Seleeke Flingai, PhD, MPA

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Education

Princeton University, School of Public and International Affairs
MPA, Domestic Policy, Certificate in Urban Policy and Planning
May 2018

University of Pennsylvania, Perelman School of Medicine
PhD, Cell and Molecular Biology, Certificate in Public Health
May 2016

Massachusetts Institute of Technology
SB, Brain and Cognitive Sciences
June 2011

Skills

Project scoping
Research design and evaluation
Policy analysis
Descriptive analyses
Data manipulation and modeling
Regression techniques
Clustering and classification techniques

Programming and Software

R (tidyverse, ggplot2, sp/sf, leaflet, e1701, tm, caret; specific coursework in machine learning, econometrics, and advanced social statistics)
HTML/CSS/JavaScript
git (Git Bash, GitHub)
ArcGIS
Datawrapper
Microsoft Excel

Professional Experience

Senior Research Associate, Vera Institute of Justice, Brooklyn, NY (January 2022—Present)
Research Associate II (May 2022—January 2022)

- Leads racial disparities quantitative research and data transparency efforts for three site partners as a member of the Reshaping Prosecution program
- Developed data pipelines in R (with some work in SQL) to clean and analyze prosecution case management system datasets; used Datawrapper, R, and Microsoft Excel for data visualization
- Authored public-facing written material and provided oral testimony for a public hearing to share policy-relevant research findings and advance local and national policy objectives

Research Analyst II, Metropolitan Area Planning Council, Boston, MA
(June 2018—April 2020)

- Managed and led the data analysis work for over a half dozen research efforts, with a primary focus on social vulnerability, racial/ethnic and socioeconomic disparities, and residential displacement in the Metro Boston region
- Developed statistical clustering and classification models in R to classify housing submarkets and climate-vulnerable communities using multiple data sources; collaborated with web development team to produce online interactive maps
- Presented findings and authored policy memos and reports, research briefs, literature reviews, and technical documentation to disseminate research to various internal and external audiences

Public Health Intern, Metropolitan Area Planning Council, Boston, MA
(June 2017-August 2017; January 2018)

- Authored three (3) policy memos and reports evaluating the regional planning agency's role in addressing various racial and socioeconomic health disparities in the Metro Boston region.

Project Consultant - Monitoring and Evaluation, Energize the Chain, Philadelphia, PA
(July 2014—October 2015)

- Developed a comprehensive evaluation framework to monitor and evaluate the health, economic, and social impacts of expanded vaccine access in Ghana.
- Communicated with global health and development stakeholders such as GAVI, USAID, and the Ghana Ministry of Health to determine how to implement the activities prescribed in the evaluation framework

Academic Research Experience

Ph.D. Candidate, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA
(August 2011—May 2016)

- *Dissertation: "Engineered DNA-Mediated Antibody Gene Transfer for Prophylaxis Against Infectious Diseases"* (Thesis advisor: David B. Weiner, Ph.D.)
- Developed an antibody delivery research program that led to multiple publications and the acquisition of grant funding totaling over $10 million
- Led the Penn contingent of a multi-institution research collaboration funded by DARPA with the aim of developing novel antibody-based protective drugs against infectious diseases
- Lead author of 3 peer-reviewed research publications (co-author on 7 others)

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Academic Research Experience (continued)

Research Assistant, Massachusetts Institute of Technology, Departments of Bioengineering and Material Science Engineering (2010–2011)

- Principal Investigator: Darrell Irvine, PhD
- Worked to develop an HIV vaccine candidate by characterizing and analyzing the immune response in mice to micro- and nanoparticle vaccine vehicles presenting the model antigen ovalbumin

Summer Undergraduate Research Fellow, Mayo Clinic Jacksonville (2010)

- Principal Investigator: Nilufer Ertekin-Taner, MD, PhD
- Completed a pilot study investigating the genetic associations of select single nucleotide polymorphisms with Alzheimer's disease risk in African Americans
- One of six fellows selected to participate in Mayo Clinic Jacksonville summer fellowship program

Research Assistant, Massachusetts Institute of Technology, Department of Brain and Cognitive Sciences (2008–2010)

- Principal Investigator: H. Sebastian Seung, PhD
- Helped develop a protocol that attempted to determine the mechanism of transynaptic spread of rabies virus.
- Using confocal microscopy, obtained images of retinal ganglion cells and assisted in the filing and computer-assisted tracing of each individual cell to produce an encyclopedic image base for retinal neurons.

