

EMMA E. MCGEE, PHD

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RESEARCH INTERESTS

Causal inference, cancer, high-dimensional data, epidemiologic methods, biostatistics, target trial emulation, comparative effectiveness research, personalized medicine, machine learning, health disparities

EDUCATION

- Ph.D. Population Health Science - Epidemiology** 2024
Harvard University, Boston, MA, USA
Concentrations: Biostatistics and Cancer Epidemiology
Thesis: Estimating the causal effects of dynamic strategies using observational data: Applications to cancer survivors
Thesis Committee: Miguel Hernán (Chair), A. Heather Eliassen, Barbra Dickerman
GPA: 4.0/4.0
- M.S. Epidemiology** 2020
Harvard T.H. Chan School of Public Health, Boston, MA, USA
GPA: 4.0/4.0
- B.A. Social Research and Public Policy, Summa Cum Laude** 2015
New York University Abu Dhabi, Abu Dhabi, United Arab Emirates (UAE)
Minor: Literature
GPA: 3.99/4.0

RESEARCH EXPERIENCE

- Research Fellow** 2024 – Present
CAUSALab and Zhu Family Center for Global Cancer Prevention, Harvard T.H. Chan School of Public Health, Boston, MA, USA
- Eric and Wendy Schmidt Center Fellow** 2022 – Present
Broad Institute of MIT and Harvard, Cambridge, MA, USA
- Research Associate** 2018 – Present
Channing Division of Network Medicine, Brigham and Women's Hospital, Boston, MA, USA
- Cancer Research Training Award Fellow** 2017 – 2018
National Cancer Institute, National Institutes of Health (NIH), Rockville, MD, USA
- Research Assistant in Cancer Epidemiology** 2015 – 2017
Pontificia Universidad Católica de Chile, Santiago, Chile
- Public Health Consultant** 2015 – 2017
Multiple organizations, Santiago, Chile
- Undergraduate Investigator** 2014 – 2015
New York University School of Medicine, NY, USA, New York University Abu Dhabi, Abu Dhabi, UAE

Epidemiologic Research Assistant

Pontificia Universidad Católica de Chile, Santiago, Chile

2014

Research Consultant

WellDone International, San Francisco, CA, USA

2013

PUBLICATIONS

Working Papers

1. **McGee EE**, Hernán MA, Giovannucci E, Mucci LA, Willett WC, Chiu YH, Eliassen AH, Dickerman BA. Estimating the effects of lifestyle interventions on mortality among cancer survivors: A methodological framework. *Under co-author review*.
2. **McGee EE**, García de Albéniz X, Eliassen AH, Yim K, Dickerman BA, Preston MA, Hernán MA. Comparative effectiveness of cystoscopy surveillance strategies on mortality in non-muscle invasive bladder cancer: A target trial emulation using real-world data. *Under co-author review*.
3. **McGee EE**, Dickerman BA, Eliassen AH, Chen WY, García de Albéniz X, Hernán MA. Adjuvant bone-modifying agents and mortality among older postmenopausal women with early-stage breast cancer. *Under co-author review*.

