

MATTHEW R BOYCE

Email: matthew.boyce@tamu.edu ♦ He/Him/His

EDUCATION & PROFESSIONAL INFORMATION

A. ACADEMIC APPOINTMENTS

2024–Present Assistant Professor, Department of Health Policy & Management
Texas A&M University

2024–Present Faculty Fellow, USA Center for Rural Public Health Preparedness
Texas A&M University

B. OTHER PROFESSIONAL EXPERIENCE

2021 Research Associate, The COVID Crisis Group

2020 Independent Consultant, The Global Fund to Fight AIDS, TB, and Malaria

2019–2020 Senior Research Associate, Center for Global Health Science & Security

2017–2020 Program Manager

2018–2019 Research Associate

2017–2018 Research Assistant

C. EDUCATION

2024 Georgetown University, Doctor of Philosophy (PhD)
Global Infectious Diseases, Concentration in Health Policy

2017 Duke University, Master of Science (MSc)
Global Health, International Development Policy Certificate

2015 University of Illinois at Urbana-Champaign, Bachelor of Science (BS)
Integrative Biology (Honors), Concentration in Chemistry

RESEARCH & SCHOLARLY PUBLICATIONS

A. REFEREED JOURNAL ARTICLES

- (23) **Boyce M.R.** Urban green infrastructure and pandemic response: how urban parks were used to support the COVID-19 response and the relationship between parkland acreage and excess mortality in large cities in the United States of America. *Oxford Open Infrastructure and Health*. 2024;2:ouae001. doi:10.1093/ooih/ouae001.
- (22) **Boyce M.R.** State-level public health preparedness indices as predictors of COVID-19 mortality outcomes: Results from the United States of America in 2020. *Frontiers in Epidemiology*. 2023;3:1229718. doi:10.3389/fepid.2023.1229718.
- (21) Katz R., Toole K., Robertson H., ... **Boyce M.R.**, et al. COVID AMP: An open access database of COVID-19 response policies. *Scientific Data*. 2023;10:491. doi:10.1038/s41597-023-02398-3.
- (20) Kipkoech J., Malinga J., Sang E., ... **Boyce M.R.**, et al. Supply and demand-side factors influencing uptake of malaria testing services in the community: lessons for scale-up from a cluster-randomized, community-based trial in western Kenya. *BMJ Open*. 2023;13:e070482. doi:10.1136/bmjopen-2022-070482.

