surgical Department

PI: Flemming

07/01/2016 – 06/30/2017

Long-term Outcomes and Cost of Robotic Abdominal and Thoracic Surgery

The objective of this study is to compare long-term rates of postoperative complications, amount of healthcare utilization, and survival among open, laparoscopic/thoracoscopic, and robotic approaches following abdominal or thoracic surgery using a large statewide, population-based dataset.

Role: Co-Investigator 4% FTE

Surgical Department (Incoming) PI: Flemming 3/1/2017 – 12/31/2017

Role: Co-Investigator 6% FRE

NIH (5R01 HL122424-03) PI: Steve Georas 9/26/2014 – 07/31/2018

Epithelial Barrier Dysfunction and Muscosal Inflammation in Athma

Aim 1. To define the precise roles of epithelial PKD and dsRNA sensors during mucosal sensitization. Aim 2. To test the hypothesis that RSV infection causes sustained dysfunction of the airway epithelial barrier in a PKD-dependent manner. Aim 3. To develop the Leaky Lung Test, a clinically useful and non-invasive assay of outside/in airway permeability.

Role: Co-Investigator 5% FTE

Pfizer PI: John Markman 10/1/2015 – 3/31/2018

Simplified Pain Evaluation and Communication Tool utilizing the Electronic Record (SPECTER)

Role: Co-Investigator 10% FTE

NIH 5 R01 MD007662-03 PI: Yue Li 07/01/13 – 1/31/17

Impacts of Nursing Home Competition & State Policies on Disparities in Quality
\$300,835

Role: Co-Investigator 15% FTE

SHORE PI: Katia Noyes 01/01/13 – 8/31/2016

Surgical Health Outcome Research

Role: Co-Investigator

NIH 5R01CA132950-05 PI: Debbie Ossip 09/01/09-07/31/15

Community-Partnered Tobacco Control in Underserved Dominican Republic Communities

Assess baseline knowledge, attitudes, exposures, behaviors regarding tobacco use & secondhand smoke, provide a randomized controlled trial of community-partnered interventions around secondhand smoke, tobacco cessation, develop & implement a dissemination plan for national/regional impact & translation of methods & results to other underserved groups as appropriate.

Role: Co-Investigator

Health Resources and Services Administration (HRSA)

PI: Tobie Olsan 1/1/2012 – 12/31/2015

The Meliora Project: Advancing Quality in Long Term Care

Role: Consultant 5% FTE

NIH K01 MH080660-03, PI: Mittal 10/01/2011 – 4/30/2014

HIV Prevention among African American Women Who use Substances

Role: Co-Investigator

National Pace Association PI: Temkin-Greener 07/01/2012 – 6/30/2014

PACE Data Analysis Center Project
Role: Co-Investigator

1R01AG033202, PI: Li 01/01/2012 – 6/30/2013
Physician Referral & Mental-Disorder Related Disparities in CABG Quality
Role: Co-Investigator

5R01AG032264, PI: Li 01/01/2012 – 8/31/2013
State Nursing Home Technical Assistance Programs: Variation & Impact on Quality
Role: Co-investigator

5 R21 HL102582-02 PI: Robert Block 06/01/2010 – 05/31/2012
NIH/NHLBI
The Effects of Fish Oil and Aspirin on Cardiovascular Risk in Type 2 Diabetes
Effects of combining aspirin w/EPA + DHA supplementation on platelet function &
lysophospholipid metabolism in a clinical trial of individuals w/Type 2 Diabetes.
Role: Biostatistician

NIH/NINDS R01 NS52619, PI: McDemott 10/01/2011 – 11/30/2012
Coordination and Statistics for CoQ₁₀ in Huntington's Disease (2CARE)
Role: Co-Investigator

U/Syracuse, PI:Pesis-Katz 02/01/2010 – 12/31/2011
Upstate Health Research Network Data Security Protocol for the Analysis of NY Data

5R01HL085347 PI: Cram 07/01/2009 – 06/30/2011
Cardiac Care in Specialty and General Hospitals
Role: Co-investigator

NIH K23HL093354-01 PI: Laroche 07/01/08 – 06/30/11
Family and Community-Focused Approaches to Improving Diet and Preventing Obesity
Role: Co-Investigator

AHRQ HHS2902006000131, PI: Simonaitis 09/28/2007 – 09/30/2009
Improving Quality through Health IT: Testing the Feasibility and Assessing the Impact of Using
Existing Health IT Infrastructure for Better Care Delivery
Role: Co-investigator