Journal Articles

1. Guo F, **McGee EE**, Chiu YH, Giovannucci E, Mucci LA, Dickerman BA. Evaluating recommendation-based dietary and physical activity strategies for prostate cancer prevention: A target trial emulation in the Health Professionals Follow-up Study. *American Journal of Epidemiology*. *In press*.
2. Khalili H, Roelstraete B, **McGee EE**, Johnell K, Schneeweiss S, Wastesson JW, Ludvigsson JF. Medications and risk of microscopic colitis: A nationwide cohort study of older adults in Sweden. *Under peer review*.
3. **McGee EE**, Zeleznik OA, Balasubramanian R, Hu J, Rosner BA, Wactawski-Wende J, Clish CB, Avilla-Pacheco J, Willett WC, Rexrode KM, Tamimi RM, Eliassen AH. Differences in metabolomic profiles between Black and White women: Analyses from two prospective cohorts. *European Journal of Epidemiology*. 2024 (online).
4. Koshiol J, Van De Wyngard V, **McGee EE**, Cook P, Pfeiffer RM, Mardones N, Medina K, Olivo V, Petit K, Jackson SS, Paredes F, Sanchez R, Huidobro A, Villaseca M, Bellolio E, Losada H, Roa JC, Hildesheim A, Araya JC, Ferreccio C. The Chile Biliary Longitudinal Study (Chile BiLS): A gallstone cohort. *American Journal of Epidemiology*. 2021;190(2):196-206.
5. **McGee EE**, Kim CH, Wang M, Spiegelman D, Stover DG, Heng YJ, Collins LC, Baker GM, Farvid MS, Schedin P, Jindal S, Tamimi RM, Eliassen AH. Erythrocyte membrane fatty acids and breast cancer risk by tumor tissue expression of immuno-inflammatory markers and fatty acid synthase. *Breast Cancer Research*. 2020;22(1):78.
6. **McGee EE**, Koshiol J. Comments on “Should we consider gallbladder cancer a new smoking-related cancer? A comprehensive meta-analysis focused on dose-response relationships” [Letter]. *International Journal of Cancer*. 2020;147(2):593-594.
7. Kotsopoulos J, **McGee EE**, Lozano-Esparza S, Garber JE, Ligibel JA, Collins LC, Polyak K, Brown MA, Narod SA, Tamimi RM, Eliassen AH. Premenopausal plasma osteoprotegerin and breast cancer risk: A case-control analysis nested within the Nurses’ Health Study II. *Cancer Epidemiology, Biomarkers & Prevention*. 2020;29(6):1264-1270.
8. Lee MH, Gao YT, Huang YH, **McGee EE**, Lam T, Wang B, Shen MC, Rashid A, Pfeiffer RM, Hsing AW, Koshiol J. A metallomic approach to assess associations of serum metal levels with gallstones and gallbladder cancer. *Hepatology*. 2020;71(3):917-928.
9. **McGee EE**, Jackson SS, Petrick JP, Van Dyke AL, Adami HO, Albanes D, Andreotti G, Beane-Freeman LE, Berrington de González A, Buring JE, Chan AT, Chen Y, Fraser GE, Freedman ND, Gao YT, Gapstur SM, Gaziano JM, Giles GG, Grant EJ, Grodstein F, Hartge P, Jenab M, Kitahara CM, Knutsen SF, Koh WP, Larsson SC, Lee IM, Liao LM, Luo J, Milne RL, Monroe KR, Neuhauser ML, O’Brien KM, Peters U, Poynter

