Duke University
Master of Science in Global Health
Program Timeline

Year 1
Identification preparation

<table>
<thead>
<tr>
<th>FALL COURSEWORK</th>
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<tr>
<td>Global Health Challenges</td>
<td>Health Policy and Systems in Global Health</td>
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<td>GLOBAL HEALTH RESEARCH: Biostatistics and Epidemiology I</td>
<td>GLOBAL HEALTH RESEARCH: Biostatistics and Epidemiology II</td>
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<td>GLOBAL HEALTH RESEARCH: Design and Practice</td>
<td>Ethics for Global Health Research</td>
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<tr>
<td>0-1 ELECTIVES</td>
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Fieldwork Experience

Year 2
Thesis product

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<tr>
<th>FALL and/or SPRING COURSEWORK</th>
<th>REMAINING ELECTIVES (NORMALLY 3-4)</th>
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<td>Ungraded Research Hours (minimum of 4)</td>
<td>EXTENDED FIELD RESEARCH EXPERIENCE (optional, depending on mentor/project needs)</td>
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<td>Department</td>
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## Representative Electives, Master of Science in Global Health

<table>
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<th>Department</th>
<th>Course #</th>
<th>Title</th>
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<td>Infectious Disease Epidemiology in Global Settings—Surveillance, Prevention, &amp; Control</td>
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<td>LAW</td>
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<td>Access to Medicines- IP &amp; Global Public Health</td>
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<td>PUBPOL</td>
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<td>Social Determinants of Health Disparities</td>
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<td>PUBPOL</td>
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<td>Assisting Development</td>
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<td>PUBPOL</td>
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<td>Microeconomics of Development Policy</td>
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<td>Policy Analysis of Development</td>
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<td>Politics of International Aid in Low-Income Countries</td>
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<td>Indigenous Peoples &amp; Human Rights/Culture, Policy, &amp; Action (Must take both)</td>
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MSc-GH Thesis Projects, 2019-2020 Anticipated Graduates

- Anfal Abdelgadir, Adapting Novel Molecular Diagnostic Methods for detection of Plasmodium knowlesi in Sarawak, Malaysia, mentored by Greg Gray
- John Bollinger, The Epidemiology, Risk Profiles, and Outcomes of Patients Infected with Carbapenem-Resistant Gram-Negative Bacterial Infections, mentored by Gayani Tillekeratne
- John Bonnewell, Sepsis in sub-Saharan Africa: a prospective observational study of clinical characteristics, management, outcomes, and barriers to care in northern Tanzania, mentored by Nathan Thielman
- Abdoulie Ceesay, Exploratory analysis of associated factors in the development of a nutritional screening tool for pediatric cancer patients in Uganda and Tanzania, mentored by Tamara Fitzgerald
- Chris Hayes, The effects of landcover on Anopheles population dynamics in Ann Township, Rakhine State, Myanmar, mentored by Myaing Nyunt
- Godfrey Kisigo, HIV stigmatizing attitudes among men in Tanzania: A mixed-method study, mentored by Melissa Watt
- Andrea Koris, Young adult experiences with oral HIV self-testing and recommendations for campus-based oral HIV self-testing programs, mentored by Karrie Stewart
- Yihuan Lai, Expanding access to perinatal depression treatment in Kenya through automated psychological support, mentored by Eric Green
- Kelsey Landrum, Economic Analysis of Universal Health Coverage for Pediatric Surgical Care in Guatemala, mentored by Henry Rice
- Jessica Mackness, Relationship quality and early stimulation during pregnancy in northern Ghana, mentored by Joy Noel Baumgartner
- Preeti Manavalan, Hypertension and HIV in northern Tanzania: from evidence to intervention, mentored by Melissa Watt
- Molly Minnig, Risk factors for pain and analgesic practices in traumatic injury patients at the Kilimanjaro Christian Medical Centre, Moshi, Tanzania, mentored by Catherine Staton
- Laura Mkumba, Evaluating the Long-Term Effects of a Mental Health Intervention in Youth Living with HIV in Tanzania, mentored by Dorothy Dow
- Krista Odom, mhGAP follow up cross sectional study in rural Ethiopia, mentored by Brandon Kohrt & Melissa Watt
- Sweta Patel, Predictors of Poor Outcomes Among Infants With Respiratory Syncytial Virus–associated Acute Lower Respiratory Infection in Botswana, mentored by Nathan Thielman
- **Tony Pham**, *The Hidden Burden of Acute Possession Syndrome in Nepal*, mentored by Nathan Thielman
- **Taji Phillips**, *Fathers’ narratives and perspectives on exclusive breastfeeding for 6 months in Kiambu County, Kenya*, mentored by Nick Pearson
- **Michelle Pieters**, *Knowledge, attitudes, and practices regarding cervical cancer screening procedures among women of reproductive age, Lima, Peru*, mentored by Lavanya Vasudevan
- **James Plunkett**, *Examining the 'Best Interest of the Child' in Residential Care Facilities in New Delhi, India: A Macro to Micro Policy Analysis*, mentored by Rae Jean Proeschold-Bell
- **Judy Riviere**, *Ghana’s transition away from donor aid for HIV: effects on vulnerable populations*, mentored by Gavin Yamey
- **Bridget Rogers**, *Cook stove "stacking" implications for willingness to switch to clean cooking fuels in peri-urban Kathmandu Valley, Nepal*, mentored by Jim Zhang
- **Sarah Snouse**, *A First Glimpse: Epilepsy Prevalence - Uganda*, mentored by Mike Haglund
- **Shantanu Srivatsa**, *Predictive modeling of TBI outcomes in Rwanda*, mentored by Joao Vissoci
- **Jacob Stocks**, *Iterative Development and Pilot of mSaada: A Mobile Phone Application to Support Community Health Volunteers during Cervical Cancer Screening in Western Kenya*, mentored by Meghan Huchko
- **Ahmad Tejan-Sie**, *The Socioeconomic Drivers of Galamsey in Ghana*, mentored by Melissa Watt
- **Jiawen Wu**, *Transferring and Adapting a Prognostic Model to Improve Care of Brazilian Traumatic Brain Injury Patients*, mentored by Joao Vissoci
- **Jiaqi Zhang**, *How are health policy makers managing donor exits: a policy analysis of Ghana’s transition from the United States President’s Emergency Plan for AIDS Relief (PEPFAR)*, mentored by Gavin Yamey
- **Chi Zhang**, *Streptococcus Pneumoniae Colonization among Children in Galle, Sri Lanka: A Cross-Sectional Study*, mentored by Gayani Tillekeratne
- **Armand Zimmerman**, *The Impact of Care Delays on Traumatic Brain Injury Outcomes in Tanzania: Descriptive Analytics and Machine Learning*, mentored by Catherine Staton
The Duke Global Health Institute works to reduce health disparities worldwide through research, education and service. Formed in 2006 as part of Duke University’s commitment to spark innovation in global health research and education, the institute brings together knowledge and resources from across the university to address the most important global health issues of our time.

