

## Grant D. Brown

The University of Iowa  
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### Education:

Ph.D.	Biostatistics	University of Iowa	2015
M.S.	Biostatistics	University of Iowa	2012
B.S.	Statistics	University of Iowa	2010
B.A.	International Studies	University of Iowa	2010

### Employment:

2022-Present	Associate Professor of Biostatistics Department of Biostatistics, College of Public Health, The University of Iowa
2015-2022	Assistant Professor of Biostatistics Department of Biostatistics, College of Public Health, The University of Iowa
2013-2014	Statistical Consultant College of Nursing, The University of Iowa
2013	Team Teacher Department of Biostatistics, College of Public Health, The University of Iowa
2012	Programmer HOBU Inc. Iowa City, IA
2009-2015	Research Assistant Center for Public Health Statistics, College of Public Health, The University of Iowa

### Methodological Research Interests

Bayesian Computing      Models of Dynamic Processes      Statistical Learning      Correlated Data

### Applied Interdisciplinary Research Interests

Infectious Disease Ecology      Immunological Modelling      Stroke Triage      Substance Use Disorders

### Instruction – University of Iowa Department of Biostatistics:

- 171:162 – Design & Analysis of Biomedical Studies (1 term)
- BIOS:4120 – Introduction to Biostatistics
  - Taught: 4 terms
  - Online Section, Supervised:11 terms
- BIOS:5120 – Regression & ANOVA in the Health Sciences (4 terms)
  - Taught: 3 terms
  - Taught Online Section: 1 term
- BIOS:5710 – Biostatistical Methods I (2 term)
- BIOS:5720 – Biostatistical Methods II (2 terms)
- BIOS:7600 – Advanced Biostatistical Seminar – Computing (1 term)
- BIOS:7330 – Advanced Biostatistical Computing (3 terms)
- BIOS:7800 – Independent Study in Biostatistics (3 terms – Approximate Bayesian Computing, Correlated Data Analysis, Infectious Disease Modelling)

### Other Course Contributions:

- BIOS:4110 – General Biostatistics, lecture on “big data”. (5 sessions)  
Iowa Summer Institute for Biostatistics, Department of Biostatistics,  
University of Iowa
- EPID:6550 – Epidemiology of Infectious Diseases, lecture on epidemic modelling. (5 sessions)  
Department of Epidemiology, University of Iowa
- CBE:1180 – The Human Face of Big Data, lecture on predicting year-1 enrollment (2 sessions)  
Department of Chemical and Biochemical Engineering, University of Iowa

