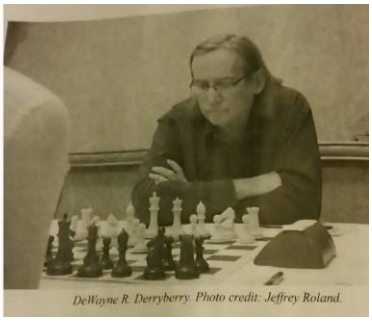
Dr. DeWayne Derryberry

derrdewa@isu.edu 253-278-3447


DeWayne R. Derryberry. Photo credit: Jeffrey Roland.

"People prefer black-and-white over shades of grey, and so there will always be the temptation to hold overly simplified beliefs and to hold them with excessive confidence."

Thomas Gilovich

Interests: Statistical Modeling, Information Criteria, Statistical Literacy, Inductive Logic, Academic Consulting

Employment

Emeritus Professor, Mathematics and Statistics, Idaho State University, March 2024 – present

Professor, Mathematics and Statistics, Idaho State University, July 2022-May 2023

Department Chair, Mathematics and Statistics, Idaho State University, July 2018 – June 2022

Professor, Mathematics and Statistics, Idaho State University, Fall 2015 – Spring 2018

Associate Professor, Mathematics and Statistics, Idaho State University, Fall 2011 – Spring 2015

Assistant Professor, Mathematics and Statistics, Idaho State University, Fall 2006 – Spring 2011

Assistant Professor, Mathematics and Computer Science, University of Puget Sound, Fall 2000 – Spring 2006

Visiting Assistant Professor, College of Business, Oregon State University, Fall 1998 – Summer 2000

Education

Bachelor of Arts in Philosophy (Minors: Ethics, Religion, Summa Cum Laude, 2024), College of Liberal Arts, Idaho State University, Senior Project: *An assessment of Allan Gibbard's "Wise Choices, Apt Feelings: A Theory of Normative Judgement"*

Doctor of Philosophy in Applied Statistics (1998) College of Science, Oregon State University
Dissertation: *Parametric Extensions of the Cox Regression Model*

Further graduate study: College of Business, Arizona State University (1990 –93), Microeconomics, Statistics, Operations Research, Operations Management

Master of Science in Decision Sciences (1990) College of Business, Arizona State University, Focus: Non-Linear Optimization, Decision Analysis
Applied Project: *Constrained Quadratic Programming Using an Interior Point Method*

Bachelor of Science in Mathematics (1988) College of Liberal Arts, Arizona State University,
Focus: Numerical Methods, Differential Equations

Courses taught (multiple times):

Freshman level:
- Introduction to Statistics
- The Language of Statistics

Junior level:
- Statistical Methods (Calculus based)
- Introduction to Probability (Calculus based)

Senior/ First year graduate:
- Applied Regression
- Experimental Design
- Time Series
- Mathematical Statistics (year-long sequence)

Book

Basic Data Analysis for Time Series with R (2014, Wiley) ISBN: 978-1-118-42254-0

This is a senior/first year graduate level textbook focusing on model selection

JMP Educational Case Studies

I created 11 cases for the JMP case studies library

Peer Reviewed Publications

General:

"Model Selection and Regression t-Statistics", (2018) DeWayne Derryberry, Ken Aho, John Edwards, Teri Peterson, *The American Statistician*.

"A graphical framework for model selection criteria and significance tests: refutation, confirmation and ecology" K Aho, D Derryberry, T Peterson, *Methods in Ecology and Evolution* (2017)

"Extending Edwards likelihood ratios to simple one-sided hypothesis tests" (2014), DeWayne Derryberry, Milan Bimali, *Missouri Journal of Mathematical Sciences*

"Model selection for ecologists: the worldviews of AIC and BIC" (2014) Ken Aho, DeWayne Derryberry, Teri Peterson *Ecology* (*cited over 1500 times*)

"Teaching Rank-based Tests by Emphasizing Structural Similarities to Corresponding Parametric Tests" (2010) DeWayne R. Derryberry, Sue B. Schou and W. J. Conover, *Journal of Statistics Education*

"A Scale-Location Adjustment for Proportional Hazards Deviance Residuals" (2000) DeWayne R. Derryberry and Paul A. Murtaugh *Communications in Statistics: Theory and Methods*

"Models of Connectance in Food Webs" (1998) Paul A. Murtaugh and DeWayne R. Derryberry**.** *Biometrics*

Consulting:

"Communication Distance and Bayesian Inference in Non-Perennial Streams" (2023), Ken Aho, Dewayne Derryberry, Sarah E. Godsey, Rob Ramos, Sara R. Warix, Samuel Zipper, *Water Resources Research*

