

# Anne Ryan Driscoll, Ph.D.

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Assistant Collegiate Professor, Department of Statistics  
Virginia Tech Department of Statistics (0439)  
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## Education

- 2008 – 2011      Ph.D. in Statistics at Virginia Tech, Blacksburg, VA  
Dissertation: “Surveillance of Poisson and Multinomial Processes.”  
Advisor: William H. Woodall
- 2006 – 2007      M.S. in Statistics at Virginia Tech, Blacksburg, VA
- 2002 – 2006      B.S. in Mathematics and Physics at Emory & Henry College, Emory, VA
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## Academic Experience

### Teaching Appointments

- 2016 – Present      Assistant Collegiate Professor  
Department of Statistics  
Virginia Tech
- 2012 – 2016      Assistant Professor of Practice  
Department of Statistics  
Virginia Tech
- 2011 – Present      Senior Instructor  
Basic Science Department  
Virginia Tech Carilion School of Medicine and Research Institute
- 2011 – 2012      Visiting Assistant Professor  
Department of Statistics  
Virginia Tech
- 2009 – 2011      Graduate Teaching Assistant  
Department of Statistics  
Virginia Tech

**Courses Taught**

STAT/ISE 5474	Statistical Quality Control Average SPOT Effectiveness Score: 5.58 (N=19) Taught: Fall 2016
STAT 5615	Statistics in Research I Average SPOT Effectiveness Score: 5.52 (N=805) Taught: Fall 2011, 2012, 2013, 2014, 2015, 2017 Summer 2016
STAT 5616	Statistics in Research II Average SPOT Effectiveness Score: 5.69 (N=465) Taught: Spring 2012, 2013, 2014, 2015, 2016, 2017
Stat 4204	Experimental Designs Average SPOT Effectiveness Score: 5.41 (N=56) Taught: Fall 2013, 2014, 2015
Stat 5204G	Advanced Experimental Designs Average SPOT Effectiveness Score: 5.49 (N=49) Taught: Fall 2013, 2014, 2015
Stat 4214	Methods of Regression Analysis Average SPOT Effectiveness Score: 5.85 (N=123) Taught: Spring 2013, 2014, 2015, 2016, 2017
Stat 5204G	Advanced Methods of Regression Analysis Average SPOT Effectiveness Score: 5.87 (N=79) Taught: Spring 2013, 2014, 2015, 2016
Stat 3006	Statistical Methods II Average SPOT Effectiveness Score: 5.87 (N=15) Taught: Fall 2012 Summer 2012

**Teaching Awards and Endorsements**

2016	<b>Carroll B. Shannon College of Science Certificate of Teaching Excellence,</b> Virginia Tech.
2015	<b>Mastery of Online Teaching,</b> Technology-enhanced Learning and Online Strategies, Virginia Tech.
2014	<b>“Favorite Faculty” Award hosted by Housing and Residence Life,</b> Virginia Tech.
2011	<b>Jesse C. Arnold Award for Excellence in Teaching,</b> Virginia Tech.

**Course Development**

- 2016 – 2017      Stat 3615: Biological Statistics I
- Revamped the undergraduate level Biological Statistics I into an online course by participating in the cohort-based design process with Technology-enhanced Learning and Online Strategies during the summer of 2016.
  - Collaborated with a team of two other statistics faculty to developed online modules with course content, including online lectures, assignments and tests.
  - Designed a Canvas course site for course administration.
- 2015 – 2016      Stat 5615: Statistics in Research I
- Revamped the graduate level Statistics in Research I into an online course by participating in the cohort-based design process with Technology-enhanced Learning and Online Strategies during the summer of 2015.
  - Developed online modules with course content, including online lectures, assignments and tests.
  - Designed a Canvas course site for course administration.
  - The first online course was taught in the 2016 summer session.
- 2013 – 2014      Stat 4204-5204G: Experimental Designs
- Transformed the lectured based Experimental Designs course into a hybrid course. Students view recorded lectures at their convenience rather than in class. The in-class sessions are devoted to discussion and review of more difficult concepts and also allow time for hands-on class exercises.
  - Developed extensive class activities to inspire deeper learning of concepts in the classroom setting.
- 2011                Biostatistics: Virginia Tech Carilion School of Medicine and Research Institute
- Developed introductory biostatistics course materials for first year medical students.

