RYAN BENNER SIMPSON, MS
161 Columbia Heights Apt. 3F, Brooklyn, NY 11201 | 978-697-1037
ryan.simpson@tufts.edu | ryan.benner.simpson@gmail.com
LinkedIn | ResearchGate | Research Website

EXPERIENCE

Research Coordinator, Tufts Friedman School of Nutrition Science and Policy

National Science Foundation (NSF), Grant #1855886 October 2019 – Present

- Built, led, and managed teams of graduate students to conduct complex population health research and trained teams in complex data management, processing, analysis, and visualization methods
- Developed training materials to analyze Big Data, develop data management plans, design analytical frameworks, and drive research strategy and insights, and curate effective data visualizations/communications

Tufts University Data Intensive Studies Center (DISC), COVID-19 Seed Grant May 2020 – May 2021

- Developed and refined analytic techniques parallel to machine learning algorithms for real-time modeling and near-term forecasting of COVID-19 outbreak signatures; adaptive time series modeling and forecasting
- Applied statistical analysis techniques to derive insights to understand disease prevalence and identify risk factors associated with emerging cholera outbreaks in Yemen to inform international assistance strategies

National Science Foundation (NSF), Grant #1826939 & #1827024 October 2018 – August 2021

- Examined how Big Data analytics can help understand interactions between ecological, economical, and political aspects to measure and assess nutritional health risks due to coastal hazards using time series modeling
- Integrated numerous disparate, publicly available data sources and data formats into single database for building predictive models; further assessed quality, credibility, and reliability of data for analytical reuse

Intelligence Advanced Research Projects Activity October 2017 – March 2020
Sub-Contractor: Raytheon BBN Technologies Corporation, Hybrid Forecasting Competition (HFC)

- Conducted weekly near-term syndromic, adaptive, and assemble forecasts to assess biological threats and infectious epidemic/pandemic outbreaks worldwide using personally curated publicly available data sources
- Designed educational training material to teach novice forecasters how to conduct effective, reliable, accurate, complex, valuable, clear, and adaptive forecasts using time series analyses for early warning surveillance

EDUCATION

Tufts University, Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy June 2022
PhD Nutrition Epidemiology and Data Science

Tufts University, Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy May 2019
MS Nutrition Epidemiology and Data Science
Cumulative GPA: 3.93 / 4.00

Yale University, Yale College May 2017
BA Global Affairs, Concentration in International Development
BA Environmental Engineering, Concentration in Urban and Sustainable Agriculture

SKILLS

Software: R/RStudio, STATA, SAS, Excel, WordPress, Tableau

Technical: Data: mining, extraction, governance, infrastructure, credibility, management, harmonization, analysis, and visualization techniques – population health surveillance, EHRs, Big Data, claims data, time series data

Modeling: harmonics/ARIMA, time series, change point analysis, spectral analysis, logistic, multivariate, mixed effects, and ML approaches – applied statistics, linear/non-linear approaches, forecasting

Managerial: data science pipeline, data strategy workflow, exploratory data analysis, data dashboard design, project management, public speaking, presentation development, and problem solving

PUBLICATIONS

1. Zhang Y, **Simpson RB**, Sallade LE, Sanchez E, Monahan KM, Naumova EN. Evaluating completeness of foodborne outbreak reporting in the United States, 1998-2019. *Int J Environ Res Public Health* **19**, 2898 (2022) https://doi.org/10.3390/ijerph19052898.
2. Zhou B, Liang S, Monahan KM, Singh GM, **Simpson RB**, Reedy J, Zhang J, DeVane A, Cruz MS, Marshak A, Mozaffarian D, Wang D, Semenova I, Roura IM, Prozorovscaia D, Naumova EN. Food and nutrition systems dashboards: A systematic review. *Adv Nutr*. Accepted.
3. **Simpson RB**, Babool S, Tarnas MC, Kaminski PM, Hartwick MA, Naumova EN. Dynamic mapping of cholera spread and conflict severity during the Yemeni Civil War, 2016-2019. *J Public Health Policy*. Accepted.
4. **Simpson RB**, Kulinkina AV, Naumova EN. Investigating seasonal patterns in enteric infections: a systematic review of time series methods. *Epidemiol Infect* , 1-25 (2022) https://doi.org/10.1017/S0950268822000243
5. **Simpson RB**, Lauren BN, Schipper KH, McCann JC, Tarnas MC, Naumova EN. Critical periods, critical time points and day-of-the-week effects in COVID-19 surveillance data: an example in Middlesex County, Massachusetts, USA. *Int J Environ Res Public Health* **19**, 1321 (2022) https://doi.org/10.3390/ijerph19031321
6. **Simpson RB**, Babool S, Tarnas MC, Kaminski PM, Hartwick MA, Naumova EN. Signatures of cholera outbreak during the Yemeni Civil War, 2016-2019. *Int J Environ Res Public Health* **19**, 378 (2022) https://doi.org/10.3390/ijerph19010378
7. Taylor S, Korpusik M, Das S, Gilhooly C, **Simpson RB**, Glass J, Roberts S. Use of Natural Spoken Language with automated mapping of self-reported food intake to food composition data for low-burden real-time dietary assessment: Method comparison study. J Med Internet Res, 23, e26988 (2021) https://doi.org/10.2196/26988
8. Sanchez E, Gelfand AR, Perkins MD, Tarnas MC, **Simpson RB**, McGee JA, Naumova EN. Providing food and nutrition services during the COVID-19 surge at the Javits New York Medical Station. Int J Environ Res Public Health 18, 7430 (2021) https://doi.org/10.3390/ijerph18147430
9. **Simpson RB**, Gottlieb J, Zhou B, Hartwick MA, Naumova EN. Completeness of open access FluNet influenza surveillance data for Pan-America in 2005-2019. *Sci Rep* **11,** 795 (2021) https://doi.org/10.1038/s41598-020-80842-9
10. **Simpson RB**, Zhou B, Alarcon Falconi TM, Naumova EN. An analecta of visualizations for foodborne illness trends and seasonality. *Sci Data* **7,** 346 (2020) https://doi.org/10.1038/s41597-020-00677-x
11. **Simpson RB**, Zhou B, Naumova EN. Seasonal synchronization of foodborne outbreaks in the United States, 1996–2017. *Sci Rep* **10,** 17500 (2020) https://doi.org/10.1038/s41598-020-74435-9
12. **Simpson RB**, Alarcon Falconi TM, Venkat A, Chui KHH, Navidad J, Naumov YN, Gorski J, Bhattacharyya S, Naumova EN. Incorporating calendar effects to predict influenza seasonality in Milwaukee, Wisconsin. *Epidemiol Infect* **147**, E268 (2019) https://doi.org/10.1017/S0950268819001511