- (19) Carlson C.J., **Boyce M.R.**, Dunne M., et al. The World Health Organization's Disease Outbreak News: a retrospective database. *PLoS Global Public Health*. 2023;3(1):e0001083. doi:10.1371/journal.pgph.0001083.
- (18) Eaneff S., **Boyce M.R.**, Graeden E., Lowrance D., Moore M., Katz R. Financing global health security: estimating the costs of preparedness in Global Fund eligible countries. *BMJ Global Health*. 2023;8:e008960. doi:10.1136/bmjgh-2022-008960.
- (17) **Boyce M.R.**, Sorrell E., Standley C.J. An early analysis of the World Bank's Pandemic Fund: A new fund for pandemic prevention, preparedness and response. *BMJ Global Health*. 2023;8:e011172. doi:10.1136/bmjgh-2022-011172.
- (16) **Boyce M.R.**, Asprilla M.C., van Loenen B., McClelland A., Rojhani A. Urban pandemic response: survey results describing the experiences from twenty-five cities during the COVID-19 pandemic. *PLoS Global Public Health*. 2022;2(11):e0000859. doi:10.1371/journal.pgph.0000859.
- (15) **Boyce M.R.**, Asprilla M.C., van Loenen B., McClelland A., Rojhani A. How do local-level authorities engage in epidemic and pandemic preparedness activities and coordinate with higher levels of government? Survey results from 33 cities. *PLoS Global Public Health*. 2022;2(10):e0000650. doi:10.1371/journal.pgph.0000650.
- (14) **Boyce M.R.**, Meyer M.J., Kraemer J.D., Katz R. Financial assistance for health security: Effects of international financial assistance on capacities for preventing, detecting, and responding to public health emergencies. *International Journal of Health Policy and Management*. 2021. doi:10.34172/IJHPM.2021.120.
- (13) **Boyce M.R.**, Katz R. COVID-19 and the proliferation of urban networks for health security. *Health Policy & Planning*. 2021;czaa194. doi:10.1093/heapol/czaa194.
- (12) **Boyce M.R.**, Attal-Juncqua A., Lin J., et al. Global Fund contributions to health security: Mapping synergies between vertical disease programs and capacities for preventing, detecting, and responding to public health emergencies. *Lancet Global Health*. 2021;9:e181–88. doi:10.1016/S2214-109X(20)30420-4.
- (11) **Boyce M.R.**, Carlin E.P., Schermerhorn J., Standley C.J. A One Health approach for Guinea worm disease control: Scope and opportunities. *Tropical Medicine and Infectious Diseases*. 2020;5:159. doi:10.3390/tropicalmed5040159.
- (10) **Boyce M.R.**, Katz R. Rapid Urban Health Security Assessment Tool: A new resource for evaluating local-level public health preparedness. *BMJ Global Health*. 2020;5:e002606. doi:10.1136/bmjgh-2020-002606.
- (9) Madad S., Moskovitz J., **Boyce M.R.**, et al. Ready or not, patients will present: Improving urban pandemic preparedness. *Disaster Medicine and Public Health Preparedness*. 2020;1–4. doi:10.1017/dmp.2020.7.
- (8) **Boyce M.R.**, Katz R., Standley C.J. Risk factors for infectious diseases in urban environments of Sub-Saharan Africa: A systematic review and critical appraisal of evidence. *Tropical Medicine and Infectious Diseases*. 2019;4:123. doi:10.3390/tropicalmed4040123.
- (7) McKay S., **Boyce M.R.**, Chu-Hsin S., et al. An evaluation tool for national-level pandemic influenza planning. *World Medical and Health Policy*. 2019;11. doi:10.1002/wmh3.297.
- (6) Stoto M.A., Song T., Bouey J., ... **Boyce M.R.**, et al. At the frontier of the global battle against emerging infections: Surveillance and management of avian influenza A(H7N9) in Guangdong province, China. *Journal of Global Health Reports*. 2019;3:e2019017. doi:10.29392/joghr.3.e2019018.
- (5) **Boyce M.R.**, Katz R. Community health workers and pandemic preparedness: Current and prospective roles. *Frontiers in Public Health*. 2019;7:62. doi:10.3389/fpubh.2019.00062.
- (4) Katz R., Graeden E., Abe K., ... **Boyce M.R.**, et al. Mapping stakeholders and policies in response to deliberate biological events. *Heliyon*. 2018;4:e01091. doi:10.1016/j.heliyon.2018.

- (3) Standley C.J., **Boyce M.R.**, Klineberg A., et al. Organization of oversight for integrated disease control of neglected tropical diseases (NTDs) within Ministries of Health. *PLoS NTD*. 2018;12. doi:10.1371/journal.pntd.0006929.
- (2) **Boyce M.R.**, Menya D., Turner E.L., et al. Evaluation of malaria rapid diagnostic test (RDT) use by community health workers: A study in western Kenya. *Malaria Journal*. 2018;17:206–17. doi:10.1186/s12936-018-2358-6.
- (1) **Boyce M.R.**, O’Meara W.P. Use of malaria RDTs in various health contexts across sub-Saharan Africa: A systematic review. *BMC Public Health*. 2017;17:470–85. doi:10.1186/s12889-017-4398-1.