**GLOBAL HEALTH AT DUKE IS**

**INTERDISCIPLINARY**

We bring expertise from a broad range of disciplines to address the many factors that influence global health.

**INNOVATIVE**

Our teams produce creative solutions that are working to bring better health to people around the world.

**EXPERIENTIAL**

Our students learn by doing, applying knowledge gained in the classroom in field projects around the world.

**COLLABORATIVE**

We engage international and local partners to find solutions that fit the culture and context of the places we work.

globalhealth.duke.edu | 919-681-7760 | globalhealth@duke.edu
DGHI has active research and education programs in more than 40 countries, including the United States. This map denotes our 12 priority locations, where DGHI faculty and students work collaboratively with longstanding local partners.

WHERE WE WORK

EDUCATION

DGHI offers a comprehensive portfolio of global health education programs, including an undergraduate major and minor in global health, a Master of Science in Global Health, and doctoral scholars and certificate programs. At all levels, students gain practical, hands-on experience, working in interdisciplinary teams and alongside local partners to address global health challenges.

Enrollment data as of May 2018

- 158 undergraduate majors
- 189 undergraduate minors
- 83 Master of Science Global Health students
- 16 doctoral certificate students
- 13 doctoral scholars

RESEARCH

Around the world, DGHI faculty, staff and students are engaged in research projects that reflect the changing global burden of disease and the many factors that influence human health. A defining characteristic of all DGHI research is its interdisciplinary approach, drawing on the most innovative ideas from medicine, genetics, epidemiology, engineering, environmental and social sciences, public policy, the humanities and beyond to design new strategies to overcome global health challenges. Our research focuses on issues such as:

- Cardiovascular disease and obesity
- Emerging infectious diseases
- Global cancer
- Global environmental health
- Global mental health
- Health systems
- Maternal, adolescent and child health

86 faculty
214 active research grants
$61 million in extramural funding for global health research
DGHI Research Design & Analysis Core

Strengthening global health research through rigorous design and analysis.

Mission: The DGHI Research Design & Analysis Core uses rigorous design and analytic methods to strengthen global health research and education through meaningful collaboration with its faculty and students.

Overview:

- Our mission and work extend to both faculty research and graduate student education and training.
- The Core has 10 members, including 1 PhD biostatistician, 2 PhD epidemiologists, 1 PhD social psychologist, 4 master's level biostatisticians, 1 MSW, and 1 data collection and management specialist. We also have 1 affiliate member who is a PhD in biostatistics, and 2 affiliate members who are PhD candidates in biostatistics and statistical sciences, respectively.
- Leadership is provided by Core Director, Liz Turner, PhD, and Associate Core Director Joe Egger, PhD. Oversight is provided by John Bartlett, MD, DGHI Associate Director for Research.
- We collaborate with DGHI faculty on grant proposal development and writing. DGHI faculty members are able to draw on our extensive experience in global health research projects by naming the Core and its members on grant proposals.
- We focus on quantitative methods and have a deep appreciation for qualitative and mixed methods research.
- We maintain strong links to Duke's Department of Biostatistics & Bioinformatics and its own Biostatistics Core, which is the home department of our four biostatisticians.
- We provide referrals to Duke Library services for DGHI, The Edge, SSRI's Connection Bar, Duke DTMI Biostatistics Core and other Duke and external organizations that provide complementary services.
- The Core collaborates and works closely with DGHI's Evidence Lab to perform rigorous evaluations of global health importance.
Leadership

- Director: Liz Turner, PhD
- Associate Director: Joe Egger, PhD
- Senior Advisor: John Bartlett, MD

Founded as the DGHI Biostatistics Core in 2012, our name was changed in 2015 to better reflect the importance of our role in meeting DGHI's research and educational mission.

