XINLEI DENG
National Institute of Environmental Health Sciences, Durham, NC 27709
+1-5182532901/xinlei.deng@nih.gov /https://xinleideng.github.io

EDUCATION

Postdoctoral Fellow, National Institute of Environmental Health Sciences (NIEHS) and National Institute on Aging (NIA) 08/2022-Present

- Intramural Research Training Award Program
- Advised by Dr. Dale Sandler, Chief, Epidemiology Branch, NIEHS and Dr. Lenore J. Launer, Chief, Lab of Epidemiology & Pop Sciences, NIA

Ph.D. (Environmental Health Sciences, EHS), School of Public Health, State University of New York at Albany, New York, USA 08/2019-05/2022

- GPA: 4.97/5
- Full scholarship Recipient
- Dissertation: The short-term association between meteorological factors and emergency department visits for mental disorders
- Mentor: Shao Lin, M.D., Ph.D.

M.D. (Medical Degree in Preventive Medicine), School of Public Health, Sun Yat-sen University, Guangzhou, China 09/2014-05/2019

- GPA: 3.8/4
- Jerry Yan Scholarship, Scholarship of Zhibin Yao and Xiao Tan for Excellent Medical Students Recipient
- The Third Prize of the Sixth Medical Knowledge & Skills Contests
- Thesis: Time series clustering analysis on the epidemiological characteristics of notifiable infectious diseases in China
- Mentor: Yingsi Lai, Ph.D.

RESEARCH INTERESTS

Spatial-temporal epidemiology, Bayesian methods, predictive models, machine learning, environmental health, air pollution, and climate change

RESEARCH EXPERIENCE

I. **Assess and Model the Health Effects, Population, and Infrastructural Vulnerabilities of Power Outage (PO).**
Funded by the National Institute of Environmental Health Sciences (NIEHS, PI: Lin)
Advised by Prof. Shao Lin, Department of EHS, State University of New York at Albany (UAlbany). 2021-Present

- Paper one: ***The synergistic and independent impacts of power outage and flooding on hospital admissions in New York State, 2002-2018.*** (submission to *Environmental International*, **First author**).
  - Responsibilities:
  - Combined New York Department of Public Services (NYDPS) data, National Oceanic and Atmospheric Administration (NOAA) Storm Events Database, Environmental Protection Agency (EPA) Community Multiscale Air Quality (CMAQ) data, simulation data from chemical transport models, and Statewide Planning and Research Cooperative System (SPARCS) data from 2002-2018 at power-operating division and daily levels.
  - Used Distributed Lag Non-Linear Models (DLNM) to assess the synergistic and independent impacts of PO and flooding and the impact of flooding together with different scales of PO at each power-operating division.
  - Conducted random-effect meta-analyses to pool the risk estimation from all operating divisions.
- Paper two: ***The individual and synergistic impacts of windstorms and power outages on injury ED visits in New York State.*** (Published in *Science of the Total Environment*, **Co-author as a statistician**).
  - Responsibilities:
  - Combined NOAA Severe Weather Data Inventory (SWDI), NOAA Integrated Surface Database, NYDPS data, and emergency department (ED) visits data from SPARCS from 2005-2013.

- Used DLNM to assess the synergistic and independent impacts of PO and windstorms at power-operation level
- Conducted random-effect meta-analyses to pool the risk estimation from all operating divisions.

➢ Paper three: ***The impacts of infrastructure and environmental variables on power outages caused by multiple hazards in New York State: a machine learning modeling study.*** (Ongoing, **Co-author as a statistician**).

- Responsibilities:
- Combined NYDPS data, Energy Information Administration (EIA) data, National Center for Environmental Prediction, NOAA SWDI, Soil Survey Geographic Database, USGS national land use map, American Community Survey, EPA CMAQ at the county and monthly level from 2001-2013.
- Built multiple machine learning models including random forest, xgboost, gradient boosting, support vector machine, and multi-layer perceptron models and assessed their performance in Python.
- Used Morris Sensitivity analysis to select the important factors.

II. **COVID-19 Fatality by Different Demographics and Time Periods in the US.**

Advised by Prof. Shao Lin, Department of EHS, UAlbany. 2021-Present

➢ Paper one: ***COVID-19 symptoms and deaths among health care workers in the United States.*** (Published a preprint and waiting for submission to *Emerging Infectious Diseases*, **Co-author as a statistician**).