## Refereed Publications:

### Methods and Methodological Applications

1. \*Nwoke, U., Farooqui, M., Oleson, J., Mohr, N., Ortega-Gutierrez, S., **Brown, G.D.** (2024) Bayesian modelling framework for optimizing pre-hospital stroke triage decisions. *Journal of Applied Statistics* doi: 10.1080/02664763.2024.2360590
2. \*Hernandez, H.G., **Brown, G.D.**, Lima, I.D., Coutinho, J.F., Wilson, M.E., Nascimento, E.L.T., Jeronimo S.M.B., Petersen, C.A., Oleson, J.J. (2023). Hierarchical spatiotemporal modeling of human Visceral Leishmaniasis in Rio Grande do Norte, Brazil. *PLoS Neglected Tropical Diseases*. doi: 10.1371/journal.pntd.0011206
3. \*Pabon-Rodriguez, F.M., **Brown, G.D.**, Scorza, B.M., Petersen, C.A. (2023). Bayesian hierarchical model for immune responses to Leishmania – a tick borne co-infection study. *PLoS Neglected Tropical Diseases*. doi: 10.1101/2022.06.20.496877
4. \*Ward, C., **Brown, G.D.**, Oleson, J. Incorporating infectious duration-dependent transmission into Bayesian epidemic models. (2022) *Biometrical Journal*. 00, 1-19. doi: 10.1002/bimj.202100401
5. \*Seedorff, N., **Brown, G.D.**, Scorza, B.M., Petersen, C.A. Joint Bayesian Longitudinal Models for Mixed Outcome Types and Associated Model Selection Techniques. (2022) *Computational Statistics*. 1-35. doi: 10.1007/s00180-022-01280-x
6. Martinez, K., **Brown, G.D.**, Pankavich, S. (2022). Spatially-heterogeneous embedded stochastic SEIR models for the 2014-2016 Ebola outbreak in West Africa. *Spatial and Spatiotemporal Epidemiology*. 41. doi: 10.1016/j.sste.2022.100505
7. \*Ozanne, M.V., **Brown, G.D.**, Scorza, B.M., Mahachi, K., Toepp, A.J., Petersen, C.A. Bayesian latent class models for identifying canine visceral leishmaniosis using diagnostic tests in the absence of a gold standard. (2022) *PLoS Neglected Tropical Diseases*. 16 (3). doi: 10.1371/journal.pntd.0010236
8. \*Ward, C. **Brown, G.D.**, Oleson, J. (2021) An individual level infectious disease model in the presence of uncertainty from multiple, imperfect diagnostic tests. *Biometrics*. doi: 10.1111/biom.13579
9. Phillip, K., Nair, N., Kamalika, S., Azevedo J.F., **Brown, G.D.**, Petersen, C.A., Gomes-Solecki, M. (2021). Maternal transfer of neutralizing antibodies to *B. burgdorferi* OspA after oral vaccination of the rodent reservoir. *Vaccine*. 39(31):4320-4327. doi:10.1016/j.vaccine.2021.06.025.
10. \*Seedorff, N., **Brown, G. D.** (2021). totalvis: A Principal Components approach to visualizing total effects in black box models. *SN Computer Science*. 2, 141. doi: 10.1007/s42979-021-00560-5
11. \*Ozanne, M.V., **Brown, G.D.**, Toepp, A.J., Scorza, B.M., Oleson, J.J., Wilson, M.E., Petersen, C.A. (2020). Bayesian compartmental models and associated reproductive numbers for an Infection with multiple transmission modes. *Biometrics*. 76(3):711-721. doi: 10.1111/biom.13192.
12. \*Ozanne, M.V., **Brown, G.D.**, Oleson, J.J., Iraci, L.D., Jeronimo, S.M.B. (2019). Bayesian compartmental model for an infectious disease with dynamic states of infection. *Journal of Applied Statistics*. 46(6):1043-1065. doi: 10.1080/02664763.2018.1531979
13. **Brown, G.D.**, Porter, A.T., Oleson, J.J., Hinman, J.A., (2018). Approximate Bayesian computation for spatial SEIR(S) epidemic models. *Spatial and Spatiotemporal Epidemiology*. 24:27-37. doi: 10.1016/j.sste.2017.11.001
14. Oleson, J.J., Cavanaugh, J.E., McMurray, B., **Brown, G.D.** (2017). Detecting time-specific differences between temporal nonlinear curves: Analyzing data from the visual world paradigm. *Statistical Methods in Medical Research*. 26(6):2708-2725 doi: 10.1177/0962280215607411
15. **Brown, G.D.**, Oleson, J.J., Porter, A.T. (2016). An empirically adjusted approach to reproductive number estimation for stochastic compartmental models: A case study of two Ebola outbreaks. *Biometrics*. 72(2):335-343. doi: 10.1111/biom.12432

\* PhD advisee

### Applied Publications

1. Asif, K., Mitra, A., Ortega-Gutierrez S., et al. (2024) Geo-Spatial Analysis of Acute Ischemic Stroke Reperfusion Treatment in India: An Assessment of Distribution and Access to Centers. *International Journal of Stroke* doi: 10.1177/17474930241312598
2. Rojas Chavez, R.A., Fili, M., Han, C., Rahman, S.A., Bicar, I.G.L., Gregory, S., Helverson, A., Hu, G., Darbro, B.W., Das, J., **Brown, G.D.**, Haim, H. (2024) Mapping the Evolutionary Space of SARS-CoV-2 Variants to Anticipate Emergence of Subvariants Resistant to COVID-19 Therapeutics. *PLOS Computational Biology*. doi: 10.1371/journal.pcbi.1012215