Emma E. McGee, PhD

- JN, Purdue MP, Robien K, Sandler DP, Sawada N, Schairer C, Sesso HD, Simon TG, Sinha R, Stolzenberg-Solomon R, Tsugane S, Wang R, Weiderpass E, Weinstein SJ, White E, Wolk A, Yuan JM, Zeleniuch-Jacquotte A, Zhang X, Zhu B, McGlynn KA, Campbell PT, Koshiol J. Smoking, alcohol, and biliary tract cancer risk: A pooling project of 26 prospective studies. *Journal of the National Cancer Institute*. 2019;111(12):1263-1278.
10. **McGee EE**, Kiblawi R, Playdon MC, Eliassen AH. Nutritional metabolomics in cancer epidemiology: Current trends, challenges, and future directions. *Current Nutrition Reports*. 2019;8(3):187-201.
 11. Jackson SS, Van Dyke AL, Zhu B, Pfeiffer RM, Petrick JL, Adami HO, Albanes D, Andreotti G, Beane-Freeman LE, Berrington de González A, Buring JE, Chan AT, Chen Y, Fraser GE, Freedman ND, Gao YT, Gapstur SM, Gaziano JM, Giles GG, Grant EJ, Grodstein F, Hartge P, Jenab M, Kitahara CM, Knutsen SF, Koh WP, Larsson SC, Lee IM, Liao LM, Luo J, **McGee EE**, Milne RL, Monroe KR, Neuhauser ML, O'Brien KM, Peters U, Poynter JN, Purdue MP, Robien K, Sandler DP, Sawada N, Schairer C, Sesso HD, Simon TG, Sinha R, Stolzenberg-Solomon R, Tsugane S, Wang R, Weiderpass E, Weinstein SJ, White E, Wolk A, Yuan JM, Zeleniuch-Jacquotte A, Zhang X, McGlynn KA, Campbell PT, Koshiol J. Anthropometric risk factors for cancers of the biliary tract in the biliary tract cancers pooling project. *Cancer Research*. 2019;79(15):3973-3982.
 12. Echeverría G, Dussallant C, **McGee EE**, Mena C, Nitsche MP, Urquiaga I, Bitran M, Pedrals N, Rigotti A. Promoting and implementing the Mediterranean diet in the Southern Hemisphere: The Chilean experience. *European Journal of Clinical Nutrition*. 2019;72(Suppl 1):38-46.
 13. **McGee EE**, Castro FA, Engels EA, Freedman ND, Pfeiffer RM, Nogueira L, Stolzenberg-Solomon R, McGlynn KA, Hemminki K, Koshiol J. Associations between autoimmune conditions and hepatobiliary cancer risk among elderly US adults. *International Journal of Cancer*. 2019;144(4):707-717.
 14. Koshiol J, Bellolio E, Vivallo C, Cook P, Roa JC, **McGee EE**, Losada H, Van Dyke AL, Van De Wyngard V, Prado R, Villaseca M, Riquelme P, Acevedo J, Olivo V, Petit K, Hildesheim A, Medina K, Memis B, Adsay V, Ferreccio C, Araya JC. Distribution of dysplasia and cancer in the gallbladder: An analysis from a high cancer-risk population. *Human Pathology*. 2018;82:87-94.
 15. Liu Z, Kemp TJ, Gao YT, Corbel A, **McGee EE**, Wang B, Shen MC, Rashid A, Hsing AW, Hildesheim A, Pfeiffer RM, Pinto LA, Koshiol J. Association of circulating inflammation proteins and gallstone disease. *Journal of Gastroenterology and Hepatology*. 2018;33(11):1920-1924.
 16. Liu Z, Kemp TJ, Gao YT, Corbel A, **McGee EE**, Roa JC, Wang B, Araya JC, Shen MC, Rashid A, Hsing AW, Hildesheim A, C Ferreccio, Pfeiffer RM, Pinto LA, Koshiol J. Circulating levels of inflammatory proteins and survival in patients with gallbladder cancer. *Scientific Reports*. 2018;8(1):5671.
 17. **McGee EE***, Echeverría G*, Urquiaga I, Jiménez P, D'Acuña S, Villarroel L, Velasco N, Leighton F, Rigotti A. Inverse associations between a locally validated Mediterranean diet index, overweight/obesity, and metabolic syndrome in Chilean adults. *Nutrients*. 2017;9(8):862.

*Co-first author

Book Chapters

1. Echeverría G, Dussallant C, **McGee E**, Urquiaga I, Velasco N, Rigotti A (2017). Mediterranean diet beyond the Mediterranean basin: Chronic disease prevention and treatment. In: *Mediterranean Identities – Environment, Society, Culture*. Edited by Fuerst-Bjelis B. Rijeka: InTech.

RESEARCH AND TRAVEL FUNDING

Eric and Wendy Schmidt Center PhD Fellow, Broad Institute of MIT and Harvard

2022 – Present

Selected to receive a PhD fellowship recognizing graduate students doing exceptional work in causal inference, machine learning, and human biology. Funded 100% of graduate tuition, fees, and stipend for 2 years.