NIH/NIMH R24 MH080824 PI: Callahan 04/24/2008 – 03/31/2013
Indianapolis Interventions and Practice Research Infrastructure Program
Role: Co-investigator

US Dept. of Defense W81XWH-08-2-0040, PI: Krebs 07/01/2008 – 12/31/2009
Post-Traumatic Stress Disorder and Pain Comorbidity in Veterans
Role: Co-investigator

5R37AA006460 PI: Edenberg 09/01/2007 – 08/31/2009
Structure & Expression of Mammal ALC on Dehydrogenase Genes
Role: Co-investigator

AHRQ 290-04-0015 PI: Overhage 09/30/2004 – 09/29/2009
An Evolving Statewide Indiana Information Infrastructure
Role: Co-investigator

R01 MH068009 PI: Nurnberger 03/01/2005 – 02/28/2010
Adolescents at High Risk for Familiar Bipolar Disorder
Role: Co-investigator

NIH /NIA 1R01AG029884 PI: Boustani 09/01/2007 – 08/30/2010
Alzheimer Screening in Primary Care: PRISM-PC Study
Role: Co-investigator

NIH/NIGMS subproject of 5P20GM67650-02, PI: Liang 09/01/2004 – 08/31/2005
Bayesian Meta-Analysis of Heterogeneous Genomic Data through Hybrid Systems.
Role: Researcher

Submitted Grants

AHRQ PI: Helena Temkin-Greener submitted: September 2018
Patient Safety Culture in Assisted Living Residencies: Association with Outcomes
Percentile: 2
Role: Co-Investigator

NIH PI: Larry Glance submitted: October 2018
Impact of Medicare Shared Savings Program on Disparities in Cardiovascular Care
Percentile: 18 (New Investigator)
Role: Co-Investigator

NIH PI: Xueya Cai / Rajeev Ramchandran submitted: June 2018
Vision Health Insights from Analysis of NHATS Linked to Administrative Databases
Role: Multiple-Principal-Investigator

NIH PI: Zhengqiang Yao submitted January 2019
Target Therapy for Metastatic Breast Cancer
Role: Biostatistics Consultant

American sleep medicine foundation, PI: Michael Yurcheshen
Multi-Center, Non-Inferiority Trial Comparing Telemedicine vs. In-Person Management for
Obstructive Sleep Apnea in Rural Populations
Role: Co-Investigator

AHRQ, PI: Helenal Temkin-Greener
Patient Safety Culture in Assisted Living: Association with Outcomes
Role: Co-Investigator

The Donaghue Foundation, PI: Yue Li
Nursing Home safety of care for residents with SMI & substance abuse
Role: Co-Investigator

NIH, PI: Steve Georas
Expression of autotaxin (ATX) and lysophosphatidic acid (LPA) in human asthma
Role: Co-Investigator

Scoliosis Research Society, PI: James Sanders
Growth of the Spine Children – a Longitudinal, Prospective Investigation.
Role: Co-Investigator

UR CTSI. PI: Xueya Cai
Causal Inference in Racial Disparity Studies with Binary Outcomes
Role: Principal Investigator

Intuitive Surgical, Inc., PI: Fergal Fleming
Long-Term Outcomes and Cost of Robotic Abdominal and Thoracic Surgery
Role: Co-Investigator

NIH, PI: Shubing Cai
Disparity in Quality of Care for Obese Nursing Home Residents
Role: Co-Investigator

NIH, PI: Geoffrey Williams
Tobacco Dependence Treatment Program for Patients at High Risk for Lung Cancer
Role: Co-Investigator

AHRQ, PI: Yue Li
Impact of state policies on nursing home patient safety culture
Role: Co-Investigator

NIH, PI: Helena Temkin-Greener
Palliative Care Consultations and Health Outcomes: Community Dwelling, Dementia, Nursing Home & Minority Patients
Role: Co-Investigator

NIH, PI: Yue Li
Nursing home organization & work environment: impact on disparity in quality
Role: Co-Investigator

NIH, PI: Yue Li
State Medicaid nursing home P4P programs & racial/ethnic disparity in quality
Role: Co-Investigator

CDC, PI: Geoffrey C. Williams.
Tobacco Dependence Treatment Program for Patients at High Risk for Lung Cancer.
Role: Co-Investigator

NIJ, PI: Paul Caccamise (LifeSpan)
Detection of Elder Financial Exploration in the Aging Services Network
Role: Co-Investigator