3. Ghandour, L., **Brown, G.D.**, Tleis, M., al Masri, H., Fares, M., Al Halabi, F., Najjar, Y., Louis, B., Afifi, R., Nakkash, R. (2024) Structural and political determinants of health among Syrian refugee young adults in the Bekaa, Lebanon: a prospective cohort study of the impact of security raids on perceived discrimination and well-being. *BMJ Open*. doi: 10.1136/bmjopen-2024-087777
4. Gilbert, P., Soweid, L., Evans, S., **Brown, G.D.**, Skinstad, A.H., Zemore, F. (2024) How Recovery Definitions Vary by Service Use Pathway: Findings From a National Survey of Adults. *Psychology of Addictive Behaviors*. doi: 10.1037/adb0001026
5. Nakkash, R., Ghandour, L., **Brown, G.D.**, Panter-Brick, C., Bomar, H., Tleis, M., Al Masri, H., Fares, M., Al Halabi, F., Najjar, Y., Louis, B., Hodroj, M., Chamoun, Y., Zarzour, M., Afifi, R.A. (2024) Syrian refugee young adults as community mental health workers implementing problem management plus: Protocol for a pilot randomized controlled trial to measure the mechanisms of effect on their own wellbeing, stress and coping. *Contemporary clinical trials communications*. doi: 10.1016/j.conctc.2024.101325
6. Bohr, N.L., Brown, G.D., Rakel, B., Babrowski, T., Dorsey, C., Kelly, C. (2024) Predictive Modeling for One-Year Lower Extremity Endovascular Revascularization Failure in Black Persons. *Journal of Surgical Research*. doi: doi.org/10.1016/j.jss.2024.04.068
7. Ogwo, C., **Brown, G.D.**, Warren, J., Caplan, D., Levy, S. (2023) Dental carries incidence and associated factors in young adults. *Journal of Public Health Dentistry*. doi: 10.1111/jphd.12586
8. Ogwo, C., Levy, S., Warren, J., Caplan, D., Brown, G.D. (2023) *Research Square* doi: 10.21203/rs.3.rs-3125821/v1
9. Davis, J., Casteel, C., **Brown, G.D.**, Carnahan, R. (2023) Fracture risk and opioid use in patients aged 17-64 years: An analysis of administrative claims data. *Pharmacotherapy*. doi: doi.org/10.1002/phar.2849
10. Gilbert, P., Saathoff, E., Russell, A., **Brown, G.D.** (2022) Gender differences in lifetime and current use of online support for recovery from alcohol use disorder. *Alcoholism: Clinical and Experimental Research*. doi: doi.org/10.1111/acer.14827
11. Chae, S., Gilbertson-White, S., Cherwin, C., Moorhead, S., **Brown, G.D.**, Street, N. (2022) Longitudinal subgrouping of cancer patients with similar symptom experiences: a systematic review. *Oncology Nursing Forum*. 49(4). doi:10.1188/22.ONF.E17-E30
12. Kontowicz, E., **Brown, G.D.**, Torner, J., Carrel, M., Baker, K., Petersen, C.A. (2022) Days of flooding associated with increased risk of influenza. *Environmental and Public Health*. doi: 10.1155/2022/8777594
13. Van Ert, H.A., Bohan, D.W., Rogers, K.J., Fili, M., Rojas, C., Anthony, R.R.C., Qing, E., Han, C., Dempewolf, S.M., Hu, G., Schwery, N., Sevcik, K.M., Ruggio, N., Boyt, D., Pentella, M., Gallagher, T., Brooks, J., Merrill, A.E., Knudson, M.C., **Brown, G.D.**, Maury, W., Haim, H. (2022), Limited variation between SARS-CoV-2-infected individuals in domain specificity and relative potency of the antibody response against the spike glycoprotein. *Microbiology Spectrum*. 10 (1). doi: 10.1128/spectrum.02676-21
14. Kontowicz, E., **Brown, G.D.**, Torner, J., Carrel, M., Baker, K., Petersen, C.A. (2022) Inclusion of environmentally themed search terms improves Elastic Net regression nowcasts of regional Lyme disease rates. *PLoS One*. 17(3):e0251165. doi: 10.1371/journal.pone.0251165
15. Riley, J., Huntley, J., Miller, J., Slaichert, A., **Brown, G.D.** (2022). Mask effectiveness in practice: secondary attack rates of COVID-19 in non-household contacts in Johnson County, Iowa. *Emerging Infectious Diseases*. 28(1). doi: 10.3201/eid2801.211591
16. Gilbert, P.A., Soweid, L., Kersten, S.K., **Brown, G.D.**, Zemore, S.E., Mulia, N., Skinstad, A.H. (2021) Maintaining recovery from alcohol use disorder during the COVID-19 pandemic: the importance of recovery capital. *Drug and Alcohol Dependence*. 229. doi: 10.1016/j.drugalcdep.2021.109142
17. Boles, C., Nonnenmann, M., **Brown, G.D.** (2021) Determination of murine norovirus aerosol concentration during toilet flushing. *Scientific Reports*. 11(23558). doi: 10.1038/s41598-021-02938-0
18. Han C., Johnson J., Dong R., Kandula R., Kort A., Wong M., Yang T., Breheny P.J., **Brown G.D.**, Haim H. (2020). Key positions of HIV-1 Env and signatures of vaccine efficacy show gradual reduction of population founder effects at the clade and regional levels. *mBio*. 11(3). doi: 10.1128/mBio.00126-20.
19. Mahachi, K., Kontowicz, E., Anderson, B., Toepp, A.J., Lima, A.L., Larson, M., Wilson, G., Grinnage-Pulley, T., Bennett, C., Ozanne, M.V., Anderson, M., Fowler, H., Parrish, M., Saucier, J., Tyrrell, P., Palmer, Z., Buch, J., Chandrashekar, R., Scorza, B., **Brown, G.D.**, Oleson J.J., Petersen, C.A. (2020). Predominant risk factors for tick-borne coinfections in US hunting dogs. *Parasites & Vectors*. 12(247). doi: 10.1186/s13071-020-04118-x
20. Boles, C., **Brown, G.D.**, Park, J., Nonnenmann, M. (2020). The optimization of methods for the collection of aerosolized murine norovirus. *Food and Environmental Virology*. 12:199-208. doi: 10.1007/s12560-020-09430-4
21. Gilbert, P.A., Pro, G., Zemore, S., Mulia, N., **Brown, G.D.** (2019). Gender differences in use of alcohol treatment services and reasons for non-use in a national sample. *Alcoholism: Clinical and Experimental Research*. 43(4):722-731. doi: 10.1111/acer.13965

