

JOE BREW

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Languages

Native: English

Fluent: Spanish, French, Catalan

Proficient: Portuguese

Expert: R, SQL, Linux

Professional: Python, SAS, Stata, SPSS

Proficient: Javascript, HTML, CSS, Ruby

Education

PhD (double degree)

The economics of malaria control: Opportunities, incentives, and risks on the road from control to elimination. 2021

University of Barcelona (Faculty of Medicine)

BARCELONA, CATALONIA

Vrije Universiteit (Athena Institute)

AMSTERDAM, HOLLAND

Manhiça Health Research Centre (research site)

MANHIÇA, MOZAMBIQUE

- Program in Transdisciplinary Global Health (Erasmus Mundus, dual doctoral degree)
- Coursework in economics, epidemiology, evaluation and policy
- Research on the cost effectiveness and efficacy of malaria control and elimination interventions

Master of Public Health

2013

Kobenhavns Universitet (year 2)

COPENHAGEN, DENMARK

Escuela Andaluza de Salud Pública (year 1)

GRANADA, SPAIN

- Coursework in epidemiology, economic evaluation, demography, advanced biostatistics, management, health policy, health promotion
- Research focus on epidemiology of obesity among immigrant youth in Denmark

Master of Arts: Diplomatic history

2010

Institut Catholique de Paris

PARIS, FRANCE

- Coursework in diplomacy, policy, political science and history
- MA in Contemporary Diplomatic History, with fieldwork on the secret diplomacy which ended the Vietnam War through the Paris Peace Accords

Bachelor of Arts: Liberal arts

2008

Sewanee: The University of the South

SEWANEE, TN, USA

- Triple major in Contemporary Non-Western History, Spanish, French
- Research focus on civil war in Guatemala

Experience

Co-founder, CEO

Hyfe Inc.

DELAWARE, USA

April 2020 - present

- Co-founded startup which uses AI to detect coughs and screen for disease from sound
- Raised 1 million USD as of April 2021

Co-founder, consultant

DataBrew

TORONTO, CANADA

January 2017 - present

- Co-founded company which provides consulting and educational services to institutions in industry and academia

Project Lead

Drone Optimized Therapy Systems

PYUTHAN, NEPAL

March 2018 - December 2019

- Implemented a campaign for identifying tuberculosis cases and transporting sputum via drones
- Coordinated an international team of engineers, health care workers, and researchers
- Navigated significant regulatory and operational challenges

Consultant

World Bank

WASHINGTON, DC, USA

May 2016 - May 2017

- Built interactive web apps for data exploration

Data scientist

Lendable

OAKLAND, CA, USA

January 2015 - December 2017

- Worked to expand access to financial products to the developing world (East Africa, India)
- Programmed machine learning algorithms to predict financial risk
- Developed and implemented stochastic simulation methods
- Devised creative means for extracting and generating features in a low-data context
- Created internal and client-facing visualization tools

Surveillance Epidemiologist

Florida Department of Health, Alachua County

GAINESVILLE, FL, USA

July 2013 - December 2015

- Wrote programs to detect clusters/abnormalities for ER data stream
- Analyzed mosquito trap data to prevent arbovirus transmission
- Coordinated flu surveillance operations through school system
- Oversaw program evaluation, billing, revenue modeling activities

Analyst

Analyst Institute

WASHINGTON, DC, USA

April 2014 - April 2015

- Analyzed voter data from controlled experiments
- Created tools for statistical analysis
- Designed interactive dashboards for data visualization

"Data Science for Social Good" Fellow

University of Chicago

CHICAGO, IL, USA

June 2014 - August 2014

- Analyzed large datasets to predict pediatric lead poisoning
- Worked in close collaboration with the Chicago Dept. of Public Health
- Used tools like R, Python and D3
- Worked closely with industry experts like Rayid Ghani and Ben Yuhas

- Designed tools for data exploration

Erasmus Mundus Researcher

Skolesundhed

COPENHAGEN, DENMARK

February 2012-June 2013

- Redesigned school health screening system to bring to digital platform
- Analyzed 3 years of youth health data on immigration and overweight

Health Systems Researcher (intern)

Agència de Salut Pública de Barcelona

BARCELONA, SPAIN

November 2012-February 2013

- Worked on SOPHIE project on immigration and health disparities

Maternal Health Analyst (intern)

Tigray Regional Health Bureau

MEKELLE, ETHIOPIA

May 2012-August 2012

- Collected, analyzed and reported on epidemiological and operational data from rural regional Health Posts near the Eritrean border

