Forrest W. Crawford, PhD

www.crawfordlab.io

Professional Experience

Senior Statistician (2023 – present)
RAND Corporation, Santa Monica, CA

- Policy research on biosecurity, pandemic preparedness, and emerging technology.

Associate Professor (with tenure), Biostatistics, Statistics & Data Science, Operations Management, Ecology & Evolutionary Biology (2012 – present)
Yale University, New Haven CT

- Built and led a research lab of quantitative scientists working on methodology, modeling, causal inference, with applications in biomedicine, infectious disease epidemiology, public health, social science.
- Published 72+ peer-reviewed articles; H-index 26, 3k+ citations
- Gave 90+ invited presentations at university/industry seminars, legislative briefings, conferences
- Advised/mentored 6 postdoctoral scholars, 7 PhDs, 3 MS students; placed trainees in tenure-track faculty positions, McKinsey & Co, Meta/Facebook, Netflix, US FDA
- Led data science and modeling for Connecticut and Department of Public Health during COVID-19 pandemic
- Designed and taught courses in computational statistics, data science, stochastic modeling, network analysis, causal inference, genetics; instructor rating 4.7/5
- Received NIH Director's New Innovator Award ($1.5MM)

Senior Scientist and *Acting Chief Technology Officer* (2021 – present)
Whitespace LTD, Alexandria VA

- Led all R&D and built data science tools for geospatial intelligence startup
- Managed a remote team of data scientists, software developers, and analysts
- Led technical development on a project to track sourcing and transfer of stolen Ukrainian grain
- Led a project to map social distancing using mobile device data during the COVID-19 pandemic – the project won Innovative Tradecraft Competition at the US Geospatial Intelligence Foundation 2021 meeting

Scientific Consultant / Subject Matter Expert (2018 – present)
I work with private sector and government clients to solve problems in biomedicine, epidemiology, diagnostics, market forecasting, national security, and human rights. Selected clients:

- Metron Inc (Reston, VA)
- Twist Bioscience / Revelar Biotherapeutics (South San Francisco, CA)
- Global Diagnostic Systems (Potomac, MD)
- Re-open Connecticut Advisory Committee, Connecticut Department of Public Health
- US Department of Labor, Project to Accelerate Action Against Child Labor and Forced Labor
- US Department of State, NORC (Bethesda MD), Global Fund to End Modern Slavery

Education

PhD Biomathematics, University of California Los Angeles (2012)
MS Biomathematics, University of California Los Angeles (2009)
BA Neuroscience, Oberlin College (2002)

Selected publications

See my website for a full publications list.

[1] **Forrest W. Crawford**, S Jones, M Cartter, S G Dean, J L Warren, Zehang Li, J Barbieri, J Campbell, P Kenney, T Valleau, and O Morozova. "Impact of close interpersonal contact on COVID-19 incidence: evidence from one year of mobile device data." *Science Advances* **8** (2022). (Winner of the Innovative Tradecraft Competition at the US Geospatial Intelligence Foundation 2021 meeting).

[2] O Morozova, Z Li, and **Forrest W. Crawford**. "One year of modeling COVID-19 transmission to support policymakers in Connecticut." *Scientific Reports* **11**, 20271 (2021).

[3] X Cai, W W Loh, and **Forrest W. Crawford**. "Identification of causal intervention effects under contagion." *Journal of Causal Inference* **9**, 9–38 (2021). (Winner of best paper award, ASA Section on Statistics in Epidemiology).

[4] S Cheng, D J Eck, and **Forrest W. Crawford**. "Estimating the size of a hidden finite set: Large-sample behavior of estimators." *Statistics Surveys* **14**, 1–31 (2020).

[5] G S Gonsalves and **Forrest W. Crawford**. "Dynamics of the HIV outbreak and response in Scott County, Indiana, 2011-2015: a modelling study." *The Lancet HIV* **5**, 569–577 (2018).

Skills

I have broad expertise in quantitative science and analysis – mathematics, statistics, computation – as well as 20 years experience in biomedical science, biotechnology, bioengineering, neuroscience, public health, evolution, and epidemiology.

- Programming/computing: Python, R, Git, Unix/Linux/GNU
- Methodologies: AI/ML, data science, modeling, GIS, forecasting/prediction, optimization, algorithms, parallel computing
- Evaluation: causal inference, policy analysis, randomized experiments, A/B testing
- Leadership: project management, product strategy, R&D, mentoring