22. Oleson, J.J., **Brown, G.D.**, McCreery, R. (2019). Essential statistical concepts for research in speech, language, and hearing sciences. *Journal of Speech, Language, and Hearing Research*. 62(3):489-497. doi: 10.1044/2018\_JSLHR-S-ASTM-18-0239.
23. Oleson, J.J., **Brown, G.D.**, McCreery, R. (2019). The Evolution of Statistical Methods in Speech, Language, and Hearing Sciences. *Journal of Speech, Language, and Hearing Research*. 62(3):498-506. doi: 10.1044/2018\_JSLHR-H-ASTM-18-0378.
24. Toepp, A.J., Monteiro, G.R.G., Coutinho, J.F.V., Lima, A.L., Larson, M., Wilson, G., Grinnage-Pulley, T., Bennett, C., Mahachi, K., Anderson, B., Ozanne, M.V., Anderson, M., Fowler, H., Parrish, M., Willardson, K., Saucier, J., Tyrell, P., Palmer, Z., Buch, J., Chandrashekar, R., **Brown, G.D.**, Oleson, J.J., Jeronimo, S.M.B., Petersen, C.A. (2019). Comorbid infections induce progression of visceral leishmaniasis. *Parasites and Vectors*. 12(1):54 doi: 10.1186/s13071-019-3312-3.
25. Ranapurwala, S., Carnahan, R., **Brown, G.D.**, Hinman, J., Casteel, C. (2019). Impact of Iowa's prescription monitoring program on opioid pain reliever prescribing patterns: An interrupted time series study 2003-2014. *Pain Medicine*. 20(2):290-300. doi: 10.1093/pm/pny029
26. Polgreen, P.M. **Brown, G.D.**, Hornick, D.B., Ahmad, F., London, B., Stoltz, D., Comellas, A. (2018). CFTR heterozygotes are at increased risk of respiratory infections: a population-based study. *Open Forum Infectious Diseases*. 5(11):ofy219. doi: 10.1093/ofid/ofy219
27. Carnahan, R.M., **Brown, G.D.**, Letuchy, E.M., Rubenstein, L.M., Gryzlak, B.M., Smith, M., Reist, J.C., Kelly, M.W., Schultz, S.K., Weckmann, M.T., Chrischilles, E.A. (2017). Impact of programs to reduce antipsychotic and anticholinergic use in nursing homes. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*. 3(4):553-561. doi: 10.1016/j.trci.2017.02.003
28. Doucette, W.R., Pendergast, J.F., Zhang, Y., **Brown, G.D.**, Chrischilles, E.A., Farris, K.B., Frank, J. (2015). Stimulating comprehensive medication reviews among Medicare part D beneficiaries. *American Journal of Managed Care*. 21(6):e372-378.
29. 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. *Value in Health*. 17(3):A149-A150. doi: 10.1016/j.jval.2014.03.869

## Non-Peer Reviewed

1. **Brown, G.D.**, Ozanne, M.V. (2019). Statistical models for infectious diseases: A useful tool for practical decision-making. Invited Editorial, *The American Journal of Tropical Medicine and Hygiene*. 101(1):1-2. doi: 10.4269/ajtmh.19-0354
2. **Brown, G.D.** Stewart, K. (2021). Radon testing and home sales: A case study. *Informational Pamphlet Published by the American Lung Association*. <https://bit.ly/3sJH0sK>
3. Thedell, T. Boles, C. Cwiertny, D. **Brown, G.D.**, Qian, J. Nonnenmann, M. (2018). Comparisons of a novel air sampling filter material, wash buffers and extraction methods in the detection and quantification of influenza virus. *bioRxiv*. doi: 10.1101/441154
4. **Brown, G.D.** Oleson, J. (2017). Spatiotemporal epidemic modelling with libSpatialSEIR: specification, fitting, selection, and prediction. 315-323. *Advances in Geocomputation*. doi: 10.1007/978-3-319-22786-3\_28
5. **Brown, G.D.**, Oleson J. (2014) Estimating and predicting epidemic behavior for the 2014 West African Ebola outbreak - A quick spatial SEIR modeling approach. *Online Report, 2014*. <https://bit.ly/3zigXLK>
6. 2011 Iowa Health Fact Book, University of Iowa College of Public Health, and the Iowa Department of Public Health. Pendergast, J., **Brown, G.D.** (Ed.) 2011