B. BOOKS, BOOK CHAPTERS, & EDITED VOLUMES

- (2) Katz R., **Boyce M.R.** (Eds.). *Inoculating Cities, Volume II: Case Studies of the Urban Response to the COVID-19 Pandemic*. Cambridge: Elsevier Academic Press; 2023.
- (1) Katz R., **Boyce M.R.** (Eds.). *Inoculating Cities: Case Studies of Urban Pandemic Preparedness*. Cambridge: Elsevier Academic Press; 2021.
 - o Nominated for the 2022 British Medical Association Public Health Award

C. FUNDED REPORTS

- (4) **Boyce M.R.** Review of the Urban Response to the COVID-19 Pandemic. New York: Vital Strategies, 2021.
- (3) **Boyce M.R.**, Katz R. Mapping Global Fund to Fight AIDS, Tuberculosis and Malaria Activities to Health Security: A Study of Kenya, Uganda, and Vietnam. New York: Resolve to Save Lives, 2019.
- (2) **Boyce M.R.**, Halabi S., Phelan A., et al. Positive Deviance Study of Outbreaks. Case Studies of Outbreaks in the Democratic Republic of Congo, Kenya, Cameroon and India. New York: Resolve to Save Lives, 2018.
- (1) Attal-Juncqua A., **Boyce M.R.**, Katz R. Assistance Following a Deliberate Biological Event: Operationalizing Article VII of the Biological and Toxins Weapons Convention. Washington: Center for Global Health Science & Security, 2018.

D. BRIEFS, WHITE PAPERS, & OTHER PUBLICATIONS

- (8) **Boyce M.R.** Comparing Reopening Metrics Proposed by the COVID Act Now and COVID-Local Initiatives. Research Brief 2020-04. Washington, DC: Center for Global Health Science & Security, 2020.
- (7) **Boyce M.R.**, Katz R. The 1918 Influenza Pandemic and COVID-19. Washington, DC: PBS, The American Experience, 2020.
- (6) Holmes C. **Boyce M.R.**, Katz R. Africa is not starting from scratch on COVID-19. Washington, DC: Council on Foreign Relations, 2020.
- (5) Knutzen M., **Boyce M.R.**, Katz R. Georgetown University Social Distancing Plan. Washington: Georgetown University, 2019.
- (4) **Boyce M.R.**, Osman R., Katz R. A Research Agenda for Urban Pandemic Preparedness: A Call to Action. Washington: Center for Global Health Science & Security, 2019.
- (3) Katz R., **Boyce M.R.**, Morhard R., et al. A Mayoral Network for Pandemic Preparedness. Global Policy Opinion, 2018.
- (2) **Boyce M.R.** Symposium & Workshop on Health Threats and Opportunities in Vulnerable Urban Geographies, Day 1 – Urban Pandemic Preparedness. Washington: Center for Global Health Science & Security, 2017.
- (1) Witmer A.P., Clark N., **Boyce M.R.**, et al. Honduran Water Project: A Short Report. Marcala, Honduras: Agua y Desarrollo Comunitario (ADEC), 2015.

E. MISCELLANEOUS RESEARCH PRODUCTS

- (4) COVID Analysis and Mapping of Policies (AMP). Center for Global Health Science & Security, Washington, DC, 2021. Available from: <https://covidamp.org/about/amp>.

- (3) Georgetown Outbreak Activity Library (GOAL). Center for Global Health Science & Security, Washington, DC, 2020. Available from: <https://goal.ghscosting.org/>.
- (2) COVID-19 Local: A Frontline Guide for Local Decision-Makers. Washington: The Nuclear Threat Initiative, 2020. Available from: <https://covid-local.org/>.
- (1) Deliberate Biological Event Tool. Center for Global Health Science & Security, Washington, DC, 2018. Available from: <https://dbe.talusanalytics.com/>.

CONFERENCE ACTIVITIES

* Denotes mentored undergraduate (U) or graduate (G) student at time research was conducted.