Teacher

St. Andrew's-Sewanee School

SEWANEE, TN, USA

January 2010-June 2011

- Taught middle and high school Technology and Spanish

Assistant Coach

The University of the South

SEWANEE, TN, USA

August 2009-December 2010

- Coached men and women's cross country and track and field

Health Educator

Promotion et Développement Humain

AVEDJI CITÉ, TOGO

May 2009-August 2009

- Led sexual health education workshops for teens
- Assessed medication adherence among HIV/AIDS patients through visits/interviews
- Assisted in accounting, data organization, process improvement

Recreation Coordinator / Teacher

Instituto Experimental de Ciudad Quetzal

CIUDAD QUETZAL, GUATEMALA

2006-2008 (summers)

- Organized youth recreation clinics for the *Cases Interculturales* program
- Taught English and Spanish in impoverished and violence-stricken area

Publications

Publications

Gabaldon JC, Keen E, **Brew J**, ... Grandjean S, Chaccour C. *Digital acoustic surveillance of cough for the detection of respiratory disease*. Chest

DOI: 10.1016/j.chest.2021.12.046 (2022)

Keen E, True J, Summers A, Smith E, **Brew J**, Grandjean S. *High-throughput digital cough recording on a university campus: A SARS-CoV-2-negative curated open database and operational template for acoustic screening of respiratory diseases*. Digital Health

DOI: 10.1177/20552076221097513 (2022)

Cirera L, Vall Vastelló J, **Brew J**, Saute F, Sicuri E. *The impact of a malaria elimination initiative on school outcomes: Evidence from Southern Mozambique*. Economics and Human Biology

DOI: 10.1016/j.ehb.2021.101100 (2022)

Gabaldon JC, **Brew J**, Doré D, Umashankar N, Chaccour J, Orrillo V, Tsang L, Blavia I, Fernández-Montero A, Bartolomé J, Grandjean S, Chaccour C. *Digital acoustic surveillance for early detection of respiratory disease outbreaks in Spain: a protocol for an observational study*. BMJ Open

DOI: 10.1136/bmjopen-2021-051278 (2021)

Thomas R, Cirera J, **Brew J**, Saute F, Sicuri E. *The short-term impact of a malaria elimination initiative in Southern Mozambique: Application of the synthetic control method to routine surveillance data*. Health Economics

DOI: 10.1002/hec.4367 (2021)

Dixon D, Deutsch K,... **Brew J**,... Yang B. *Modelling distributions of Aedes aegypti and Aedes albopictus using climate, host density and interspecies competition*. PLOS Neglected Tropical Diseases

DOI: 10.1371/journal.pntd.0009063 2021

Chaccour C, Ruiz-Castillo P, Richardson MA,... **Brew J**,... Rabinovich R. *The SARS-CoV-2 Ivermectin Navarra-ISGlobal Trial (SAINT) to Evaluate the Potential of Ivermectin to Reduce COVID-19 Transmission in low risk, non-severe COVID-19 patients in the first 48 hours after symptoms onset: A structured summary of a study protocol for a randomized control pilot trial*. BMC

DOI: 10.1186/s13063-020-04421-z (2021)

Chaccour C, Casellas A, Blanco-Di Matteo A,... **Brew J**,... Fernandez-Alonso M. *The effect of early treatment with ivermectin on viral load, symptoms and humoral response in patients with mild COVID-19: a pilot, double-blind, placebo-controlled, randomized clinical trial*.

Brew J, Pradhan M, Broerse J, Bassat Q. *Researchers' perceptions of malaria eradication: findings from a mixed-methods analysis of a large online survey*. Malaria Journal

DOI: 10.1186/s12936-020-03430-2 (2020)

Brew J, Pinder M, Dalessandro U, Lindsay SW, Jones C, Sicuri E. *Evidence of high bednet usage from a list randomization experiment in rural Gambia*. Malaria Journal

DOI: 10.1186/s12936-020-03322-5 (2020)

Chaccour C, Ruiz-Castillo P, Richardson M, Moncunill G, Casellas A, Carmona-Torre F, Giraldez M, Schwartz J, Ramon J, Fernandez M, Reina G, Dobaña C, **Brew J**, Sabada B, Hammann F, Rabinovich R. *The SARS-CoV-2 Ivermectin Navarra-ISGlobal Trial (SAINT) to Evaluate the Potential of Ivermectin to Reduce COVID-19 Transmission in low risk, non-severe COVID-19 patients in the first 48 hours after symptoms onset: A structured summary of a study protocol for a randomized control pilot trial*. BMC Trials

DOI: 10.1186/s13063-020-04421-z (2020)

García-Basteiro A, Chaccour C, Guinovart C, Llupià A, **Brew J**, Trilla A, Plasencia A. *Monitoring the COVID-19 epidemic in the context of widespread local transmission*. The Lancet Respiratory Medicine

DOI: 10.1016/S2213-2600(20)30162-4 (2020)

