Colin Lewis-Beck

CONTACT INFORMATION	719 Virginia Avenue *E-mail:* clewisbeck@gmail.com Apartment 212 *Phone:* (617) 784-3596 Indianapolis, IN 46203 *Web:* Personal Website

RESEARCH INTERESTS

Reliability, Bayesian methods, computational statistics, causal inference

EDUCATION

Ph.D., Statistics
Iowa State University, 2018

Dual M.A./M.P.P., Applied Statistics and Public Policy
University of Michigan, 2010

B.A., French
Middlebury College, 2005

COMPUTER SKILLS

Scientific Programming: R, Rcpp, RStan, Stata, UNIX
Markup Languages: LaTeX, Markdown
Software Development: GitHub

EMPLOYMENT

Research Scientist (Statistics), Eli Lilly, Indianapolis, IN   **2021-present**
Project Statistician in Neuroscience
- Communicate complex statistical concepts to stakeholders with a variety of backgrounds.
- Provide scientific input and co-author the statistical component of study protocols and reports for a phase 3 neurodegenerative molecule as part of an FDA submission.
- Collaborate with statistical colleagues on two internal white papers assessing the impact of decentralized clinical trials on data quality, and Bayesian model averaging for disease progression models, using simulation studies.

Visiting Assistant Professor, University of Iowa, Iowa City, IA
Department of Statistics & Actuarial Science   **2018-2021**
- Taught 16 advanced and introductory statistics classes to undergraduate statistics, business, and liberal arts majors.
- Performed independent and collaborative statistical research resulting in 10 peer-reviewed publications.
- Advised undergraduate statistics majors, and supervised 1 undergraduate honors project.

Software Developer, NIMBLE, Berkeley, CA   **Summer 2017**
Interned as part of the Google Summer of Code program
- Wrote and tested an R package that dynamically generated model code to fit Bayesian ecological statistical models.
- Collaborated with statisticians and software developers using GitHub.
- Scripted code that went into the main nimble R package.

Statistical Analyst, STATinMED Research, Ann Arbor, MI   **2011-2012**
Research Department
- Analyzed large claim databases using advanced statistical techniques (e.g., GLMs, SEMs, propensity score matching, and meta-analysis).
- Drafted statistical protocols and wrote final manuscripts analyzing and interpreting study results for client, as well as academic, publication.

- Worked directly with clients, senior researchers, and programmers to ensure projects were completed correctly and on schedule.

PUBLICATIONS

Tian Q., **Lewis-Beck C.**, Niemi J., & Meeker W.Q. (2022). Specifying Prior Distributions in Reliability Applications. *In submission.*

Lewis-Beck C., Tian Q., & Meeker W.Q. (2022). Prediction of Future Failures for Heterogeneous Reliability Field Data. *Technometrics*, 64(1), 125-138.

Shiraef, Mary A, Hirst, Cora., [and 17 others, including **Lewis-Beck C.**] (2021). Border Accountability Project, a hand-coded global database of border closures introduced during 2020. *Scientific data*, 8(1), 1-11.

Berg E., Im J., Zhu Z., **Lewis-Beck C.**, & Li, J. (2021). Integration of Statistical and Administrative Agricultural Data from Namibia. *Statistical Journal of the IAOS*, 37(2), 557-578.

Lewis-Beck C., & Martini, N.F. (2020). Economic Perceptions and Voting Behavior in U.S. Presidential Elections. *Research and Politics*, 7(4), 1-6.

Togliatti, K., **Lewis-Beck C.**, Walker, V.A., Hartman, T., VanLoocke, A., Cosh, M.H., & Hornbuckle, B.K. (2020). Quantitative Assessment of Satellite L-Band Vegetation Optical Depth in the US Corn Belt. *IEEE Geoscience and Remote Sensing Letters.*

Lewis-Beck C., Zhu Z., Walker V.A., & Hornbuckle B.K. (2020). Modeling Crop Phenology in the U.S. Corn Belt using Spatially Referenced SMOS Satellite Data. *Journal of Agricultural and Biological Statistics*, 25(4), 657-675.

Lewis-Beck, C., & Lewis-Beck, M.S. (2020). US Presidential Election Forecasting: The Economist Model. *Foresight: The International Journal of Applied Forecasting*, 59, 38-44.

Lewis-Beck, C., Walker, V.A., Niemi, J., Caragea, P., & Hornbuckle, B.K. (2020). Extracting Agronomic Information from SMOS Vegetation Optical Depth in the US Corn Belt Using a Nonlinear Hierarchical Model. *Remote Sensing*, 12(5), 827.

Lewis-Beck C., Zhu Z., Mondal A., Jin Song J., Hobbs, J., Hornbuckle B.K, & Patton J. (2019). A Parametric Approach to Unmixing Remote Sensing Crop Growth Signatures. *Journal of Agricultural and Biological Statistics*, 24(3), 502-516.

Mittman, E., **Lewis-Beck, C.**, & Meeker, W.Q. (2019). A Hierarchical Model for Heterogeneous Reliability Field Data. *Technometrics*, 61(3), 354-368.

A. Alhasan, A. Ali, D. Offenbacker, O. Smadi, & **Lewis-Beck C.** (2018). Incorporating Spatial Variability of Pavement Foundation Layers Stiffness in Reliability-Based Mechanistic-Empirical Pavement Performance Prediction. *Transportation Geotechnics*, 17, 1-13.

Lewis-Beck, C., & Lewis-Beck, M.S. (2015). Applied Regression: An Introduction, Second Edition. SAGE Publications.

