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PROFESSIONAL SUMMARY

An analytical translator that can scope work, write code, and explain it on the back of an envelope. I leverage my quantitative background and training in applied econometrics, statistical genetics, and experimental design with experience in machine learning and predictive modeling using SAS and R to solve problems. I can produce and apply peer reviewed research and discuss the application with a scientist, sales representative, or the customer whose problem ultimately drives the analysis. I can code my own estimators, execute SQL queries, mine text, and visualize a social network.

EDUCATION

M.S. Agriculture, Focus on Bioscience Economics and Management

Independent Studies: *A Game Theoretic Analysis of Trait Resistance Management; An Econometric Analysis of Perceptions of Genetically Engineered Foods*
Western Kentucky University GPA: 4.0 (2005)

B.A. Economics

Minor(s): Mathematics, Agriculture
Western Kentucky University GPA: 3.8 *Summa Cum Laude* (2002)

Relevant Course Work: Applied Econometrics, Biostatistics, Experimental Design, Population Genetics, Plant Breeding and Genetics, Applied Microeconomic Theory, Advanced Managerial Finance, World Food Development, Agricultural Finance, Accounting

Certification: SAS ® *Certified Predictive Modeler Using SAS Enterprise Miner 6*

EXPERIENCE

Humana, Inc. *Research Scientist, Wellness Science and Analytics*

May 2015-Present

Accomplishments: Developed a suite of models and analyses (descriptive, predictive, and experimental and quasi-experimental methods) to drive Humana's Wellness strategy and enhance the overall Wellness portfolio.

Responsibilities:

- Projects leveraged a variety of analytical and statistical methodologies including multiple regression, negative binomial, logistic, and multinomial logistic regression as well as non-parametric statistics, survival analysis, propensity score matching, text mining and machine learning (decision trees, gradient boosted machines).
- Developed research protocols and integrated large data sets from a myriad of sources including enterprise, product specific, and external data.
- Write technical briefs, white papers, and publish results in peer reviewed academic journals to drive thought leadership in the area of Wellness

Humana, Inc. *Clinical Guidance Metrician, Humana Wellness-Well Being Solutions*

February 2014-May 2015

Accomplishments: Developed the first analytical solutions platform to strategically position our newly developed Well-Being product.

Responsibilities:

- Worked with process managers, analysts, consultants, actuaries, and other leaders to develop customized analytic solutions meeting their business requirements and driving Humana's Well-Being strategy and operations

- Utilized advanced statistical analysis and modeling techniques including multivariable regression, quantile regression, simulation, power and sample size analysis, structural equation modeling, and exploratory data analysis

Agriculture Policy Analysis and Consulting

March 1998-February 2014

Accomplishments: Over a decade of experience analyzing applications, perceptions, and policy related to food and agricultural technology. Radio commentary and guest lectures related to food, water, biotechnology, and climate change. Data analysis supporting new product development and analysis of social network data. Crop consulting and GPS/GIS services.

Activities:

- Analysis of industry trends, technology, markets, current events, research, and policy related to agriculture and biotechnology (www.ageconomist.blogspot.com)
- Agweb Blogger, Farm Journal Media. Blog: *Economic Sense*. June 2008-July 2013
- Interview, *Biotech*. Agritalk, Farm Journal Media. December 17, 2013.
- Interview, *The Science and Economics of Genetically Modified Food Labeling Initiatives*. Agritalk, Farm Journal Media. April 4, 2013.
- Data analysis and consulting (paid and unpaid projects). 2008-2013.
- Guest lecturer for AGRI 315 *Water in Food Production*, October 2011. "*The Economics of Water Utilization: Principles and Applications.*"
- Reviewer, *Journal of Applied Economics and Policy*, 2010-2011.
- Council of Economic Advisers, U.S. Senate Candidate, May 2009-November 2010
- Panel discussion participant for the Teach-In On Global Warming Solutions. Western Kentucky University. 2008. "*An Economic Approach to Climate Change.*"
- Assistant Research and Sales Tech. Garst Seed. Bowling Green, KY. March 2003-May 2004.
- GPS/GIS Crop Consultant. Southern States Cooperative. Bowling Green, KY. March 1998-May 2003.

Western Kentucky University *Market Research Coordinator, Institutional Research*

July 2011-February 2014

Accomplishments: Developed a 'Moneyball' analytical modeling platform for strategic recruitment and retention.

Responsibilities:

- Used advanced analytics and reporting to inform strategic decision making related to recruitment, scholarships, admissions policies, and programs to improve educational outcomes and drive smart enrollment growth at Western Kentucky University
- Used SAS Enterprise Miner for the development and enterprise wide implementation and automation of predictive models including decision trees, neural networks, logistic regression, and ensemble models
- Used SAS for forecasting and time series analysis
- Developed SAS macros to extend capabilities for data mining applications and improve efficiency
- Used SAS Text Miner to mine unstructured textual data to derive new variables as candidates for predictive models
- Developed SAS programs for creating data sets used for applied research, analytics, and ad hoc decision support reporting

Western Kentucky University *Market Research Coordinator, Enrollment Management*

April 2008-July 2011

Accomplishments: Developed the first analytical and reporting framework for applications, admissions, and enrollment for WKU using SAS and R.