Mitjà O, Arenas A, Rodó X, Tobias A, **Brew J**, Benlloch JM. *Experts' request to the Spanish Government: move Spain towards complete lockdown*. The Lancet

DOI: 10.1016/S0140-6736(20)30753-4 (2020)

Brew J, Sauboin C. *A Systematic Review of the Incremental Costs of Implementing a New Vaccine in the Expanded Program of Immunization in Sub-Saharan Africa*. MDM Policy and Practice

DOI: 10.1177/2381468319894546 (2019)

Knoblauch A, de la Rosa S, Sherman J, Blauvelt C, Matamba C, Maxim L, Defawe O, Gueye A, Robertson J, McKinney J, **Brew J**, Paz E, Small P, Tanner M, Rakotosamimanana N, Grandjean S. *Bi-directional drones to strengthen healthcare provision: experiences and lessons from Madagascar, Malawi and Senegal*. BMJ Global Health

DOI: 10.1136/bmjgh-2019-001541 (2019)

Fonseca, AM, González R, Bardaji A,... **Brew J**,... Mayor A. *VAR2CSA Serology to Detect Plasmodium falciparum Transmission Patterns*. Emerging Infectious Diseases

DOI: 10.3201/eid2510.181177 (2019)

Imbahale S, Montaña J, **Brew J**, Paaijmans K, Rist C, Chaccour C. *Mapping the potential use of endectocide-treated cattle to reduce malaria transmission*. Nature: Scientific Reports

DOI: 10.1038/s41598-019-42356-x (2019)

Yang B, Borgert B, Alto B... **Brew J**... Xue R, Cummings D. *Modelling the distribution of Aedes aegypti and Aedes albopictus using climate, host density and interspecies competitive effects*. In press

DOI: 10.1101/498238v1 (2018)

García-Basteiro A, **Brew J**, Williams B, Borgdorff M, Cobelens F. *What is the true tuberculosis mortality burden? Differences in estimates by the World Health Organization and the Global Burden of Disease study*. International Journal of Epidemiology

DOI: 10.1093/ije/dyy144 (2018)

Chaccour C, Alonso S, Zulliger R, Wagman J, Saifodine A, Candrinho B, Macete E, **Brew J**, For-

nadel C, Kassim H, Loch L, Sacoer C, Varela K, Carty C, Robertson M, Saute F. *Combination of indoor residual spraying with long-lasting insecticide-treated nets for malaria control in Zambezia, Mozambique: a cluster randomised trial and cost-effectiveness study protocol*. BMJ Global Health
DOI: 10.1136/bmjgh-2017-000610 (2018)

García-Basteiro A, Mambuque E, Hertog A, Saavedra B, Cuamba I, Oliveras L, Blanco S, Bulo H, **Brew J**, Cuevas L, Cobelens F, Nhabomba A, Anthony R. *IP-10 Kinetics in the First Week of Therapy are Strongly Associated with Bacteriological Confirmation of Tuberculosis Diagnosis in HIV-Infected Patients*. Nature: Scientific Reports
DOI: 10.1038/s41598-017-13785-3 (2017)

García-Basteiro A, Miranda R, **Brew J**, Sacoer C, Valencia S, Bulo H, Cobelens F, Macete E. *Tuberculosis on the rise in southern Mozambique (1997–2012)*. European Respiratory Journal
DOI: 10.1183/13993003.01683-2016 (2017)

Tran C, **Brew J**, Johnson N, Ryan K, Martin B, Cornett C, Caron B, Duncan R, Small P, Myers P, Morris J. *Sustainability of School-located Influenza Vaccination Programs in Florida*. Vaccine
DOI: 10.1016/j.vaccine.2016.04.017 (2016)

Lednicky J, Iovine N, **Brew J**, Loeb J, Sugimoto J, Rand K, Morris J. *Hemagglutinin Gene Clade 3C.2a Influenza A(H3N2) Viruses, Alachua County, Florida, USA*. Emerging Infectious Diseases
DOI: 10.3201/eid2201.151019 (2016)

Potash E, **Brew J**, Loewi A, Majumdar S, Reece A, Walsh J, Rozier E, Jorgenson E, Mansour R, Ghani R. *Predictive Modeling for Public Health: Preventing Childhood Lead Poisoning*. ACM SIGKDD International Conference on Knowledge Discovery and Data Mining
DOI: 10.1145/2783258.2788629 (2015)

Iovine M, Morris JG, Fedenburg K, Rand K, Alnuaimat H, Lipori G, **Brew J**, Lednicky JA. *Increased severity of H1N1 influenza in the 2013-14 season and emergence of the D225G variant*. Emerging Infectious Diseases
DOI: 10.3201/eid2104.141375 (2015)