- Responsibilities:
- Managing almost 30 million COVID-19 Case Surveillance Restricted Use Detailed Data from Centers for Disease Control and Prevention (CDC).
- Generated the results including descriptive analysis and multivariate analysis.

➢ Paper two: ***COVID-19 symptoms, infection, and deaths among children and teenagers before vaccines, after vaccines, and during Delta Variant.*** (Ongoing, **First author**).

- Responsibilities:
- Extracted children and teenagers from CDC COVID-19 Case Surveillance Restricted Use Detailed Data.
- Conducted stratified analysis for COVID-19 cases and deaths among children and teenagers before Vaccines, after Vaccines, and during Delta Variant.
- Conducted cluster analysis for COVID-19 symptoms among children and teenagers before Vaccines, after Vaccines, and during Delta Variant.

➢ Paper three: ***The interaction effect of greenspace and vaccines on the number of cases and deaths, fatality rate, and incidence rate of COVID-19.*** (Ongoing, **First author**, Advised by Prof. Kai Zhang, UAlbany)

- Responsibilities:
- Combined the county-level COVID-19 data from Johns Hopkins Center for Systems Science, Google Community Mobility Reports for COVID-19, Normalized Difference Vegetation Index (NDVI) and Enhanced Vegetation Index (EVI) from NASA MODIS Terra products, and American Community Survey data covering US mainland 48 States.
- Created spatial maps of COVID-19 cases, deaths, fatality rate, and incidence rate with ArcGIS.
- Built negative binomial mixed model to assess the effects of green space on COVID-19 at different vaccine stages

➢ Paper four: ***COVID-19 symptoms and deaths among the elderly in the United States.*** (Published in *Emerging Infectious Diseases*, **Co-author as a statistician**).

- Responsibilities:
- Extracted the elderly from CDC COVID-19 Case Surveillance Restricted Use Detailed Data.
- Generated the results including descriptive analysis and multivariate analysis.

III. **Changes in PM Composition in NYS & Triggering of Acute Cardiorespiratory Events.**

Funded by the New York State Energy Research and Development Authority (NYSERDA).

Advised by Prof. Shao Lin, Department of EHS, UAlbany and Prof. David Q. Rich, Department of Public Health Sciences, University of Rochester. 2021-Present

- Responsibilities:
- Geocoded 2019-2020 hospital admission data from SPARCS
- Conducted descriptive analysis for PM2.5 and different PM compositions including sulfate, nitrate, elemental carbon, and primary organic carbon (POC), and increased secondary organic carbon (SOC).
- Assessed the changes of the impact of PM2.5 and O3 on cardiovascular admissions, respiratory admissions,

respiratory infection admissions under different policy periods including BEFORE [2005-2007], DURING [2008-2013], AFTER [2014-2016], and RECENT [2017-2020].

IV. **The Short-Term Association between Meteorological Factors and Emergency Department Visits for Mental Disorders (Ph.D. Dissertation by Dr. Xinlei Deng).**

Advised by Prof. Shao Lin, Department of EHS, UAlbany, Dr. Jerald Brotzge, New York State Mesonet, UAlbany, Dr. Melissa Tracy, Department of Epidemiology and Biostatistics, UAlbany, Dr. Xiaobo Romeiko, Department of EHS, UAlbany, and Dr. Howard Chang, Department of Biostatistics and Bioinformatics, Emory University 2020-Present

