Education

- PhD Statistics, Iowa State U, 2016
- MS Statistics, lowa State U 2013
- BS Math, U of Chicago 2011

Publications

- Niemi, J., Mittman, E., and Nettleton, D. (2015), "Empirical Bayes Analysis of RNA-seq Data for Detection of Gene Expression Heterosis," *Journal of Agricultural*, *Biological*, and *Environmental Statistics*, 20, 1-15. Available at link.springer.com.
- and Liu, P. (2013), "Dispersion Estimation and Its Effect on Test Performance in RNA-seq Data Analysis: A Simulation-Based Comparison of Methods," *PLOS One*, 8. Available at journals.plos.org.
- Ratliff, B., Womack. C., Tang, X., Butler, L., and Szpunar, D. (2010), "Modeling the Rovibrationally Excited C2H4OH Radicals from the Photodissociation of 2-Bromoethanol at 193 nm," *Journal of Physical Chemistry*, 114, 4934-4945. Available at ncbi.nlm.nih.gov.

Articles under review

- Miemi, J., and Nettleton, D., "Fully Bayesian analysis of RNA-seq counts for the detection of gene expression heterosis", submitted to the *Journal of the American Statistical Association* on June 24, 2016.
- and Niemi, J., "A fully Bayesian strategy for high-dimensional hierarchical modeling using massively parallel computing," submitted to the *Journal of Computational* and *Graphical Statistics* on March 8, 2016. Preprint available at arxiv.org.

Awards

- Student Paper Award, American Statistical Association Section on Statistical Computing,
 Jan 2016. Awarded for an early draft of the preprint at
- Vince Sposito Statistical Computing Award, Iowa State University, Aug 2013.

- GlaxoSmithKline Industrial Scholarship, Iowa State University, Sep 2011.
- Alumni Scholarship, Iowa State University, Aug 2011.

Skills

- Reproducible research, hierarchical models, Bayesian methods, Markov chain Monte Carlo, statistical computing, high-dimensional data analysis, genomics data analysis, exploratory analysis, visualization, linear and nonlinear models, data mining, machine learning, predictive modeling, multivariate analysis.
- Parallel computing, high-performance computing, general-purpose graphics processing unit (GPU) computing, R, R package development, Rcpp, C/C++, CUDA C/C++, MPI, OpenMP, shell scripting, Python, JavaScript, AWK, Fortran, Markdown, LaTeX, knitr, ioslides, HTML, CSS.

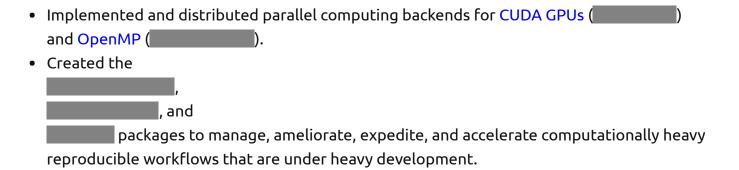
Research scientist

- October 2016 Present
- Eli Lilly and Company
- Advanced Analytics Immunology Hub
- Used data mining to help tailor new treatments of autoimmune diseases to patients.
- Simulated entire pipelines of clinical trials to predict the efficacy of immunology treatments under development.
- Created an interactive tool to turn clinical trial simulation data into actionable knowledge for planning real-world trials.
- Created , an R package on CRAN that efficiently manages reproducible workflows and provides easy access to multiple modes of high-performance computing.
- Created , and R package on CRAN that evaluates code chunks in bulk in a controlled environment.

Research assistant

- May 2013 Aug 2016
- RNA-sequencing Working Group, Department of Statistics, Iowa State University.
- Funded by NIH grant R01GM109458 with Drs. Dan Nettleton and Jarad Niemi.
- Developed a new fully Bayesian analysis method for high-dimensional genomic datasets using hierarchical models.
- Implemented massively parallelized Markov chain Monte Carlo.
- · Created the

R package to distribute the analysis method.



Seminar instructor

- Aug Dec, 2012 and 2013.
- Department of Statistics, lowa State University.
- GPU computing seminar series at
- Educated faculty and graduate students on massively parallel computing with generalpurpose graphics processing units.
- Constructed, curated, and distributed slides, video, and example code at and on YouTube.

Course instructor

- Jan May, 2012 and 2013.
- Department of Statistics, Iowa State University.
- STAT 305: Engineering Statistics (
).

Grader

- Aug Dec, 2011.
- Department of Statistics, Iowa State University.
- STAT 231: Engineering Probability.
- STAT 105: Introduction to Engineering Statistics.

Leadership at Iowa State University

- Founder and leader, Cloud Computing Working Group, Sep Dec 2015.
- Member, Computation Advisory Committee, Sep 2015 May 2016.
- Volunteer instructor, Office of Precollegiate Programs for Talented and Gifted (OPPTAG), Mar 13, 2014.
- Fellow, Preparing Future Faculty, Aug 2013 May 2014.
- Assistant Coach, Boxing Club, Aug 2013 Dec 2013.

References

- Jarad Niemi, PhD advisor and major professor, niemi@iastate.edu.
- Dan Nettleton, lead principal investigator of the RNA-sequencing Working Group (Iowa State Department of Statistics), dnett@iastate.edu.
- Peng Liu, MS advisor and major professor, pliu@iastate.edu.
- Additional references available on request.

Hobbies

• Sailing, windsurfing, climbing, CrossFit, Brazillian Jiu Jitsu.