Direct Costs: \$100,000

Emma E. McGee, PhD

Zhu Trainee Travel Award, Harvard T.H. Chan School of Public Health	2024
Supported by a competitive travel award for pre and postdoctoral scientists with excellent academic achievement. <u>Direct Costs:</u> \$2,000	
Brian McMahon Travel Award, Harvard T.H. Chan School of Public Health	2023
Received funding to present work that estimated the long-term effects of lifestyle interventions for cancer survivors using target trial emulation and dynamic treatments at the Society for Epidemiologic Research Annual meeting. <u>Direct Costs:</u> \$1,000	
Brian McMahon Travel Award, Harvard T.H. Chan School of Public Health	2022
Received funding to present work on Black-White racial disparities in metabolomics profiles at the Society for Epidemiologic Research Annual meeting. <u>Direct Costs:</u> \$1,000	
Rose Traveling Fellowship, Harvard T.H. Chan School of Public Health	2019
Selected by the chairs of the Departments of Epidemiology and Biostatistics as a recipient of an international fellowship awarded to top postdocs, PhD students, and master's students. Proposal aimed to investigate body fat composition by computed tomography and subsequent breast cancer risk among adults in Iceland. <u>Direct Costs:</u> \$5,000	
Capstone Research Grant, New York University Abu Dhabi	2015
Received funding to support a study on water pipe tobacco smoking patterns in Abu Dhabi. Research included a survey administered to a random sample of 4,500 students, focus groups, and interviews. <u>Direct Costs:</u> \$1,000	
Summer Research Grant, New York University Abu Dhabi	2014
Supported by an undergraduate research grant to investigate co-factors associated with <i>Helicobacter pylori</i> infection and gastric cancer risk as part of a World Health Organization study located in Chile. <u>Direct Costs:</u> \$5,000	

Direct costs are rounded to the nearest \$1,000 US dollar.

AWARDS AND HONORS

Academic Awards and Scholarships

Presidential Scholarship , Harvard University (\$18,000)	2020
Dimitrios Trichopoulos Memorial Fund Award , Harvard T.H. Chan School of Public Health (\$2,000)	2020
Loan Relief Award , Harvard T.H. Chan School of Public Health (\$27,000)	2018
Summa Cum Laude , New York University Abu Dhabi	2015
University Honors Scholar/Founders' Day Award , New York University	2015
Rhodes Scholar Finalist , US District 15, Rhodes Trust, University of Oxford	2014
Full Scholarship , New York University Abu Dhabi (\$250,000)	2011

Scientific Awards

Best Thesis Presentation , Harvard T.H. Chan School of Public Health	2020
Best Oral Presentation , Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research	2018
Best Student/Fellow Poster , National Cancer Institute Cohort Consortium Annual Meeting	2017
Sponsored Delegate , 16 th World Conference on Tobacco or Health	2015

Emma E. McGee, PhD

Teaching Awards

Excellence in Teaching , Epidemiology, Harvard T.H. Chan School of Public Health	2021 – 2022
Bok Center Certificate of Distinction in Teaching , Harvard University	2022
Bok Center Certificate of Distinction in Teaching , Harvard University	2021
Certificate of Distinction in Teaching , Epidemiology, Harvard T.H. Chan School of Public Health	2020 – 2021

Artistic Awards

Exhibiting Photographer: End of Year Showcase (Journeys) , <i>New York University Abu Dhabi</i>	2012
Exhibiting Filmmaker: Fall Art Showcase , <i>New York University Abu Dhabi</i>	2012

