Rachel Hannah Tao, MPH

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DATA SCIENCE EXPERIENCE

Fair Health

Healthcare Data Analyst   *November 2021 – Present*

- Develop streamlined analytics strategies using PL/SQL and Tableau to evaluate new methodologies for 4+ of Fair Health's Benchmark Data Products
- Deliver custom analytics to 5+ client groups by extracting relevant data from Fair Health's database—containing more than 36 billion private health care claim records—and transforming it to the desired format for each client's research needs
- Aid in training new employees on statistical methods and processes used for routine review of Benchmark Data Products

Department of Environmental Health Sciences, Mailman School of Public Health

Research Analyst   *June 2020 – November 2021*

- Collaborated with diverse 9-person team of epidemiologists, biostatisticians, and computer scientists for development of novel machine learning methods to assess environmental mixtures as health exposures
- Applied PCA and other dimensionality-reduction methods to evaluate novel method, Principal Component Pursuit
- Analysis in R using EPA's Air Quality System and New York's Statewide Planning and Research Cooperative System (SPARCS) to better understand the relationship between source-specific fine particulate matter and heart attack incidence

RELEVANT EXPERIENCE

Department of Pediatrics, Columbia University Irving Medical Center, New York, NY   *May 2017-June 2019*

Research and Fellowship Coordinator

- Coordinated study subject visits, data collection, and data management for 3 clinical research studies
- Maintained regulatory information for ongoing research, in accordance with the Institutional Review Board
- Editorial assistance for 6 manuscripts, 3 abstracts, and 1 NIH grant proposal (publications list below)
- Managed fellowship application process and documented research accomplishments of 7 fellows for program reporting

EDUCATION

Columbia University, Mailman School of Public Health, New York, NY   *May 2021*

Master of Public Health (MPH), Epidemiology, Certificate in Applied Biostatistics and Data Science
GPA: 4.0 Dean's Scholarship Merit Award Recipient
Involvement: Teaching Assistant for Applied Regression I
Relevant Coursework: Machine Learning for Epidemiology, Analysis of Categorical Data
Thesis: Source-specific effects of $PM_{2.5}$ pollution on emergency-department visits for myocardial infarction

Columbia University, Columbia College, New York, NY   *May 2016*

Bachelor of Arts (BA), Environmental Biology
GPA: 3.6 **Thesis:** Differences in Water-Use for Plant Species on New York Green Roofs

SKILLS

Programming languages and tools: R, SAS, Git, Python
Databases: SQL (PL/SQL – Oracle, MySQL)
Visualization and formatting: R ggplot2, Tableau, LaTeX, QGIS
Languages: English (fluent/native), French (intermediate proficiency), Mandarin (basic proficiency)

TEACHING AND MENTORSHIP

COVID-19 Student Service Corps (CSSC) New York, NY   *February 2021 – April 2021*
Co-Lead, Vaccination Appointment Community Outreach
Managed 30+ volunteers in student effort to set up vaccination appointments for Washington Heights residents at New York Presbyterian Hospital

Crime Victims Treatment Center, New York, NY   *October 2018 – October 2020*
Mentor for Crisis Counselor Trainees
Volunteer Rape Crisis and Domestic Violence Counselor at Mount Sinai West and Morningside Emergency Departments

PEER-REVIEWED JOURNAL ARTICLES

Weiner A, Cowell A, McMahon DJ, **Tao R**, Zitsman J, Oberfield SE, Fennoy I. The effects of adolescent laparoscopic adjustable gastric band sleeve gastrectomy on markers of bone health and bone turnover. Clinical Obesity, 2020.

Pereira-Eshraghi CF, Chiuzan C, Zhang Y, **Tao RH**, McCann M, Neugut D, Printz A, Fennoy I, Cree-Green M, Oberfied SE, Sopher AB. Obesity and insulin resistance, not polycystic ovary syndrome, are independent predictors of bone mineral density in adolescents and young women. Horm Res Paediatr, 2020; 1-7.

Baer TG, Agarwal S, Chen S, Chiuzan C, Sopher AB, **Tao R**, Hassoun A, Shane E, Fennoy I, Oberfield SE, Vuguin PM. Deficits in bone geometry in growth hormone-deficient prepubertal boys revealed by high-resolution peripheral quantitative computed tomography. Horm Res Paediatr, 2019;92(5)293-301.

Witchel SF, Burghard AC, **Tao RH**, Oberfield SE. The diagnosis and treatment of PCOS in adolescents: an update. Current Opinion 2019;31(4):562-569.

Oberfield SE, **Tao R,** Witchel SF. Present knowledge on the etiology and treatment of adrenarche. Pediatric Endocrinol Rev 2018;15(3):244-254.

Ibañez L, Oberfield SE, Witchel S…**Tao R**, …Lee PA. An International Consortium Update: Pathophysiology, diagnosis, and treatment of polycystic ovarian syndrome in adolescence. Horm Res Paediatr, 2017;88(6):371-395.

OP-ED

Tao R. Opinion: A side effect of COVID-19 could be weaker civil liberties. City Limits, July 4, 2020.

PRESENTATIONS

Tao RH, Nunez Y, Chillrud LG, Rowland ST, Boehme AK, Kioumourtzoglou M-A. Source-specific fine particulate matter and hospitalization due to myocardial infarction. Oral presentation at the International Society for Environmental Epidemiology. August 2021. New York, NY, USA.

Tao RH. Pie Charts: Friend or Foe? Lightening Talk for R-Ladies NYC Meetup. October 2021. Virtual.