Brad Price, Ph.D.

CONTACT INFORMATION

E-mail: brad.price@mail.wvu.edu
Website: www.bradprice.io
Department Chair and Associate Professor
Department of Management Information Systems and Supply Chain
John Chambers College of Business and Economics
Co-Director, Biostatistics, Epidemiology, and Research Design
West Virginia Clinical and Translational Science Institute
West Virginia University
Phone: (304)-767-5599

RESEARCH INTERESTS

Statistical Machine Learning, Multi-task Learning, Statistical Computing, Data Science, Data Visualization, Statistics Education, Reproducible Research, Statistical Consulting

EDUCATION

University of Minnesota, **Minneapolis, MN**

Ph.D., Statistics *June 2014*

- Advisors: Charles J. Geyer and Adam J. Rothman
- Title: "Fusion Penalties in Statistical Learning"

West Virginia University, **Morgantown,WV**

B.S., Mathematics and Industrial Mathematics and Statistics *May 2009*

- Cum Laude
- IMS Outstanding Senior Award

PAPERS, TECHNICAL REPORTS, WORKING DOCUMENTS

1. **Price, B.S.**, Saldanha, J., Quiroga, B., Hodder, S.L. (2024) Maintaining Healthcare Capacity in Rural America by Replenishing Personal Protective Equipment: The Case from West Virginia. *INFORMS Journal on Applied Analytics* 54 (6), 516-536.

2. Smida, T. , Bonasso,P., Bardes, J., **Price,B.S.**, Seifarth, F. , Gurien, L., Maxson, R., Letton, R. (2024). Reverse Shock Index Multiplied by the Motor Component of the Glasgow Coma Scale Predicts mortality and Need for Intervention in Pediatric Trauma. *Journal of Trauma and Acute Care Surgery*, 97(3); 393-399.

3. Dotson, T., **Price, B.S.**, Witrick, B., Davis, S., Kemper, E., Whanger, S., Hodder, S., Hendricks, B. (2024). Factors Associated With Surveillance Testing in Individuals With COVID-19 Symptoms During the Last Leg of the Pandemic: Multivariable Regression Analysis. *JMIR Public Health and Surveillance*. 10 (1).

4. Smida, T. , **Price, B.S.**, Mizener, A., Crowe, R.P., Bardes, J.M.. (2024). Prehospital Post-Resuscitation Vital Sign Phenotypes are Associated with Outcomes Following Out-of-Hospital Cardiac Arrest. *Prehospital Emergency Care*. Available Online.

5. Anzalone, A.J., Beasley, W.H., Murray, K., Hillegass, W.B., Schissel, M., Vest, M.T., Chapman, S.A., Horswell, R., Miele, L., Porterfield, Z., Bunnell, H.T., **Price, B.S.**, Patricks, S., Rosen, C.J., Santangelo, S.L., McClay, J.C., Hodder, S.L. (2024). Associations Between COVID-19 Therapies and Outcomes in Rural

and Urban America: A Multisite, Temporal Analysis from the Alpha to Omicron SARS-CoV-2 Variant. *Journal of Rural Health.*

6. Smitda, T., Crowe, R.P., Martin, P.S., Scheidler, J.F, **Price, B.S.**, Bardes, B.S.. (2024). A Retrospective, Multi-Agency 'Target Trial Emulation' for the Comparison of post-resuscitation epinephrine to norepinephrine. *Resuscitation.* 198, May 2024.

7. **Price, B.S.**, Khodaverdi, M., Hendricks, B. M., Smith, G., Kimble, W., Halász, Á. M., Gutherie, S. (Graduate Student), Fraustino, J. D., Hodder, S. L. (2024). Enhanced SARS-CoV-2 Case Prediction Using Public Health Data Using Machine Learning Models. *JAMIA Open* 7(1), 1-11 ,ooae014.

8. Sherwood, B., **Price, B.S.**, (2024) On the Use of Minimum Penalties in Statistical Learning. (2024) *Journal of Computational and Graphical Statistics*, 33 (1): 138-151.