Responsibilities:

- Used SAS programming language and SAS Web Report Studio to create data sets and ad hoc reports for decision support for the Associate Vice President of Enrollment Management
- Used SAS programming language for predictive modeling, forecasting, and statistical analysis
- Used R programming language for data mining and predictive modeling using decision trees, neural networks, and support vector machines, as well as data visualization, spatial data analysis, and social network analysis
- Supported development of data warehousing and reporting framework to support all prospect, recruitment, applications, and admissions data requirements for the Vice President of Enrollment Management

“Assessing the Success of the State Quarter Program as a Model of Collecting Behavior.” Catherine Carey and Matt Bogard. *Academy of Business Research Journal*. Volume 4. 2013.

“Analytics in Action: Using SAS® Enterprise Business Intelligence Server and SAS® Enterprise Miner to Reduce Student Attrition.” Matt Bogard, Chris James Tuesdi Helbig, Ph.D., Gina Huff. Paper 031-2012. *SAS Global Forum 2012 Proceedings*. North Carolina; SAS® Institute. Received Honorable Mention for Best Applied Business Intelligence Contributed Paper. Available at: <http://support.sas.com/resources/papers/proceedings12/031-2012.pdf>

POSTERS

“Differences among us: understanding the impact of behavioral variation on coaching engagement.” Wallace A, Bogard M, Kukreja V, Zbikowski S. *Society of Behavioral Medicine 38th Annual Meeting and Scientific Sessions*. San Diego, Ca March 29 – April 1, 2017

“Getting to Goals: Understanding the Nature and Achievement of Health-Related Goals in Coaching.” Anne Wallace, PhD, Matt Bogard, MS, Varun Kukreja, MBA, Kevin Prybol, MS, Susan M Zbikowski, PhD. *Human Society for Behavioral Medicine*. Washington, DC. April 1, 2016.

WORKING AND UNPUBLISHED PAPERS

“Getting to Goals: Understanding Intra-Personal Variation in Goal-Setting and Achievement in Coaching.” Anne Wallace, PhD, Matt Bogard, MS, Susan M Zbikowski, PhD. (2017).

“Evaluating the Impact of Advisement Contacts on Fall to Spring Retention Using Propensity Score Methods.” Matt Bogard. (2013) (working paper) Available at: http://works.bepress.com/matt_bogard/25

PRESENTATIONS

“Quasi-Experimental Designs and Program Evaluation for Disaster Recovery” Federal Emergency Management Agency. Brown Bag Analytics Series Invited Speaker. July 25, 2017.

“A Guide to Quasi-Experimental Designs.” Kentucky Association of Institutional Research Annual Convention. Louisville, KY. November 7, 2013. Available at: http://works.bepress.com/matt_bogard/27/

“Analysis to Action: A Closer Look at Retention Using Decision Tree Risk Analysis & Outreach.” Kentucky Council on Postsecondary Education Student Success Summit. Matt Bogard, Sharon Huner, and Tuesdi Helbig. WKU Office of Institutional Research and Enrollment Management. Louisville. KY. April 16, 2013.

“An Introduction to Social Network Analysis with Applications.” WKU Bioinformatics and Information Science Center Research Symposium. Jan 2012. Available at: http://works.bepress.com/matt_bogard/23

“The Economics of Water Utilization: Principles and Applications.” Guest lecturer for AGRI 315 *Water in Food Production*, October 2011.

“An Economic Approach to Climate Change.” Panel discussion participant for the Teach-In On Global Warming Solutions at Western Kentucky University, 2008.

“Teaching Hausman and Willig Using Mathematica.” Guest Lecture for Applied Microeconomic Theory course, Western Kentucky University, 2008 . Available at: http://works.bepress.com/matt_bogard/2

“Student Perceptions of Genetically Modified Foods: An Empirical Investigation.” WKU Department of Agriculture Graduate Seminar, 2005.

“Using Marker Assisted Selection and Quantitative Trait Loci to Improve the Fatty Acid Profile of Soybeans.” Presented as part of completion of AGRO 414G Crop Improvement. Fall 2004.

“Externalities and Pollution.” WKU Department of Agriculture Graduate Seminar, 2003

“An Econometric Analysis of Propane Demand.” Presented at the Kentucky Economic Association Annual Meeting, 2002

ACTIVITIES AND ACHIEVEMENTS

Applied Economics Research Seminar. Department of Economics, Western Kentucky University. (2008-2016).

Reviewer, *Decision Trees for Analytics Using SAS Enterprise Miner*. Barry de Ville and Padraic Neville, 2013

Interview, *The Convergence of Big Data and Genomics in Biotech*. Agritalk, Farm Journal Media. December 17, 2013.

Interview, *The Science and Economics of Genetically Modified Food Labeling Initiatives*. Agritalk, Farm Journal Media. April 4, 2013.

Honorable Mention, Best Contributed Paper for Applied Business Intelligence . SAS Global Forum, 2012

Reviewer, *Journal of Applied Economics and Policy*, 2010-2011

Western Kentucky University Bioinformatics and Information Science Center (BISC), Member 2010-present

Council of Economic Advisers, U.S. Senate Candidate, May 2009-November 2010

Western Kentucky University Libraries Staff Award for Outstanding Performance, 2006

Ramsey Award for Best Senior Paper in Economics, 2002