"Non-perennial stream networks as directed acyclic graphs The R-package streamDAG" (2023)
Ken Aho, Cathy Kriloff, Sarah E. Godsey, Rob Ramos, Chris Wheeler, Yaqi You, Sara Warix, DeWayne Derryberry, Sam Zipper, Rebecca L. Hale, Charles T. Bond, Kevin A. Kuehn, *Environmental Modelling and Software*

"Estimating vegetation biomass and cover across large plots in shrub and grass dominated drylands using terrestrial lidar and machine learning", January (2018), Kyle Anderson, Nancy Glenn, Lucas Spaete, Douglas Shinneman, David Pilliod, Robert Arkle, Susan McIlroy, DeWayne Derryberry *Ecological Indicators*

"Methodological considerations of terrestrial laser scanning for vegetation monitoring in the sagebrush steppe", (2017) , 12 pages online (no page numbers), Kyle Anderson, Nancy Glenn, Lucas Spaete, Douglas Shinneman, David Pilliod, Robert Arkle, Susan McIlroy, DeWayne Derryberry, *Environmental Monitoring and Assessment*.

"Strontium -90 Biokinetics from Simulated Wound Intakes in Non-Human Primates Compared With Combined Model Predictions from National Council on Radiation Protection and Measurement Report 156 and International Commission on Radiation Protection Publication 67" (2016), Mark Allen, Richard Brey, Thomas Gesell, DeWayne Derryberry, Deepesh Poudel *Journal of Health Physics*

"A Simple Framework for Assessing the Sensitivity of Mountain Watersheds to Warming-driven Snowpack Loss" (2015), C. J. Tennant, B. T. Crosby, S. E. Godsey, R. W. VanKirk, and D. R. Derryberry, *Geophysical Research Letters*

"Aboveground total and green biomass of dryland shrub derived from terrestrial laser scanning" (2014) Peter J. Olsoy, Nancy F. Glenn, Patrick E. Clark, DeWayne R. Derryberry *ISPRS Journal of Photogrammetry and Remote Sensing*

"Monte Carlo Simulation of In-vivo Measurement of the Most Suitable Knee Position for the Optimal Measurement of the Activity"(2013) Khalaf M, Brey RR, Harris JT, Derryberry D, Tabatadze G. *Health Physics*

"Evaluation of ^{241}Am Deposited in Different Parts of the Leg Bones and Skeleton to Justify In-vivo Measurements of the Knee for Estimating Total Skeletal Activity" (2013) Khalaf M, Brey RR, Derryberry D. *Health Physics*

"Remote sensing of sagebrush canopy nitrogen" (2012) Jessica J. Mitchell, Nancy F. Glenn, Temuulen T. Sankey, DeWayne R. Derryberry, Matthew J. Germino *Remote Sensing of Environment*

"Spectroscopic detection of nitrogen concentrations in sagebrush" (2012) Jessica J. Mitchell, Nancy F. Glenn, Temuulen T. Sankey, DeWayne R. Derryberry, Matthew O. Anderson, Ryan C. Hruska *Remote Sensing Letters*

"Estrogen receptor positive breast cancers and their association with environmental factors" (2011) Sophie St-Hilaire, Rakesh Mandal, Amy Commendador, Sylvio Mannel and DeWayne Derryberry, *International Journal of Health Geographics*

"Small-footprint LiDAR estimations of sagebrush canopy characteristics" (2011) Mitchell, J., Glenn, N.F., Sankey, T., Derryberry, D.R., Anderson, M.O., Hruska, R.,*Photogrammetric Engineering and Remote Sensing*

"Errors in LiDAR-derived shrub height and crown area on sloped terrain" (2011) Nancy F Glenn; Lucas Spaete; Temuulen Sankey; DeWayne R Derryberry; Stuart Hardegree; Jessica J Mitchell, *Journal of Arid Environments*

"Vegetation and slope effects on accuracy of a LiDAR-derived DEM in the sagebrush steppe" (2010) Spaete, L., Glenn, N.F. , Derryberry, D.R., Sankey, T., Mitchell, J., Hardegree, S. *Remote Sensing Letters*

"Correlations between meteorological parameters and prostate cancer" (2010) S.St-Hilaire, S. Mannel, A. Commendador, R. Mandal, and D. Derryberry, *International Journal of Health Geographics*

"Spatial trends of breast and prostate cancers in the United States between 2000 and 2005" (2009) Rakesh Mandal, Sophie St-Hilaire, John G Kie and DeWayne Derryberry
International Journal of Health Geographics

"New Interatheres (Mammalia, Notoungulata) from the Late Oligocene Salla Beds of Bolivia" (2008), Ralph B. Hitz, Guillaume Billet and DeWayne Derryberry *Journal of Paleontology*