

JENNIFER H VAN MULLEKOM, PhD

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EDUCATION

Virginia Polytechnic Institute & State University, Blacksburg, VA
PhD, Statistics July 1998

Virginia Polytechnic Institute & State University, Blacksburg, VA
MS, Statistics December 1995

Concord College, Athens, WV
BS Mathematics/BS Mathematics Education with minors in Computer Science & Statistics
December 1993/May 1994

ACADEMIC EXPERIENCE

Virginia Tech, Blacksburg, VA

Associate Professor of Statistical Practice.

Director of the Statistical Applications and Innovations Group

September 2016 – Present

- Lead the Laboratory for interdisciplinary statistical analysis including managing consulting team assignments, mentoring students in technical and soft skills, and authoring and resourcing short courses
- Identify areas of technical and soft skill development and provide formal instruction
- Write a strategic plan to reinvent LISA and elevate its service levels to the University Research Community
- Identify funding opportunities including grants and strategic external partnerships
- Design a statistical practice curriculum for STAT 5024: Communication in Statistical Collaboration
- Teach STAT 5024: Communication in Statistical Collaboration

Case Western Reserve University, Cleveland, OH

Adjunct Assistant Professor, Department of Chemical Engineering

June 2001 – August 2002

- Taught EPOM 405, Applied Statistics and Probability for Engineers in the Master of Engineering Practice Program
 - Redesigned EPOM 405 to emphasize statistical concepts and case studies meaningful to working professionals versus theoretical probability calculations
 - Received highest rated instructor evaluations in the history of the Case Western Master of Engineering Practice program
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Lakeland Community College, Mentor, OH

Adjunct Faculty Member, Department of Science and Health

January 2002 – May 2002

- Taught Introductory Statistics
- Redesigned course to include experiential learning component

GRANTS & FUNDING

Federal Agricultural Education Information Services (FAEIS), U.S. Department of Agriculture, Department of Agriculture, 09/01/2017 (\$67K for 1 year, typically renewed annually)

Federal Agricultural Education Information Services (FAEIS), U.S. Department of Agriculture, Department of Agriculture, 09/01/2016 (\$67K for 1 year, typically renewed annually)

PROPOSALS PENDING

CMDA STARS, NSF-NRT-HDR, National Science Foundation, Principal Investigators: House L; Gramacy R; Warburton T; Embree M; North C, 02/06/2018

Slip recovery training as a cost-effective workplace intervention for fall prevention, NIOSH, Other, Principal Investigators: Madigan, M; Nussbaum, M; Kim, S, 10/20/2017

Aging Motor Neurons, NIH- CSR, National Institutes of Health, Principal Investigators: Valdez, G, 10/01/2017

Amyloid Toxicity, NIH-CSR, National Institutes of Health, Principal Investigators: Sontheimer H, 08/01/2017

Slip Recovery Training, NIOSH, National Institutes of Health, Principal Investigators: Madigan M, 08/01/2017

PUBLICATIONS, TECHNICAL REPORTS, & PATENTS

In Progress:

Madigan, M., Aviles, J., Van Mullekom, J. *Balance Recovery Training for Older Adults Study Results.*

Queen, R., Van Mullekom, J., Hughes-Oliver, C., Renner, K. *A Limb Symmetry Measure for Orthopedics.*

Van Mullekom, J. Good Statistical Practice: Telling the Story of Your Stats Description: An overview of the science behind incorporating story telling into reporting statistical results and research complete with methods for doing so and examples in statistical contexts.

Van Mullekom, J. Define, Translate, Construct, Interpret: A Framework for Statistical Consulting. Description: A framework for statistical consulting ,including guiding questions, checklists, and tools.