A. ORAL PRESENTATIONS

- (12) **Boyce M.R.**, Gordon M.^(U), Piltch-Loeb R, Katz R. Tweeting through pandemics: A content analysis of Chicago Public Health Department twitter communications during the COVID-19 and mpox pandemics. 2024 International Global Health Security Conference, Sydney, AUS, June, 2024.
- (11) **Boyce M.R.** Associations between local public health financing and 2020 excess mortality rates in the 50 largest cities in the United States of America. American Public Health Association Annual Meeting and Expo, Atlanta, GA, November, 2023.
- (10) **Boyce M.R.**, Meyer M.J., Kraemer J.D., Katz R. Financial Assistance for Health Security: Effects of International Financial Assistance on Capacities for Preventing, Detecting, and Responding to Public Health Emergencies. 2022 International Global Health Security Conference, Singapore, SGP, June, 2022.
- (9) Eaneff S., Graeden E., **Boyce M.R.**, Moore M., Katz R. Financing global health security: estimating the costs of pandemic preparedness in Global Fund eligible countries. 2022 International Global Health Security Conference, Singapore, SGP, June, 2022.
- (8) **Boyce M.R.**, Asprilla M.C., McClelland A., Rohani A., van Loenen B. The Local Response to the COVID-19 Pandemic in Cities. 2022 International Global Health Security Conference, Singapore, SGP, June, 2022.
- (7) **Boyce M.R.** An Introduction to Urban Pandemic Preparedness & Response. Georgetown Global Health Security Seminar Series, Virtual Event, September, 2021.
- (6) **Boyce M.R.** Assessment of Social Assistance and Government Expenditures in South Africa. International Monetary Fund Mini-Conference, Virtual Event, June, 2021.
- (5) **Boyce M.R.** The 2018 Bristol Declaration and the Rapid Urban Health Security Assessment Tool. Annual Conference of the Global Parliament of Mayors – Rethinking the City: How Mayors Respond to the Needs of a Post-COVID City, Virtual Event, November, 2020.
- (4) **Boyce M.R.**, Katz R. Urban Pandemic Preparedness. 2019 International Global Health Security Conference, Sydney, AUS, June, 2019.
- (3) **Boyce M.R.**, Afriaj-Blumi D., Attal-Juncqua A., Burke E., Faraq M., Hansen P., Idris R., Johnson A.^(U), Katz R., League A.^(U), McKay S., Moreland A., Roy A., Schissler K.^(U), Shumway D.^(G), Solano J., Sortur S.^(U), Wenzel L.^(U), Zamani S. Synergies between Global Fund-supported activities and health security: Case studies in Kenya, Uganda, and Vietnam. 2019 International Global Health Security Conference, Sydney, AUS, June, 2019.
- (2) **Boyce M.R.**, Graeden E., Katz R. Georgetown International Health Regulation (IHR 2005) Costing Tool. Consultative Workshop to Review National Action Plans, World Health Organization, Geneva, CHE, April 2018.
- (1) **Boyce M.R.** Public-Private Partnerships for Urban Pandemic Preparedness. Georgetown Symposium and Workshop on Urban Pandemic Preparedness, Washington, DC, November 2017.

