# Christopher B. Boyer

CONTACT
INFORMATION

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RESEARCH
INTERESTS

Causal inference, randomized-controlled trials, statistics, machine learning, epidemiology, global health, econometrics, networks, Bayesian methods

EDUCATION

**Harvard University**, Cambridge, Massachusetts USA

Ph.D., Epidemiology                                                                          2022 (expected)

Concentration: Causal Inference
Thesis Committee: Goodarz Danaei (*Chair*), James Robins, Andrew Beam

M.S., Biostatistics                                                                          2022 (expected)

**Columbia University**, New York, New York USA

M.P.H., Epidemiology                                                                          2015

**Wright State University**, Dayton, Ohio USA

B.S., Mechanical Engineering                                                                          2010

WORKING PAPERS

**Boyer, C**, Paluck, E. L., Annan, J., Nevatia, T., Cooper, J., Namubiru, J, Heise, L., & Lehrer, R. (2021) "Religious counsel can motivate men to cede power and reduce intimate partner violence: experimental evidence from Uganda." Under Review at *PNAS*, 2021.

**Boyer, C**, Bates-Jefferys, E., Fink, G. & Annan, J. (2021) "Texting with men to reduce violence: a cluster-randomized trial of the Modern Man Challenge intervention in Monrovia, Liberia".

**Boyer, C.**, Beam, A., Robins, J, & Danaei, G. (2021) "Factual and counterfactual risk prediction using the parametric g-formula".

**Boyer, C.**, Beam, A., Robins, J, & Danaei, G. (2021) "Prediction under treatment policy shifts".

**Boyer, C.**, Beam, A., Robins, J, & Danaei, G. (2021) "Deep learning for causal inference".

**Boyer, C**, Rumpler, E, Kissler, S, & Lipsitch, M. (2022) "Infectious disease dynamics and restrictions on social gathering size". medRxiv 2022.01.07.21268585

PUBLICATIONS

NCD Risk Factor Collaboration (NCD-RisC). (2021) "Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participant". *The Lancet.* 398(10304), 957–980. DOI: 10.1016/S0140-6736(21)01330-1

Pinchoff, J., **Boyer, C.**, Nag Chowdhuri, R., Smith, G., Chintu, N. & Ngo, T.D. (2019) "The evaluation of the Woman's Condom marketing approach: What value did peer-led interpersonal communication add to the promotion of a new female condom in urban Lusaka?" *PLoS ONE*, 14(12), e0225832. DOI: 10.1371/journal.pone.0225832

| CONFERENCE PRESENTATIONS | **Boyer, C.** 2015. Estimating indices of health system readiness: an example from rural northern Ghana. Consortium of Universities for Global Health. |
|---|---|

Bawah, A., Awoonor-Williams J., Asuming, P., **Boyer, C.**, Achana, S., Akazili, J., Phillips, J.F. 2017. The child survival impact of the Ghana essential health interventions program: a health systems strengthening initiative in a rural region of northern Ghana. Annual Meeting of the Population Association of America.

HONORS AND AWARDS

| | |
|---|---|
| Bok Center Certificate of Distinction in Teaching (×3) | 2019, 2020, 2021 |
| Summa Cum Laude, Columbia University | 2015 |
| Magna Cum Laude, Wright State University | 2010 |
| Tau Beta Pi, Wright State University | 2010 |
| National Merit Scholarship Finalist | 2006 |
| Salutatorian, Miamisburg High School | 2006 |

EXTRAMURAL GRANTS

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|---|---|
| USAID DIV (APS9-7414). $200,000 PI: Erica Field (lead), Christopher Boyer. | 2021 |
| NIH T32 Training Grant (T32 HL 098048). PI: Eric Rimm | 2019 |
| Wellspring. $450,000 PI: Jeannie Annan (lead), Christopher Boyer. | 2017 |

RESEARCH PROJECTS

Annan, J, **Boyer, C**, Cooper, J, Heise, L, & Paluck, E.L. (2019) "A Pair-Matched Randomized Evaluation of Faith-Based Couples Counseling in Uganda." AEA RCT Registry. March 11. https://doi.org/10.1257/rct.3994-4.1