- Paper one: ***High-resolution weather simulations based on weather monitor stations: a two-stage downscaling model.*** (Ongoing, **First author**).
  - Responsibilities:
  - Extracted and combined Human Modification Index of Terrestrial Systems and Urban extent from Socioeconomic Data and Applications Center, NDVI, EVI, and Land Surface Temperature from NASA MODIS Terra products, Tree canopy coverage from US Forest Services, Solar radiation from National Renewable Energy Laboratory, Daily surface weather data from Daymet, Elevation from WorldClim, Population from American Community Survey, and Weather station data from Automated Surface Observation System (ASOS) and Mesonet.
  - Built machine learning model at the first stage and Bayesian Spatial-temporal model at the second stage.
  - Validated this two-stage model at testing weather station sites and generate high-resolution weather data.
- Paper two: ***Identifying joint impacts of sun radiation, temperature, humidity, and rain duration on mental disorders using a high-resolution weather monitoring system.*** (Presented in ISEE 2020, Published in *Environmental International*, **First author**).
  - Responsibilities:
  - Combined SPARCS data, Mesonet data, EPA CMAQ data, and simulation data from chemical transport models.
  - Transformed combined dataset to fit the case-crossover study design.
  - Used conditional logistic regression to assess the association between meteorological factors and mental disorders.
- Paper three: ***The interaction effect of green space and meteorological factors on mental disorders.*** (Ongoing, **First author**)
  - Responsibilities:
  - Combining NDVI, EVI, Tree canopy coverage, high-resolution weather simulations, and SPARCS data.
  - Assessing the multiplicative and additive interaction effects of green space on the association between meteorological factors on ED visits of mental disorders.

V. Evaluating Short-/Long-term Impacts and Exposure Sources of Ultrafine Particles on Multiple Health Outcomes in New York State by Using High-Resolution Pollutant Simulations

Funded by the New York State Energy Research and Development Authority (NYSERDA).

Advised by Prof. Shao Lin, Department of EHS, UAlbany and Prof. Fangqun Yu, Department of Earth and Atmospheric Sciences, Atmospheric Sciences Research Center, UAlbany 2021-Present

- Paper one: ***Assessing the short-term risk effects of exposure to ultrafine particles on emergency department visits of renal diseases in New York State, 2013-2018.*** (Presented in ISEE 2021, **First author**).
  - Responsibilities:
  - Combined high-resolution pollutant simulations with SPARCS data and transformed the combined data to fit the case-crossover study design.
  - Used conditional logistic regression to assess the short-term risk effects.
- Paper two: ***Particle surface area, ultrafine particle number concentration, and cardiovascular hospitalizations.*** (Published in *Environmental Pollution*, **Co-author**).
  - Responsibilities:
  - Combined high-resolution pollutant simulations with SPARCS data and transformed the combined data to fit the case-crossover study design.
  - Used conditional logistic regression to assess the short-term risk effects.

VI. Assess School Environmental Effects on Children's Health and Performance and Strengthen State/Community Capacity to Create A Healthy and Safe Learning Environment

Funded by the US Environmental Protection Agency (EPA)'s Science to Achieve Results (STAR) program
Advised by Prof. Shao Lin, Department of EHS, UAlbany 2020-2021

- Paper one: ***Application of data science methods to identify school and home risk factors for asthma and allergy-related symptoms among children in New York.*** (Presented in SER 2020, Published in *Science of The Total Environment*, Publish a related R package, **First author**).
  - Responsibilities:
  - Used multivariate feature imputation method to address missing values with Python.
  - Built random forest models to identify the most important risk factors for asthma and allergy-related symptoms.
  - Used decision tree for visualizing the inter-relationships among selected risk factors.
- Paper two: ***Temporal-spatial characteristics of thermal comfort among students using real-time personal monitors.*** (Under review, **Co-author**).
  - Responsibilities:
  - Generated graphs for temporal-spatial characteristics of different air pollutants.