COLLABORATION WITH DGHI FACULTY

The Research Design & Analysis Core collaborates with DGHI faculty on the design and analysis of population health research studies. Core members Joe Egger, Joao Vissoci, John Gallis, Larry Park, Alyssa Platt, Ryan Simmons, Yunji Zhou, Sabrina McCutchan, and Liz Turner are available to meet with any DGHI faculty member regarding ongoing and new research proposals. DGHI affiliates, research scholars, postdoctoral scholars/associates, and visiting scholars may request Core support as resources permit. For new grant proposals, our four PhD team members (Joe Egger, Joao Vissoci, Larry Park and Liz Turner) are available to be named as co-investigators on new grant proposals. Our MS team members (Alyssa Platt, John Gallis, Ryan Simmons and Yunji Zhou) and data specialist (Sabrina McCutchan) are available to further strengthen those new grant proposals by providing high quality in-house quantitative support through funded grant support. Types of research activities include, but are not limited to:
• Grant preparation, including the possibility of a statistician or epidemiologist named as a co-investigator. Please note: Requests for grant support should be submitted within 5 days of notification to DGHI finance of intention to submit a grant (i.e., at least 90 days prior to the grant’s due date).
• Grant preparation, including the possibility of listing a Master's level biostatistician on proposal
• Conceptualization and study design, (e.g., methods, analysis plan)
• Data collection and sampling (e.g. power/sample size calculations, choosing data collection tools, designing data collection and management systems)
• Reliability/validity analysis (e.g. informal or formal bias analysis)
• Statistical analysis
• Manuscript preparation
• End-of-project closeout (e.g. preparing data for deposit in a repository)
• General statistical advice
• General epidemiological advice

Support is typically offered by meeting face-to-face in Durham, NC. When that is not possible, email or web-based (e.g., Skype, Google) consultation is available.

• An initial consultation, subsidized by DGHI, is offered free of charge for appropriate requests. If a significant time investment is required, the faculty or affiliate will need to provide funding. Depending on the time commitment, some additional support can be offered free of charge. For instance, assistance with preparation of a grant application may be provided; however, the grant application should include a budget request for continued PhD-level and MS-level biostatistical or epidemiological support after the grant is funded.

Online Request Form for Faculty/Affiliates

OUR TEAM

The DGHI Research Design & Analysis Core is made up of Liz Turner, PhD (Director), Joe Egger, PhD (Associate Director), Larry Park, PhD, Joao Vissoci, PhD, John Gallis, SCM, Jennifer Headley, MSW, Alyssa Platt, MA, Ryan Simmons, MB, Yunji Zhou, MSc, Sabrina McCutchan, BS, and affiliate members Amy Herring, Kelly Moran and Xueqi Wang.

Liz Turner, PhD, Director

Liz has served as the Core Director since its creation in March 2012 when she joined Duke's Global Health Institute and Duke's Department of Biostatistics & Bioinformatics. With a PhD in statistics from McGill University, Canada, followed by four years working as a collaborative biostatistician in the Department of Medical Statistics, Faculty of Epidemiology and Population Health of the London School of Hygiene and Tropical Medicine (LSHTM), Liz has extensive experience working in both epidemiological studies and randomized trials across a range of substantive areas in developed world and resource poor settings. Thanks to her participation in multi-disciplinary projects, she has a great appreciation for the importance of good study design and data collection and is well aware that no fancy statistical analyses can save researchers from the scourge of bad data. Through those experiences and her teaching different settings, including the UK, Canada, France and Tanzania, she is aware that statisticians and their collaborators sometimes "speak a different language". As a result, her approach is very much one of translation, pragmatism and collaboration.
Her current substantive interests include malaria, disability and disease burden with an emphasis on eye diseases, cardiovascular disease and mental health, together with child health and education.

**RECENT RESEARCH COLLABORATIONS**

*The International Centre for Eye Health, LSHTM*
Estimation of cataract incidence in order to plan for the surgical volume required to prevent blindness in line with the VISION 2020 goals. Data from three large national prevalence surveys of blindness in Bangladesh, Nigeria and Pakistan were used to estimate incidence and predict future disease burden.

*Ifakara Health Institute, Tanzania*
Research projects in public health entomology in Tanzania including experimental field trials to evaluate registered spatial repellents as potential replacements for DDT against malaria.

*Kenyan Medical Research Institute, Nairobi, & Harvard Graduate School of Education*
Statistician to the Health and Literacy Intervention Trial, a factorial cluster randomized trial to evaluate the impact of malaria control and enhanced literacy instruction on health and educational achievement of school children in Kenya. More than 5000 children from 101 schools on the south-east coast were enrolled.

*National Heart and Lung Institute, Imperial College, London, UK*
Research in preventive cardiology including a national survey to evaluate lifestyle and risk factor management in coronary patients and people at high risk of developing cardiovascular disease, secondary analyses of a European cluster randomized trial of a lifestyle intervention to improve cardiovascular (CV) health and a case-control study of the effects of exposure to violence on CV disease.

*European Huntington’s Disease Network*
Use of longitudinal registry data from more than 2000 people with a range of measures such as motor function, cognition and depression, to develop recommendations for how best to design a forthcoming trial.

**Joe Egger, PhD, Associate Director**

Joe joined Duke's Global Health Institute in June 2013. Joe is an epidemiologist and collaborates with, and provides epidemiological and statistical support to DGHI students, faculty and affiliates. Prior to joining Duke, Joe was the lead epidemiologist for SciMetrika, a public health consulting firm based in Research Triangle Park, NC. Joe has also worked in academic and government settings on a wide array of public health research topics, including influenza, HIV/AIDS, dengue, tobacco, obesity/nutrition, and cancers. Joe has a master's degree in medical geography from the University of Washington, and a PhD in infectious disease epidemiology from the London School of Hygiene & Tropical Medicine.