In Review:

Simmons, D. R., Van Mullekom, J., & Ohland, M. (n.d.). The Popularity and Intensity of Undergraduate Out-of-Class Activities. *Journal of Engineering Education.*

In Press:

Wagner, T., Scholla, M., Van Mullekom, J. H., & Severin, J. (2018). 5. Package/Container Closures. In Lambert, B, Lam, S, & Hansen, J (Eds.), *Assurance of Sterility for Sensitive Combination Products and Materials New Paradigms for the Next Generation of Medical Devices and Pharmaceuticals* (1st ed.). Academic Press. (in press, available June 2018)

Published:

Xie, Y., Hong, Y., Jin, Z., & Van Mullekom, J. (2017). Statistical Methods for Thermal Index Estimation Based on Accelerated Destructive Degradation Test Data. In *Statistical Modelling for Degradation Data*. Springer. (Book Chapter)

Jin, Z., Xie, Y., Hong, Y., & Van Mullekom, J. (2017). ADDT: An R Package for Analysis of Accelerated Destructive Degradation Test Data. In *Statistical Modelling for Degradation Data*. Springer. (Book Chapter)

King, C.; Hong, Y.; Xie, Y.; Van Mullekom JH; Dehart, S.; Defeo, P.. (2017). A Comparison of Traditional and Maximum Likelihood Approaches to Estimating Thermal Index for Polymeric Materials. *Journal of Quality Technology*.

C.M. Anderson-Cook, L. Lu, G. Clark, S.P. Dehart, R. Hoerl, B. Joes, R.J. MacKay, D.D. Montgomery, P.A. Parker, J. Simpson, R. Snee, S. Steiner, J. Van Mullekom, G.G. Vining, A.G. Wilson. (2012) Statistical Engineering- Forming the Foundations, *Quality Engineering* 24:110-132.

C.M. Anderson-Cook, L. Lu, G. Clark, S.P. Dehart, R. Hoerl, B. Joes, R.J. MacKay, D.D. Montgomery, P.A. Parker, J. Simpson, R. Snee, S. Steiner, J. Van Mullekom, G.G. Vining, A.G. Wilson. (2012) Statistical Engineering- Roles for the Statistician and Path Forward, *Quality Engineering* 24:133-152.

U.S. Patent Application 20060169051, Alman, Koerner, and Van Mullekom, "Method to Specify the Appearance of a Coated Article." (2006)

O'Connor, B.M., Van Mullekom, J.H., Gahagan, M.P., Rank, R., Jahn, W. "Influence of Additive Chemistry on Manual Transmission Synchronizer Performance", Society of Automotive Engineers, May 2002. Paper Number 2002-01-1697.

U.S. Patent 6644095, Van Mullekom, Melnyk, and Dayal, "Continuous on-board Diagnostic Lubricant Monitoring System and Method" (2001)

U.S. Patent 6463796, Van Mullekom, Melnyk, and Dayal, "Continuous on-board Diagnostic Lubricant Monitoring System and Method" (2001)

Forrester, S. Dru, Troy, Gregory C., Dalton, M. Nell, [Van Mullekom] Huffman, Jennifer W., and Holtzman, Golde. "Retrospective Evaluation of Urinary Tract Infection in 42 Dogs with Hyperadrenocorticism or Diabetes Mellitus or Both", *Journal of Veterinary Internal Medicine*, 1999. 13:557-560.

CO-AUTHOR OF 13 INDUSTRIAL TECHNICAL REPORTS OVER 100+ PAGES EACH NOT LISTED DUE TO CONFIDENTIAL NATURE OF SUBJECT MATTER.

RECENT CONFERENCE PRESENTATIONS & PANELS

Panelist: A Panel Discussion on Collaboration	2017
Fall Technical Conference	
Panelist: Statistical Training for Industry: Up to Date or Out of Date?	2017
Fall Technical Conference	
Discussant for Anderson-Cook & Lu, Graphics to Facilitate Informative Decision Making	2017
ISBIS	
Several Hard to Explain Concepts in Statistics	2017
Test Science Workshop	
Statistical Presentation Power: How to Reveal Your X-Factor	2017
Conference on Statistical Practice	
Case Studies: There are No Answers in the Back of the Book	2016
Fall Technical Conference	
Together We Can Do So Much: Collaborations Among Industry, Academia, & Government (Panel)	2015
Spring Research Conference	
Good Things Come in Small (and Large) Tyvek® Medical Packages, Let's Keep it That Way	2015
DuPont TechCon	
Not Different Doesn't Mean the Same: An Overview of Equivalence Testing	2015
DuPont TechCon	
Are you Crazy?!? A Thirteen Factor Response Surface Experiment on a Production Asset?	2014
Pennsylvania Chapter of the American Society for Quality	
The Results are In—But Do You Know What You Can Do with Them?	2014
DuPont Medical Packaging External Customer Webinar	
Out with the Old, In with the New: The Tyvek® Medical Packaging Transition Program,	2014
Fall Technical Conference	
The Human Side of Statistical Engineering, Panel	2013
Joint Statistical Meetings	
Response Surface Experiments on Production Assets: A Short Course	2012
DuPont TechCon	
Mirror, Mirror on the Car, Who is the Fairest by Far?	2011
Joint Statistical Meetings	