Research Assistant, Harvard University, Department of Psychology, Prosopagnosia Research Center (2009)

- Principal Investigator: Ken Nakayama, PhD
- Assisted in optimizing prosopagnosia training software and setting up a new online research distribution model with aims to allow targeted delivery of training software to prosopagnosia sufferers via the Internet.

Research Assistant, Massachusetts General Hospital, Institute of Music and Brain Science (2009)

- Principal Investigator: Mark Jude Tramo, MD, PhD
- Utilized MATLAB programming and music production skills to conduct clinical research focusing on the effects of music playback during "heel stick" blood tests on premature infants; worked directly with MGH nurses and bioengineers in various neonatal intensive care units.

Research Publications

2018 **Flingai S**. The Missegregation of the Twin Cities: How the Minnesota Land Use Planning Act of 1976 Failed to Stably Integrate the Twin Cities Metropolitan Area. *Journal of Public and International Affairs 2018: 152-68.*

2018 Wang Y*, Esquivel R*, **Flingai S***, Schiller ZA, Kern A, Agarwal S, Chu J, Patel A, Sullivan K, Wise MC, Broderick KE, Hu L, Weiner DB, Klempner MS. Anti-OspA DNA-Encoded Monoclonal Antibody Prevents Transmission of Spirochetes in Tick Challenge Providing Sterilizing Immunity in Mice. *J Infect Dis, jiy627, https://doi.org/10.1093/infdis/jiy627*
*co-first authors

2017 Patel A, DiGiandomenico A, Keller AE, Smith TRF, Park DH, Ramos S, Schultheis K, Elliott STC, Mendoza J, Broderick KE, Wise MC, Yan J, Jiang J, **Flingai S**, Khan AS, Muthumani K, Humeau L, Cheng LI, Wachter-Rosati L, Stover CK, Sardesai NY, Weiner DB. An engineered bispecific DNA-encoded IgG antibody protects against Pseudomonas aeruginosa in a pneumonia challenge model. *Nat Commun: 8(1): 637.*

2016 **Flingai, S**. Engineered DNA-Mediated Antibody Gene Transfer for Prophylaxis Against Infectious Diseases. *Publicly Accessible Penn Dissertations. 1719. https://repository.upenn.edu/edissertations/1719*

2016 Muthumani K, Block P, **Flingai S**, Muruganantham N, Chaaithanya IK, Tingey C, Wise M, Reuschel EL, Chung C, Muthumani A, Sarangan G, Srikanth P, Khan AS, Vijayachari P, Sardesai NY, Kim JJ, Ugen KE, Weiner DB. Rapid and long-term immunity elicited by DNA encoded antibody prophylaxis and DNA vaccination against Chikungunya virus. *J Infect Dis: jiw111.*

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Research Publications (continued)

2015 Muthumani K, Falzarano D, Reuschel EL, Tingey C, **Flingai S**, Villarreal DO, Wise M, Patel A, Izmirly A, Aljuaid A, Seliga AM, Soule G, Morrow M, Kraynyak KA, Khan AS, Scott DP, Feldmann F, LaCasse R, Meade-White K, Okumura A, Ugen KE, Sardesai NY, Kim JJ, Kobinger G, Feldmann H, Weiner DB. *A synthetic consensus anti-spike protein DNA vaccine induces protective immunity against Middle East respiratory syndrome coronavirus in nonhuman primates. Sci Transl Med 7: 301ra132.*

2015 **Flingai S**, Plummer EM, Patel A, Shresta S, Mendoza JM, Broderick KE, Sardesai NY, Muthumani K, Weiner DB. Protection against dengue disease by synthetic nucleic acid antibody prophylaxis/immunotherapy. *Sci Rep 5: 12616.*