Joe's research interests include vector-borne disease ecology, disease transmission dynamics, and more recently, the use of electronic health record data in epidemiological studies and disease surveillance.

**RECENT RESEARCH COLLABORATIONS**

Epidemiologic biases in post-marketing safety surveillance
Co-investigator on an FDA-funded project to study the impact of bias parameters (e.g., misclassification, confounding, selection bias)
on epidemiologic studies. The study is adapting existing probabilistic bias analysis techniques for use in post-licensure medical product safety surveillance.

Traumatic Brain Injury
Co-investigator with CDC's National Center for Injury Prevention and Control to study traumatic brain injury in American youth. Designing a study to calculate the sensitivity of relevant ICD-9 CM codes to accurately detect TBI in multiple clinical settings using electronic health record data. Results will be used to improve the sensitivity of CDC's traumatic brain injury surveillance system. A secondary objective of the project is the study predictors of concussion in high school sports using a nationally-representative sample of US high schools.

Health-Related Quality of Life
Researching the relationship between health-related quality of life and the adoption and effectiveness of interventions to prevent chronic diseases. Specifically, the study uses data from the Behavioral Risk Factor Surveillance System and National Health Interview Survey to model whether HRQOL moderates the association between an intervention to prevent chronic diseases (e.g., lung cancer from tobacco use) and success in that intervention (e.g., tobacco cessation program).

Expanding Healthcare Data Access and Use
Co-investigator on a two-year study with CDC's Office of Surveillance, Epidemiology, and Laboratory Services (OSELS) to systematically evaluate the use of several large healthcare data sources (e.g., medical claims, electronic health records) to augment public health surveillance activities at CDC. A component of the evaluation was to determine the ability of each data source to monitor the impacts of Health Reform, as enacted under PPACA and ARRA/HITECH, on the US healthcare system.

Fitnessgram
Co-investigator on a multi-year longitudinal study of the effects of changes in fitness and body mass index on academic outcomes in New York City middle school students. By using data from a large and heterogeneous population the study also assessed the impact of socio-economic status, race/ethnicity and gender on the fitness-academic relationship.

Seroprevalence of pandemic influenza viruses, New York.
Data from the 2004 NYC Health and Nutrition Examination Survey, a representative sample of New York City adults, were used to determine the seroprevalence of preexisting hemagglutinin inhibition (HAI) antibody titers to influenza strains with pandemic potential. Serum samples were tested for antibodies to A(H1N1)pdm09 virus and the 1918, 1957, and 1968 pandemic viruses. Statistical modeling was used to assess the relationship between antibody titers to previously circulating viral strains and titers to A(H1N1)pdm09 virus. The results revealed that immunologic background during the emergence of A(H1N1)pdm09 virus in NYC beginning in late April 2009 help explain why fewer cases of A(H1N1)pdm09 infection were clinically detected among older persons than younger persons, supporting the conclusion that the difference was a result of, at least in part, antibodies elicited by prior H1N1 subtype infection in older persons.

Non-pharmaceutical interventions on rates of influenza in schools
Studied the effect of reactive school dismissal in New York City during the 2009 influenza pandemic on rates of influenza transmission in those schools, compared to schools that did not enact school dismissal policies. Results indicated that if non-pharmaceutical interventions, such as school dismissal, are employed after cases are detected through passive surveillance, the effect on reducing the burden of influenza will be minimal.

Larry Park, PhD
Larry Park, Ph.D. is affiliated with the Duke Department of Medicine and the Durham VA Medical Center. Dr. Park joined the Duke Global Health Institute in 2013 as adjunct faculty and the DGHI Biostatistics Core in July 2014. He is the statistical analysis lab
instructor for Quantitative Methods I and course instructor for Quantitative Methods II. Dr Park holds a Ph.D. in epidemiology from UNC Chapel Hill and Master’s degrees in both computer science and electrical engineering from the Johns Hopkins School of Engineering. He has spent many years in basic science (protein chemistry, molecular biology, immunology and viral evolution).

His current research interests and collaborations include respiratory infectious disease, HIV and HCV infection and their effects on chronic disease, cardiovascular disease and endocarditis, healthcare cost and utilization, hospital infection control and prevention, the application of advanced statistical methods in epidemiology, analysis of longitudinal data, survival analysis, and methods for causal inference in observational epidemiology.

RECENT RESEARCH COLLABORATIONS

Institute for Genomic Sciences and Policy – Duke University
A study examining in vivo peripheral blood gene expression signatures in response to respiratory infection to differentiate among viral, bacterial and fungal etiology and further to distinguish among specific pathogens. The aims are to identify pre-symptomatic infection to reduce inappropriate antibiotic use and initiate appropriate treatment earlier. This study uses Bayesian factor analysis and other pattern recognition and machine learning methods in developing expression and symptom signatures to detect infection and differentiate among the infectious agents.

International Collaboration on Endocarditis
Currently the largest study on endocarditis (comprised of >7000 inpatient stays in 64 hospitals and 38 countries around the world) this project aims to describe the epidemiology, clinical course and outcomes of patients hospitalized with infectious endocarditis. This study has elucidated geographic, demographic and clinical factors associated with outcomes.