Annan, J, Fink, G, & Paluck, E.L. (2019) "Modern Man Challenge Intimate Partner Violence Study." AEA RCT Registry. June 10. https://doi.org/10.1257/rct.4245-1.0

**Boyer, C** & Field, E. (2022) "The Real Man Challenge: A Randomized-Controlled Trial of a WhatsApp Intervention to Reduce Intimate Partner Violence." AEA RCT Registry. *To be posted.*

TEACHING EXPERIENCE

EPI207 - Advanced Epidemiologic Methods

*Lead Teaching Fellow* **2020, 2021**
Required course for epidemiology PhD students. Causal inference for time-varying exposures: g-formula, inverse-probability weighting, marginal structural models, static and dynamic treatment regimes. Responsible for leading 90 min lab section and grading homeworks and tests.
Instructor: Dr. James Robins

PHS2000 - Quantitative reseach methods

*Teaching Fellow* **2019, 2020, 2021**
Year-long required methods course for first-year PhD students. Regression models, sampling, longitudinal and multilevel analysis, time-varying confounding, mediation and interaction, econometric methods, missing data. Responsible for leading 90 min lab section, developing homework assignments and tests, and drafting course materials.
Instructors: Dr. Tyler Vanderweele, Dr. Jarvis Chen, Dr. Michael Hughes

PROFESSIONAL EXPERIENCE

**Innovations for Poverty Action**, New York, New York USA

*Technical Lead* **2017 - 2018**
Managed a team that provided support to 70+ active randomized trials advising on research and questionnaire design, programming (Stata, R, and Python), statistics/econometrics, and data management. Designed and conducted randomized trials with assistance of PI network. Responsible for

improving quality and efficiency of data collected at IPA through innovative technical solutions and research methods. Lead global technical training.

*Senior Research and Data Analyst* **2016 - 2017**
Provided technical guidance to randomized evaluations testing the impact of the Partnership Schools Program in Liberia, the impact of the IRC's Girl Empower Program in Liberia. Authored Stata packages used by IPA, J-PAL, and the World Bank to automate daily checks of survey data quality.

*Research and Data Analyst* **2015 - 2016**
Lead data manager and analyst on a randomized evaluation testing the impact of interpersonal communication networks on contraceptive use in Zambia.

**Columbia University**, New York, New York USA

*Research Associate* **2013 - 2015**
Provided research support on data management, analysis, and preparation of manuscripts on studies in Ghana and Tanzania for Dr. James Phillips and the program on Advancing Research on Comprehensive Health Systems (ARCHeS).

**Peace Corps**, Montepuez, Cabo Delgado, Mozambique

*Secondary Science Teacher* **2010 - 2012**
Instructed more than 700 secondary school students in Physics and English. Lessons delivered in Portuguese. Established first science laboratory in the district. Collaborated with the Ministry of Education to organize regional and provincial science fair competition. Managed extracurricular journalism club.

CONSULTING
EXPERIENCE

**StellarEmploy**, New York, New York USA

*Data Scientist* **2017 - 2018**
Built and refined prediction models of the probability of employee turnover using psychometric data from applicants for private sector clients in high-turnover industries to help them make smarter hiring decisions.

**World Bank**, Washington, DC USA

*R/Python Programmer* **2016**
Built data pipeline and visualization using Python to automate the creation of easy-to-read municipal performance scorecards for low-literacy populations as part of a randomized evaluation on voter engagement and political preferences in Burkina Faso.

PUBLISHED
SOFTWARE

Boyer, C, Danaei, G, Hajifathalian, K, Ueda, P, & Carrillo Larco, R. M. (2021) `globorisk`, R package for Globorisk Global CVD Risk Calculator.

Boyer, C., Baako, I.A., & Sandino, R.S. (2018) `ipacheck`, Stata package for running high-frequency checks of survey data.

Boyer, C. & White, M. (2016) `bcstats`, Stata package for comparing survey and back check data.

PROGRAMMING

| Statistics: | R, Stata, Python, Stan, Julia (beginner) |
| Web: | HTML, JavaScript, CSS, D3.js |
| GIS: | ArcGIS, QGIS, ggmap, ggplot |
| Markup: | Markdown, LaTeX |
| Survey: | SurveyCTO, Qualtrics |
| Other: | C/C++, SQL, Java |