

# Ian Laga

iul25@psu.edu

(970) 314-4122

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

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## 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*.

**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*.

## 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

“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 7<sup>th</sup> 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