Wanyu Huang

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Department of Civil and Systems Engineering
Johns Hopkins University

EDUCATION

Johns Hopkins University Aug. 2018 – Present
Ph.D. Student, Department of Civil and Systems Engineering
Advisor: *Professor Takeru Igusa*

Iowa State University Aug. 2016 – May 2018
M.S., Department of Industrial and Manufacturing Systems Engineering
Advisor: *Professor Caroline C. Krejci*

Shanghai Jiao Tong University Sep. 2012 – June 2016
B.Sc. in Automation, School of Electronic Information and Electrical Engineering

RESEARCH INTERESTS

Systems Science, Agent-based Modeling, Machine Learning, Network Modeling, Social Network Analysis, Optimization

PUBLICATIONS

In-Utero Co-Exposure to Toxic Metals and Micronutrients on Childhood Risk of Overweight or Obesity: New Insight on Micronutrients Counteracting Toxic Metals.
Wanyu Huang, Tak Igusa, Guoying Wang, Jessie P. Buckley, Xiumei Hong, Eric Bind, Andrew Steffens, Jhindan Mukherjee, Douglas Haltmeier, Yuelong Ji, Richard Xu, Wenpin Hou, Zhihua (Tina) Fan and Xiaobin Wang. *International Journal of Obesity, pp.1-11, May 2022*.

DNA Methylation Mediates the Effect of Maternal Smoking on Offspring Birthweight: A Birth Cohort Study of Multi-Ethnic US Mother–Newborn Pairs.
Richard Xu, Xiumei Hong, Boyang Zhang, **Wanyu Huang**, Wenpin Hou, Guoying Wang, Xiaobin Wang, Tak Igusa, Liming Liang and Hongkai Ji. *Clinical Epigenetics 13, No. 1: 1-13, Dec. 2021*.

Agent-based Modeling for Implementation Research: An Application to Tobacco Smoking Cessation for Persons with Serious Mental Illness.
Wanyu Huang, Chia-Hsiu Chang, Elizabeth A Stuart, Gail L Daumit, Nae-Yuh Wang, Emma E McGinty, Faith B Dickerson and Takeru Igusa. *Implementation Research and Practice, Vol. 2, Jan. 2021*.

Analyzing Residential Weatherization Decisions Using Hybrid Simulation Modeling.
Wanyu Huang, Caroline C. Krejci, Michael C. Dorneich, Ulrike Passe, Linda Shenk and Jacklin Stonewall. *Building Simulation, Vol. 12, No. 3, pp. 517-534, Jun. 2019*.

Energy Use and Weatherization Practices: Applications for Agent-Based Modeling to Support Vulnerable Populations.
Jacklin Stonewall, **Wanyu Huang**, Michael C. Dorneich, Caroline C. Krejci, Linda Shenk and Ulrike Passe. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting, Vol 62, Issue 1, 2018*.

Weatherization Adoption in A Multilayer Social Network: An Agent-based Approach.
Wanyu Huang, Caroline C. Krejci, Michael C. Dorneich and Ulrike Passe. *Computational Social Science Conference, 2017*.
Best Paper Finalist.

Consumer-adoption Modeling of Distributed Solar Using an Agent-based Approach.
Anuj Mittal, **Wanyu Huang** and Caroline C. Krejci. *Computational Social Science Conference, 2017*.

A Genetic-Algorithm-Based Information Evolution Model for Social Networks.
Yanan Wang, Xiuzhen Chen, Jianhua Li and **Wanyu Huang**. *China Communications, Vol. 13, No. 12, pp. 234-249, Dec.*

2016.

Multiple Evidence Fusion based Information Diffusion Model for Social Network.
Yanan Wang, Jianhua Li, Xiuzhen Chen and **Wanyu Huang**. *9th International Conference on Communications and Networking in China (pp. 102-105), IEEE, 2014*.

RESEARCH EXPERIENCE

Boston Birth Cohort Study Feb. 2019 – Present
We are using machine learning methods to study early life factors and their effects on pregnancy, infancy, and child health outcomes. I have been working on three specific topics, including early risk assessment of Autism, the impacts of in-utero co-exposure to toxic metals and micronutrients on childhood overweight or obesity, and trajectories of body mass index in children.

Systems Science to Model Interventions to Improve Physical Health in the Population with SMI Nov. 2018 – Present
We are working on systems science models that can be used to simulate and estimate the effects of various interventions to improve physical health among people with serious mental illness (SMI) on long-term public health outcomes, like tobacco smoking prevalence.

Development of Expansion Planning Methods and Tools for Handling Uncertainty Aug. 2017 – June 2018
We worked on a new approach to generate a small number of high-quality scenarios, which can help existing transmission expansion planning models and tools to produce more resilient solutions for power system development.

PIIR DDSI Big Data for Sustainable Cities Decision Making Sep. 2016 – May 2018
We developed an integrated agent-based model for modeling residents' decisions for adopting energy-saving practices. We also explored what factors matter when residents make these decisions.

Complex Network and Control Lab Sep. 2015 – June 2016
I worked on the undergraduate thesis project of information dissemination in multi-layer social networks.

Group Behaviors and Group Emotions in Social Networks May 2014 – May 2016
We proposed a multiple evidence fusion based information diffusion model which can simulate the propagation process based on users' historical and real-time behavior data, and a genetic-algorithm-based diffusing behavior model to investigate the effects of different factors in information propagation.