## External Support:

### Active

- Mohr, N., **Brown, G.D.**, Gutierrez, S.; NIH 1 R01 NS127114-01 (USD 3,184,901); "Geospatial modeling for stroke care"; Role: Co-PI; 30% effort; 2022-2026
- Oleson JJ; NIH 1 U01 CA258400-01A1 (USD 1,188,804); "Development of small area interactive risk maps for cancer control efforts"; Role: Co-I; 15% effort; 2022-2025
- Zamba, G; NIH 5 R25 HL161716-03 (USD 1,280,640); "Iowa Summer Institute for Research Education in Biostatistics and Data Science"; Role: Co-I; 4% effort; 2012-2027

- Petersen, CA; NIH 5 R01 AI139267-02 (USD 4,492,529); “*Field trial and modeling of transmission blocking vaccine to prevent Lyme Disease*”; Role: Co-I; 5% effort; 2019-2024
- Cwiertny, D.; HUD FR-6500-N-15 (USD 479,548) “*Healthy homes need healthy water: Developing and implementing a lead in drinking water assessment tool*”; Role: Co-I; 8% effort 2022-2025
- Oleson/Petersen; 1 R01 TW010500-01; “*Epidemic modeling framework for complex, multi-species disease process and the impact of vertical and vector transmission*”; Role: Co-I; 5% effort; 2016-2021
- Gilbert, PA; NIH 5 R01 AA027266-02 (USD 2,275,812); “*Recovery definitions and behavior change processes in recovery outside of treatment*”; 15% effort; 2019-2024
- McMurray, B; NIH 5 R01 DC008089-11 (USD 7,213,518); “*The development of real-time spoken and written word recognition: cognitive bases of language and educational outcomes*”; Role: Co-I; 6% effort; 2020-2023
- Oleson, JJ; Iowa Dept. of Public Health (IDPH) Contract #5882NB90 (USD 7,591,351); “*Screening data management*”; Role: Co-I; 8% effort; 2015-2022

### Completed

- Afifi, R., Nakkash R.; NIH/NIMH 1 R34 MH121558-01A1 (USD 641,160); “*Youth as community mental health workers in humanitarian settings: A pilot test of the mechanisms of effect on their own well-being*”; Role: Co-I; 10% effort 2021-2023
- Zamba, G; NIH 5 R25 HL147231-03 (USD 1,005,471); “*Iowa Summer Institute for Biostatistics*”; Role: Co-I; 4% effort; 2016-2022
- **Brown, G.D.**; Immuno-Technologies, Inc. (USD 22,835); “*Antibody isotyping for discrimination of disease stages and diagnosis of early Lyme Disease*”; Role: PI for UI Subaward; 10% effort; 2020-2022
- **Brown, G.D.**, Field. R.W.; American Lung Association (USD 19,516); “*ALA Expanding National Radon Action: 2021-2023 project*”; Role: Subcontract PI; 5.5% effort; October 2021-March 2012
- Haim, H; American Foundation for AIDS Research 110028-67-RGRL (USD 159,995); “*Deep learning methods to personalize antibody therapeutics for delaying viral rebound after cessation of ART*”; Role: Co-I; 9% effort; 2020-2021
- **Brown, G.D.**; American Lung Association 1 3110800 (USD 6,974); “*Expanding national radon action*”; Role: Subcontract PI; 33% effort; July-September 2019
- Gilbert, P.A.; 1 R21 AA023878-01A1; “*Factors responsible for racial-gender disparities in alcohol services use*”; Role: Co-I; 5% effort; 2015-2018
- Carnahan, R.; PCORI 1131 Mod 003; “*Extension connection: advancing dementia care for rural and Hispanic populations*”; Role: Co-I; 20% effort; 2015-2016

