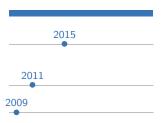
Susan Vanderplas

Curriculum Vitae

349a Hardin Hall North Wing 3310 Holdrege Street Lincoln, NE 68483-0961 402-472-7290 ⊠ susan.vanderplas@unl.edu ⊕ srvanderplas



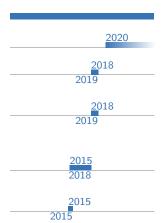
Education

PhD, Statistics, Iowa State University

Dissertation: The Perception of Statistical Graphics

MS, Statistics, Iowa State University

BS, Psychology & Applied Mathematical Sciences, Texas A&M University



Professional Experience

Assistant Professor, Statistics Department, University of Nebraska, Lincoln

Research Assistant Professor, Center for Statistics and Applications in Forensic Evidence, lowa State University

Statistical Consultant, Nebraska Public Power District

Provided individual mentoring and project leadership to continue the Business Intelligence Embedded Agent program and provide support for R-related projects.

Statistical Analyst, Nebraska Public Power District

Postdoc, Iowa State University Office of the Vice President for Research



Scholarship

Contribution percentages estimated from git contributions using git fame where possible. Not all projects have github repositories for which this is meaningful.



Journal Publications

Submitted as an invited response to Hullman & Gelman's "Designing for Interactive Exploratory Data Analysis Requires Theories of Graphical Inference".

VanderPlas, Susan (July 30, 2021). "Designing Graphics Requires Useful Experimental Testing Frameworks and Graphics Derived from Empirical Results". In: *Harvard Data Science Review*. https://hdsr.mitpress.mit.edu/pub/m7ur7k3u. DOI: 10.1162/99608f92.7d099fd0. URL: https://hdsr.mitpress.mit.edu/pub/m7ur7k3u.



13.

Hofmann, Heike, **Susan Vanderplas**, and Alicia Carriquiry (June 2021). "Treatment of inconclusives in the AFTE range of conclusions". en. In: *Law, Probability and Risk* 19.3-4, pp. 317–364. DOI: 10.1093/lpr/mgab002. URL: https://academic.oup.com/lpr/article/19/3-4/317/6308611 (visited on 12/20/2021).

Contribution: Writing (50%).

VanderPlas, **Susan**, Christian Röttger, Dianne Cook, and Heike Hofmann (2021). "Statistical significance calculations for scenarios in visual inference". In: *Stat* 10.1, e337. DOI: https://doi.org/10.1002/sta4.337.

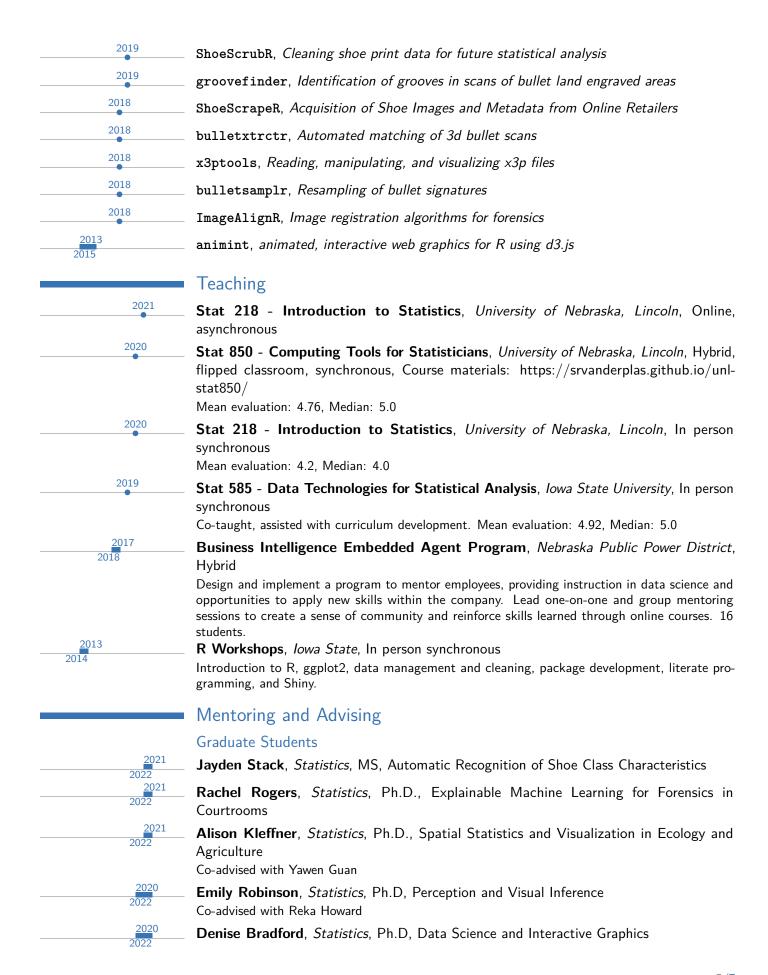
Contribution: Programming and analysis (30%), Writing (65%).



