Katherine Goode

Contact Information

2207 Snedecor Hall
Department of Statistics
2438 Osborn Dr, Ames, IA 50011

Email: kgoode@iastate.edu
Phone: 920-904-7072
Website: https://goodekat.github.io/

Education

2016 - Current   **Doctor of Philosophy, Statistics**
Iowa State University, Ames, IA
Major Professor: Dr. Heike Hofmann
Research Topic: Diagnostics for Random Forest Models
Expected Completion: December 2020

2013 - 2015   **Master of Science, Statistics**
University of Wisconsin, Madison, WI

2009 - 2013   **Bachelor of Arts, Mathematics**
Lawrence University, Appleton, WI
Graduated Magna Cum Laude
Senior Capstone: "An Explanation of Double-Error-Correcting BCH Codes"

Study Abroad
2012   University of Granada, Centro de Lenguas Modernas
2010   Lawrence London Centre

Awards and Honors

2018   **ISU Department of Statistics Dan Mowrey Consulting Excellence Award**
Awarded in recognition of outstanding contributions in the area of statistical consulting
while working toward a graduate degree.

2017   **ISU Department of Statistics Award for Experiential Development**
Presented to a student for excellent performance in multiple statistical efforts (teaching and
consulting) as part of the graduate program.

2009 - 2013   **Lawrence University Deans List**
2009 - 2013   **Lawrence University Richard Warch Presidential Scholarship**
2012 - 2012   **Mortar Board Honor Society**
2010 - 2011   **Lambda Sigma National Honor Society**

Positions Held

2018 - Current   **Senior Statistical Consultant**
Agriculture Experiment Station, Iowa State University
Mentored and trained new consultants. Helped the group adviser make administrative
decisions. Oversaw organizational tasks for the consulting group. Continued with the same
statistical consultant responsibilities.

2016 - 2018   **Statistical Consultant**
Agriculture Experiment Station, Iowa State University
Provided statistical support on research projects for graduate students, faculty, and staff
mostly from the college of agriculture and life sciences but also from the colleges of engi-
neering, human sciences, liberal arts and sciences, and veterinary medicine. Advised clients
on study designs, statistical analysis methods, and statistical language use in writing in
many areas of statistics including exploratory analyses, linear (and mixed) models,

generalized linear (and mixed) models, data visualization, community analyses, dose response curves, predictive modeling, multivariate analyses, and Bayesian models. Assisted with the implementation of the analyses in R, SAS, and JMP.

2016   **Course Instructor**
Iowa State University
Lectured for an introductory statistics course for non-statistics majors. Prepared and graded exams.

2015   **Data Analyst**
Research Administration Office, Lawrence University
Performed statistical analyses using SPSS to analyze data from a study to compare the academic success and mood towards the university of undergraduates from freshman to sophomore years.

2015   **Lecturer of Mathematics**
Lawrence University
Taught an introductory statistics course for non-statistics majors. Organized the curriculum. Prepared and graded homework and exams.

2013 - 2015   **Teaching Assistant**
University of Wisconsin, Madison
Prepared and led discussions for a variety of undergraduate introductory statistics courses and taught labs for population health graduate student statistics courses. Graded homework and exams. Held office hours and worked in the statistics help room.

2014 - 2015   **Academic Mentor for Minority and First Generation Undergraduates**
Center for Academic Excellence, University of Wisconsin, Madison
Mentored minority and first generation undergraduate students enrolled in statistics courses. Met weekly throughout the semester with individuals or small groups to review statistical concepts from class and make the material approachable. Discussed and encouraged strategies for academic success.

Data Collection Assistant
2014 - 2015   *Research Administration Office, Lawrence University*
Assisted with the data collection for a study on the evaluation of warning lights installed at a busy crosswalk on the university campus. Used Tracker software to determine the deceleration rate of vehicles from videos taken of cars approaching the crosswalk.

RESEARCH INTERESTS ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Model Assessment, Data Visualization, Random Forest Models, Interpretation of Machine Learning Algorithms, Generalized Linear Mixed Models, R Package Development

CONTRIBUTED POSTERS ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

Goode, K. and Hofmann, H. "Using LIME to Interpret a Random Forest Model with an Application to Bullet Matching Data", Iowa State University Graduate and Professional Student Research Conference, Contributed Poster. April 2019.

Goode, K. and Rey, K. "Introducing ggResidpanel: An R Package for Easy Visualization of Residuals". Kansas State University Conference on Applied Statistics in Agriculture. Contributed Poster. May 2018.

SOFTWARE ⎯⎯

`ggResidpanel` R package for easy visualization of model diagnostic plots. Produces panels of diagnostic plots for one one, panels of plots for comparing multiple models, and interactive versions of the plots. Developed with Katie Rey. Source code can be found at `https://goodekat.github.io/ggResidpanel/`.

Seminar Leader	2018		*Predictive plant phenomics graduate student statistics bootcamp* at Iowa State University. Topics included statistical concepts of randomization, confidence intervals, and design of experiments.
Instructor	2016	STAT 101	*Introduction to statistics* at Iowa State University. Topics included summary statistics, visualizations, normal distribution, hypothesis testing, confidence intervals, and JMP.
	2015	MATH 107	*Elementary statistics* at Lawrence University. Topics included summary statistics, visualizations, randomization tests, bootstrap, normal distribution, hypothesis testing, confidence intervals, and R.
Teaching Assistant	2015	BMI 552	*Regression methods* for population health graduate students at UW Madison. Topics included simple and multiple linear regression, logistic regression, survival analysis, and SAS.
	2014	BMI 551	*Introduction to biostatistics* for population health graduate students. Topics included summary statistics, visualizations, probability, normal distributions, hypothesis testing, confidence intervals, and R.
	2014	STAT 301	*Introduction to statistical methods* for non-statistics majors at UW Madison. Topics included summary statistics, visualizations, probability, normal distributions, hypothesis testing, and confidence intervals.
	2014	STAT 302	*Accelerated introduction to statistical methods* for statistics undergraduate majors at UW Madison. Topics included summary statistics, visualizations, randomization tests, bootstrap, normal distribution, hypothesis testing, confidence intervals, and R.
	2013	STAT 371	*Introductory applied statistics for the life sciences* at UW Madison. Topics included summary statistics, visualizations, probability, normal distributions, hypothesis testing, confidence intervals, and R.
Academic Mentor	2014 - 2015		Mentor for minority and first generation undergraduate students in introductory statistics courses at the UW Madison.
Statistics Tutor	2014 - 2015		Tutor for undergraduate students in introductory statistics courses at the UW Madison.

2018 - Current	Graduate student representative to ISU statistics department faculty meetings
2018 - Current	Member of StatCom (Statistics in the Community)
2017 - 2019	Recycling coordinator for ISU STATers (Statistics Graduate Student Organization)
2017 - 2018	Treasurer for StatCom

Working Knowledge: GitHub, JMP, LaTeX, R, R Markdown, SAS, Shiny, SPSS
Basic Knowledge: C, Mathematica