PCORI, PI: Christopher Ritchlin
Biosychosocial Intervention for Chronic Diseases
Role: Co-Investigator

NIH, PI: Katia Noyes

Does Quality of Care in Colorectal Cancer Mediate Disparity in Outcomes: Developing Quality Indicator

Role: Co-Investigator

NIH, PI: Steve N. Georas

Epithelial Barrier Dysfunction and Mucosal Inflammation in Asthma

Role: Co-Investigator

(Awarded but only support a biostatistics programmer due to budget cut)

NIH, R01, PI: Yue Li

Medicare mental health parity: impact on service use and spending for schizophrenia

Role: Co-Investigator

NIH R01, PI: Irena Persis-Katz

Clinical management of chronic heart failure in long-term care setting

Role: Co-investigator

NIH R01, PI: Irena Persis-Katz

Improving outcomes for nursing home residence with chronic heart failure

Role: Co-investigator

OREF: PI: James O. Sanders

Orthopaedic Research & Education Foundation

Determination of the best fusion levels in surgical adolescent idiopathic scoliosis

NIH, R21, PI: Ann Dozier

Infant feeding decision aid

Role: Co-Investigator

NIH, R01, PI: Ann Dozier

Community partnership for breastfeeding promotion and support

Role: Co-Investigator

UL1, PI: Cai

Interim monitoring of longitudinal outcomes in clinical trials

PRESENTATIONS:

1. Xueya Cai, Michael McDermott, Jennifer Gewandter, Hua He, Robert Dworkin. Multiple Imputation for Missing Data in Analgesic Clinical Trials using Pattern Mixture Model. ICASA Applied Statistics Symposium. Chicago, IL. June 2017 (**Invited**)
2. Xueya Cai. Biostatistics and Evaluation of Evidence. Bellary Tract Surgery Grand Rounds, Zhongshan Hospital of Fudan University, Shanghai, China. December 2016 (**Invited**)
3. Xueya Cai. Application of Two Stage Residual Inclusion (2SRI) Model in Testing the Impact of Length of Stay on Short-term Readmission Rate. UP STAT Conference. Buffalo. April 2016 (**Session chair**)
4. **Xueya Cai**. Interim Monitoring of Longitudinal Outcomes in Clinical Trials. Department of Biostatistics, SUNY Buffalo. April 2015 (**Invited**)

5. **Xueya Cai**. Observational Data Analyses for Risk Adjustment. Department of Biostatistics, Fudan University Medical Center. Shanghai, China. July 2014 (**invited**)
6. **Xueya Cai**. An Application of Instrumental Variable Analysis in Testing the Impact of Length of Stay on Short-term Readmission Rate. Second Joint Biostatistics Symposium. Beijing, China. June 2012 (**Invited**)
7. **Xueya Cai**, Mary S. Sarrazin, Levent Bayman, Peter Cram. Uncompensated Care Provided by Hospitals with Varying Ownership Structure: Contemporary Data and Future Implications. Academy Health Annual Research Meeting, Boston, MA. June 2010
8. **Xueya Cai**, Peter Cram, Mary S. Vaughan-Sarrazin. Are Black Patients More likely to Receive Total Knee Arthroplasty in Hospitals With Higher Risk-Adjusted Complication Rates? University of Iowa Department of Medicine Research Day. March 2010
9. **Xueya Cai**, Gregory E. Wilding, Alan Hutson, Yue Li. Testing the Equality of Conditional Correlations Across Numeric Variable(s) with Heteroscedastic Data. The Joint Statistical Meeting, Washington DC, August 2009
10. Yue Li, Laurent G. Glance, **Xueya Cai**, Dana B. Mukamel. Mental Illness and Hospitalization for Ambulatory Care Sensitive Medical Conditions. AcademyHealth Annual Research Meeting, Washington DC, June 2008.
11. **Xueya Cai**, Gregory E. Wilding, Alan Hutson. Approaches for Estimating and Testing Conditional Correlations. International Biometric Society, Eastern North American Region annual meeting. Arlington, VA, March 2008.
12. Yue Li, **Xueya Cai**, Laurent G. Glance, Dana B. Mukamel. Urinary Incontinence in Community-Dwelling Older Women: Does Socioeconomic Status Affect Help Seeking and Treatment? APHA Annual Meeting, Washington DC. (Award winner: Susan B. Anthony Aetna Award for Excellence in Research on Older Women and Public Health), November 2007.
13. Yue Li, **Xueya Cai**, Laurent G. Glance, Dana B. Mukamel. Gender Differences in Healthcare-Seeking for Urinary Incontinence and the Impact of Socioeconomic Status: A Study of the Medicare Managed Care Population. AcademyHealth Annual Research Meeting, Orlando, FL, June 2007.
14. **Xueya Cai**, Gregory E. Wilding, Alan Hutson. A Generalized Linear Model Based Approach for Estimating and Testing Equality of Conditional Correlations. International Biometric Society, Eastern North American Region annual meeting. Atlanta, GA, March 2007.
15. Yulan Liang, **Xueya Cai**, Arpad Kelemen. Bayesian State Space Models for Inferring Gene Interaction Networks. Case Studies in Bayesian Statistics Workshop. Carnegie Mellon University. Pittsburgh, PA, September 2005.
16. **Xueya Cai**, Yulan Liang. Hierarchical Bayesian Analysis for Temporal Microarray Gene Expression Data. Joint Statistical Meeting. Minneapolis, MN, August 2005.
17. **Xueya Cai**, Yue Li, Juanhong Gu. Effect of Simvastatin Dose Escalation: Results from a Randomized Clinical Trial for Coronary Heart Disease (CHD) Patients with Hyperlipidemia in Mainland China. American Public Health Association Annual Meeting. Washington, DC, November 2004.