9. Moradi, H., Bunnell, T. H.,**Price, B.S.**, Khodaverdi, M., Vest, M. T., Porterfield, J. Z., Anzalone, A. J., Santangelo, S. L., Kimble, W., Harper, J., Hillegas, W., Hodder, S. L. (2023). Assessing the Effects of Therapeutic Combinations on SARS-CoV-2 Infected Patient Outcomes: A Big Data Approach. *PLOS One*, 18(3), 1-22.

10. Smida, T. , **Price, B.S.**, Scheidler II, J., Crowe, R., Wilson, A. M., Bardes, J. Stay and Play or Load and Go? The association of On-Scene Advance Life Support Interventions with Return of Spontaneous Circulation Following Traumatic Cardiac Arrest. *European Journal of Trauma and Emergency Surgery*,(49), 2165-2172.

11. Hendricks, B. M., Quinn, T., **Price, B.S.**, Dotson, T., Claydon, E., Miller, R. (2023). Impact of Stress and Stress Mindset on Prevalence of Cardiovascular Disease Risk Factors Among First Responders. *BMC Public Health*, 23(1921), 1-8.

12. Saldanha, J., **Price, B.S.**, Thomas, D. (2023) A Non-parametric Approach to Setting Safety Stock. *Production and Operations Management*, 32(4), 1150-1168.

13. Yim, A., **Price, B.S.**, Agnihotri, R., Cui, A.P. (2023) The Harmful Effect of Salesperson Babyface on Online Consumer Engagement. *European Journal of Marketing*, 57(7), 1886-1911.

14. Bardes J.B., **Price B.S.**, Bailey H., Quinn A., Warriner Z.D., Bernard A.C., LaRiccia A., Spalding M.C., Linskey Dougherty M.B., Armen S.B., Wilson A. (2023) Prehospital Shock Index Predicts Outcomes After Prolonged Transport: A Multicenter Rural Study. *Journal of Trauma and Acute Care Surgery*, 94 (4), 525-531.

15. Hendricks,B., **Price, B.S.**, Dotson, T., Kimble,W.D., Davis, S., Khodaverdi, M., Halasz, A., Smith, G., Hodder,S. (2023) If You Build It, Will They Come? Is Test Site Availability a Root Cause of Geographic Disparities in COVID-19 Testing?. *Public Health*, 216, 21-26.

16. **Price, B.**, Saldanha, J., Drake, D., Kopp, K. (2022) Lessons from West Virginia's Pandemic Response. *Journal of Computational and Graphical Statistics*, 32 (3), 763-764.

17. Anzalone, A.J., Sun, J., Vinson, A.J., Beasley, W.H., Hillegass, W.B., Murray, K., Hendricks, B.M., Daendel, M., Reynolds Geary, C., Bailey, K.L., Hanson, C.K., Miele, L., Horswell, R. McMurry, J.A., Porterfield J.Z., Vest, M., Bunnell, H.T.,

Harper, J.R., **Price, B.S.,** Santangelo, S.L., Rosen, C.J., McClay, J.C., Hodder, S.L. (2022) Community Risks for SARS-CoV-2 Infection Among Fully Vaccinated US Adults by Rurality: A Retrospective Cohort Study from the National COVID Cohort Collaborative. *PLOS One*, 18 (1), 1-25.

18. Khodaverdi, M., **Price,B.S.**, Porterfield,J.Z., Bunnell, T.H., Vest, M.T., et.al. (2022) An Ordinal Severity Scale for COVID-19 Retrospective Studies Using Electonic Health Record Data. *JAMIA Open*, 5 (3), ooac066.

19. Nazir, S., **Price, B.S.**, Kopp,K., Surdendera, N. Applying Agile Development Practices for Successful COVID Vaccination Distribution: Lessons Learned from an Emergency Response Research Project. (2022)*Information Technology and Management*, 23 (2), 193–211.

20. Bardes, J., **Price, B.S.**, Adjeroh, D., Doretto, G., Wilson, A. (2021) Initial EMS Shock Index is the Most Accurate Predictor of Patient Outcomes After Blunt Torso Trauma. *Journal of Trauma and Acute Care Surgery*, 92 (3), 498–503.

21. **Price, B.S.**, Khodaverdi, M. , Halaz, A., Hendricks, B., Kimble, W., Smith,G., Hodder,S. (2021) Predicting Increases in COVID-19 Incidence to Identify Locations for Targeted Testing in West Virginia: A Machine Learning Enhanced Approach. *PLOS ONE*, 16 (11), 1–16.

