

# JOE BREW

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## Languages

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*Native:* English

*Fluent:* Spanish, French, Catalan

*Proficient:* Portuguese

*Expert:* R, SQL, Linux

*Professional:* Python, SAS, Stata, SPSS

*Proficient:* Javascript, HTML, CSS, Ruby

## Experience

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### 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

## Education

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### 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

## Publications

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### Publications

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.*  
DOI: 10.1016/j.eclinm.2020.100720 (2020)

**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**, Fornadel C, Kassim H, Loch L, Sacoar 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**, Sacoar 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

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



## Community Service

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### 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

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