SELECTED PRESENTATIONS

1. **Simpson RB**, Sallade LE, Sanchez E, Zhang Y, Naumova EN (2022). Analyzing foodborne illness outbreak severity in the United States, 2009-2019. *2022 Annual CUGH Global Health Conference*. Consortium of Universities for Global Health. Virtual.
2. **Simpson RB** (2020 - Cancelled). An association between peaks of foodborne infections and food recalls. *Tufts Friedman Student Research Conference*. Friedman School of Nutrition Science and Policy. Boston, MA.
3. **Simpson RB**, Venkat A, Zhou B, Naumova EN (2019). Synchronization of Foodborne Disease Seasonality. *Symposium on Networks in Food Systems & Nutrition*. University of Vermont. Burlington, VT.
4. **Simpson RB**, Venkat A, Marshak A, Naumova EN (2018). Techniques for Forecasting Infectious and Foodborne Diseases. *Global Health Weekly Seminar*. Tufts University School of Medicine. Boston, MA.

CONSULTING

Tufts Technology Services (TTS), Tufts University, Boston & Medford, MA October 2018 – Present

- Assisting student development of statistical analyses, data visualizations, and research strategy insights
- Provided statistical training material and guidance for Stata and R statistical programming software

Tufts Medical Center Hepatology Department, Boston, MA October 2019 – March 2020

- Analyzing population EHRs to examine associations between morbidity and chronic kidney disease status

- Extracted, aligned, and harmonized spatiotemporal records, conducted matched nested case-control analyses, designed data management and analytical plans, and supervised a team of data scientists

APPOINTMENTS

President & President-Emeritus, Tufts Chapter of the American Statistical Association September 2019 – Present

- Worked closely with students and faculty to design data-centric workshops on advanced topics related to building data infrastructure, data credibility checks, applied time series analyses, and modeling for Big Data
- Facilitated multi-university partnerships between students and faculty for building research development pipelines and creating professional opportunities for students in data science

Co-Chair, Tufts Research and Data Symposium for Food and Nutrition September 2021 – March 2022

- Aimed at exploring diverse perspectives in nutrition and public health fields to create multicultural, intergenerational, and interdisciplinary solutions to tackle complex emerging and existing nutrition challenges
- Organized a variety of data science workshops focused on novel applications of data science and analytics in the professions of recent alumni working in both public and private sector industries
- Created and maintained symposium website: https://sites.tufts.edu/friedmanresearchsymposium/

Co-Chair, Tufts Research and Data Symposium for Food and Nutrition September 2020 – March 2021

- Orchestrated 920-person conference including participants from ~50 countries, ~150 academic institutions, and 200+ professional organizations with ~100 persons in attendance for each of ~40 virtual sessions
- Designed a multi-university partnership aimed at improving skill development of data sciences to nutrition students and opportunities for students to present nutrition-related, data-driven research

Co-Chair, Tufts Analytics Without Borders 2020 Conference September 2019 – February 2020

- Managed conference budget including the ascertaining 4 grants accounting for ~$8,000 of conference expenses
- Attended by over 200 students, from 15 universities from across the world with ~40 guest speakers and over 20 conference sessions over the 1.5-day conference

HONORS AND AWARDS

1. **Cooperative Extension Service Fellowship.** National Institute of Food and Agriculture (NIFA) 2020-23
2. **Data Intensive Studies Center (DISC) COVID-19 Seed Grant.** Tufts University 2020
3. **Tufts Institute of Environment (TIE) - Environmental Research Fellow.** Tufts University 2020
4. **2020 Strategic Initiative Grant.** American Statistical Association 2020
5. **Joan M. Bergstrom Student Award for Excellence in Global Nutrition.** Tufts University 2019

TEACHING

1. *Data Visualizations and Effective Communication*. Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Teaching Assistant (Spring 2020, Spring 2021, Spring 2022)
2. *Advanced Data Analysis*. Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Teaching Assistant (Fall 2019, Fall 2020, Fall 2021)
3. *Statistical Methods for Nutrition Research II.* Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Teaching Assistant (Spring 2019, Spring 2020, Spring 2021, Spring 2022)
4. *Statistical Methods for Nutrition Research I.* Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Teaching Assistant (Fall 2019, Fall 2020, Fall 2021)
5. *Statistical Methods for Nutrition Science and Policy*. Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Private Tutor (Fall 2017, Fall 2018)
6. *Regression Analysis for Nutrition Policy*. Graduate course, Tufts University Friedman School of Nutrition Science and Policy; Private Tutor (Spring 2017, Spring 2018)