

Ruoyan Sun

孙若琰

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POSITIONS

School of Public Health, University of Alabama at Birmingham Assistant Professor, Department of Health Care Organization and Policy	2019 –
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EDUCATION

School of Public Health, University of Michigan Ann Arbor, MI PhD of Health Services Organization and Policy (Cognate: Operations Research/Decision Sciences and Economics)	2014 - 2019
Bloomberg School of Public Health, Johns Hopkins University, MD Master of Health Science in Health Economics	2013 - 2014
College of William and Mary, Williamsburg, VA	2009 - 2013

RESEARCH

Research Interests: Agent-based Modeling, Complex Systems, Health Economics, Obesity, Social Network Analysis, Tobacco Control.

Peer Reviewed Publications

18. Henna Budhwani, Prabal De, **Ruoyan Sun**. Perceived stigma in health care settings mediates the relationships between depression, diabetes, and hypertension. *Population Health Management*. Forthcoming.
17. Xiao Chen, Hanwei Huang, Jiandong Ju, **Ruoyan Sun**, Jialiang Zhang. Impact of vaccination on the COVID-19 pandemic in U.S. states. *Scientific Reports*. Forthcoming.
16. **Ruoyan Sun**, David Mendez, Kenneth E. Warner. Evaluation of self-reported cannabis vaping among US youth and young adults who use e-cigarettes. *JAMA Pediatrics*. Forthcoming.

15. **Ruoyan Sun**, David Mendez, Kenneth E. Warner. Is adolescent e-cigarette use associated with subsequent? A new look. *Nicotine and Tobacco Research*. 2021.
14. **Ruoyan Sun**, David Mendez, Kenneth E. Warner. In search of a better way to assess the risk of youth exposure to nicotine and tobacco products. *JAMA Pediatrics*. 2021; 175(12):1208-9.
13. **Ruoyan Sun**, David Mendez, Kenneth E. Warner. Trends in nicotine product use among US adolescents, 1999-2020. *JAMA Network Open*. 2021;4(8):e2118788.
12. Henna Budhwani, **Ruoyan Sun**. Creating COVID-19 stigma by referencing the novel coronavirus as the “Chinese virus” on Twitter: quantitative analysis of social media data. *Journal of Medical Internet Research*. 2020;22(5):e19301.
11. **Ruoyan Sun**, David Mendez. Finding the optimal mix of initiation and cessation interventions to reduce smoking prevalence. *PLoS ONE*. 2019;14(3):e0212838.
10. **Ruoyan Sun**, David Mendez. Initiation vs cessation policies: deriving optimal resource allocation strategies to decrease smoking prevalence under a fixed budget. *MDM Policy & Practice*. 2019;4(1):2381468319832036.
9. **Ruoyan Sun**, David Mendez. An application of the Continuous Opinions and Discrete Actions (CODA) model to adolescent smoking initiation. *PLoS ONE*. 2017;12(10): e0186163.
8. **Ruoyan Sun**. Adopting epidemic model to optimize medication and surgical intervention of excess weight. *Physics Letters A*. 2017;381(1):19-23.
7. **Ruoyan Sun**. Optimal weight based on energy imbalance and utility maximization. *Physica A*. 2016;442:429-35.
6. **Ruoyan Sun**. Kinetics of jobs in multi-link cities with generalized migration-driven aggregation process. *Applied Mathematics and Computation*. 2014;247:1003-10.
5. **Ruoyan Sun**. Migration-driven aggregation behaviors in job markets with direct foreign immigration. *Physics Letters A*. 2014;378(43):3177-81.
4. **Ruoyan Sun**. Migration-driven aggregation behaviors of job markets in a multi-group environment. *Economics Research International*. 2013:250717.
3. **Ruoyan Sun**. Kinetics of jobs in multi-link cities with migration-driven aggregation process. *Economic Modelling*. 2013;30(1):36-41.
2. **Ruoyan Sun**, Junping Shi. Global stability of multigroup epidemic model with group mixing and nonlinear incidence rates. *Applied Mathematics and Computation*. 2011;218(2): 280-6. (Highly Cited Paper)

1. **Ruoyan Sun**. Global stability of the endemic equilibrium of multigroup SIR models with nonlinear incidence. *Computers and Mathematics with Applications*. 2010;60(8):2286–91.

