

# Duo Ren, MPH, MSW

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## EDUCATION

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| <b>MPH</b> | Epidemiology & Biostatistics (GPA: 3.96/4.0)<br>Washington University in St. Louis, MO<br>Major Courses: Biostatistics, Survival Analysis, Applied Deep Learning in Health Data, Epidemiology Methods, Applied Linear Modeling, Health Behavior Health Promotion, System Dynamic, Environmental Health, Planning, Implementation, & Evaluation                                      | 08/2021-12/2023 |
| <b>MSW</b> | International Economics and Development & Research (GPA: 3.96/4.0)<br>Washington University in St. Louis, MO<br>Major Courses: Global Anti-Poverty Intervention, Social Work Practice with Organizations & Communities, Social Justice & Human Diversity, Research Methods with Statistical Applications, Development Practice in International Settings, MSW Research Seminar I&II | 08/2020-12/2023 |
| <b>BSW</b> | Social Work (GPA:3.84/4.0)<br>Suzhou University of Science and Technology, Suzhou, China<br>Major Courses: Social Statistics, Qualitative Study and Social Work, Social Welfare, Social Survey Research Methods, Abnormal Psychology, Social Psychology Analysis, Social Work Practice Across Disability, Adolescent Social Work, Group Work, Case Work, Sociology                  | 08/2015-06/2019 |

## RESEARCH EXPERIENCE

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| <b>Research Data Assistant, Washington University School of Medicine, St. Louis, MO</b> | 04/2023-present |
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Mentor: Associate Professor in Surgery, Associate Professor in Medicine, Yin Cao, ScD, MPH

Study: *Trends and Patterns of Meal-Related Alcohol Consumption among US population in NHANES 1999-2020* March

- Conducted a literature review to identify research gaps in meal-related alcohol consumption.
- Drafted study proposal, covering background, rationale, research question, study design, and statistical methods.
- Performed data analysis using R: created descriptive tables, measured timing between food and alcohol intake, and conducted trend analysis of alcohol without food using linear regression and join point regression.
- Draft the manuscript: Trends and Patterns of Alcohol Consumption without Food among US population in NHANES 1999-2020 March.

Study: *Rising Accelerated Aging in Recent Generations is associated with the Risk of Early-Onset Cancers*

- Drafted the manuscript methods section, including cohort selection, PhenoAge algorithm application, and statistical analyses (linear regression and Cox proportional hazards models).
- Reviewed and refined data visualizations (tables, figures, dose-response curves) to ensure accuracy and alignment with manuscript content.
- Edited manuscript drafts in collaboration with other co-authors, providing suggestions, refining language, and ensuring compliance with journal submission requirements.

Study: *Parental Obesity Before Pregnancy and Risk of Metabolic Dysfunction-Associated Steatotic Liver Disease in Adult Offspring: A Prospective Cohort Study*

- Integrated literature review findings, synthesizing key background information on parental obesity, childhood adiposity, and liver disease risk in offspring.
- Drafted the introduction and methods sections, detailing the study population, outcome definitions, exposure and covariate assessments, and performed descriptive analysis for Table 1 summarizing population characteristics.
- Created Table 1 using R and Figure 1 with BioRender, illustrating the study design and inclusion/exclusion flowchart, and authored figure legends.

Project: *Cancer Grand Challenges: PROSPECT (Pathways, Risk factors, and mOleculeS to Prevent Early onset Colorectal Tumors) – Work Package 1*

- Developed ancillary study proposals for data acquisition (e.g., UNC Add Health) to investigate intergenerational family impacts on early-onset colorectal cancer risk.
- Conducted a comprehensive literature review on social determinants of colorectal cancer, including socioeconomic status, food environment, stress, and neighborhood SES, with a focus on biological stress pathways in cancer etiology.
- Harmonized stress-related data across global cohorts, including CPS3, All of Us, UK Biobank, Black Women's Health Study, Lifelines, and NHS, ensuring compatibility for comparative analyses.
- Performed exploratory analysis of the All of Us dataset, examining perceived stress and colorectal cancer risk using CPSS scoring, ICD-based cancer classifications, and Cox proportional hazard modeling in R.

**Research Assistant, Brown School, Washington University in St. Louis**

07/2024-present

Mentor: Constance and Martin Silver Endowed Professor in Data Science and Prevention, Ruopeng An, PhD

Study: *Systematic Review of Social Media Sentiment Analysis on Greenspace Use*

- Applied the PICO framework to formulate the research question and establish inclusion and exclusion criteria.
- Conducted systematic database searches across PubMed, Web of Science, EBSCO, and SCOPUS, and performed initial screening of titles and abstracts for relevance.
- Developed a protocol for Cohen's kappa reliability assessment to ensure consistency in screening and full-text review processes.

**Graduate Research Assistant, Social Policy Institute, Washington University in St. Louis**

07/2022-02/2023

Mentor: Assistant Professor of Practice, Dan Ferris, PhD

Project: *Operation Food Search Reduced Price School Meals Research Program*

- Conducted financial analysis by using Excel and Python to estimate the cost of expanding students' eligibility for reduced-price meals in the School Meals Program funded by Operation Food Search.
- Implemented descriptive analysis using Python (NumPy, Pandas) to calculate proportions and ratios of free, reduced-price, and paid school meals (2015–2020) across regions and grade levels; submitted a Data Analysis Plan, Report, and Coding Notebooks.