### **Invited Talks:**

- Ortega-Gutierrez, S., Mohr, N., **Brown, G.D.** (November 2022) “MAP-STROKE: Modeling Ambulance-based Prehospital Triage for Optimizing Stroke Recovery.” *Grand Rounds presentation, University of Iowa Carver College of Medicine, Department of Neurology, Iowa City, IA*
- **Brown, G.D.** (February 2022) “Computational Strategies for Large Spatiotemporal Scale Infectious Disease Modelling.” *ASA North Texas Chapter Seminar Series, Dallas, TX*
- **Brown, G.D.** (December 2021) “Computational Strategies for Large Spatiotemporal Scale Infectious Disease Modelling.” *Department of Geographical and Sustainability Sciences, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (December 2021) “Computational Strategies for Large Spatiotemporal Scale Infectious Disease Modelling.” *Department of Biostatistics, University of Nebraska Medical Center, College of Public Health, Omaha, NE.*
- **Brown, G.D.** (June 2021) “Power, Sample Size, and Proposals.” *College of Nursing, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (April 2021) “Computational Strategies for fully Bayesian State-Space Models of Infectious Diseases.” *Department of Biostatistics, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (April 2021) “Computational Strategies for fully Bayesian State-Space Models of Infectious Diseases.” *Department of Biostatistics and Informatics, Colorado School of Public Health, Aurora, CO*
- **Brown, G.D.** (October 2020) “Modelling the Enzootic Cycle of *Borrelia burgdorferi* for Planning and Evaluating Interventions.” *Department of Statistics, University of Iowa, Iowa City, IA*

- **Brown, G.D.** (June 2020) “Epidemic Models of *Borrelia burgdorferi* for planning and evaluating interventions (plus a few notes about COVID in Iowa).” *The Fields Institute for Research in Mathematical Sciences, University of Toronto, Canada.*
- **Brown, G.D.** (March 2018) “Working with Approximate Bayesian Computation in Stochastic Compartmental Models.” *Department of Applied Mathematics and Statistics, Colorado School of Mines, Golden, CO*
- **Brown, G.D.** (December 2016) “Approximate Bayesian Computation for Compartmental Epidemic Models.” *Iowa Informatics Initiative Student Journal Club, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (November 2016) “Approximate Bayesian Computation for Compartmental Epidemic Models.” *Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA*
- **Brown, G.D.**, Carter, K. (November 2016) “SAS and R: A practical comparison for predictive analytics” *Business Intelligence Community, University of Iowa, Iowa City, IA*
- Carnahan R., **Brown G.D.** (October 2016) “Evaluation of Educational Programs to Improve Medication Use in Nursing Home Residents.” *Department of Epidemiology Seminar, University of Iowa, Iowa City, IA*
- **Brown, G.D.**, Porter, A.T., Oleson J.J. (August 2016) “Approximate Bayesian Computation for Compartmental Epidemic Models.” *Joint Statistical Meetings, Chicago, IL*
- \*Porter, A.T., **Brown, G.D.** (August 2016) “A Robust SEIR Model for Epidemics on Unobserved Graphs.” *Joint Statistical Meetings, Chicago, IL*
- **Brown, G.D.** (February 2016) “Approximate Bayesian Computation for Compartmental Epidemic Models.” *Department of Statistics, University of Iowa, Iowa City, IA*
- **Brown, G.D.** Carter, K. (December 2015) “Predictive Modelling Techniques with Application to Enrollment Management at UI.” *Department of Biostatistics Seminar, University of Iowa, Iowa City, IA*
- **Brown, G.D.** Carter, K. (October 2015) “Predictive Modeling for First Year Enrollment.” *Institutional Data Users Group, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (January 2015) “An Empirically Adjusted Reproductive Number for Stochastic Compartmental Models.” *Department of Biostatistics Seminar, University of Iowa, Iowa City, IA*
- **Brown, G.D.** (December 2014) “Working with Epidemic Data.” *Cornell College, Mt. Vernon, IA*
- **Brown G.D.** (November 2014) “Predicting Epidemic Behavior.” *Online Presentation for Project Lead the Way Inc.*