VII. International Cooperation Research

- Paper one: ***Using innovative machine learning methods to screen and identify predictors of congenital heart diseases in a birth cohort study***. Advised by Prof. Shao Lin, Department of EHS, UAlbany. (Submitted one paper to *Frontiers in Cardiovascular Medicine* (**Co-first author**), developed an online predictive tool/website, and present at APHA 2021) 2020-2021
  - Responsibilities:
  - Combined and extract 1,127 predictors from self-reported questionnaires and routine clinical laboratory tests.
  - Used AllKNN to address data imbalance, built Explainable Boosting model, and select top 35 predictors.
  - Built an online predictive tool or website with this predictive model by using R Shiny.
- Paper two: ***Building a predictive model to identify clinical indicators for COVID-19 using machine learning method.*** Advised by Prof. Shao Lin, Department of EHS, UAlbany. (Published in *Medical & Biological Engineering & Computing* (**First author**), developed an online predictive tool/website) 2020-2021
  - Responsibilities:
  - Built predictive model to distinguish patients with COVID-19 from patients with CAP by Explainable Boosting model.
  - Select top contributing factors and combined these factors into groups to identify abnormal systematic body functions.
  - Built an online predictive tool or website with this predictive model by using R Shiny.
- Paper three: ***APS (Age, Platelets, 2D Shear-Wave Elastography) score predicts hepatocellular carcinoma in chronic hepatitis B.*** Advised by Dr. Ting Zhang, Departments of Medical Ultrasonics, Third Affiliated Hospital of Sun Yat-Sen University. (Published in *Radiology* (**Co-author as a statistician**)) 2020-2021
  - Responsibilities:
  - Developed the APS score by using Cox proportional hazards model and generated all results.
  - Compared the APS score with other well-known scores including CU-HCC, GAG-HCC, CAMD, LSM-HCC, and mREACH-B scores.
- Paper four: ***Development and validation of a predictive model for feeding intolerance in intensive care unit patients with sepsis.*** Advised by Dr. Kunlin Hu, The First Clinical Medical College of Jinan University. (Published in *Saudi Journal of Gastroenterology* (**Co-author as a statistician**)) 2020-2021
  - Responsibilities:
  - Built predictive model for feeding intolerance in intensive care unit patients with sepsis.
  - Selected top contributing factors and generated calibration curve and decision curve.
  - Built an online predictive tool or website with this predictive model by using R Shiny.
- Paper five: ***Development of a prognostic model for predicting multiple sclerosis following optic neuritis: a secondary analysis of data from the Optic Neuritis Treatment Trial.*** Advised by Dr. Wenjing Luo, Department of Ophthalmology, The First Affiliated Hospital of Guangxi Medical University. (Published in *Journal of Neuro-*

ophthalmology (**Co-author as a statistician**)) 2020-2021

- Responsibilities:
- Built a monogram with the Cox Proportional Hazards model.
- Generated C-index and calibration curves.

- Paper six: ***Mobile texting and lay health supporters to improve schizophrenia care in a resource-poor community in rural China (LEAN Trial): randomized controlled trial extended implementation.*** Advised by Dr. Romen Xu, Acacia Lab for Health Systems Strengthening and Department of Health Management, Southern Medical University. (Published in *Journal of Medical Internet Research* (**Co-author as a statistician**)) 2019-2020
  - Responsibilities:
  - Addressed missing values with Multivariate Imputation by Chained Equations.
  - Used generalized estimating equation (GEE) model for effect estimation.
  - Conducted stratified analysis and generated the forest plot.
- Paper seven: ***Residual Effect of Texting to Promote Medication Adherence for Villagers with Schizophrenia in China: 18-Month Follow-up Survey After the Randomized Controlled Trial Discontinuation.*** Advised by Dr. Romen Xu, Acacia Lab for Health Systems Strengthening and Department of Health Management, Southern Medical University. (Published in *JMIR mHealth and uHealth* (**Co-author as a statistician**)) 2019-2020
  - Responsibilities:
  - Addressed missing values with Multivariate Imputation by Chained Equations.
  - Used generalized estimating equation (GEE) model for effect estimation.
  - Conducted stratified analysis and generated the forest plot.

TEACHING EXPERIENCE

- Teaching Assistant:
  - Clinical Research Methods Remote Training Program 2021 (UAlbany)
  - Guest lecture: Guangdong Cardiovascular Institute, Guangdong Provincial People's Hospital (Topic: Building Predictive Model for Congenital Heart Diseases)
  - HEHS Course 545 Global Climate Change, Extreme Weather and Public Health (Topic: Machine Learning Methods in Public Health, UAlbany Fall 2020)
  - HEHS Course 629 Grant Writing and Protocol Preparation (Topic: Sample size and power calculation, UAlbany Fall 2021)
  - Center for Social & Demographic Analysis Virtual Colloquium (Topic: Identifying Joint Impacts of Sun Radiation, Temperature, Humidity, and Rain Duration on Mental Disorders in New York State Using the Mesonet Weather Monitoring System, January 2022)
  - Seminar: National Institute of Environmental Health Sciences and National Institute on Aging. (Topic: Development of predictive models and spatial-temporal models in epidemiology studies)

COMPUTER SKILLS

- **Software:**
  R, Python, ArcGIS, SAS, HTML Language, PASS, SPSS, Matlab, STATA, Graphpad, Epidata, Photoshop, SQL

- **Developed R packages:**

- **Deng X**, Zhang W, Lin S. Package "APML" An Approach for Machine-Learning Modelling. https://cran.r-project.org/web/packages/APML/APML.pdf. Published online 2020.