Brew J. *(Mis)measurement in the study of food environment: we need better methods to solve the puzzle*. Journal of Epidemiology and Community Health
DOI:10.1136/jech-2014-205163 (2015)

Tran C, Sugimoto J, Pulliam J, Ryan K, Myers P, Castleman J, Doty R, Johnson J, Stringfellow J, Kovacevich N, **Brew J**, Cheung L, Caron B, Lipori G, Harle C, Alexander C, Yang Y, Longini I, Halloran M, Morris JG, Small P. *School-Located Influenza Vaccination Reduces Community Risk for Influenza and Influenza-Like Illness Emergency Care Visits*. PLOS ONE
DOI: 10.1371/journal.pone.0114479 (2014)

Conference presentations

Cirera L, **Brew J**, Valls J, Sicuri E. *Impact of a malaria elimination initiative on school outcomes in Southern Mozambique* American Society of Tropical Medicine and Hygiene
Baltimore, USA (2017)

Brew J, Gondo K, Dorkin E, Thomas R, Sicuri E. *Effectiveness of private sector malaria control: the case of sugarcane workers in Southern Mozambique* Malaria transmission: current challenges and new tools in the elimination context
Lisbon, Portugal (2017)

Brew J, Broerse J, Pradhan M, Sicuri E. *Silent pessimists: researchers' perceptions of malaria eradication and implications for health spending* European Conference of Tropical Medicine and International Health
Antwerp, Belgium (2017)

Brew J, Cirera L, Thomas R, Sicuri E. *Short-term effectiveness of a malaria elimination campaign in Southern Mozambique* European Conference of Tropical Medicine and International Health
Antwerp, Belgium (2017)

Cirera L, **Brew J**, Vall J., Sicuri E. *The educational impact of a malaria elimination campaign* Revolutions in the Economics of Health Systems: Congress of the International Health Economics Association
Boston, USA (2017)

Brew J, Cirera L, Sicuri E. *The economic benefits of a malaria elimination campaign in Southern Mozambique*. African Health Economics Association Conference: The sustainable development goals, the grand convergence, and health in Africa.
Rabat, Morocco (2016)

Academic theses

The Economics of Malaria: Opportunities, incentives, and risks on the road from control to elimination. Vrije Universiteit Amsterdam and Universitat de Barcelona (PhD dissertation) 2021

Youth overweight in Denmark: prevalence, ethnicity and other risk factors. Kobenhavns Universitet (MPH dissertation) 2013

La Presse comme arme politique: le role des journaux américains dans les négociations des accords de Paris. Institut Catholique de Paris (MA dissertation) 2009

Religion and Counterrevolution: Fundamentalist Evangelicalism and the Dictatorship of Efraín Ríos Montt. Sewanee: The University of the South (BA thesis) 2008

Honors and Awards

Transdisciplinary Global Health Fellowship Funded by the European Commission to carry out research on economics and malaria	2015
Data Science for Social Good Fellowship Funded by the University of Chicago to spend 3 months tackling big problems with big data	2014
Erasmus Mundus Fellowship European Commission award for full MPH funding	2011
Highest honors ("mention très bien") on MA thesis <i>La Presse comme arme politique: le role des journaux américains dans les négociations des accords de Paris</i>	2009
Highest honors ("summa cum laude") and Phi Beta Kappa Top 5% of graduating class at Sewanee	2008
Linda Wheat Fellowship Full funding for graduate studies at the Institut Catholique de Paris	2008
Fulbright ETA (Andorra) Awarded, but I declined in order to pursue graduate studies	2008
Algernon Sydney Sullivan Award Granted to one graduate annually, Sewanee's "most prestigious prize"	2008
Joseph Cushman Scholarship Highest award given to History major at Sewanee	2007
Gessell Fellowship Funding to carry out research on African-American history at Sewanee	2007
Biehl Social Science Fellowship Full funding to investigate the religious roots of social division in Guatemala	2007
Lilly Grant Full funding for vocational institute and internship in Guatemala	2006
Wright-Bentley Scholarship For strong academic skills and service to the community	2005
Wilkins Scholarship Merit and community award	2004

Community Service

Translator

PORT-AU-PRINCE, HAITI

Physicians for Haiti

2010-present

- Translated medical education documents between French and English

Founder

SEWANEE, TN, USA

Weekend English for Migrants

2009-2011

- Organized language exchanges between high-schoolers and undocumented immigrants

Co-founder

SEWANEE, TN, USA

ABRE

2006-2008

- Co-founded and presided over social awareness and social justice organization

Personal

Happily married, father, likes to fix and ride bikes, enjoys travel, doesn't enjoy airplanes, loves running, hates sitting, morning person.