2014 Lanitis E, Smith JB, Dangaj D, **Flingai S**, Poussin M, Xu S, Czerniecki BJ, Li YF, Robbins PF, Powell DJ Jr. A human ErbB2-specific T-cell receptor confers potent antitumor effector functions in genetically engineered primary cytotoxic lymphocytes. *Hum Gene Ther 25: 730-9.*

2014 Shedlock DJ, Tingey C, Mahadevan L, Hutnick N, Reuschel EL, Kudchodkar S, **Flingai S**, Yan J, Kim JJ, Ugen KE, Weiner DB, Muthumani K. Co-Administration of Molecular Adjuvants Expressing NF-Kappa B Subunit p65/RelA or Type-1 Transactivator T-bet Enhance Antigen Specific DNA Vaccine-Induced Immunity. *Vaccines (Basel) 2: 196-215.*

2013 Muthumani, K, Wise MC, Broderick KE, Hutnick N, Goodman J, **Flingai, S**, Yan J, Bian CB, Mendoza J, Tingey C, Wilson C, Wojtak K, Sardesai NY, Weiner DB. HIV-1 Env DNA vaccine plus protein boost delivered by EP expands B- and T-cell responses and neutralizing phenotype in vivo. *PLoS One 8: e84234.*

2013 **Flingai S**, Czerwonko M, Goodman J, Kudchodkar SB, Muthumani K, Weiner DB. Synthetic DNA vaccines: improved vaccine potency by electroporation and co-delivered genetic adjuvants. *Front Immunol 4: 354.*

2013 Muthumani K, **Flingai S**, Wise M, Tingey C, Ugen KE, Weiner DB. Optimized and enhanced DNA plasmid vector based in vivo construction of a neutralizing anti-HIV-1 envelope glycoprotein Fab. *Hum Vaccin Immunother 9: 2253-62.*

Other Publications and Projects

2022 **Flingai S**, Sahaf M, Battle N, Castaneda S. An Analysis of Racial Disparities in Police Traffic Stops in Suffolk County, Massachusetts, from 2010 to 2019. Vera Institute of Justice, June 27 (Forthcoming).

2022 **Flingai S**. "Racism in traffic stops is real, and the data backs it up" Op-Ed. *Boston Herald, February 25.*

2021 Hodge J, **Flingai S**. What Happened When Boston Stopped Prosecuting Nonviolent Crimes. Think Justice Blog, Vera Institute of Justice. April 2.

2021 **Flingai S**. Framework for Residential Displacement Research at MAPC: Definitions and Approaches. MAPC MetroCommon 2050, Metropolitan Area Planning Council. March 4.

2021 MAPC Housing Submarkets. (Lead Researcher). MAPC MetroCommon 2050, Metropolitan Area Planning Council. February 25.

2020 The Diversity Deficit: Municipal Employees in Metro Boston. (Lead Researcher and Author). MAPC MetroCommon 2050, Metropolitan Area Planning Council. July 13.

2019 Climate Vulnerability in Greater Boston. (Lead Researcher and Co-Lead Author). MAPC MetroCommon 2050, Metropolitan Area Planning Council. December 10.

2018 Blumauer C, Brown A, Castaldi M, **Flingai S**, Hernandez P, Mavronis S, Pierce K, Stanley-Becker T, Stockdale J. Advancing Bail Reform in Maryland: Progress and Possibilities. School of Public and International Affairs, Princeton University. February 27.

Conference Presentations

2019 Mapping Climate Vulnerability in Greater Boston. National Neighborhood Indicators Partnership 2019 Meeting. Milwaukee, WI (oral presentation).

2019 Housing, Economic Hardship, and Maternal Depression: A Subgroup Analysis. Population Association of America 2019 Annual Meeting. Austin, TX (poster presentation).

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Conference Presentations (continued)

2016 Generation of DNA Plasmid-Encoded Neutralizing Monoclonal Antibodies in vivo. American Society of Gene and Cell Therapy 19th Annual Meeting. Washington, DC (poster presentation).