Hospital epidemiology and infection control in the Durham VA Medical Center
Hospital-acquired infection (HAI) with multi-drug resistant organisms (MDRO) is a significant contributor to morbidity and mortality worldwide, and reducing incidence of HAI has been a focus of the infection control groups in hospitals nationwide. At Durham VAMC, real-time clinical surveillance data is used to identify patients colonized with MDRO to insure that they are put on appropriate isolation protocols. These data also allow researchers to conduct outbreak investigations within the facility. In addition, patients with incident hospital-acquired infections are identified in order to administer appropriate treatment and to monitor the sources of those infections to reduce future incident events.

Clinical Case Registry – VA Healthcare System
The VA Clinical Case Registry has compiled a clinical dataset for all patients infected with either HIV or HCV. This database covers the years 1998 through 2010 and includes 450,000 patients. Data are being used to quantify overall healthcare utilization and temporal trends of utilization in this patient population. The data are also being used to study the epidemiology of cardiovascular disease, pulmonary disease and other chronic conditions in this patient population.

Institute for Immunology and Infectious Diseases – Murdoch University and Royal Perth Hospital, Perth Western Australia
A major focus of this group is the association between host HLA genotype and mutation/evolution of HIV and hepatitis viruses HBV and HCV. Certain HLA Class I and II alleles and haplotypes are associated with better or poorer survival among those infected with HIV, and specific HLA alleles are strongly associated with escape mutations in HIV. This research uses full-length viral sequence and high-resolution HLA typing to identify the associations between HLA and viral mutation and viral mutation with clinical disease course.

Joao Vissoci, PhD
Joao joined the core in July 2018 and has been working with Duke University School of Medicine since 2016. He is an assistant professor in the Departments of Surgery, working with the Emergency Medicine Division, and DGHI. Prior to joining the faculty in the Department of Surgery, Joao was a post-doctoral fellow at DGHI. Prior to coming to Duke, he was an assistant professor of Public Health and Psychology in Maringá, Brazil. With a PhD in social psychology, Joao has dedicated his career to research methods including mixed methods, psychometrics, latent variable modelling and geospatial analysis. Joao has experience in Measurement, Population Health, Mental Health and Health Systems.

His research interests include data science and technology towards access to and quality of primary and acute care. His collaborations also involve mental health with an emphasis on psychometrical assessments. Joao has actively worked in Brazil, Tanzania and Uganda on topics related to understanding population health, health systems and quality of care through geospatial analysis and geostatistics.

**RECENT RESEARCH COLLABORATIONS**

**Kilimanjaro Christian Medical Center (KCMC), Moshi, Tanzania**
Joao leads the methodological and analytical support for Dr. Catherine Staton's acute care research projects at KCMC. These studies are focused on injury prevention and related risk factors including alcohol and substance use, mental health, pain, comorbidities and physical function. Research project designs include health systems evaluation, implementation, assessment of interventions, patient registries and observational studies. Among other techniques, Joao uses Geographical Information Systems (GIS), latent variable modelling and machine learning.

**Mbarara Regional Referral Hospital, Mbarara, Uganda**
With the Duke Global Neurosurgery and Neuroscience division, Joao works on designing and conducting observational and implementation studies of neurosurgery access and epidemiology in Uganda. His team uses machine learning and Geographical Information Systems (GIS) to improve access to care and optimize resource allocation.

**Health Sciences Postgraduate Program, State University of Maringá, Maringá, Brazil**
In collaboration with the Postgraduate program in Health Sciences of the State University of Maringá, Joao teaches a course on systematic reviews and latent variable modelling. He also collaborates with Dr. Luciano Andrade on studies of health systems and population health using secondary analysis of the Brazilian National Health System (SUS) data, focusing on cardiovascular disease. Joao uses geostatistics and time series approaches to support these studies.

**Physical Education Postgraduate Program, State University of Maringá, Maringá, Brazil**
The Pro-Esporte group conducts research about sports and exercise and their impact on health, human development and well-being. Joao uses latent variable modelling to analyze mental health reintegration through sport and exercises.

**National Program for Access and Quality Improvement in Primary Care (PMAQ) Consortium, Brazil**
The PMAQ Consortium is a group of six universities in Brazil (Federal University of Pelotas, Federal University of Santa Caterina, Federal University of Goias, Federal University of Minas Gerais, Federal University of Maranhão, University of Brasilia) led by the Federal University of Pelotas that conducts research on primary care access and quality improvement in the country. The PMAQ conducts an ongoing external diagnostic census of primary care units, aiming to evaluate structure and process dimensions of quality of care to incentivize adherence to care protocols and inform policy changes.

**Methods Analytics and Technology for Health (MATH) Consortium**
The Duke Global Health Institute is a partner in the MATH Consortium, a group of researchers collaborating to produce innovative healthcare analytics solutions by leveraging data science techniques.
Alyssa Platt, MA

Alyssa joined Duke’s Global Health Institute and the Department of Biostatistics and Bioinformatics in February 2012. Alyssa received a MA in applied economics from Duke University. Previous to joining DGHI and the Department of Biostatistics and Bioinformatics, she worked in the field of health economics in the Department of Economics, at Duke University. Alyssa has a range of experience in the field of health behaviors and health outcomes, including: obesity and physical activity; infectious disease; risk perceptions; alcohol and tobacco use; effects of built environment on health behavior; court policies and deterrence in domestic violence and DWI behavior; and associations of adherence to recommendations for preventive care in health maintenance and disease management.

Her interests include health behavior and access to care, risk behavior, and economic development, and the use of spatial methods to determine environmental correlates of health and disease risk.