22. Delgado, Y., **Price, B.S.**, Speaker, P.J., Stoiloff, S.L. (2021) Forensic Intelligence: Data Analytics as the Bridge Between Forensic Science and Investigation. *Forensic Science International: Synergy*, 3, (Available Online).

23. **Price, B.S.**, Molstad, A., Sherwood, B. (2021) Estimating Multiple Precision Matrices using Cluster Fusion Regularization. *Journal of Computational and Graphical Statistics*, 30 (4), 823–834.

24. **Price, B.S.**, Allenbrand, C., Sherwood, B. (2021) Detecting Clusters in Multiple Response Regression. *WIREs Computational Statistics*, 14 (3), e1551.

25. Ramezan, C. A., Warner, T. A., Maxwell, A. E., **Price, B. S.** (2021) Effects of Training Set Size on Supervised Machine Learning Land-Cover Classification of Large-Area High Resolution Remotely Sensed Data. *Remote Sensing*, 13 (3), 368.

26. Nowak, A., **Price, B.S.**, Smith, P. (2021) Real Estate Dictionaries Across Space and Time *Journal of Real Estate Finance and Economics*, 62 (1), 139–163.

27. **Price, B.S.**, Geyer, C.J. , Rothman, A.J. (2019) Automatic Response Category Combinations in Multinomial Logistic Regression *Journal of Computational and Graphical Statistics*, 28 (3), 758–766.

28. Aluri, A.J., **Price, B.S.**, McIntyre, N. (2019) Using Machine Learning to Co-Create Value Through Dynamic Customer Engagement in a Brand Loyalty Program. *Journal of Hospitality and Tourism Research*, 43 (1), 78-100 (JHTR 2018 Best Paper Award).

29. **Price, B.S.**, Sherwood, B. (2018) A Cluster Elastic Net for Multivariate Regression *Journal of Machine Learning Research*, 18 (232), 1-39.

30. **Price, B.S.**, Kleist, V.F., McIntyre N. (2016) Incorporating program spanning experiential learning into an online/hybrid master of science in business data analytics program. *Proceedings of 33rd Information Systems Education Conference (ISECON 2016), 142-145.*

31. **Price, B.S.** (2015) Supporting Data Analysis for Ridge Fusion in Statistical Learning. Technical report, University of Minnesota.

32. **Price, B.S.**, Geyer, C.J., Rothman, A.J. (2015) Ridge Fusion in Statistical Learning. *Journal of Computational and Graphical Statistics* 24 (2), 439-454 .

Interviews and Book Reviews

1. **Price, B.S.** (2017). An Interview with Pete Gibson, CEO of Datlytics, Ft. Lauderdale, Florida, USA. *Journal of Global Information Technology Management* 20 (2), 131-134.

2. **Price, B.S.** (2017). A review of "An Adventure in Statistics: The Reality Enigma". *The American Statistician* 71 (3) 282-289.

R Packages

car

Software package in R that implements functions to accompany J. Fox and S. Weisberg, An R Companion to Applied Regression, Second Edition, Sage, 2011.

effects

Software package in R that implements graphical and tabular effect displays, e.g., of interactions, for linear (including fit via gls), multivariate-linear, generalized linear, multinomial-logit, proportional-odds logit, mixed-effect, polytomous latent-class, and some other models; (multidimensional) component plus residual plots for linear and generalized linear models..

carData

Software package in R that supplies data that accompany J. Fox and S. Weisberg, An R Companion to Applied Regression, Second Edition, Sage, 2011.

mcen

Software package in R that implements a penalized log-likelihood approach to estimate regression coefficients and cluster response categories in multivariate linear and logistic regression. This package includes methods for both continuous response regression, binary logistic regression, and model selection.

gfmR

Software package in R that implements a penalized log-likelihood approach to combine response categories in multinomial logistic regression. This package includes methods for group structure selection with adaptive penalties and cross validation using validation likelihood to select models with prediction accuracy.

