

Grant D. Brown

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Contact Information	grant-brown@uiowa.edu (319) 384-1599 University of Iowa Department of Biostatistics N314 CPHB Iowa City, IA 52242	grantbrown.github.io
Education	<ul style="list-style-type: none">• Ph.D. Biostatistics University of Iowa 2012-2015• M.S. Biostatistics - 2010-2012• B.S. Statistics - 2006-2010• B.A. International Studies - 2006-2010	
Dissertation	"Application of Heterogeneous Computing Techniques to Compartmental Spatiotemporal Epidemic Models" Advisor: Dr. Jacob J. Oleson	
Preceptorship Project	"Examining the Association between Influenza Epidemics, Temperature, and Demographic Information via a Spatial SIR Model" Advisor: Dr. Jacob J. Oleson	
Publications	Published and Submitted <ul style="list-style-type: none">• Brown, G. D., Oleson, J. J. and Porter, A. T. (2015). An empirically adjusted approach to reproductive number estimation for stochastic compartmental models: a case study of two Ebola outbreaks. Accepted at <i>Biometrics</i>• Oleson, J. J., Cavanaugh, J. E., McMurray, B., Brown, G. D. (2015) A multiplicity adjusted test procedure for time-specific comparisons of temporal population curves. <i>Statistical Methods in Medical Research</i>.• Doucette, W. R., Pendergast, J. F., Zhang, Y. Brown, G. D. et. al. (2014) Stimulating Comprehensive Medication Reviews among Medicare part D beneficiaries. <i>American Journal of Managed Care</i>• Zhang, Y., Doucette, W. R., Pendergast, J.F., Brown, G. D., Frank, J. (2015) Assessing the Effect of a Cost Management Component in a Targeted Intervention Program. <i>Value in Health</i>. 17(3).• Porter, A. T. and Brown, G. D. A robust SEIR Model for fast computation of the basic reproductive number on unobserved graphs. <i>Submitted to Annals of Applied Statistics</i>• Brown, G. D. and Oleson, J. J. Spatiotemporal epidemic modeling with libSpatialSEIR – model specification, fitting, selection, and prediction. extended abstract under review for <i>Geocomputation, Journal of Visual Languages and Computing</i>• Brown, G. D. and Oleson, J. J. Estimating and predicting epidemic behavior for the 2014 West African Ebola Outbreak – a quick spatial SEIR modeling approach (2014) Online Report.• Editor: 2011 Iowa Health Fact Book In Progress <ul style="list-style-type: none">• Brown, G.D., Porter, A.T., Oleson, J.J. Approximate Bayesian Computation for Spatial SEIR(S) Epidemic Models. Under Preparation for Submission in Fall 2016	
Invited Presentations	<ul style="list-style-type: none">• "Predictive Modeling for First Year Enrollment." University of Iowa Institutional Data Users Group, October 2015.• "An Empirically Adjusted Reproductive Number for Stochastic Compartmental Models." University of Iowa Department of Biostatistics, January 2015• "Working with Epidemic Data." Cornell College, December 2015.	

- “Predicting Epidemic Behavior.” Online Presentation for Project Lead the Way, November 2014

Research Interests

- Bayesian Inference
- Statistical Computing
- Stochastic Compartmental Models and Spatial Generalizations
- Statistical/Machine Learning, Ensemble Learning Techniques
- Data Visualization

Teaching

Instructor

- Design and Analysis of Biomedical Experiments (Summer 2013) *University of Iowa, Department of Biostatistics*

Guest Lecturer

- Epidemiology of Infectious Diseases (Fall 2015) *University of Iowa, Department of Epidemiology*

Tutor

- Calculus (Fall 2008)
- Language and Formal Reasoning (Spring 2007)

Professional and Academic Experience

Assistant Professor, Department of Biostatistics, University of Iowa (2015-Present)

- UI³ Cluster Faculty
- Developed predictive models for undergraduate student enrollment with the Department of Enrollment Management Data Analytics

Research Assistant, Center for Public Health Statistics, University of Iowa. (2009-2015)

- Helped to build and maintain the Iowa Get Screened colorectal cancer screening program data management website
- Helped to build and maintain the Care For Yourself breast and cervical cancer screening program data management website
- Conducted collaborative research with individuals in the University of Iowa College of Pharmacy, including design of data collection tools, implementation of stratified sampling techniques, and designing medication therapy management program evaluation analyses
- Worked with researchers in Community and Behavioral Health to evaluate the effectiveness of a large unplanned pregnancy prevention project

Statistical Consultant, University of Iowa College of Nursing (2013)

- Worked with PhD candidates in the College of Nursing
- Helped plan and execute statistical analyses
- Used extensive one-on-one meetings to explain statistical concepts
- Designed standard statistical analysis reports to provide to clients

Programmer, HOBUS Inc. (Summer 2013)

- Developed the ‘laspy’ LIDAR data abstraction library for python
- Worked to create extensive technical documentation and tutorials
- Worked on LIDAR file bounding algorithms

Software Projects

ABSEIR

An R package implementing path-specific spatial SEIRS models using Approximate Bayesian Computing techniques and the CAF parallel computing framework.

RcppCAF

An R package designed to simplify the inclusion of the C++ Actor Framework (CAF) in software projects

libSpatialSEIR

A C++ library and associated R package interface, designed to intuitively and efficiently fit stochastic spatial SEIRS epidemic models

laspy

A python package providing read-write access to binary LIDAR files following the ASPRS .LAS file format, version 1.0-1.4, in addition to a suite of visualization tools

Service, Professional Organizations

- Chair, Advanced Biostatistical Computing Exploratory Committee (2015)
- Member, Computing Committee, Department of Biostatistics (2015)
- Member, Admissions and Student Recruitment Committee, Department of Biostatistics (2015)
- Biostatistics departmental representative, undergraduate subgroup of the Curricular Innovations Committee, College of Public Health (2015)
- Student Representative, Computation and Informatics Committee
 - Surveyed student interest in access to RCloud services, began implementation (2015)
 - Surveyed student software needs, proposed additional SAS licenses (2013)
- Biostatistics Student Representative, College of Public Health Legislative Breakfast (2015)
- Participant, Iowa Initiative Press Conference (2012)
- Biostatistics Student Representative, CPH Student Panel for Undergraduates (2011)
- Member, American Statistical Association (2015)
- Member, International Biometric Society (2015)

References

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