RECENT RESEARCH COLLABORATIONS

MESA
A cross-sectional matched case/control study linking children presenting to the pediatric ward at Webuye District Hospital to children of the same age/gender and village examining a range of data on household members, sleeping spaces, bednet quality and usage, larval sites, agriculture, building structure, and neighborhood bednet usage to determine the best predictors of febrile malaria.

Innovative Public Private Partnerships
A two phase semi-longitudinal case control study in the Ndivisi district of Western Kenya. The study will examine rapid diagnostic tests (RDT) and anti-malarial purchasing behavior in response to coupons for free testing and discounted price on Artemisinin-based Combination Therapy (ACT).

Facility Incentives Study
A longitudinal cluster randomized study that examines the effectiveness of pay-for-performance (P4P) incentives in improving malaria diagnostic, treatment, and reporting practices by health centers in high transmission and low malaria transmission areas in Western Kenya.

DSS Febrile Study
A longitudinal observational study using census data from the Webuye DSS (Western Kenya). This study identifies spatial “hotspots” of self-reported febrile malaria and finds static and dynamic factors predictive of a household’s location in a “hotspot”

Juega
A longitudinal observational study on physical activity level and weight status of children in two Mexico cities. Children are observed prior to after starting preschool, using survey, accelerometry, and GPS methods.

NC On the Move
A pre-post case/control evaluation study examining the effects of a grassroots community intervention to promote physical activity on physical activity and BMI of elementary school age children in two small cities in North Carolina.

MAPA
A pre-post case/control evaluation study examining the effects of a statewide policy for minimum mandatory requirements for physical activity for children in preschool.

Promoting Breastfeeding through State Regulation
A national cross-sectional spatial analysis of state policies promoting breastfeeding in childcare centers and family home child care.
John Gallis, ScM

John joined Duke’s Global Health Institute in June 2014 and the Department of Biostatistics and Bioinformatics in August 2012. John received a master’s degree (ScM) in biostatistics from the Johns Hopkins School of Public Health. John’s collaborations at Duke have included performing data management and analysis and creating statistical reports for a long-term randomized controlled trial (RCT) of weight loss in young adults in Durham; working with a neurosurgery research group and other statisticians to answer clinical questions of interest using a large national insurance database; and assisting research relating to childcare use and obesity.

John’s research interests include the application of longitudinal and spatial statistical methods to public health and medical observational and clinical data.

RECENT RESEARCH COLLABORATIONS

Cell Phone Intervention for You (CITY) Clinical Trial
A longitudinal (24-month) RCT of the effectiveness of a cell phone app-based intervention and a personal contact-based intervention in increasing weight loss in young adults (ages 18-35) versus a control group.

Neurosurgery Research Group
Studying the relationship between various procedures related to neurosurgery and various health outcomes, such as complications following surgery and healthcare resource utilization, using a large longitudinal insurance database (MarketScan).

Danish National Birth Cohort
A study of the relationship between childhood overweight and obesity and childcare use in Denmark using a large national birth cohort.

Nurture Study
Ongoing prospective longitudinal data collection on mothers and infants in Durham, NC, the main goal of which is to study the factors influencing childhood overweight and obesity. Data collection is in its early stages, but a current study on the data collected up to this point seeks to examine the relationship between food insecurity (i.e., not having enough food to eat) and various health outcomes, such as obesity and infant feeding styles.
Ryan collaborates with DGHI faculty and affiliates via the DGHI Biostatistics Core. Collaboration efforts include a priori analyses (e.g., sample size and power calculations) for grant applications, assistance in research design and methods, and analysis of results. Past projects include examining access to healthcare among elderly individuals in Laos and analyzing malaria serology data from a cluster randomized trial in Tanzania. Ryan received his master in biostatistics degree from Duke in 2015.

RECENT RESEARCH COLLABORATIONS
Changes in Access to Healthcare Among the Elderly in Laos
A study using cross-sectional survey data in Laos evaluating changes in access to and utilization of both inpatient and outpatient services by people 60 years and older.

Implementation Science to Optimize Malaria Vector Control and Disease
A longitudinal cluster randomized 2x2 factorial trial of malaria prevention interventions in Tanzania using disease management, vector management, and their combination to reduce prevalence of malaria in 24 randomly selected villages.

Jennifer Headley, MSW
Jennifer is an Evaluation Research Specialist with the DGHI Evidence Lab, which conducts, and builds capacity to conduct, high-quality and rigorous evaluations. Within the Evidence Lab, she is working to develop and test evaluation toolkits for SEAD innovators. Jennifer has expertise as a research analyst and project manager of a wide range of studies, including formative research studies, impact evaluations, and randomized controlled trials. Jennifer worked with FHI 360’s Social and Behavioral Health Sciences department for more than 6 years prior to joining DGHI, analyzing qualitative and quantitative data, managing multi-site studies in low-resource settings, conducting trainings, and building site capacity.

Yunji Zhou, MSc
Yunji works in the DGHI Research Design & Analysis Core as a Biostatistician, providing statistical support to DGHI faculty and affiliates. His experience includes data management, research design and methods, and interpretation of results. He assists with research projects evaluating interventions on maternal mental health and innovative strategies to improve rational use of first-line antimalarials in sub-Saharan Africa. Yunji earned his master’s degree in Biostatistics from Duke University in 2019.