PRESENTATIONS

Oral Presentations	Target trial emulation of dynamic surveillance strategies for cancer survivors: An application to non-muscle invasive bladder cancer Society for Epidemiologic Research (SER) Annual Meeting, Austin, TX, USA (<i>scheduled</i>)	2024
	Estimating causal effects from observational studies when treatment is unknown at baseline Eric and Wendy Schmidt Center, Broad Institute of MIT and Harvard, Boston, MA, USA	2024
	Causal inference from human data: How do we learn what works? Eric and Wendy Schmidt Center, Broad Institute of MIT and Harvard, Boston, MA, USA	2023
	Estimating the long-term effects of lifestyle interventions for cancer survivors using target trial emulation and dynamic treatment strategies Society for Epidemiologic Research (SER) Annual Meeting, Portland, OR, USA	2023
	Methodological challenges in estimating the long-term effects of lifestyle interventions for cancer survivors Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research, Boston, MA, USA	2023
	Identifying effective interventions for cancer survivors using causal inference methods and high-dimensional data Population Health Sciences Research Talk, Harvard T.H. Chan School of Public Health, Boston, MA, USA	2022
	Disparities in metabolomic profiles between Black and White women: Findings from two prospective cohorts Metabolomics Working Group, Channing Division of Network Medicine, Brigham and Women's Hospital, Boston, MA, USA	2022
	Racial differences in metabolomic profiles Metabolomics Working Group, Channing Division of Network Medicine, Brigham and Women's Hospital, Boston, MA, USA	2020
	Erythrocyte membrane fatty acids and breast cancer risk by tumor tissue expression of immuno-inflammatory markers and fatty acid synthase Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research, Boston, MA, USA	2019

	Plasma osteoprotegerin and breast cancer risk: A nested case-control study within the Nurses' Health Study II	2019
	Dana-Farber/Harvard Cancer Center Breast and Gynecologic Cancer Symposium, Boston, MA, USA	
	Nutritional metabolomics in cancer epidemiology	2019
	Breast Cancer Working Group, Channing Division of Network Medicine, Brigham and Women's Hospital, Boston, MA, USA	
	Cigarette smoking, alcohol consumption, and biliary tract cancer risk: A pooling project of 26 prospective studies	2018
	Dana-Farber/Harvard Cancer Center Celebration of Early Career Investigators in Cancer Research, Boston, MA, USA	
	Hepatobiliary cancer risk among elderly US adults with a history of autoimmune disease: A registry-based case-control study	2018
	National Cancer Institute, Infections and Immunoepidemiology Branch, Rockville, MD, USA	
	Managing requests for large data projects in REDCap	2017
	REDCapCon, New York, NY, USA	
	Experience in electronic data capture for cohorts: MAUCO and Chile BiLS (contributed), Chilean Symposium on Health Informatics, Santiago, Chile	2016
Poster Presentations	Comparative effectiveness of cystoscopy surveillance strategies on mortality in non-muscle invasive bladder cancer: A target trial emulation using real-world data	2024
	American Association for Cancer Research (AACR) Annual Meeting, San Diego, CA, USA	
	Precision medicine, health equity, and causal mediation: An application to metabolomic profiles among Black and White women	2023
	Eric and Wendy Schmidt Center, Broad Institute of MIT and Harvard, Boston, MA, USA	
	Disparities in metabolomic profiles between Black and White women	2022
	Society for Epidemiologic Research (SER) Annual Meeting, Chicago, IL, USA	
	Erythrocyte membrane fatty acids and breast cancer risk by tumor tissue expression of immuno-inflammatory markers and fatty acid synthase	2019
	Dana-Farber/Harvard Cancer Center Cancer Risk, Prevention, and Early Detection Symposium, Boston, MA, USA	
	Plasma osteoprotegerin and breast cancer risk: A nested case-control study within the Nurses' Health Study II	2019
	Harvard T.H. Chan School of Public Health Poster Day, Boston, MA, USA	
	The Chile Biliary Longitudinal Study (Chile BiLS): A cohort profile	2018
	Society for Epidemiologic Research (SER) Annual Meeting, Baltimore, MD, USA	
	Highlights of findings from the Biliary Tract Cancers Pooling Project (BiTCaPP)	2017
	National Cancer Institute Cohort Consortium Annual Meeting, Rockville, MD, USA	
	The Chile Biliary Longitudinal Study (Chile BiLS): A cohort study protocol	2016
	Advanced Center for Chronic Diseases (ACCDiS) Cancer Spring Symposium, Santiago, Chile	

