

# Nicholas Aaron Syring

## Contact Information

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## Professional Experience

Iowa State University, Department of Statistics, *Assistant Professor*, 2020 – **Current Position**

Allstate Insurance, *Data Scientist*, 12/2017 – 08/2018

Allstate Insurance, *Data Scientist Intern*, Summer 2017

Google Summer of Code, Summer 2016

NASA Langley Area Research Center, *Visiting Research Scientist*, Summer 2014

Capital One, *Statistician Intern*, Summer 2013

State Farm Life Insurance Company, *Actuarial Analyst*, 2009–2011

## Education

Ph.D. Mathematics, University of Illinois at Chicago, Advisor: Dr. Ryan Martin, 12/2017

M.S. Statistics, Northern Illinois University, 2013

B.S. Actuarial Science, Illinois State University, 2009

## Peer-reviewed Publications

### *Statistics Journals*

N. Syring and R. Martin. Gibbs posterior concentration rates under sub-exponential type losses. (2022) **Bernoulli**. Accepted. <https://arxiv.org/pdf/2012.04505.pdf>

N. Syring. Robust posterior inference for Youden's index cutoff. (2021). **Communications in Statistics - Theory and Methods**, 1-16. <https://doi.org/10.1080/03610926.2021.1969409>.

N. Syring and R. Martin. Robust and Rate-Optimal Gibbs Posterior Inference on the Boundary of a Noisy Image. (2020). **Annals of Statistics**. 48(3):1498-1513. <https://doi.org/10.1214/19-AOS1856>

N. Syring, L. Hong, and R. Martin. Gibbs Posterior Inference on Value-at-Risk. **Scandinavian Actuarial Journal**. (2019). <https://doi.org/10.1080/03461238.2019.1573754>.

N. Syring and R. Martin. Calibrating General Posterior Credible Regions. **Biometrika**. (2018). <https://doi.org/10.1093/biomet/asy054>.

N. Syring and R. Martin. Gibbs Posterior Inference on the Minimum Clinically Important Difference. **Journal of Statistical Planning and Inference**. 187 (2017): 67-77. <http://dx.doi.org/10.1016/j.jspi.2017.03.001>.

C. Liu, R. Martin, and N. Syring. Efficient Simulation from a Gamma Distribution with Small Shape Parameter. **Computational Statistics** 32, 4 (2017): 1767-1775. <https://doi.org/10.1007/s00180-016-0692-0>.

N. Syring and M. Li. BayesBD: An R Package for Bayesian Inference on Image Boundaries. **R Journal**. 9, 2 (2017): 149-162. <https://journal.r-project.org/archive/2017/RJ-2017-052/index.html>.

### *Conference Proceedings*

N. Syring and R. Martin. Stochastic optimization for numerical evaluation of imprecise probabilities. (2021). Proceedings of the Twelveth International Symposium on Imprecise Probability: Theories and Applications, in **Proceedings of Machine Learning Research**. 147. <https://proceedings.mlr.press/v147/syring21a.html>.

R. Martin and N. Syring. Validity-preservation properties of rules for combining inferential models. (2019) Proceedings of the Eleventh International Symposium on Imprecise Probabilities: Theories and Applications, in **Proceedings of Machine Learning Research**. 103:286-294. <http://proceedings.mlr.press/v103/martin19a/martin19a.pdf>.

### *In Review*

N. Syring, F. Miguez, and J. Niemi. Valid predictions of group-level random effects. <https://arxiv.org/abs/2202.01848>.

### *In Preparation*

N. Syring. Margin and smoothness adaptive posterior concentration in binary classification.

A. Cloud, R. Martin, and N. Syring. Valid finite-sample inference in a wide class of risk-minimization problems.

N. Syring. Valid and efficient inference in Gaussian errors-in-variables linear regression.

## Teaching

### @ Iowa State University

STAT 500: Statistical Methods I

STAT 342: Introduction to the Theory of Probability and Statistics II

STAT 588: Statistical Theory for Research Workers, Instructor (2 times)

### @ Washington University St. Louis

MATH3200: Elementary to Intermediate Statistics, Instructor (5 times)

MATH475: Statistical Computation, Instructor

### @ North Carolina State University

ST311: Introduction to Statistics, Instructor

### @ University of Illinois at Chicago

STAT381: Applied Statistical Methods I, Instructor

## Advising

### @ Iowa State University

PoS Committee Member for Zhengqiang Ni, Genetics and Genomics Graduate Program, Animal Science

PoS Committee Member for Md Azizul Islam, Apparel, Events, and Hospitality Management Graduate Program

CyBound Summer Program - supported by C-CHANGE: Jarad Niemi and I co-advised Roger Castillo Ramos on his Summer project to visualize agricultural data (e.g., yield, nitrogen emissions) using R Shiny.

### @ Washington University St. Louis

MATH500: Independent Work, Summer 2019

## Conferences and Seminar Talks

Conference on Applied Statistics in Agriculture and Natural Resources, Contributed Talk

*Valid predictions of group-level random effects*

May 2022, Utah State University

CMStatistics 2021, Invited Talk

*Asymptotic concentration of Gibbs posterior distributions*

December 2021, London/remote

SIAM CSE21 Invited Talk

*Frequentist calibration of posterior distributions*

March 2021

Bayesian, Fiducial, Frequentist Workshops, Invited Talk

*Advances by Next-Generation BFFs: Gibbs Posterior Distributions*

February 2021

WHOA-PSI 4 Poster Presentation

*Treatment Selection Problems*

WUSTL-08/2019

ISIPTA 2019 Contributed Talk

*Validity-preservation properties of rules for combining inferential models*

Uni Ghent-07/2019

Bayesian, Fiducial, and Frequentists (BFF 6) Poster Presentation

*Gibbs Posterior Inference on Youden's Index cutoff*

Duke-05/2019

Statistics Seminar

*Inferential models in errors-in-variables models*

WUSTL-11/2018

Joint Statistical Meetings Invited Poster Presentation

*Inferential Models for Instrumental Variables*

Baltimore-07/2017

Summer Research Conference  
*Image Boundary Detection via a Gibbs Model*  
IIT-05/2016

Undergraduate Mathematics Seminar  
*Misspecified Statistical Models: What happens when the model is wrong?*  
Wheaton College-11/2015

Statistics Seminar  
*Scaling the Gibbs posterior*  
University of Illinois at Chicago-09/2015

Statistics Seminar  
*On Bayesian inference without a model*  
University of Illinois at Chicago-11/2014

## Professional Service

Manuscript Reviewer

- Scandinavian Journal of Statistics
- Journal of the Royal Statistical Society
- Statistica Sinica
- Journal of the American Statistical Association
- Sankhya
- Bayesian Analysis
- Journal of Statistical Planning and Inference
- SIAM Journal of Uncertainty Quantification
- Technometrics
- Statistics and its Interface

## Department Service

STAT-ers Advisor (2 times)

Honors and Awards Committee Member (2 times)