RECENT RESEARCH COLLABORATIONS
Sabrina McCutchan

Sabrina joined RDAC in June 2019 as a data collection and management specialist. She supports DGHI’s extensive primary data collection activities by leveraging Duke’s broad resource pool and her own 10+ years of experience to design tailored data collection and management strategies for research projects. Sabrina is available to assist researchers with needs including but not limited to: choosing data collection tools, file/folder management, designing culturally-appropriate training for international teams, and preparing data for deposit in data repositories. Before joining DGHI, she was a health economics researcher in Duke’s economics department focused on behavioral and child health. She also served as her team’s data custodian for multiple federal and non-profit grants. In addition to her time as a health researcher, Sabrina has worked in strategy, market research, and curriculum development for a start-up in higher education.

Support for DGHI MSC-GH students

In addition to faculty input provided through MSc-GH course curricula and faculty mentorship, the DGHI Research Design & Analysis Core also offers statistical and epidemiological advice to students related to their MSc-thesis projects. Liz Turner and Larry Park provide support to MSc-GH students through their teaching of core methods courses. Liz Turner leads the fall course Biostatistics and Epidemiology I, whilst Larry Park leads the accompanying data analysis lab and leads the follow-on spring course Biostatistics and Epidemiology II. In addition, Joe Egger teaches an Intermediate Global Health Epidemiology Course during the Fall semester. Core members Joe Egger, Alyssa Platt, and Jennifer Headley are available are available to meet with students, and provide support in the following areas:

- Conceptualization and study design (e.g. methods, analysis plan, power/sample size calculations)
- Human Subjects (IRB) review
- Questionnaire design
- Data entry forms and/or solutions
- General epidemiological or statistical consultation
• Questions about data structure or data cleaning
• Questions about preliminary exploratory analyses
• Statistical analysis methods/solutions
• Referral services for students, including Duke Libraries, ORS/IRB, and others.

To set-up a meeting, first fill out a student request and someone will get in touch with you. Please plan ahead and submit a form as early as possible, as requests are taken in the order in which they are received.

Online Request Form for Students

Undergraduate Global Health students may seek support for quantitative questions from the Academic Resource Center and SSRI’s Connection Bar.
Preparing for All Career Options

- Writing Support (M, C)
- Duke OPTIONS
- Responsible Conduct of Research (M, C)
- Mentoring (M)
- Administrative Internships
- Professional Development Blog (M)
- Professional Development Grant (M)
- Emerging Leaders Institute (M, C)
- Master's Workshop Series (M)
- Professional Development Series (M)

Preparing for Faculty Careers

- Teaching Ideas Workshops (M)
- Courses on College Teaching (C)
- Certificate in College Teaching (C)
- Bass Instructional Fellowships (C)
- Preparing Future Faculty (C)

KEY

- M: Open to master's students
- C: Earns course/transcript credit or certificate of completion

Your Professional Development Starts Today
Find more information at gradschool.duke.edu
Teaching Ideas Workshops
This annual workshop series addresses topics relevant to teaching, learning, instructional technology, and issues in higher education and faculty life. [gradschool.duke.edu/TeachingIdeas](gradschool.duke.edu/TeachingIdeas)

Courses on College Teaching
One-credit courses address topics including fundamentals of college teaching, course design, visual communication, online teaching, student diversity, and topics and careers in higher education. [gradschool.duke.edu/Courses](gradschool.duke.edu/Courses)

Certificate in College Teaching
This program prepares Ph.D. students to teach and provides formal documentation upon completion of the program, which helps make students more competitive when applying for faculty positions. [gradschool.duke.edu/CCT](gradschool.duke.edu/CCT)

Bass Instructional Fellowship Program
Graduate students gain high-quality teaching experience as instructors of record, instructional teaching assistants, or online apprentices through this endowed fellowship program. [gradschool.duke.edu/Bass](gradschool.duke.edu/Bass)

Preparing Future Faculty
Ph.D. students learn about the broad range of faculty roles and responsibilities in this yearlong experience by visiting regional partner institutions and working closely with a mentor at one of them. [gradschool.duke.edu/PFF](gradschool.duke.edu/PFF)

Duke OPTIONS
Ph.D. students develop six key competencies throughout the three stages of their graduate programs using this online professional development planning tool. Duke OPTIONS provides advice on when to take advantage of career and professional development offerings and encourages students to map out their futures. [options.duke.edu](options.duke.edu)

Writing Support
Duke provides resources to support graduate student writing, including courses, individual consultations, dedicated spaces, and additional support for international students. [gradschool.duke.edu/WritingSupport](gradschool.duke.edu/WritingSupport)

Responsible Conduct of Research
All master’s students are required to complete four hours of RCR training during their orientation; all PhD students are required to complete 12 or 18 hours of RCR training in their first four years of study, depending on their discipline. [gradschool.duke.edu/RCR](gradschool.duke.edu/RCR)

Mentoring
Students with strong mentoring relationships are more productive, more involved in the campus community, and more satisfied with their graduate school experience. Through online resources, The Graduate School works to cultivate a culture of mentoring at Duke. [gradschool.duke.edu/mentoring](gradschool.duke.edu/mentoring)

Administrative Internships
Ph.D. students can gain administrative experience and insights through internships hosted by The Graduate School and the University Center of Exemplary Mentoring. [gradschool.duke/gradintern](gradschool.duke/gradintern) | [gradschool.duke.edu/ucemintern](gradschool.duke.edu/ucemintern)

Professional Development Blog
Students can share their professional development experiences and alumni interviews to build their online communication portfolios. [gradschool.duke.edu/ProfDevBlog](gradschool.duke.edu/ProfDevBlog)