**Program Development**

- 2013 – 2016      Data Analysis and Applied Statistics (DAAS) Master of Arts graduate program
- Member of the committee proposing a new M.A. degree focused on applied statistics.
  - Reviewed and made recommendations for proposal and presentations about the degree.
  - Initiated and analyzed a student interest survey about the proposed program.
  - The DAAS program was approved by SCHEV as a new degree program starting the Fall 2016.

**Student Advising**

- 2016 – Present      Coordinator, Data Analysis and Applied Statistics (DAAS) Graduate Program
- Evaluate applications and make recommendations for students being admitted into the master’s program.
  - Support students on completing their plan of study and ensure requirements are met for graduation.
  - Provide career advice to students.
  - Currently, advise 6 simultaneous graduate students and 1 sole DAAS students.
- 2016 – 2017      Ph.D Co-Advisor
- M. Zhao (2017) Dissertation Title: Analysis and Evaluation of Social Network Anomaly Detection; Statistics
- 2014 – Present      Ph.D Committee Member
- N. Mehrabadi (2018): Dissertation Title: Power Electronics Design Methodologies with Parametric and Model-Form Uncertainty Quantification: Electrical Engineering
  - A. Rhodes (2016) Dissertation Title: Accelerated Life Test Modeling Using Median Rank Regression: Statistics.
  - S. Li (2016) Dissertation Title: K-12 STEM Educators and the Inclusive Classroom. Department: Education.
  - X. Zhang (2015) Dissertation Title: Dynamic Probability Control Limits for Risk-Adjusted Bernoulli Cumulative Sum Charts. Department: Statistics.
  - R. Dickinson (2014) Dissertation Title: Statistical Methods for Improving and Maintaining Product Reliability. Department: Statistics.
  - S. Vaghefi (2014) Dissertation Title: Cooperative Positioning in Wireless Sensor Networks Using Semidefinite Programming. Department: Electrical Engineering.
- 2017 – Present      M.A. Data Analysis and Applied Statistics (DAAS) Committee Chair
- Kaitlin Hanak (2017): Cyprinid Species Relationships and Community Dynamics within the St. Lawrence Watershed
  - Sreyoshi Bhaduri (2017): Analyzing data from the National Society of Black Engineers (NSBE) SEEK summer STEM campsites for school students
  - Rachel Keller (2017): LECTURE IS THE ~~BEST~~ WORST!
  - Fang Fang (2017): Is Marriage Also a Greedy Institution in China? A comparative study of the marriage effect on social interactions in China and the United States
  - Niloofar Mehrabadi (2017): Parametric and Model-Form Uncertainty in the Modular Multilevel Converter Modeling
  - Claire Walraven (2017): The Under-Representation of Special Educators of Color across State

- 2014 – Present M.S. Statistics Oral Examination Committee
- George Rooney (2016)
  - Allison Steel (2015)
  - Justin Loda (2015)
- 2013 – 2015 M.S. Committee Member
- A. Parchure (2015) Thesis Title: Towards Three-Phase Dynamic Analysis of Large Electric Power Systems. Department: Electrical Engineering.
- 2013 – 2015 Laboratory for Interdisciplinary Statistical Analysis (LISA) Video Session and Feedback Coach
- Led video feedback sessions coaching students on improving collaboration skills by reviewing student videos of collaboration meetings.

### **Professional Development**

- 2016-2017 College of Science Inclusive Pedagogy Series participant.
- 2016 Technology-enhanced Learning and Online Strategies (TLOS) Course Design Faculty Showcase to present revamped Stat 3615: Biological Statistics I course.
- 2015 Technology-enhanced Learning and Online Strategies (TLOS) Course Design Faculty Showcase to present revamped Stat 5615: Statistics in Research I course.
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## Service

### **Department of Statistics**

- 2014 – Present Chair of the Department of Statistics Corporate Partners Program
- Foster the relationship between the statistics department and 5 companies.
    - Afton Chemical Company, Capital One, Corning, Eastman Chemical Company, Shell Global Solutions
  - Negotiate new corporate partnerships. Afton Chemical Company was the most recent addition in 2017.
  - Support placement of students in internship and full-time positions with our corporate partners.
  - Plan the annual Corporate Partners Event in the fall where partners visit the department to network with students, learn about the department, and interview students.
- 2016– Present Teaching Evaluation Committee
- 2016 – Present Social Committee
- 2011 – 2016 Lead Collaborator, Laboratory for Interdisciplinary Statistical Analysis (LISA)

