

Ian Laga

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Website: <https://ilaga.github.io/>

RESEARCH INTERESTS

Bayesian methods, small area estimation, network scale-up, computational statistics, and spatial statistics

EDUCATION

Pennsylvania State University

Ph.D. Statistics (Expected May 2022), Pennsylvania State University

Advisors: Dr. Le Bao and Dr. Xiaoyue Niu

Dissertation Title: Everyone Counts: Advanced Methods for Estimating Marginalized Populations

University of Colorado - Boulder

B.S. Applied Mathematics (minors in Statistics and in Computer Science) (2013 - 2017), *Magna Cum Laude*

ACCEPTED & PUBLISHED

Ian Laga, Xiaoyue Niu, and Le Bao. (2021) “Modeling the Marked Presence-only Data: A Case Study of Estimating the Female Sex Worker Size in Malawi.” *Journal of the American Statistical Association*. Published online. doi: 10.1080/01621459.2021.1944873.

Ian Laga, Le Bao, and Xiaoyue Niu. (2021) “Thirty Years of The Network Scale-up Method.” *Journal of the American Statistical Association*, 116:535, 1548-1559. doi: 10.1080/01621459.2021.1935267.

Ian Laga and Xiaoyue Niu. (2020) “Review of *Model-Based Geostatistics for Global Public Health: Methods and Applications*,” by Peter J. Diggle and Emanuele Giorgi, *Journal of the American Statistical Association*, 115:530, 1030-1032. doi: 10.1080/01621459.2020.1759988.

Ian Laga. (2019) “The POWER Structure and Why an 80% Correct Solution is Sometimes Better Than a 100% Correct Solution.” In JSM Proceedings, Section on Statistical Consulting. Denver, Colorado: American Statistical Association. 2345-2356.

Ian Laga and William Kleiber. (2017) “The Modified Matérn Process.” *Stat*, 6:1, 241-247. doi: 10.1002/sta4.152.

SUBMITTED

Ian Laga, Le Bao, and Xiaoyue Niu. “A Correlated Network Scale-up Model: Finding the Connection Between Subpopulations.” Submitted to *Journal of the American Statistical Association*. Preprint.

Ian Laga, Xiaoyue Niu, Katherine Rucinski, Stefan Baral, David Chen, Nikita Viswasam, Keith Sabin, Jinkou Zhao, Jeffrey W. Eaton, and Le Bao. “Mapping

the Population Size of Female Sex Worker in Countries Across Sub-Saharan Africa.” Submitted to *The Lancet*. Preprint.

IN PREPARATION

Sanam Sanei*, **Ian Laga***, Sharon Weir, and Le Bao. “Enhancing the Precision of Female Sex Worker Size Estimation with Cross-Country Studies.”

*Equal contribution

Ian Laga, Dennis K.J. Lin, Kevin Quinlan, and Muzi Zhang. “Multi-Objective Optimization for Latin Hyper Cube Designs.”

TEACHING EXPERIENCE

Lecturer:

Computational Statistics, STAT 440, Spring 2020
Mathematical Statistics, STAT 415, Fall 2018

Teaching Assistant:

Mathematical Statistics, STAT 415, Fall 2017/Spring 2018
Introduction to SAS, STAT 480, Fall 2019

RESEARCH PRESENTATIONS

“A Correlated Network Scale-up Model: Finding the Connection Between Subpopulations,” Stochastic Modeling and Computational Statistics Talk, Department of Statistics, Pennsylvania State University. September 2021

“Finding the Hidden Populations: A Correlated Network Scale-up Model,” Contributed Presentation, Joint Statistical Meetings, Virtual Conference. August 2021

“Finding the Hidden Populations: A Correlated Network Scale-up Model,” Contributed Presentation, World Meeting of the International Society for Bayesian Analysis, Virtual Conference. June 2021

“Modeling the Marked Presence-only Data: A Case Study of Estimating the Female Sex Worker Size in Malawi,” Invited Poster Presentation, Joint Statistical Meetings, Virtual Conference. August 2020

“The POWER Structure and Why an 80% Correct Solution is Sometimes Better Than a 100% Correct Solution,” Topic-Contributed Session, Joint Statistical Meetings, Denver, Colorado. August 2019

“The Modified Matérn Process,” SIAM Front Range Applied Mathematics Student Conference, University of Colorado at Denver, Denver, Colorado. March 2016

OTHER PRESENTATIONS

“How to Make a R package,” Penn State Statistics Graduate Student Association Workshop, December 2020

“Introduction to RStan,” Penn State Statistics Graduate Student Association Workshop, November 2019, November 2020

“Introduction to RStan,” Bayer Corporation Statistician Group, August 2019

POSTERS

Ian Laga. “Finding the Hidden Populations: A Correlated Network Scale-up Model,” Contributed Poster, World Meeting of the International Society for Bayesian Analysis, Virtual Conference. June 2021

Ian Laga. “MCPMod for Negative Binomial Count Data,” ASA New Jersey Chapter/Bayer Statistics and Data Insights 7th Annual Workshop. November 2019

Eric Vance and **Ian Laga.** “Variations in Statistical Practice Between North American Stat Labs,” ASA Conference on Statistical Practice, Jacksonville, Florida, February 2017

INTERNSHIPS

Statistician Intern (Summer 2019), Bayer Corporation, Whippany, New Jersey

SCIENTIFIC SOFTWARE

MCPModGeneral: R-package to supplement the ‘DoseFinding’ package for non-normal data

AWARDS/HONORS

2020 Teaching Award Honorable Mention: Pennsylvania State University Statistics Department

2019 NSF Graduate Research Fellowship Honorable Mention: National Science Foundation

2013 - 2017 Dean’s List: University of Colorado - Boulder

CU Esteemed Scholars - Sewall Award:

Awarded to high school students with 4.0 GPA and 33 ACT and above

Engineering Differential Scholarship:

Awarded to engineering students who also received a Sewall or Presidential Scholarship

2013 Boettcher Scholar:

Award given to top 40 high school students in Colorado

GRANT EXPERIENCE

2021 Notice of Special Interest (NOSI): Harnessing Big Data to Halt HIV. NOT-AI-21-054

Title: Understanding the Impacts of Key Populations to the HIV Epidemics.

Role: Participant

2019 NSF Graduate Research Fellowship

SERVICE

CDC Key Population Surveillance and Estimates: Recent Advances and Future Directions, May 2021

Participant

UNAIDS Reference Group Spring Meeting, April 2021

Participant

Refereed papers for *Annals of Applied Statistics*, 2019, 2020

Refereed paper for *Proceedings of the National Academy of Sciences of the United States of America*, 2019

Eberly College Climate and Diversity Committee, 2018 - 2021

Member

Penn State Statistics Graduate Student Association, 2017 - 2021

Social Coordinator

Laboratory for Interdisciplinary Statistical Analysis (LISA) University of Colorado - Boulder 2016-2017

Founding collaborator