\* denotes presenter

### Contributed Talks:

- \*Gilbert, P.A., **Brown, G.D.**, Maharjan, G. (2024) “Recovery goals and their associations with outcomes in a cohort of adults in early recovery from alcohol use disorder.” *Poster presentation at American Public Health Association Annual Meeting, Minneapolis, MN*
- \*Ogwo, C., Levy, S., **Brown, G.D.**, Wehby, G., Caplan, D.J., Warren, J. (2022) Prediction Of Caries In Young Adults Using Machine Learning Approach. *AADOCR/CADR Annual Meeting & Exhibition, Atlanta, GA*
- \*Gilbert, P.A., Saathoff, E., **Brown, G.D.**, Kersten, S., Soweid, L., Skinstad, A.H., Mulia, N., Zemore, S.E., Kaskutas, L. (October 2021) “Digital Recovery Support Services during the COVID-19 Pandemic: Differences by Gender.” *Virtual poster presentation at American Public Health Association annual meeting, Denver, CO*
- \*Ward, C., **Brown, G.D.**, Oleson, J.J. (August 2020) “An Individual Level Infectious Disease Model in the Presence of Uncertainty from Multiple, Imperfect Diagnostic Tests.” *Joint Statistical Meetings, Virtual Conference*
- **Brown, G.D.** (July 2019) “Structure Penalized Trees for Ensemble Methods – Robust Prediction for Annual Outcome Data.” *Joint Statistical Meetings, Denver, CO*
- \*Ozanne, M.V., **Brown, G.D.**, Oleson, J.J. (July 2019) Poster: “Bayesian Compartmental Model for an Infectious Disease with Multiple Infectious States”. *Joint Statistical Meetings, Denver, CO*
- **Brown, G.D.** (May 2018) “Leveraging Institutional Data: Predicting Undergraduate Enrollment and Retention.” *2018 Tech Forum, University of Iowa, Iowa City, IA*
- \*Nwoke, Uchechukwu. Ulin, Brenda. Brown, Grant. (2018) “Partnerships in Technology, Predictive Indexes & Process to Influence Student Success & Retention: A Data Science Perspective.” *Higher Education Data Warehousing Forum, Corvallis, OR*

- \*Ozanne, M.B., Oleson, J.J., **Brown, G.D.** (August 2016) “Bayesian Epidemic Compartmental Model for an Infectious Disease with Multiple Transition Paths: Analyzing Visceral Leishmaniasis in Brazil.” *Joint Statistical Meetings, Baltimore, MD*
- **Brown, G.D.** (March 2016) “Approximate Bayesian Computation for Compartmental Epidemic Models – Methods and Software.” *American Statistical Association, Eastern North American Region. Austin, TX*
- **Brown, G.D.**, Oleson JJ. (May 2015) “Spatiotemporal Epidemic Modeling with libSpatialSEIR Specification, Fitting, Selection, and Prediction.” *Geocomputation Conference, Dallas TX*

\* denotes presenter

### Selected Software Development:

- totalvis: R package for implementing principal-components-based effect visualizations for black-box models. <https://github.com/nickseedorff/totalvis>
- ABSEIR: R package for efficient fitting of spatial Susceptible-Exposed-Infectious-Removed compartmental epidemic models using Approximate Bayesian Computing. <https://github.com/grantbrown/ABSEIR>
- libSpatialSEIR: C++ library and R package for Markov Chain Monte Carlo fitting of spatial Susceptible-Exposed-Infectious-Removed infectious disease models. <https://github.com/grantbrown/libspatialSEIR>
- laspy: python package for LIDAR data processing <https://github.com/laspy/>

### Selected Student Advising:

- Have served or am serving on numerous PhD committees (non-chair) from: Biostatistics, Occupational and Environmental Health, Nursing, Epidemiology, Interdisciplinary Graduate Program in Informatics, Civil and Environmental Engineering
- PI for internal funding opportunity: “Supporting Public Health Communication About COVID-19 in Johnson County”, supporting a Biostatistics RA
- Project mentor, (2024,2021) Iowa Institute of Public Health Research and Policy Global Health Case Competition
- Iowa Summer Institute in Biostatistics Project Mentor, 2015-2021,2023 (7 groups, 16 total students)
- Supervisor for Biostatistics Preceptorships (8 students)
- Supervisor for Biostatistics Research Assistants, 2015-present (15 student-projects)
- External examiner for one PhD student (University of Calgary, 2022)
- Served on Numerous MS exam/thesis committees: Occupational and Environmental Health, Epidemiology, Community and Behavioral Health

### Doctoral Dissertations Directed:

- Natalie Langenfeld, “A novel sequential ABC algorithm with applications to the opioid crisis using compartmental models.” Biostatistics, University of Iowa. May 2018
- Marie Ozanne, “Bayesian compartmental models for zoonotic visceral leishmaniasis in the Americas.” Biostatistics, University of Iowa. Co-advised with Jacob Oleson. May 2019
- Caitlin Ward, “Advances in Spatio-Temporal Infectious Disease Modelling.” Biostatistics, University of Iowa. Co-Advised with Jacob Oleson. May 2021
- Nicholas Seedorff, “Advancing Flexible Methods for Interpretation and Forecasting of Correlated Data.” Biostatistics, University of Iowa. September 2021
- Felix Pabon-Rodriguez, “Bayesian approaches to within and between host models for infectious disease processes.” Biostatistics, University of Iowa. May 2023
- Helin Hernandez, Biostatistics, “Bayesian spatial modeling of visceral leishmaniasis disease and infection in Brazil at multiple spatial scales.” University of Iowa. Co-advisor Jacob Oleson. July 2023
- Annika Helverson, “A hybrid particle filter for simultaneous parameter and state estimation.” Biostatistics, University of Iowa. May 2024
- Josh Tomiyama, Biostatistics, University of Iowa. Anticipated May 2025
- Krit Petrachaianan, Biostatistics, University of Iowa. Anticipated July 2025