- **Developed online tools/websites:**

- Predictive Model for Enteral Nutrition Intolerance in ICU Patients with Sepsis: xdeng3.shinyapps.io/NIPM/
- Predictive Model for Congenital Heart Diseases Built by a Large Birth Cohort Study: xdeng3.shinyapps.io/CHD_model/
- Predictive Model for COVID-19 vs Community-Acquired Pneumonia (CAP): xdeng3.shinyapps.io/COVID-19/

ACADEMIC SERVICES & HONORS

- Serving as **reviewer** for **Environment International, Environmental Pollution, Journal of Environmental Management, Health and Place, Indoor Air, The Journal of Nutrition, Frontiers in Public Health, Head and Neck, Journal of BioMed Research International, Hygiene and Environmental Health Advances, and Plos One**
- Served as **abstract reviewer** for 2022 APHA conference
- Served as **The Nation's Health Board Representative (Chair)** for APHA - Student Assembly 2021
- Served as **moderator** at the American Public Health Association (APHA) conference for **Big Data Analytics for Public Health Research session** 2021
- **Applied Public Health Statistics** (APHS) Student Membership Award from APHA 2021
- **Edward & Frances Gildea George Endowment** from UAlbany 2021
- **Registration Award** at ISEE conference 2021
- **Health Research, Inc. David Axelrod Award** for **Outstanding Presentation** in UAlbany 2021
- **Certificate in Biostatistics** from Peking University 2020
- **Student and New Researcher Network (SNRN) Award** at ISEE conference 2020
- **Outstanding Thesis Recipient** in Sun Yat-sen University 2019
- **Honorable Mention Award** in American **Mathematical Contest in Modeling** 2018
- **First prize** at the provincial level in China Contemporary Undergraduate **Mathematical Contest in Modeling** 2017
- **Full scholarship** to UAlbany SPH PhD program

PUBLICATIONS

[20] Qu Y, Zhang W, Boutelle AYM, Ryan I, **Deng X**, Liu X, Lin S. Associations Between Ambient Extreme Heat Exposure and Emergency Department Visits Related to Kidney Disease. American Journal of Kidney Diseases. Published online October 2022. doi:10.1053/j.ajkd.2022.09.005

[19] Ye B, Yucel R, Qu Y, Thurston G, **Deng X**, Ryan I, Lin S. Impact of environmental programs on student test scores mediated by school attendance rate. Hygiene and Environmental Health Advances. 2022;4:100028. doi:10.1016/j.heha.2022.100028

[18] Ryan I, **Deng X**, Thurston G, Khwaja H, Romeiko X, Zhang W, Marks T, Yu F, Lin S. Measuring students' exposure to temperature and relative humidity in various indoor environments and across seasons using personal air monitors. Hygiene and Environmental Health Advances. 2022;4:100029. doi:10.1016/j.heha.2022.100029

[17] Yount CS, Utell MJ, Hopke PK, Thurston SW, Lin S, Ling FS, Chen Y, Chalupa D, **Deng X**, Rich DQ. Triggering of ST-elevation myocardial infarction by ultrafine particles in New York: Changes following Tier 3 vehicle introduction. Environmental Research. 2023;216:114445. doi:10.1016/j.envres.2022.114445

[16] **Deng X**, Brotzge J, Tracy M, Howard C, Xiaobo R, Wangjian Z, Ian R, Fangqun Y, Yanji Q, Gan L, Shao L. Identifying joint impacts of sun radiation, temperature, humidity, and rain duration on triggering mental disorders using a high-resolution weather monitoring system. Environment International. 2022;167:107411. doi:10.1016/j.envint.2022.107411

[15] **Deng X**, Thurston G, Zhang W, Ryan I, Jiang C, Khwaja H, Romeiko X, Marks T, Ye B, Qu Y, Lin S. Application of data science methods to identify school and home risk factors for asthma and allergy-related symptoms among children in New York. *Sci Total Environ*. 2021;770. doi:10.1016/J.SCITOTENV.2020.144746