2015 Protection against dengue disease by intramuscular delivery of DNA encoding anti-dengue neutralizing antibodies. PEGS 2015. Boston, MA (poster presentation).

2015 Protection against dengue disease by intramuscular delivery of DNA encoding anti-dengue neutralizing antibodies. American Society of Gene and Cell Therapy 18th Annual Meeting. New Orleans, LA (poster presentation).

2014 Generation of DNA Plasmid-Encoded Broadly Neutralizing Antibodies in vivo. American Society of Gene and Cell Therapy 17th Annual Meeting. Washington, DC (poster presentation).

2014 Generation of DNA Plasmid-Encoded Broadly Neutralizing Antibodies in vivo. Keystone Symposium on Prophylactic and Therapeutic Antibodies. Keystone, CO (oral and poster presentation).

Invited Talks

2021 Speaker, "Mapping Climate Vulnerability: A Regional, People-Centered Approach," University of Pennsylvania 2021 Summer Institute: GIS & Public Health, June 18.

2021 Speaker, "Gathering and managing data: The how and why," Middlesex County District Attorney's Office Data Summit, June 4.

2021 Panelist, "Transformative Justice," Princeton School of Public and International Affairs Students and Alumni of Color (SAOC) Symposium 2021. April 10.

2020 Speaker, "The Diversity Deficit: Municipal Employees in Metro Boston," MAPC MetroCommon 2050 Research Release, July 14.

2019 Speaker, "Social Vulnerability to Climate Change in Greater Boston," MAPC MetroCommon 2050 Speaker Series – Clean Energy Forum, December 11.

2019 Speaker, "Assessing Residential Displacement in Greater Boston: Initial Steps," MAPC presentation for the Healthy Neighborhood Study Research Consortium, May 17.

2018 Speaker, "MetroWest Health Foundation Trends and Projections," MAPC presentation for the MetroWest Health Foundation, November 16.

2018 Speaker, "MAPC Creative Economy Indicator Data Project," MAPC presentation for the Massachusetts Cultural Data Working Group, August 23.

2015 Guest Lecturer, "Light at the End of the Tunnel? The Path Toward a Dengue Vaccine." Drexel University, April 2.

2013 Panelist, "Dom Time" television program with Dom Giordano: panel discussion on vaccine safety and their importance in America's public health. August 5.

Teaching Positions

Lecturer, "Race and Public Health," graduate seminar course, University of Pennsylvania Master of Public Health program (forthcoming, Fall 2022)

Penn Summer Biomedical Research Academy, Journal Club Leader (high school level), Philadelphia, PA (2016)

Science Education Academy, White Rock Baptist Church (elementary school level), Philadelphia, PA (2013–2014)

Massachusetts Institute of Technology STEM Summer Institute: Probability and Statistics (summer course, advanced junior high level), Cambridge, MA (2011)

Morse Elementary School Math and Reading Tutor, Cambridge, MA (2009)

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Service to the Profession and Leadership

Member, Justice Counts prosecution subcommittee (2021)
Member, Black Verans Council, Vera Institute of Justice (2021)
Member, Equity Team, Metropolitan Area Planning Council (2019–2020)
Co-Chair, Students and Alumni of Color, Princeton University School of Public and International Affairs (2017-2018)
Student Co-Representative, Domestic Policy field, Princeton University Policy Student Government (2016–2017)
President, Ernest E. Just Biomedical Society, University of Pennsylvania (2015–2016)
Founding Board Member, Penn Science Diplomacy Group, University of Pennsylvania (2015–2016)
Webmaster, Penn Graduate Women in Science and Engineering, University of Pennsylvania (2015–2016)
Vice President, Ernest E. Just Biomedical Society, University of Pennsylvania (2014–2015)
Outreach Chair, Ernest E. Just Biomedical Society, University of Pennsylvania (2013–2014)

Honors and Awards

2016	American Society of Gene and Cell Therapy Underrepresented Minority Travel Award
2015	PEGS 2015 Student Fellowship Award
2009-2010	Massachusetts Institute of Technology Department of Brain and Cognitive Sciences Honorable Mention for Outstanding Research
2007-2011	Canadian Pacific U.S. Scholarship