B. POSTER PRESENTATIONS

- (14) **Boyce M.R.** A marginal benefit incidence analysis assessing COVID-19 vaccine distribution targeting efforts in the City of Chicago. 2024 International Global Health Security Conference, Sydney, AUS, June, 2024.
- (13) **Boyce M.R.**, Kraemer J., Katz R. Subnational public health preparedness indices as predictors of COVID-19 mortality outcomes. American Public Health Association Annual Meeting and Expo, Atlanta, GA, November, 2023.
- (12) **Boyce M.R.**, Tiongson E., Katz R. Comparing the technical efficiency of local pandemic response: Results from the 50 largest cities in the United States of America. International Conference on Urban Health, Atlanta, GA, November, 2023.
- (11) **Boyce M.R.** Urban parks and the COVID-19 pandemic response: Results from a mixed-methods study of large cities in the United States of America. International Conference on Urban Health, Atlanta, GA, November, 2023.
- (10) Kipkoech J., Malinga J., Sang E., ... **Boyce M.R.**, et al. Supply and demand-side factors influencing uptake of malaria testing services in the community; lessons for scale-up from a cluster-randomized, community-based trial in western Kenya. Annual Meeting of the American Society of Tropical Medicine and Hygiene, Seattle, WA, November, 2022.
- (9) Aminpour A.^(G), Robinson-Marshall S., **Boyce M.R.**, Katz R. Redefining the Urban Public Health Workforce. 2022 International Global Health Security Conference, Singapore, SGP, June, 2022.
- (8) **Boyce M.R.**, Katz R., Standley C.J. Risk Factors for Infectious Diseases in Urban Environments of Sub-Saharan Africa. Annual Meeting of the American Society of Tropical Medicine and Hygiene, National Harbor, MD, November, 2019.
- (7) **Boyce M.R.**, Katz R. Rapid Urban Health Security Assessment. Annual Summit of the Global Parliament of Mayors, Durban, ZAF, November, 2019.
- (6) **Boyce M.R.**, Osman R., Katz R. Addressing Gaps in Pandemic Preparedness. American Public Health Association Annual Meeting and Expo, Philadelphia, PA, November, 2019.
- (5) **Boyce M.R.**, Osman R., Katz R. A research agenda for urban pandemic preparedness: A call to action. 2019 International Global Health Security Conference, Sydney, AUS, June, 2019.
- (4) Cameron E., Nalabandian M., Attal-Juncqua A., **Boyce M.R.**, et al. Filling global gaps for responding to deliberate biological events: Senior-level tabletop exercise. 2019 International Global Health Security Conference, Sydney, AUS, June, 2019.
- (3) Halabi S., Katz R., Sorrell E., Phelan A., **Boyce M.R.**, et al. Positive Deviance Study of Outbreak Response. 2019 International Global Health Security Conference, Sydney, AUS, June, 2019.
- (2) **Boyce M.R.**, Sorrell E.M., Standley C.J., Fischer J.E. Infection Prevention and Control, Biosafety, and Biosecurity: Intersections and Gaps in the Context of One Health. Centers for Disease Control and Prevention International Biosafety Symposium, Atlanta, GA, February 2018.
- (1) Laktabai J., **Boyce M.R.**, Menya D., et al. Competence in Malaria Rapid Diagnostic Tests (mRDTs) Performance Twelve Months Post Training: Evaluation of Malaria Testing by Community Health Workers (CHWs). Annual Meeting of the American Society of Tropical Medicine and Hygiene, Baltimore, MD, November 2017.

TEACHING & MENTORSHIP

A. TEACHING

2021 Georgetown University
Course: Global Health Security and Diplomacy
Role: Teaching Assistant

Detail: Graduate/Undergraduate; In-person

2016 Duke University
Course: Global Nutrition
Role: Teaching Assistant
Detail: Graduate/Undergraduate; In-person

B. GUEST LECTURES

2023 Cornell University, Veterinary Parasitology Program
Lecture: Guinea Worm Disease
Detail: Virtual; August 2023

2022 Georgetown University, Science, Technology & International Affairs Program
Lecture: “Glocal Health Security”: Health Security at the Local Level
Detail: In-person; November 2022

European University Institute, Health Crisis Resilience Program
Lecture: Module 35: Urban Pandemic Preparedness
Detail: Virtual; October 2022

C. MENTORING

2023 Undergraduate: Margot Gordon (Georgetown University, Global Health)

2021 Graduate: Ariyand Aminpour (Georgetown University, Global Infectious Disease)

2018 Graduate: Douglas Shumway (Georgetown University, Biohazardous Agents & Emerging Infectious Diseases)
Undergraduate: Aurora Johnson (Georgetown University, Science, Technology, & International Affairs), Avery League (Georgetown University, Science, Technology, & International Affairs), Kelly Schissler (Georgetown University, Science, Technology, & International Affairs), Shrayus Sortur (Georgetown University, Biology of Global Health), Laura Wenzel (Georgetown University, Global Health)

ACADEMIC & SCHOLARLY SERVICE

A. DISCIPLINARY SERVICE

Conference Service

2024 Panel Moderator, 2024 International Global Health Security Conference

2018 Program Committee, 2019 International Global Health Security Conference

Referee Service

American Journal of Tropical Medicine & Hygiene, Health Policy & Planning, International Health, Journal of Public Health in Africa, Lancet Global Health, MIT Science Policy Review, PLoS ONE, Springer Publishing