## Editorial Activities:

- Statistical Editor, *Anesthesia & Analgesia* (2022-present)
- Statistical Reviewer, *Anesthesia & Analgesia* (2021)
- External Fellowship Review, Wellcome Trust (2019)
- Referee for: *Acta Tropica*; *American Journal of Tropical Medicine and Hygiene*; *Biostatistics*; *Biostatistics & Epidemiology*; *Canadian Journal of Statistics*; *Computational and Applied Mathematics*; *Heliyon-D*; *International Conference on Information Systems*; *Inquiry*; *JAMA Network Open*; *Journal of Applied Statistics*; *Journal of Exposure Science and Environmental Epidemiology*; *Journal of Speech, Language, and Hearing Research*; *Journal of Occupational and Environmental Hygiene*; *Journal of the Royal Statistics Society Series C*; *New England Journal of Medicine*; *Open Statistics*; *PLoS Neglected Tropical Diseases*; *PLoS One*; *Scientific Reports*; *Spatial and Spatiotemporal Epidemiology*; *Stats*; *Statistics in Medicine*; *Tropical Medicine and Infectious Disease*
- Reviewer for ASA Chambers award and student paper competition (2016)

## Professional Organizations:

- American Statistical Association
- International Biometrics Society/ENAR

## Professional Service:

- Reviewer, NIH ZRG1 HSS-N-91 section (2024)
- Chair, Faculty Council, College of Public Health (2022-2024)
- Member, Faculty Council, College of Public Health (2022)
- Member, MPH Program Core Faculty Advisory Group, College of Public Health (2022-2023)
- Member, Undergraduate Program Committee, College of Public Health (2018-2023)
- Member, Academic Misconduct Committee, College of Public Health (2022-2023)
- Faculty Representative, Awards Committee, College of Public Health (2022-2023)
- Question Writer, PhD Comprehensive Exam Committee, Department of Biostatistics (2017-2021)
- Member, Admissions Committee, Department of Biostatistics (2016-2023, Co-Chair 2016)
- Member, Web-Based Instruction Resource Committee, Department of Biostatistics (2016-2021)
- Member, Data Safety Monitoring Board, "Effect of Tick Prevention on Progression of Canine Leishmaniosis." Grant number: MFHA18441000 (2020)
- Member, COVID-19 Working Group, College of Public Health (2020)
- Member, Business Intelligence Community Steering Committee, University of Iowa (2016-2020)
- Member, Computing Committee, Department of Biostatistics (2015-2023)
- Member, Community and Behavioral Health DEO Search Committee, College of Public Health (2019)
- Member, MS Core Exam Committee, Department of Biostatistics (Spring 2017, Summer 2017, Winter 2019, Winter 2023)
- Panel Participant, College of Public Health Hot Topics Session. (2016, 2018)
- Biostatistics Representative, College of Public Health Business Leadership Network Steering Committee Meeting (2018)
- Member, Statistical Methods Task Force, College of Public Health (2017)
- Session Chair, Clustered Data Methods contributed session, American Statistical Association, Eastern North American Region, Austin TX. (2016)
- Chair, Advanced Biostatistical Computing Exploratory Committee, Department of Biostatistics (2015-2016)
- Member, Curricula Innovations Committee Undergraduate Subgroup, College of Public Health (2015)



## Awards and Honors

- Inducted into Delta Omega Honorary Society (2023)
- College of Public Health Faculty Teaching Award (2018) – One of two annual collegiate teaching awards.
- Fellow, Opioid Ideas Lab (2018) – Three-day workshop, hosted by the University of Iowa Office of the Vice President for Research and Economic Development, and directed by Dr. Chris Buresh (MD, MPH). Fellows were selected from applying University of Iowa faculty. <https://research.uiowa.edu/university-iowa-opioids-ideas-lab>
- Recipient of “thank-you” messages from students through the “Thank-a-Teacher” program sponsored by the University of Iowa Office of Teaching, Learning, and Technology: Spring 2018, Spring 2019, Fall 2020
- Contributing author, Postgraduate Best Paper Award (2014) - Honorable Mention in the Economic, Social & Administrative Sciences, American Pharmacists Association. “A Longitudinal Analysis of High Risk Medication Use among Beneficiaries in Two Medicare Drug Plans.” Zhang, Y., Doucette, W., **Brown, G.D.**, Pendergast, J., Frank, J.