RidgeFusion

Software package in R that implements a penalized log-likelihood approach for joint inverse covariance matrix estimation using ridge and fused ridge penalties. This includes methods for quadratic discriminant analysis, semi-supervised model based clustering, and tuning parameter selection for each method.

Academic Experience

West Virginia University **Morgantown, WV**

Department Chair, Management Information Systems and Supply Chain July 2024-Present

Associate Professor of Business Data Analytics June 2022-Present

Co-Director BERD Core, West Virginia Clinical and Translational Science Institute September 2021-Present

Adjunct Assistant Professor, Economics August 2021-Present

Chief Data Scientist, West Virginia Governors Joint Interagency Taskforce May 2021-Present

Assistant Professor of Business Data Analytics June 2016-June 2022

University of Miami (Fla.) **Miami, Fla.**

Clinical Assistant Professor
Director, Masters of Science in Business Analytics Summer 2014-May 2016

Member of Center for Computational Science Fall 2014 - Fall 2016

University of Minnesota **Minneapolis, MN**

Lead Instructor Introduction to Statistical Analysis *Fall 2013-Spring 2014*

Research Assistant *Summer 2013*

Teaching Assistant *Fall 2009-Spring 2011*

Select Grants and Sponsored Research

"Leveraging COVID-19 Insights to Develop Novel Behavior-Informed Multi-Task Machine Learning Frameworks for Targeted Public Health Interventions in Rural America", Primary Investigator, $418,000 (Direct Cost), Funded

"Exploring Perivascular spaces in Alzheimer's disease using an automated Frangi filter technique", National Institute of Health, Co- Investigator, $418,000, Awarded.

"West Virginia Clinical and Translational Science Institute: Improving Health through Partnerships and Transformative Research (NC3 Year 3)", National Institute of Health, Co-Investigator. $645,630, Funded.

"West Virginia Clinical and Translational Science Institute: A Statewide Organization Building Research Excellence and Engaging Communities to Improve Health ", National Institute of Health, Core Director.$20,184,135, Funded.

"Identifying Covid-19 Vaccine Deserts using Machine Learning and Geospatial Analyses to target Community-engaged testing for vulnerable rural populations to prevent localized outbreaks", National Institute of Health, Co-Primary Investigator, $2,155,451, Funded.

"NRT-HDR: Bridges in Digital Health" (2020) , Sponsored Research, National Science Foundation, $3,000,000 (Co-Investigator)

"Investigating Personal Protective Equipment Usage During Pandemics" (2020) Sponsored Research, West Virginia Clinical and Translational Science Institute, Primary Investigator,$30,000, June 2020-May 2021.

"New Computational Methods for Multi-Task Learning" (2021), John Chambers College of Business and Economics Summer Salary Support, Principal Investigator, $13,000, June 2021-August 2021.

"Graph Constrained Multi-Task Regression Models using Self-Learning Graphs with Post Selection Inference" (2020), John Chambers College of Business and Economics Summer Salary Support, Primary Investigator,$13,000, June 2020-August 2020.

Awards

John Chambers College of Business and Economics College Award of Distinction for Faculty Outreach

August 2024

AACSB 2024 Influential Leader Award

April 2024

John Chambers College of Business and Economics College Award of Distinction for Faculty Research

August 2023

John Chambers College of Business and Economics College Award of Distinction for Faculty Service

August 2020

Department of The Army Civilian Service Award/Medal

August 2020

2018-2019 Big XII Faculty Fellowship

June 2018

2017 Best Paper Award Journal of Hospitality and Tourism Research presented by ICHRIE: "Using Machine Learning to Co-Create Value Through Dynamic Customer Engagement in a Brand Loyalty Program"

June 2018

Finalist 2017 Best Paper Award INFORMS Annual Meeting Data Mining Section: "A Cluster Fusion Penalty for Grouping Response Variables in Multivariate Regression Models

Oct 2017

2017-2018 Big XII Faculty Fellowship

July 2017

ISECON 2016 Best Paper Award "Incorporating Program-spanning Experiential Learning into an Online/Hybrid Masters of Science in Business Data Analytics Program"

Nov 2016

University of Miami School of Business Administration Excellence in Teaching Award

May 2016

University of Miami School of Business Administration Excellence in Teaching Award