18. **Xueya Cai**, Yulan Liang. Bayesian Approach and Power Analysis for Temporal Gene Expression Data for the Treatment of IFN in Relapsing Multiple Sclerosis Patients. Buffalo Center for Biomedical Computing Retreat/Symposium. Buffalo, NY, May 2004.

PUBLICATIONS

METHODOLOGICAL RESEARCH:

1. Shi Z, Yu J, **Cai X**. The application of CMH method in categorical data in multi-center clinical trials. Journal of health statistics in China. 1999.16(3): 179-80.
2. **Cai X**, Jin P. The method and its limitation to assess agreement using Intraclass Correlation Coefficient (ICC). Journal of preventive medicine in China. 1999. 33(3): 175-76.
3. **Cai X**, Jin P. The disadvantage of effective rate analysis in patients with different illness status. Journal of health statistics in China. 2000.17(4): 250-51.
4. **Cai X**, Jin P. Estimating the confidence interval of median using Bootstrap sampling. Journal of health statistics in China. 2002.19(3): 185-86.
5. **Cai X**. Agreement analysis. In: Jin P, et. al. Medical statistical methods. Second edition. Series of public health and preventive medicine. Shanghai: Fudan Press. 2004.
6. **Cai X**. Nonparametric data analysis using CMH method. In: Liu Q, Jin P, et. al. Categorical data analysis and SAS programming. Shanghai: Fudan Press. 2002.
7. Liang Y, Tayo B, **Cai X**, Kelemen A. Differential and trajectory methods for time course gene expression data. Bioinformatics. 2005. 21: 3009-3016. PMID: PMC2574001
8. Li Y, Dick AW, Glance LG, **Cai X**, Mukamel DB. Misspecification issues in risk adjustment and construction of outcome-based quality indicators. Health services & outcomes research methodology. 2007. 7: 39-56.
9. Hutson AD, Wilding GE, **Cai X**. Bootstrap and Permutation Methods Using the SAS System. Technical Report. 2007. Department of Biostatistics, University at Buffalo.
10. Wilding GE, **Cai X** (Corresponding Author), Hutson A, Yu Z. A Linear Model Based Test for the Heterogeneity of Conditional Correlations. Journal of Applied Statistics, 2011, 38(10): 2355-2366.
11. **Cai X**, Wilding GE, Hutson A, Java J. Estimation and Testing of the Conditional Correlations Across Continuous Variable(s) for Heteroscedastic Data. Advances and Applications in Mathematical Sciences. 2012, 10(9): 191-206.
12. Wang D, **Cai X**, Tian, L. Interval Estimation for the Gini Index of Shifted Exponential Distribution under Type-II Double Censoring. Health Services and Outcomes Research Methodology. 2015 (15) 69-81.