Professional Development Grant
Students' professional development needs vary across disciplines. This grant supports discipline-specific programming at the program or department level that complements campus offerings. [gradschool.duke.edu/ProfDevGrant](gradschool.duke.edu/ProfDevGrant)

Emerging Leaders Institute
In this six-week intensive program, participants develop competencies in communication, self-awareness, professional adaptability, interdisciplinary teamwork, and leadership, leading to a certificate of completion. Spring. [gradschool.duke.edu/ELI](gradschool.duke.edu/ELI)

Master's Workshop Series
Each semester, master’s students can build skills in leadership, self-awareness, and communication in workshops designed just for them. These skills will be useful whether students continue their education or launch careers after earning their master’s degrees. [gradschool.duke.edu/masters](gradschool.duke.edu/masters)

Professional Development Series
These events help students identify career paths of interest and develop transferable skills to succeed in them, whether in academia, industry, government, nonprofit, or entrepreneurship. Features biannual Academic Job Search Series in rotation with biannual Careers Beyond Academia series. [gradschool.duke.edu/PDS](gradschool.duke.edu/PDS)

Online Resources
Find resources to leverage LinkedIn and the Duke Alumni Network, view recordings of past events, and access VersatilePhD's Career Finder tool. [gradschool.duke.edu/ProfDevOnline](gradschool.duke.edu/ProfDevOnline)
Before the semester begins...

- **Sign up for library tours** of Perkins Library during orientation and the first weeks of class: August 20—August 29
- Meet your Global Health subject librarians and learn how to get research assistance
- **Visit different libraries on campus** and check out unique services and resources
- Sign up for our newsletter at [library.duke.edu/about/newsletter](library.duke.edu/about/newsletter)
- **Check the library catalog** to see if your textbooks are on reserve. **Note:** We don’t have all textbooks, but it’s worth checking.

During the semester...

- Configure **Google Scholar** to find full text articles @ Duke. Settings —> Click Library Links —> Search for Duke Libraries and Save. Don’t ever pay for articles!
- Refer to the **Global Health research guide** for quick links to key resources (Pubmed, Scopus, etc.)
- **Schedule a research consultation** with your global health librarian for help with search strategies, systematic reviews, or course-related research.
- Learn about **off-campus access to E-resources**
- Find out more about citation tools (Zotero, Endnote, & Mendeley)
- **Find quiet study spaces, reservable spaces, and spaces for collaboration** in the library.
- Stop by the Data Visualization Services Lab in the Edge for help with data-driven research, or **sign up for fall workshops** on data analysis, data visualization, and more.
- Explore fun stuff—**Search for books and DVDs** in the library catalog. Find downloadable e & audio books.

Before you leave Duke...

- Install **Unpaywall.org** to find open access articles
- Be sure that your **library account** is cleared of any fines or overdue books
- Find out about **Alumni library privileges**
# Spring 2019 Workshop Series

**Registration and locations are online at [http://library.duke.edu/data/workshops](http://library.duke.edu/data/workshops)**

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Rfun: Intro to R</td>
<td>Jan 22</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Data Management 101 for Social Scientists</td>
<td>Jan 23</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Intro to ArcGIS Pro</td>
<td>Jan 24</td>
<td>1:00 pm - 3:00 pm</td>
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<tr>
<td>Rfun: Visualization in R using ggplot2</td>
<td>Jan 25</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Rfun: Mapping with R</td>
<td>Jan 29</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Open Science: General Principles and Practices</td>
<td>Jan 30</td>
<td>10:00 am - 12:00 pm</td>
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<tr>
<td>Web Mapping</td>
<td>Jan 31</td>
<td>1:00 pm - 3:00 pm</td>
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<tr>
<td>Rfun: Version Control, Git, &amp; GitHub</td>
<td>Feb 1</td>
<td>10:00 am - 12:00 pm</td>
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<tr>
<td>Intro to QGIS</td>
<td>Feb 6</td>
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<tr>
<td>Intro to Tableau – Easy Charts and Maps</td>
<td>Feb 7</td>
<td>10:00 am - 12:00 pm</td>
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<tr>
<td>Introduction to GIS</td>
<td>Feb 12</td>
<td>10:30 am - 11:30 am</td>
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<tr>
<td>Story Maps</td>
<td>Feb 13</td>
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<tr>
<td>Visualization in Python with Altair</td>
<td>Feb 19</td>
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<tr>
<td>Data Management 101 for Humanists</td>
<td>Feb 19</td>
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<tr>
<td>Map Design</td>
<td>Feb 21</td>
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<tr>
<td>Rfun: Interactive Dashboard Visualizations with R</td>
<td>Feb 26</td>
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<tr>
<td>Open Data Tools: Duke's Research Data Repository</td>
<td>Feb 27</td>
<td>10:00 am - 11:00 am</td>
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<tr>
<td>Managing Sensitive Data</td>
<td>Mar 5</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Adobe Illustrator for Modifying Charts and Graphs</td>
<td>Mar 7</td>
<td>10:00 am - 12:00 pm</td>
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<tr>
<td>Data Management 101 for Scientists</td>
<td>Mar 19</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Data Management 201: Preparing Data for Publishing</td>
<td>Apr 2</td>
<td>2:00 pm - 4:00 pm</td>
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<tr>
<td>Open Workflow Tools: Open Science Framework</td>
<td>Apr 3</td>
<td>10:00 am - 11:00 am</td>
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