**University**

2017 – 2019	COS Teaching Awards Committee, Chair (2018-2019)
2017	4-VA Collaborative Research Grant Reviewer
2016 – Present	Data Analytics and Decision Sciences (DADS) Destination Area Curriculum Workgroup.
2015	TLOS Distance Learning Committee – Proctoring Work Group

**Professional**

2017-2018	Local Organizing Committee for the Stu Hunter Research Conference 2018, Roanoke Virginia
2017	Chair, Chemical and Process Industries Division of the American Society for Quality (ASQ)
2016	Chair Elect, Chemical and Process Industries Division of the American Society for Quality (ASQ)
2016-2018	American Society for Quality (ASQ) Brumbaugh Award Selection Committee
2014 – 2015	Treasurer, Chemical and Process Industries Division of the American Society for Quality (ASQ)
2014 – 2015	Fall Technical Conference Short Course Chair, Statistics Division of the American Society for Quality (ASQ)
2011 – Present	Journal Referee <ul style="list-style-type: none"> <li>• <i>Journal of Quality Technology</i></li> <li>• <i>Statistics and Probability Letters</i></li> <li>• <i>Communications in Statistics</i></li> <li>• <i>International Journal of Production Economics</i></li> <li>• <i>Quality and Reliability Engineering International</i></li> </ul>
2011	Member of Conference Organizing Committee, 2011 Quality and Productivity Research Conference

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## Consulting

- 2013 – Present      Consulting Statistician  
 NASA Composite Overwrapped Pressure Vessels (COPV) Analytical Team  
*Provide technical expertise/consultation and services, including test planning and analysis, to support a project at the NASA Engineering and Safety Center (NESC) exploring the safety of Composite Overwrapped Pressure Vessels (COPVs).*
- 2011 – 2014      Consulting Statistician  
 Department of Defense  
*Collaborated on a series of research projects with applications in experimental design for the Air Force in a project funded by the Department of Defense. Created continuous learning modules in statistics for the Defense Acquisition University (DAU).*
- 2008              Intern  
 Pratt & Whitney, Hartford, CT  
*Helped create a short-course to be taught to practitioners at Pratt & Whitney explaining computer experimentation. Learned to use GEMSA/GPMSA, two computer programs used at Pratt & Whitney to perform sensitivity and uncertainty analyses.*
- 2007              Technical Support Specialist  
 Minitab Inc. State College, PA  
*Intensive training in Minitab software. Answered customers' statistical questions, researched various statistical concepts, and developed reports for Minitab's Answers Knowledgebase found on Minitab.com*
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## Research Experience

### Grants

- 2016              4-VA Design and Develop Award (\$8,949.47), Principal Investigator  
 Technology-enhanced Learning and Online Strategies (TLOS)  
*Redesigned Stat 3615: Biological Statistics I as an online course*
- 2015              Design and Develop Award (\$11,542.10), Principal Investigator  
 Technology-enhanced Learning and Online Strategies (TLOS)  
*Redesigned Stat 5615: Statistics in Research I as an online course*

## **Publications**

### *Referred Journal Articles:*

Ryan, A. G. and Woodall, W. H. (2010). "Control Charts for Poisson Count Data with Varying Sample Sizes". *Journal of Quality Technology* 42, pp. 260-275.

Ryan, A. G.; Wells, L. J.; and Woodall, W. H. (2011). "Methods for Monitoring Multiple Proportions When Inspecting Continuously". *Journal of Quality Technology* 43, pp. 237-248.

Leonardi, A. D.; Keane, N. J.; Bir, C. A.; Ryan, A. G.; Xu, L.; and VandeVord, P. J. (2012). "Head Orientation Affects the Intracranial Pressure Response Resulting from Shock Wave Loading in the Rat". *Journal of Biomechanics*, <http://dx.doi.org/10.1016/j.jbiomech.2012.08.024>.

Freeman, L. J.; Ryan, A. G.; Kensler, J. L.; Dickinson, R. M.; and Vining, G. G. (2013). "A Tutorial on the Planning of Experiments". *Quality Engineering*, 25(4), pp. 315-332.