**Graduate Research Student, Brown School, Washington University in St. Louis**

01/2023-12/2023

Mentor: Steven H. and Susan U. Lipstein Distinguished Professor, Ross C. Brownson, PhD

Professor of Data Science for the Social Good in Practice, Drake Brett, PhD

Study: *Disability and Its Association with Breast Cancer Screening (Ages 40–74) and Cervical Cancer Screening (Ages 21–65): A Cross-Sectional Analysis of BRFSS*

- Conducted a literature review and developed a research proposal exploring disparities in cancer screening access using 2019 BRFSS data.
- Cleaned and managed data on women's self-reported mammography and Pap test utilization, applying multivariate logistic regression to report odds ratios for the association between disabilities and screening outcomes, and used the Kessler-Hedeker-Brown (KHB) method to assess income as a mediator.
- Generated descriptive tables summarizing population characteristics and analytical tables presenting regression and figure of mediation analysis results.
- Drafted the thesis manuscript and designed a research poster for an academic symposium.

## PUBLICATIONS

### Under Review

1. Ruiyi Tian, Xiaoyu Zong, **Duo Ren**, Stefani Tica, Daniel Hong, Oluseye Oduyale, Ramaswamy Govindan, and Yin Cao. Accelerated Aging in Recent Generations is associated with Risk of Early-Onset Cancers. (Resubmitted to Cancer Discovery-In review)

2. Stefani S. Tica, Chongliang Luo, **Duo Ren**, Xiaoyu Zong, Michael D. Thompson, Janis Stoll, Brian DeBosch, Phillip I. Tarr, Yin Cao. Parental Obesity Before Pregnancy and Risk of Metabolic Dysfunction-Associated Steatotic Liver Disease in Adult Offspring: A Prospective Study. (Submitted to Gut-In review)

### Work in Progress

1. **Duo Ren**, Haley Oetterer, Xiaoyu Zong, Mengyao Shi, Yin Cao (Tentative). Trends and Patterns of Meal-Related Alcohol Consumption in the US population. (In-development)

## PROFESSIONAL & WORK EXPERIENCE

**Clinical Research Coordinator**, Division of Hospital Medicine, St. Louis, MO 10/2024-present

- NutriConnect Study: Aims to improve cardiovascular health outcomes by promoting "food as medicine." Patients with cardiovascular risk factors discharged from the hospital receive Schnucks coupons for healthy food purchases, with follow-up on their health status to assess risk reduction.
- Recruit and interview discharge patients from Barnes-Jewish Hospital at three-month intervals to gather insights on health and dietary habits.
- Collect and manage data through EPIC reports and conduct data cleaning using R, specifically for geographic data such as ZIP codes.
- **Oncology I-TEAM Care Study**: Aims to enhance interdisciplinary teamwork among healthcare providers, including hospitalists, social workers, and nurses, to improve patient outcomes.
- Conducted pilot study interviews to assess satisfaction with bedside interdisciplinary rounds, engaging team members such as social workers, case managers, hospitalists, and charge nurses to support improved communication and coordination within hospital settings.

**Biostatistician Intern**, Inventiv Matrix Inc., St. Louis, MO 09/2023-12/2023

- Provided statistical review of clinical trial documents such as Protocols, Case Report Forms (CRFs), and Statistical Analysis Plans (SAPs), ensuring adherence to CDISC standards and FDA guidelines.

- Assisted senior Biostatisticians in drafting SAS programming specifications (Table/Listings/Figure shells).
- Reviewed raw data to identify inconsistencies, including missing values, incorrect variables, and outliers, while collaborating with the clinical team to resolve errors.
- Derived raw data into SDTM datasets and ADaM dataset, enhancing data integrity and usability for further analysis.
- Conducted quality control review of Clinical Study Reports and ad-hoc reports before delivery to the clinical study team.

**Capacity Building Coordinator**, International Center for Child Health & Development, MO

12/2022-12/2023

- Managed and inputted 80 detailed training records into REDCap, improving the efficiency of data management of programs.
- Led semi-structured interviews with 65 trainees from four research training programs, capturing and transcribing insights from varied training programs to improve the quality of programs.
- Designed professional brochures and posters of seminars and research training programs to enhance the progress of program recruitment and event attendance.

## HONORS & AWARDS

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| Brown School Research without wall symposium 2023 First Place                               | 2023      |
| Washington University Brown School Scholarship (\$28,000)                                   | 2021-2023 |
| Graduate Policy Scholar   | 2022-2023 |
| Suzhou University Science and Technology First-class Scholarship                            | 2016-2019 |
| Suzhou University Science and Technology Excellent Cadre of Communist Youth League of China | 2016-2017 |

## SKILLS

- Programming/Software: R, SAS, STATA, SPSS, Python, Tableau, Dedoose, NVivo, REDCap, Stella (system dynamics)
- Statistical Analysis: Survival Analysis, Regression Analysis, Trend Analysis, Analysis of Variance
- Dataset: NHANES, All of us, UK Biobank, BRFSS
- Other: Motivational Interview, Qualitative Analysis
- Language: Chinese Mandarin (Native); English (Fluent)