[14] **Deng X**, Friedman S, Ryan I, Zhang W, Dong G, Rodriguez H, Yu F, Huang W, Nair A, Luo G, Lin S. The independent and synergistic impacts of power outages and floods on hospital admissions for multiple diseases. Sci Total Environ. 2022;828. doi:10.1016/J.SCITOTENV.2022.154305

[13] **Deng X***, Li H*, Liao X, Qin Z, Xu F, Friedman S, Ma G, Ye K, Lin S. Building a predictive model to identify clinical indicators for COVID-19 using machine learning method. *Medical & Biological Engineering & Computing*. 2022; 11. doi: 10.1007/s11517-022-02568-2

[12] Qu Y*, **Deng X***, Lin S, Han F, Chang H, Ou Y, Nie Z, Mai J, Wang X, Gao X, Wu Y, Chen J, Zhuang J, Ryan I, Liu X. Using Innovative Machine Learning Methods to Screen and Identify Predictors of Congenital Heart Diseases. *Frontiers in Cardiovascular Medicine*. 2022;8. doi:10.3389/fcvm.2021.797002

[11] Lin S, **Deng X**, Ryan I, Zhang K, Zhang W, Oghaghare E, Gayle DB, Shaw B. COVID-19 Symptoms and Deaths among Healthcare Workers, United States. Emerging Infectious Diseases. 2022;28(8):1624-1641. doi:10.3201/eid2808.212200

[10] Sheridan SC, Zhang W, **Deng X**, Lin S. The individual and synergistic impacts of windstorms and power outages on injury ED visits in New York State. Sci Total Environ. 2021;797:149199.

[9] Zhang T, Zhang G, **Deng X**, Zeng J, Jin J, Zeping H, Wu M, Zheng R. APS (Age, Platelets, 2D Shear-Wave Elastography) Score Predicts Hepatocellular Carcinoma in Chronic Hepatitis B. *Radiology*. Published online 2021:204700.

[8] Hu K, **Deng X**, Han L, Xiang S, Xiong B, Pinhu L. Development and validation of a predictive model for feeding intolerance in intensive care unit patients with sepsis. *Saudi J Gastroenterol*. Published online 2021.

[7] Luo W, **Deng X**, Xu X, Song R, Luo M, Moss H, Du Y. Development of a Prognostic Model for Predicting Multiple Sclerosis After Optic Neuritis: A Secondary Analysis of Data From the Optic Neuritis Treatment Trial. *Journal of Neuro-ophthalmology : the Official Journal of the North American Neuro-ophthalmology Society*. 2021 Oct. DOI: 10.1097/wno.0000000000001424. PMID: 34860745.

[6] Guo J, Wu Y, **Deng X**, Liu Z, Chen L, Huang Y. Association between social determinants of health and direct economic burden on middle-aged and elderly individuals living with diabetes in China. *PLoS One*. 2021;16(4):e0250200. doi:10.1371/JOURNAL.PONE.0250200

[5] Qu Y, Zhang W, Ryan I, **Deng X**, Dong G, Liu X, Lin S. Ambient extreme heat exposure in summer and transitional months and emergency department visits and hospital admissions due to pregnancy complications. *Sci Total Environ*. 2021;777:146134. doi:10.1016/j.scitotenv.2021.146134

[4] Cai Y, Gong W, He H, Hughes JP, Simoni J, Xiao S, Gloyd S, Lin M, **Deng X**, Liang Z, He W, Dai B, Liao J, Hao Y, Xu D. Mobile texting and lay health supporters to improve schizophrenia care in a resource-poor community in rural China (LEAN Trial): Randomized controlled trial extended implementation. *J Med Internet Res*. 2020;22(12). doi:10.2196/22631

[3] Cai Y, Gong W, He W, He H, Hughes J, Simoni J, Xiao S, Gloyd S, Lin M, **Deng X**, Liang Z, Dai B, Liao J, Hao Y, Xu D. Residual Effect of Texting to Promote Medication Adherence for Villagers with Schizophrenia in China: 18-Month Follow-up Survey After the Randomized Controlled Trial Discontinuation. *JMIR Mhealth Uhealth* 2022;10(4):e33628. doi: 10.2196/33628