Lewis-Beck, C., Abouzaid, S., Xie, L., Baser, O., & Kim, E. (2013). Analysis of the relationship between psoriasis symptom severity and quality of life, work productivity, and activity impairment among patients with moderate-to-severe psoriasis using structural

equation modeling. *Patient Preference and Adherence*, 7, 199-205.

Wang, L., **Lewis-Beck, C.**, Baser, E., Fritschel, E., & Baser, O. (2013). Applied Comparison of Meta-Analysis Techniques. *Value in Health*, 16(7), 14-22.

TEACHING EXPERIENCE	**Instructor**, Stonehill College Meehan School of Business • *Quantitative Analysis* (*Online*)	**Spring 2021**

Instructor, University of Iowa   **2018-2021**
- *Econometric Analysis* (S19)
- *Elementary Statistics* (S21)
- *Mathematical Statistics I* (F18, F19, F20)
- *Mathematical Statistics II* (S19, S20)
- *Statistics & Society* (F18, S19, F19, S20, F20, S21)

Instructor, University of Michigan   **2018-2020**
Interuniversity Consortium for Political and Social Research (ICPSR) Summer Program
- *Introduction to Meta-Analysis* (Su18)
- *Introduction to Regression Analysis* (Su19, Su20)

Instructor, Iowa State University   **2017-2018**
- *Statistical Methods for Research Workers (Graduate Course)* (Su18)
- *Probability and Statistical Inference for Engineers* (S18)
- *Engineering Statistics* (S17, F17)

Teaching Assistant, Iowa State University   **2014-2015**
- *Applied Statistical Modeling (Graduate Course)* (F15)
- *Introduction to Statistics* (F14, S15)

Graduate Student Instructor, University of Michigan   **2007-2010**
- *Introduction to Statistical Reasoning* (F09, S10)
- *Introduction to Statistics and Data Analysis* (S09)
- *Statistics for Public Policy (Graduate Course)* (S08, F08)
- *Introduction to Microeconomics for Public Policy* (F07)

PRESENTATIONS AND WORKSHOPS

"Prediction of Future Failures for Heterogeneous Reliability Field Data." Invited seminar presented at the Bayesian Seminar Series, Eli Lilly, Virtual, September 2021.

"Social Capital and Shared Leadership in Small Iowa Communities." Invited talk (with Tom Rice) at the University of Iowa Public Policy Center, Virtual, February 2021.

"Forecasting the 2020 US Elections." Invited talk (with Michael Lewis-Beck) at the Data Analytics Colloquium, University of Texas at Dallas and the National Chung Hsing University, Virtual, November 2020.

"Prediction of Future Failures for Heterogeneous Reliability Field Data." Poster presentation at the Joint Statistical Meetings, Virtual, July 2020.

"Using the M-RA Approximation to Integrate Multiple Data Sources on Temperature." Talk presented at the Joint Statistical Meetings, Denver, CO, July 2019.

"A Hierarchical Model for Heterogeneous Reliability Field Data." Invited seminar presented at the Department of Statistics and Actuarial Science, University of Iowa, Iowa City, IA, March 2019.

"A Parametric Approach to Unmixing Remote Sensing Crop Growth Signatures." Talk presented at the Joint Statistical Meetings, Vancouver, BC, August 2018.

"A Nonlinear Hierarchical Approach for Modeling Crop Growth in the US Corn Belt." Talk presented at the Kansas State University Conference on Applied Statistics in Agriculture, Manhattan, KS, May 2018.

"A Hierarchical Model for Heterogeneous Reliability Field Data." Poster presentation at the Joint Statistical Meetings, Baltimore, MD, August 2017.

Graduate Workshop on Environmental Data Analytics, National Center for Atmospheric Research, Boulder, CO, June 2017.

"An Introduction to Statistical Thinking for Forensic Practitioners." Invited talk (with Hal Stern) at the Center for Statistics and Applications in Forensic Evidence, Palm Beach County Sheriff's Office, Palm Beach, FL, March 2016.

"Regression Questions You Always Wanted to Ask." Invited Blalock lecturer (with Michael Lewis-Beck) at the Interuniversity Consortium for Political and Social Research, University of Michigan, July 2015.

"Analysis of relationship between psoriasis severity and quality of life, work productivity, and activity impairment among patients with moderate to severe psoriasis using structural equation modeling." Poster presented at International Society for Pharmacoeconomics and Outcomes Research, Washington, DC, June 2012.

POPULAR PRESS INTERVIEWS	Lynch, James Q. (2020, November 23). Record voter turnout masks Iowa schism. *The Gazette.*
AWARDS AND GRANTS	University of Iowa Public Policy Center, Summer Scholars Grant, $3,000 (with Tom Rice) (2020)
	Teaching Excellence Award, Iowa State University, Dept. of Statistics (2018)
	SAGE Cornerstone Author Award for publication (with Michael Lewis-Beck) of Applied Regression: An Introduction, Second Edition (2015)
	Outstanding Teaching Award, University of Michigan, Dept. of Statistics, $500 (2010)
OTHER EXPERIENCE	**Summer Program Computing Consultant Summer (2006, 2013, 2014)** ICPSR, University of Michigan - Assisted program participants and faculty with a wide range of statistical and programming backgrounds with questions in R, Stata, SPSS, and SAS. - Promoted to Team Leader (2013, 2014). Responsible for supervising a staff of 8 Computer Consultants.
EDITORIAL SERVICE	Reviewer for the following journals: SAGE Publications (2017), Annals of Applied Statistics (2021)

Professional
Memberships

American Statistical Association