Conference Papers

2. Jiacun Wang, Jiarui Tian, **Ruoyan Sun** (2018). Emergency health care resource requirement analysis: A stochastic timed Petri net approach. In *Networking, Sensing and Control (ICNSC), 2018 IEEE 15th International Conference*.
1. Xiao Chen, Hanwei Huang, Jiandong Ju, **Ruoyan Sun**, Jialiang Zhang (2021). Trade, migration, and pandemics: the effect of COVID-19 containment policies in the United States. In *2021 China Meeting of the Econometric Society*.

Preprint

1. Xiao Chen, Hanwei Huang, Jiandong Ju, **Ruoyan Sun**, Jialiang Zhang. Impact of vaccination on the COVID-19 pandemic: Evidence from US states. Available at SSRN 3845163. 2021.

GRANTS AND AWARDS

Center for the Assessment of Tobacco Regulations Pilot Fund	2021
UAB Back of the Envelope	2020
Nominated, AcademyHealth Annual Research Meeting Best Poster Award	2019
Rackham Conference Travel Grant, University of Michigan	Summer 2017
AHRQ National Research Service Award, University of Michigan	Sep. 2014 – Aug. 2015
Cummings Memorial Summer Scholarship, College of William and Mary	Summer 2012
Chappell Fellowship, College of William and Mary, Virginia	Summer 2011
Biomath Summer Scholarship, College of William and Mary	Summer 2010

RESEARCH AND TEACHING EXPERIENCE

Courses at UAB

- Pharmacoeconomics 2020
- Policy Analysis: Modeling and Simulation 2021

Teaching Assistant at University of Michigan

- Operations Research and Control Systems 2016 - 2018
- The US Health Services System Winter 2017
- Case Studies in Health Services Administration Winter 2016

- Guest lecture at University of Michigan
- The US Health Services System Mar. 2018
 - Case Studies in Health Services Administration Mar. 2017
- Research Assistant
- Institute for Healthcare Policy & Innovation Summer Research Assistant Summer 2017
University of Michigan
 - Robert Wood Johnson Graduate Student Research Assistant Sep. 2015 – Jul. 2016
University of Michigan
 - Summer Research Assistant Summer 2012
Monmouth University

PRESENTATIONS AND CONFERENCES

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- Center for the Assessment of Tobacco Regulations (CAStoR) Symposium Jun. 2021
Speaker
- E-cigarette Summit May 2021
Speaker
- Society for Research on Nicotine and Tobacco Annual Meeting Feb. 2021
Podium presentation
- AcademyHealth Annual Research Meeting, Washington, D.C. Jun. 2019
Poster presentation
- Short Course on Mathematical Sciences in Obesity Research, Baltimore, MD. Jun. 2019
- Annual Health Econometrics Workshop, Baltimore, MD. Sep. 2018
- INFORMS Healthcare, Rotterdam, Netherlands. Jul. 2017
Podium presentation
- 21st Annual National Research Services Award Conference, Minneapolis, MN. Jun. 2015
Poster presentation
- 2011 GMU-WM CSUMS Workshop, Williamsburg, VA. Apr. 2011
Podium Presentation
- 2010 Fall American Mathematical Society (AMS) Southeastern Sectional Meeting, Richmond, VA. Nov. 2010
- Fourth International Conference on Recent Advances in Applied Dynamical Systems, Jinhua, China. Jun. 2010

REFEREE

Addiction
Advances in Difference Equations
Applied Mathematics and Computation
Applied Mathematics Letters
Economic Modelling
Health Education Research
International Journal of Communication
International Journal of Control
Journal of Applied Mathematics
Journal of Immigrant and Minority Health
Journal of Medical Internet Research
Journal of Pediatrics
Journal of Public Health and Epidemiology
Journal of Scientific Research and Reports
Mathematics and Computers in Simulation
Obesity
Physica A
Preventive Medicine Reports
Proceedings of the National Academy of Sciences of the United States of America (PNAS)
Social Science & Medicine – Population Health.
Tobacco Control