TEACHING

- Target Trial Emulation. Role: Curriculum Fellow and Head Teaching Fellow** 2022 – Present
CAUSALab, Harvard T.H. Chan School of Public Health, Boston, MA, USA
Leading content development for a course providing hands-on training in causal inference from healthcare databases for ~100 participants from industry, academia, and government. Teaching target trial emulation, causal inference, estimation of effects in randomized trials and observational emulations, g-methods, competing events, and methods to handle and assess potential biases.
Instructors: Miguel Hernán, Barbra Dickerman, Joy Shi, Sonja Swanson
- Seminar in Causal Inference: Target Trial Emulation. Role: Instructor** 2023
University of Iceland, Reykjavik, Iceland
Developed and taught a short course on target trial emulation and causal inference methods. Taught ~25 graduate students and faculty. Topics covered included the specification and emulation of a target trial specification using routinely collected observational data, inverse probability weighting of marginal structural models, causal survival analysis, matching, cloning, immortal time bias, selection bias, and confounding.
- Doctoral Qualifying Exam. Role: Tutor** 2023
Harvard T.H. Chan School of Public Health, Boston, MA, USA
Designed materials and taught 1:1 sessions on advanced quantitative methods for the doctoral qualifying exams in epidemiology and other population health sciences.
- Quantitative Research Methods in Population Health Sciences. Role: Teaching Fellow** 2021 – 2022
Harvard University Graduate School of Arts and Sciences, Boston, MA, USA
Developed content, wrote problem sets and exams, and led lab sessions for a year-long course for ~40 PhD students. Taught maximum likelihood estimation, generalized linear models, survival analysis, g-methods, sensitivity analyses, instrumental variables, missing data, meta-analysis, etc.
Instructors: Tyler VanderWeele, Issa Dahabreh, David Canning, Jarvis Chen
- Principles of Biostatistics and Fundamentals of Epidemiology. Role: Tutor** 2021 – 2022
Harvard Medical School, Office for Diversity Inclusion and Community Partnership, Boston, MA, USA
Provided individualized instruction and tutoring in biostatistics and epidemiology for 7 MD/DDS fellows selected for Harvard's Commonwealth Fund Fellowship in Minority Health Policy.
Instructors: Albert Hofman, Stefania Papatheodorou, Marcia Testa
- Models for Causal Inference. Role: Teaching Fellow** 2020 – 2021
Harvard T.H. Chan School of Public Health, Boston, MA, USA
Led weekly lab sessions for a course including ~70 PhD and master's students. Taught g-method for causal inference, instrumental variable estimation, propensity scores, and other methods.
Instructors: Miguel Hernán, Barbra Dickerman
- Core Principles of Biostatistics and Epidemiology. Role: Head Teaching Fellow** 2021
Harvard T.H. Chan School of Public Health, Boston, MA, USA
Led a team of 16 teaching fellows in the instruction of ~180 PhD and master's students from 10 different academic programs. Taught epidemiologic methods, study design, and analyses.
Instructors: Kimberlee Gauvreau, Elizabeth Mostofsky

MENTORSHIP

Mentee: Gabriella Forchion, Undergraduate Student, Howard University 2021
Role: Mentor and direct research supervisor for a full-time summer research position
Program: CURE Program, Dana-Farber/Harvard Cancer Center, aimed at increasing diversity in cancer research

PEER REVIEW

Journals: *American Journal of Epidemiology; British Journal of Cancer; Cancer Epidemiology, Biomarkers, & Prevention; Epidemiology; International Journal of Cancer; JAMA Internal Medicine*
Conference Abstracts: *Society for Epidemiologic Research (SER) Annual Meeting*

