# Ting-Hsuan Chang

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## EDUCATION

**Columbia University** – PhD in Biostatistics (Advisor: Dr. Daniel Malinsky) May 2027 (exp)
**Johns Hopkins University** – MS in Biostatistics (Advisor: Dr. Elizabeth Stuart) May 2021
**National Taiwan University** – BS in Psychology Jun 2018

## RELEVANT SKILLS

**Quantitative Methods:** Causal Inference, Machine Learning, Multivariate Analysis, Hierarchical Models
**Data Analysis:** Data Cleaning & Wrangling, Statistical & Predictive Analysis, Data Visualization
**Programming:** R, Python, MATLAB, SAS

## PROFESSIONAL EXPERIENCE

**Columbia University**
Graduate Research Assistant Sep 2022 - present

- Develop a novel method for valid post-selection inference in causal graphical models
- Analyze spatial datasets using causal forest models to quantify differential air quality impacts of prescribed fires versus wildfires

**Johns Hopkins University**
Biostatistician Aug 2021 - Jul 2022

- Conducted Monte Carlo simulations to assess the statistical performance of causal decomposition estimators for health disparity research
- Provided analytic support to an interdisciplinary team by extracting and processing data from Electronic Health Record databases

Graduate Research Assistant Jun 2020 - May 2021

- Conducted Monte Carlo simulations to evaluate the use of machine learning methods (e.g., Bayesian additive regression trees, generalized boosted modeling) in propensity score estimation on clustered observational data
- Analyzed large-scale data from the Facebook COVID-19 Trends and Impact Survey using multilevel modeling to examine the evolution of mask usage across 38 countries

## SELECTED PUBLICATIONS

- **Chang T-H**, Guo Z, Malinsky D (2024). Post-selection inference for causal effects after causal discovery. arXiv:2405.06763
- **Chang T-H**, Stuart EA (2023). Overview of methods for adjustment and applications in the social and behavioral sciences: the role of study design. In *Handbook of Weighting and Matching Adjustments for Causal Inference*. Chapman and Hall/CRC. Chapter 1; pp. 3-20.
- Brantner CL, **Chang T-H**, Nguyen TQ, Hong H, Di Stefano L, Stuart EA (2023). Methods for integrating trials and non-experimental data to examine treatment effect heterogeneity. *Statistical Science*, 38(4), 640-654.
- **Chang T-H**, Nguyen TQ, Lee Y, Jackson JW, Stuart EA (2022). Flexible propensity score estimation strategies for clustered data in observational studies. *Statistics in Medicine*, 41(25), 5016-5032.

## TEACHING EXPERIENCE

**Columbia University**
Teaching Assistant Sep 2022 - present

- Assisted in 3 graduate courses (Graphical Models, Biostatistical Methods I/II)

**Johns Hopkins University**
Teaching Assistant Aug 2020 - May 2021

- Held office hours for the graduate course on Causal Inference
- Led lab sessions on introductory statistics for 25 undergraduate students in Public Health