Leonardi, A. D.; Keane, N. J.; Hay, K.; Ryan, A. G.; Bir, C. A.; and VandeVord, P. J. (2013). "Methodology and Evaluation of Intracranial Pressure Response in Rats Exposed to Complex Shock Waves". *Annals of Biomedical Engineering*, 41(12), 2488-2500.

Dickinson, R. M.; Olteanu Roberts, D. A.; Ryan, A. G.; Woodall, W. H.; and Vining, G. G. (2014). "CUSUM Charts for Monitoring the Characteristic Life of Censored Weibull Lifetimes". *Journal of Quality Technology* 46, pp. 340-358.

Zhao, M. J. and Driscoll, A. R. (2016). The c-Chart with Bootstrap Adjusted Control Limits to Improve Conditional Performance. *Quality and Reliability Engineering International*, 32(8), 2871-2881.

Vining, G. G.; Freeman, L. J.; Simpson, J.; and Driscoll, A. R. (2018). "Experimental Campaigns and Addressing Issues in Planning Experiments For Highly Constrained Regions". Submitted to *Quality Engineering*.

Zhao, M., Driscoll, A. R., Fricker, R. D., Sengupta, S., Spitzner, D. J., and Woodall, W. H. (2018). "Performance Evaluation of Social Network Anomaly Detection using a Moving Window Based Scan Method". Submitted to *Quality and Reliability Engineering International*.

Zhao, M., Driscoll, A. R., Sengupta, S., Stevens, N. T., Fricker, R. D., and Woodall, W. H. (2018). "The Effect of Temporal Aggregation Level in Social Network". Submitted to *IISE Transactions*.

### *Referred Proceedings Papers:*

Woodall, W. H. and Driscoll, A. R. (2015). "Some Recent Results on Monitoring the Rate of a Rare Event", *Frontiers in Statistical Quality Control 11*. Knoth, S. and Schmid, W. (Eds.), Springer, pp. 15-27.



*Chapters in Books:*

Ryan, A. G. *Solutions Manual to Accompany Introduction to Linear Regression Analysis*. Hoboken: Wiley, 2014. Print.

**Presentations**

*“Control Charts for Poisson Count Data with Varying Sample Sizes,”* Joint Research Conference on Statistics in Quality, Industry, and Technology, Gaithersburg, MD, May 2010

*“Control Charts for Poisson Count Data with Varying Sample Sizes,”* Virginia Tech Corporate Partners Event, Blacksburg, VA, October 2010

*“A CUSUM Chart for Monitoring Multiple Proportions When Inspecting Continuously,”* Quality and Productivity Research Conference, Roanoke, VA, June 2011

*“A CUSUM Chart for Monitoring Multiple Proportions When Inspecting Continuously,”* Virginia Tech Statistics Department Colloquium, Blacksburg, VA, February 2011

*“The c-chart with Bootstrap Adjusted Control Limits to Improve Conditional Performance”*, International Symposium on Statistical Process Monitoring – 4, Padua, Italy, July 2015

*“The c-chart with Bootstrap Adjusted Control Limits to Improve Conditional Performance”*, Columbian Symposium in Statistics, Armenia, Columbia, August 2015

*“Performance Evaluation of Social Network Anomaly Detection Using a Moving Window Based Scan Method”*, 4th International Conference on the Interface between Statistics and Engineering (ICISE), Palermo, Sicily, June 2016

*“Experimental Design for Composite Pressure Vessel Life Prediction”*, Test Science: Improving Defense and Aerospace Through Data Collection and Analysis 2017 Workshop, Alexandria, Virginia, April 2017.

**Honors**

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| 2016 | <b>Carroll B. Shannon College of Science Certificate of Teaching Excellence,</b> Virginia Tech. |
| 2014 | <b>“Favorite Faculty” Award hosted by Housing and Residence Life,</b> Virginia Tech.            |
| 2011 | <b>Jesse C. Arnold Award for Excellence in Teaching,</b> Virginia Tech.                         |

- 2010            **Ellis R. Ott Scholarship for Applied Statistics and Quality Management**, student scholarship awarded from the Statistics Division of the American Society for Quality (ASQ).
- 2010            **Rose Costain Award for Outstanding Departmental Citizenship**, Virginia Tech.
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## Professional Memberships

- 2011 – Present    American Society for Quality (ASQ)
- 2007 – Present    American Statistical Association (ASA)
- 2008 – Present    Mu Sigma Rho Honor Society
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