B. DEPARTMENTAL SERVICE

- 2022 Center for Global Health Science & Security, Culture & Space Committee
2017–2020 Center for Global Health Science & Security, Research Development Committee

C. UNIVERSITY SERVICE

- 2021 Georgetown Global Cities Initiative Student Research Summit, Respondent
2017–2020 Georgetown Global Health Security Seminar Series, Planning Committee
2018–2019 Microbiology & Immunology 524 Capstone Presentations, Respondent
2017 Symposium on Urban Pandemic Preparedness, Planning Committee

FUNDING, HONORS, & AWARDS

A. FUNDING, GRANTS, & CONTRACTS

- 2023 Inoculating Cities: A Vision for a Healthier World
Funder: Georgetown University
Funding: \$10,000
Role: Co-Investigator
- 2021 Review of the COVID-19 Pandemic Response in Urban Environments
Funder: Vital Strategies
Funding: \$15,437
Role: Principal Investigator
- 2016 Malaria Rapid Diagnostic Test Use by Community Health Workers
Funder: Duke Global Health Institute
Funding: \$7,500
Role: Principal Investigator

B. AWARDS, HONORS, & FELLOWSHIPS

- 2021–2024 Wynn Global Health Security Fellow
2022–2023 Salzburg Global Seminar – Emerging Urban Leader Fellow
2022 GSAS-GradGov Research Project Award
2015 UIUC Integrative Biology Departmental Distinction

PROFESSIONAL SERVICE & MEMBERSHIPS

A. SERVICE

- 2020 Mayors Pandemic Resilience Working Group, Technical Expert
2018–2020 Global Parliament of Mayors, Technical Expert – Public Health
2018–2019 World Health Organization Costing Technical Advisory Group, Member

B. MEMBERSHIPS

- 2023–Present International Society for Urban Health (ISUH)
2020–Present Global Health Security Network (GHSN)
2018–Present American Public Health Association (APHA)
2018–Present Next Generation Global Health Security Network
2018–Present Consortium of Universities for Global Health (CUGH)
2018–2019 GOARN-Research Social Sciences

SKILLS & EXPERTISE

A. COMMUNICATION

Oral Communication, Peer-Reviewed Publications, Public Speaking, Spanish (Limited), Written Communication

B. COMPUTER

Adobe Photoshop, ArcGIS, Google Suite, Microsoft Office Suite, Qualtrics, REDCap, Stata, Tableau, Zotero

C. RESEARCH

Data Cleaning, Data Collection, Data Visualization, Database Management, Epidemiology, Grant Writing, Implementation Research, Legal Epidemiology, Literature Reviews, Mixed Methods Studies, Policy Analysis, Program Evaluation, Project Management, Public Finance, Research Design, Quantitative Analysis, Survey Methodologies

COMMUNICATION & OUTREACH ACTIVITIES

A. SELECTED WEB BLOGS

- (5) **Boyce M.R.**, Mohr G., Rest E. Getting to Know *Plasmodium knowlesi*: The New Parasite on the Block. Washington, DC: Malaria.com, 2021.
- (4) Barrett S., **Boyce M.R.**, Cuevas J. The A, B, Cs of the Governance of Antimicrobial Resistance – What it is and Why it Matters for Human and Animal Health. Washington, DC: Georgetown University Global Infectious Disease Program, 2020.
- (3) **Boyce M.R.** A New Threat to Public Health: Antibiotic-Resistant Bacteria. Durham, NC: Duke Global Health Institute, 2017
- (2) **Boyce M.R.** A Call to Prioritize Health. Durham, NC: Duke Global Health Institute, 2016.
- (1) **Boyce M.R.** The Syrian Refugee Crisis: A Ticking Global Health Time-Bomb. Durham, NC: Duke Global Health Institute, 2015.

B. PODCASTS

- (1) Global Health and Global Cities. Diplomatic Immunity Podcast. Season 3, Episode 6. Washington: Institute for the Study of Diplomacy, 2021.

RESEARCH INTERESTS

Health Equity and Disparities
Health Financing
Health Security
Health Systems Strengthening
Urban/Rural Health