SHORT COURSES

Effective Presentations for Statisticians: Success = (PD) ²	
Joint Statistical Meetings	2017
Philadelphia Chapter of the American Statistical Association	2017
Eastman Chemical	2017
Conference on Women in Statistics and Data Science	2016
Joint Statistical Meetings	2016
Joint Statistical Meetings	2015
Joint Statistical Meetings	2014
Fall Technical Conference	2014

UNIVERSITY, COLLEGE, & DEPARTMENT SERVICE

- Corporate Partner's Speaker on SAIG
- Host/Representative for various COS donors activities including Paul Waymack, Fraser Family, and Jean Dickinson Gibbons
- Overview of SAIG at BoozAllenHamilton University Wide Meeting
- Interviewed female graduate students on behalf of Diversity Committee
- Speaker at Big Data Analytics Symposium on SAIG sponsored by Library Data Services

ADVISING/MENTORING

- MS Committee for Jennifer West
- MS DAAS Committee for Kaitlan Hanak
- MS DAAS Committee for Xiaoyan Han
- MS Committee for Dimple Mozhi in HNFE
- Reviewed resumes and provided internship and career advice for multiple students including Austin Cole, Jennifer West, Scott Singleton, Shane Bookhultz, Shreya Chandrasakaran, Steve Walsh
- Nominated Austin Cole for Fall Technical Conference Student Scholarships

PROFESSIONAL DEVELOPMENT

- New Academic Leader Program Completion, 2017

PROFESSIONAL SERVICE

- Chair, American Society for Quality Chemical and Process Industries Division (2018)
- American Statistical Association, Section on Physical and Engineering Sciences- Chair (2007, 2016), Marquardt Industrial Speakers Program- Chair (2006-2012), Publicity Chair (2000-2004), Fall Technical Conference Program Committee Member 2004
- American Statistical Association, Section on Quality and Productivity- Joint Statistical Meetings Program Chair (2005)
- American Statistical Association Conference on Statistical Practice Committee (2012-2013)
- American Statistical Association President's Career Success Factors Task Force (2011-2012)
- American Society for Quality- Chemical and Process Industries Division- Secretary (2015)
- Member, Toastmasters (2015)

AWARDS & HONORS

- DuPont Engineering Excellence Award (2015)
- DuPont Associate Fellows Forum (2011)
- SPES JSM Outstanding Presentation Award (2011)
- DuPont Special Recognition Training Development Award (2006)
- Lubrizol Cash Award (2002)
- Lubrizol Driveline Section Leadership Award (1999)
- Klaus Hinkelmann Outstanding Graduate Assistant Award (1997)

STATISTICAL PRACTICE PROFILE

Experienced senior statistical consulting professional with proven track record of excellence in providing statistical leadership to global, cross-disciplinary projects in the areas of product development, applications development, process development, business process improvement, predictive analytics, quality management, and regulatory submissions

Communication Skills	Multivariate Data Analysis	Technical Writing
Customer Interactions	Predictive Analytics	Tool Development
Data Visualization	Quality Systems	Six Sigma Master Black Belt
Design of Experiments	Regulatory Approvals	Statistical Engineering
Industry Advocacy	Research Collaboration	Statistical Programming
Mentoring	Teaching & Training	Thought Leadership

STATISTICAL PRACTICE RESPONSIBILITIES

Design studies, analyze data, and communicate practical implications of statistical results for high stakes, complex business and technical projects. Design and deliver hands-on training based in adult education principles for databased project management philosophies and statistical methods. Manage teams of statisticians and interns. Recruit and mentor new employees. Develop and execute strategic renewal programs for statistical technology.