May 2015

University of Minnesota School of Statistics Bernard W. Lindgren Graduate Student Teaching Award

May 2014

Council of Graduate Students Graduate Student Teaching Award

May 2013

Presentations

University of Minnesota, Minneapolis, Minnesota (Invited) Oct 2022
N3Community Forum, Virtual, Invited, May 2022
Rice University, Houston, Texas, (Invited) April 2022
IDeA-CTR- N3C Investigator Engagement Event, Virtual, (Invited) Feb 2022
noRth R Users Conference, Virtual Meeting, (Keynote) September 2021
Symposium for Statistics and Data Science, Virtual Meeting (Invited) June 2021
Joint Statistical Meetings, Virtual Meeting (Invited) August 2020
CMStatistics, London, England (Invited) December 2019
University of Miami Department of Management Science (Invited) November 2019
Focus Forward Big Data, Charleston, WV (Moderator) September 2019
Joint Statistical Meetings, Denver CO August 2019
Education Alliance Ed-Talk, Beckley, WV (Invited) June 2019
Symposium for Data Science and Statistics, Seattle, WA (Invited), May 2019
POMS 2019, Washington DC (Invited), May 2019
Symposium for Data Science and Statistics, Reston, VA (Invited), May 2018
School of Statistics IRSA, Univ. of Minnesota (Invited), April 2018
University of Kansas, Center for Business Analytics Research (Invited), Nov 2017
INFORMS Annual Meeting (Invited Research), Houston, TX Oct 2017

Joint Statistical Meetings, Baltimore, MD Aug 2017
SAMSI Workshop on the Interface between Statistics and Optimization Feb 2017
INFORMS Annual Meeting 2016, Nashville, TN Nov 2016
SHRM State Meeting 2016, Bridgeport, WV, (Invited) Nov 2016
Technology at the Gap 2016, Rocky Gap, MD, (Invited) Oct 2016
WVU Center for Free Enterprise Summer Empirical Workshop July 2016
Colgate University Department of Mathematics Nov 2015
West Virginia University College of Business and Economics (Invited) Oct 2015
Interface 2015, Morgantown, WV (Invited Education) June 2015
Interface 2015, Morgantown, WV (Invited Research) June 2015
West Virginia University Department of Statistics (Invited) April 2015
ENAR , Miami, FL Mar 2015
University of Miami School of Business Faculty Colloquium (Invited) Nov 2014
University of Miami Biostatistics (Invited) Oct 2014
Winona State University Dept. of Mathematics and Statistics (Invited) Dec 2013
University of Miami Department of Management Science (Invited) Nov 2013
University of Minnesota School of Statistics Student Seminar Series Nov 2013
Joint Statistical Meetings, Montreal, Canada Aug 2013
Joint Statistical Meetings, San Diego, CA Aug 2012
University of Minnesota School of Statistics Anniversary Celebration May 2011

Service

Reviewer for American Statistical Association Business and Economics Section Student Paper Competition

Reviewer for WIREs Computational Statistics

Reviewer for INFORMS Journal on Applied Analytics

Reviewer for Statistics and Computing Reviewer for Statistics and Computing

Reviewer for Scientific Reports

Reviewer for Remote Sensing

Reviewer for Biometrics

Editorial Board Reviewer Journal of Machine Learning Research

Reviewer for Journal of Computational and Graphical Statistics

Reviewer for Computational Statistics and Data Analysis

Reviewer for Advances in Data Analysis and Classification

Co-Track Chair 2019 Symposium for Data Science and Statistics: Machine Learning

Reviewer for Biostatistics

Planning Committee for Watson Initiative at WVU

Program Committee 2018 Symposium on Data Science and Statistics

Reviewer Journal of Statistical Software

Reviewer AOM Conference on Big Data and Managing in a Digital Economy

2016-2017 BUDA Open Rank Faculty Search Committee

BUDA Coordination Committee

John Chambers College of Business and Economics Committee on Policies and Procedures

Reviewer for Technometrics

Reviewer Information Systems Frontiers

Program Committee Interface 2015

Reviewer for Journal of Machine Learning Research

University of Miami School of Business Administration Graduate Curriculum Committee

Co-Founder University of Minnesota School of Statistics Student Seminar Series