[2] Wang T, Xu D, Fan Q, Rong W, Zheng J, Gao C, Li G, Zeng NN, Guo T, Zeng L, Wang F, Xiao C, Cai L, Tang S, **Deng X**, Yin X, Huang M, Lu F, Hu Q, Chen W, Huang Z, Wang Q. 1,2-Dichloroethane impairs glucose and lipid homeostasis in the livers of NIH Swiss mice. *Toxicology*. 2017;380:38-49. doi:10.1016/J.TOX.2017.02.005

[1] Lin S, Ryan I, Paul S, **Deng X**, Zhang W, Luo G, Dong GH, Nair A, Yu F. Particle surface area, ultrafine particle number concentration, and cardiovascular hospitalizations. Environmental Pollution. 2022;310:119795. doi:10.1016/j.envpol.2022.119795

CONFERENCES

[1] **Deng X**, Sheridan S, Zhang W, Lin S. The individual and synergistic impacts of windstorms and power outages on injury ED visits in New York State. International Society of Biometeorology Virtual Conference 2021.

[2] **Deng X**, Qu Y, Lin S, Han F, Chang H, Ou Y, Nie Z, Mai J, Wang X, Gao X, Wu Y, Chen J, Zhuang J, Ryan I, Liu X. Using innovative machine learning methods to screen and identify predictors of congenital heart diseases in a birth cohort study. APHA's Annual Meeting 2021.

[3] **Deng X**, Zhang W, Yu F, Ryan I, Luo G, Lin S. Short-term risk effects of exposure to ultrafine particles on emergency department visits of renal diseases in New York State, 2013-2017. ISEE Conf Abstr. 2021;2021(1). doi:10.1289/ISEE.2021.O-TO-127.

[4] **Deng X**, Brotzge J, Zhang W, Ye B, Ryan I, Qu Y, Lin S. Assessing the association between meteorological factors and mental disorders in summer using Mesonet, a refined weather monitoring system, in New York State. ISEE Conf Abstr. 2020;2020(1). doi:10.1289/ISEE.2020.VIRTUAL.P-0334.

[5] Ye B, Zhang W, **Deng X**, Ryan I, Qu Y, Lin S. Impacts of environmental policies on students' test scores mediating by school attendance rate. ISEE Conf Abstr. 2020;2020(1). doi:10.1289/ISEE.2020.VIRTUAL.P-1249.

[6] **Deng X**, Jiang C, Thurston G, Khwaja H, Romeiko X, Ryan I, Marks T, Zhang W, Ye B, Qu Y, Lin S. Application of data science methods to identify school and home risk factors for asthma and allergy symptoms among children in New York. Society for Epidemiologic Research's Annual Meeting 2020.

[7] Qi Q, **Deng X**, Yu F, Ryan I, Lin S. Extreme ambient temperatures modify the effects of ultrafine particles on hospital admissions for high burden diseases in New York State, 2013-2018. International Society of Biometeorology Virtual Conference 2021.

[8] Yount CS, Hopke PK, Utell M, Thurston SW, Ling F, Chen Y, Chalupa D, Lin S, **Deng X**, Rich DQ. Triggering

of ST-elevation myocardial infarction by ultrafine particles in New York: changes following Tier 3 vehicle introduction. ISEE Conf Abstr. 2022.
[9] **Deng X**, Lin S, Hopke PK, Thurston S, Utell M, Chen Y, Ito K, Yount CS, Rich DQ. Triggering of cardiovascular hospitalization by short-term increases in PM2.5 in New York adults: changes following Tier 3 vehicle introduction. ISEE Conf Abstr. 2022.
[10] **Deng X**, Chang H, Brotzge J, Tracy M, Romeiko X, Lin S. Generating daily high-resolution gridded meteorological datasets for New York State from 2017-2018 using two-stage downscaling model. ISEE Conf Abstr. 2022.
[11] Lin S, Qi Q, Ryan I, **Deng X**, Luo G, Nair A, Yu F. High ambient temperature or ultrafine particles – which one has the largest effect on high burden diseases in New York State (NYS)?. ISEE Conf Abstr. 2022.
[12] Lin S, Ryan I, Paul S, **Deng X**, Zhang W, Luo G, Dong G, Nair A, Yu F. Particle surface area, ultrafine particle number concentration, and cardiovascular hospitalizations. ISEE Conf Abstr. 2022.