SERVICE AND LEADERSHIP

President, Epidemiologic Methods Journal Club 2021 – 2023
Harvard T.H. Chan School of Public Health, Boston, MA, USA

Volunteer, Contact Tracing and Vaccine Outreach (Spanish and English) 2020 – 2021
COVID-19 Academic Public Health Volunteer Corps (APHVC) and GOTVax, Boston, MA, USA

Co-Leader, Master’s Program Committee 2019 – 2020
Harvard T.H. Chan School of Public Health, Boston, MA, USA

Member, Epidemiology Student Advisory Committee 2018 – 2020
Harvard T.H. Chan School of Public Health, Boston, MA, USA

Member, Harvard Chan Student Club on CANcer: Learn, Interact, Translate (CAN-LIT) 2018 – 2020
Harvard T.H. Chan School of Public Health, Boston, MA, USA

Volunteer, Arabic Language Program 2018
Kalimah Programs for Arabic Language, Culture, and Arts, Rockville, MD, USA

Member, NIH Academy on Health Disparities 2017 – 2018
NIH, Bethesda, MD, USA

Co-Leader, Community Outreach and Service Committee 2017 – 2018
DCEG Fellows Committee, National Cancer Institute, NIH, Rockville, MD, USA

Manuscript Editor 2017 – 2018
DCEG Fellows Editorial Board, National Cancer Institute, NIH, Rockville, MD, USA

Board of Directors and Executive Committee 2014 – 2016
QINE Association for Promoting Education Quality (QAPEQ), Abu Dhabi, UAE

Co-Chair 2014 – 2015
Public Health Think Tank Conference, New York University Abu Dhabi, Abu Dhabi, UAE

PROFESSIONAL SOCIETIES

Society for Epidemiologic Research (SER), Member	2021 – Present
American Association for Cancer Research (AACR), Associate Member	2019 – Present

SELECTION OF RELEVANT GRADUATE COURSEWORK

Causal Inference and Epidemiologic Methods	Models for Causal Inference Causal Mediation and Interaction Advanced Epidemiologic Methods Principles of Clinical Trials Advanced Topics in Case-Control and Cohort Studies Measurement Error and Misclassification for Epidemiologists Database Analytics in Pharmacoepidemiology Study Design in Epidemiologic Research Epidemiologic Methods Development
Statistics and Machine Learning	Deep Learning for Biomedical Data Data Science II (<i>Deep Learning</i>) Quantitative Methods in Population Health Sciences Applied Regression for Clinical Research Applied Survival Analysis Applied Longitudinal Analysis Social and Biological Networks
Pathophysiology and Cancer	Pathology for Epidemiologists Molecular Biology for Epidemiologists Biomarkers in Epidemiology Research Pathophysiology of Disease Human Physiology Epidemiology of Cancer

TECHNICAL SKILLS

Statistical Software and Markup	R, SAS, Python, Stata Markdown, LATEX
Data Analysis, Epidemiologic Methods, and Statistics	G-methods for causal inference (e.g., parametric g-formula, inverse probability weighting, marginal structural models) Graphical causal models (DAGs, SWIGs) Target trial emulation of dynamic and static treatment strategies Deep learning Analysis of administrative healthcare claims data Analysis of longitudinal cohort and case-control studies Integration of molecular biomarker data into epidemiologic research Sensitivity analyses Literature reviews Meta-analysis
Teaching	Didactic instruction in causal inference, epidemiology, and biostatistics Development of course materials (e.g., lectures, exercises, statistical code, problem sets, exams, syllabi) Statistical coding instruction in R, SAS, and Stata

Emma E. McGee, PhD

Management and Implementation of International Field Studies

Staff training and supervision
Questionnaire design, testing, and implementation
Development of standard operating procedures and study protocols
Quality control of survey and biological data

Electronic Databases and Surveys

REDCap
Qualtrics

LANGUAGES

English (fluent), **Spanish** (fluent), **Arabic** (intermediate)