STATISTICAL PRACTICE ACHIEVEMENTS

E. I. DuPont de Nemours, Richmond, VA

Senior Statistical Consultant, Applied Statistics Group & Protection Solutions

July 2008 – Present

- Developed and executed statistical strategy for the Tyvek® Medical Packaging Transition Project in the areas of product development, commercialization, and regulatory to preserve over \$100M in revenue year over year
- Designed data management, reporting process, and marketing communication materials for the regulatory, industry, and customer results for Tyvek® Medical Packaging Transition Project
- Awarded a DuPont Engineering Excellence Award, company's highest engineering honor, for "The Successful Execution of the Tyvek® Medical Packaging Transition Project"
- Constructed Tyvek® global specification development process
- Designed and executed manufacturing optimization and quality processes at the customer for agriculture application with \$50M NPV
- Defended over \$30M in business by identifying lot acceptance test biases in US government testing labs and testing procedures for life protection products
- Collaborated with researchers at Virginia Tech to develop new models and test plans in Accelerated Destructive Degradation Testing to provide product differentiation, estimation of uncertainty, and efficient use of testing resources versus current industry standards for thermal indices of polymeric materials
- Advocated for sound statistical practices in multiple regulatory and industry groups
- Expanded internal DuPont Applied Statistics Group business from Protection Technologies and Building Innovations from 25% full time equivalent to 150% full time equivalent in 3 years

Capital One Financial, Richmond, VA

Senior Manager, Statistical Analysis

June 2007 – June 2008

- Led process improvement project for the redesign of quarterly financial assessment in Recoveries
- Formalized the model monitoring process and action plans for evaluating existing risk models
- Established process and detailed models for forecast of macroeconomic trends as inputs to Debt Sell Decision Process
- Created formal testing process for direct mail and on-line experiments
- Achieved Scrum Master Certification

E. I. DuPont de Nemours, Wilmington, DE

Statistical Consultant, Quality Management and Technology

November 2002 – May 2007

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- Developed new and upgraded existing Corporate Six Sigma Leveraged Black Belt Training Material to incorporate Top Line Growth Tools and Development Project Methodology
- Generated updated OEM qualification requirements for coatings based on modern statistical techniques collaboratively with OEMs for the entire DuPont Performance Coatings (automobile paint) portfolio
- Led and mentored cross-functional Six Sigma project teams to solve business problems with financial validation values totaling >\$10M per year
- Crafted statistical methodology to relate human perception of a coated article to multivariate machine measurements to establish a new industry standard resulting in US Patent Application

The Lubrizol Corporation, Wickliffe, OH

Research Statistician, Statistics and Intelligent Systems

August 1998-October 2002

- Generated intellectual property resulting in inventorship on three U.S. Patents for an on-board oil diagnostic monitoring system
- Authored algorithms to detect oil degradation and engine water leaks using a combination of on-line sensors and in laboratory experimental data
- Coordinated industry-wide team of statisticians and engineers in the design of experiments and analysis of data for American Chemical Council engine oil test registration
- Built predictive models based on historical databases in conjunction with designed experiments for the Virtual Testing project, the aim of which was to reduce testing time and cost for formulation development
- Redesigned Statistician Career Ladder

STATISTICAL PRACTICE AREAS

Technical

- Automotive, Credit & Risk, Healthcare, Inks, Life Protection, Packaging, Paints & Coatings, Oil & Gas

Functional

- Chemical & Material Operations, Engineering, Government, Marketing & Sales, Regulatory, Research & Development, Quality Management, Supply Chain

Agency/Industry

- US Food & Drug Administration, Health Canada, European Notified Bodies, Japanese Ministry of Health, Chinese FDA, International Safety Association, US Department of Defense, Society of Automotive Engineers, American Chemistry Council, American Petroleum Institute, American Society for Testing of Materials
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OTHER EMPLOYMENT

Virginia Tech, Blacksburg, VA
Graduate Teaching Assistant
August 1994 – July 1998

USDA, Beckley, WV
Data Analyst Intern
June 1994-August 1994

Biopop Biological & Popular Culture, Inc.
Radford, VA
Statistical Consulting Internship
May 1996 – February 1998

Concord College Athens, WV
Admissions Processing Clerk & Tour Guide
August 1990-May 1994

COMPUTER SKILLS

AT&T Connect, Assembly, Excel, JMP, Lync, Minitab, Pascal, PowerPoint, SharePoint, SAS, SQL, Word