COLLABORATIVE RESEARCH

13. Fernaays MM, Lesse AJ, Sethi S, **Cai X**, Murphy TF. Differential genome contents of nontypeable Haemophilus influenzae strains from adults with chronic obstructive pulmonary disease. Infection and immunity. 2006. 74:3366-3374. PMID: PMC1479259

14. Fernaays MM, Lesse AJ, **Cai X**, and Murphy TF. Characterization of igaB, a Second Immunoglobulin A1 Protease Gene in Nontypeable Haemophilus influenzae. *Infection and immunity*. 2006. 74:5860-5870. PMID: PMC1594874
15. Murphy TF, Brauer AL, Sethi S, Kilian M, **Cai X**, Lesse AJ. Haemophilus haemolyticus: a human respiratory tract commensal to be distinguished from Haemophilus influenzae. *Journal of infectious diseases*. 2007. 195:81-89. PMID: 17152011
16. Sethi S, Sethi R, Eschberger K, Lobbins P, **Cai X**, Grant JB, Murphy TF. Airway Bacterial Concentrations and Exacerbations of Chronic Obstructive Pulmonary Disease. *American journal of respiratory and critical care medicine*. 2007. 176:356-361. PMID: 17478618
17. Li Y, Glance LG, **Cai X**, Mukamel DB. Are Patients with Coexisting Mental Disorders More Likely to Receive CABG Surgery from Low-Quality Cardiac Surgeons? The Experience in New York State. *Medical care*. 2007. 45:587-593. PMID: 17571006
18. Li Y, **Cai X**, Glance LG, Mukamel DB. Gender Differences in Healthcare-Seeking Behavior for Urinary Incontinence and the Impact of Socioeconomic Status: A Study of the Medicare Managed Care Population. *Medical Care*. 2007. 45: 1116-1122. PMID: 18049354
19. Sethi S, Wrona C, Eschberger K, Lobbins P, **Cai X**, and Murphy TF. Inflammatory Profile of New Bacterial Strain Exacerbations of Chronic Obstructive Pulmonary Disease. *American Journal of Respiratory and Critical Care Medicine*. 2008. 177: 491-497. PMID: 18079493
20. Murphy TF, Brauer AL, Eschberger K, Lobbins P, Grove L, **Cai X**, Sethi S. Pseudomonas aeruginosa in Chronic Obstructive Pulmonary Disease. *American Journal of Respiratory and Critical Care Medicine*. 2008. 177: 853-860. PMID: 18202344
21. Li Y, Glance LG, **Cai X**, Mukamel DB. Adverse Hospital Events for Mentally-Ill Patients Undergoing Coronary Artery Bypass Surgery. *Health Services Research*. 2008. 43(6): 2239-2252. PMID: PMC2613995
22. Li Y, **Cai X**, Glance LG, Spector WD, Mukamel DB. National Release of the Nursing Home Quality Report Cards: Implications of Statistical Methodology for Risk Adjustment. *Health Services Research*. 2009. 44(1):79-102. PMID: PMC2669625
23. Li Y, Glance LG, **Cai X**, Mukamel DB. Mental Illness and Hospitalization for Ambulatory Care Sensitive Medical Conditions. *Medical Care*. 2008. 12:1249-1256. PMID: 19300315
24. Blekher T, Weaver MR, **Cai X**, Hui S, Marshall J, Jackson GJ, Wojcieszek F, Yee RD, Foroud TM. Test-retest reliability of saccadic measures in subjects at-risk for Huntington disease. *Investigative Ophthalmology & Visual Science*. 2009. 50(12): 5707-5711. PMID: 19553607
25. Novotny LA, Adams LD, Kang DR, Wiet GJ, **Cai X**, Sethi S, Murphy TF, and Bakaletz LO. Epitope mapping immunodominant regions of the PilA protein of nontypeable Haemophilus influenzae (NTHI) to facilitate the design of two novel chimeric vaccine candidates. *Vaccine*. 2009. 28 (1): 279-289. PMID: PMC2787809
26. Cram P, Bayman L, Popescu I, Vaughan-Sarrazin MS, **Cai X**, Rosenthal GE. Uncompensated care provided by for-profit, not-for-profit, and government owned hospitals. *BMC Health Services Research*. 2010. 10(90). PMID: PMC2907758

<http://www.biomedcentral.com/content/pdf/1472-6963-10-90.pdf>

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UNPUBLISHED RESEARCH

1. Xueya Cai, Jennifer Gewandter, Hua He, Robert Dworkin, Michael P. McDermott. Missing Data in Clinical Trials in Chronic Pain: Time for a Change (submitted)
2. Wang J, Caprio T, Temkin-Greener H, Cai X, Simning A, Li Y. Relationship of Medicare-Medicaid dual eligibility and dementia with unplanned facility admissions among Medicare home health care recipients. (submitted)