Other Publications

2	2019	Carriquiry, Alicia, Heike Hofmann, Xiao Hui Tai, and Susan VanderPlas (2019). "Machine learning in forensic applications". In: <i>Significance</i> 16.2, pp. 29–35. DOI: 10.1111/j.1740–9713.2019.01252.x. Contribution: Writing (50%). Budrus, Sarah, Susan Vanderplas, and Dianne Cook (2013). "In tennis, do smashes win matches?" In: <i>Significance</i> 10.3, pp. 35–38. DOI: 10.1111/j.1740-9713.2013.00665.x.
	In Progress	 Perception of Log Scales Assessment of perception and use of log scales to display exponential growth. Data collection stage. A Convolutional Neural Network for Outsole Recognition Use CNNs to automate identification of class characteristics in images of footwear outsoles. Revision stage. Bullet Signature Resampling Method for resampling bullet signatures used to calculate match and non-match score distributions.
		Grants
	2021	NIJ R&D in Forensic Science, Automatic Acquisition and Identification of Footwear Class Characteristics, PI, Funded, \$380,650 total
	2020	NIST , Center for Statistics and Applications in Forensic Evidence, PI, Funded (\$20 million total, \$456,930 sub-award)
	2020	USDA CIGOFF , Improving the Economic and Ecological Sustainability of US Crop Production through On-Farm Precision Experimentation, PI, Funded (\$4,000,000 total, \$400,000 UNL subcontract split between 3 UNL PIs)
	2021 2022	USDA NIFA AFRI , <i>Corn Residue Adaptive Grazing Strategies</i> , Collaborator, Funded, \$300,000
	2020	USDA NIFA AFRI , Practical Framework to Facilitate Adoption of In-Season N Management Technology in Commercial Fields, Collaborator, Not funded, \$300,000
	2020	NSF , Al Institute: AgroAl: The Institute for Advancing Agriculture and Food in a Changing World Using Al, Collaborator, Not Funded, Total grant \$20 million, UNL subcontract request \$3,555,327
	2020	NSF , Overcoming the Rural Data Deficit to Improve Quality of Life and Community Services in Smart & Connected Small Communities, PI, Funded (\$1,500,000 total, \$123,445 subcontract)
	2019	USDA AFRI-SAS , <i>A Cyber-Physical System for Data-Intensive Farm Management</i> , PI, Not funded, \$3,000,000 total
	2019	NIJ R&D in Forensic Science , Statistical Infrastructure for the Use of Error Rate Studies in the Interpretation of Forensic Evidence, Collaborator, Funded for FY 2019, \$197,699 total, \$57,596 ISU sub-award
	2018	NIJ R&D in Forensic Science, Passive Acquisition of Footwear Class Characteristics in Local Populations, PI, Not funded, \$383,104
	2018	NIJ R&D in Forensic Science , Evaluating Photogrammetry for 3D Footwear Impression Recovery, PI, Not funded, \$281,755
		Invited Talks
	2021	How do you define a circle? Perception and Computer Vision Diagnostics, <i>JSM</i> , Section on Statistical Graphics, Seattle, WA
	2021	Pandemics, Graphics, and Perception of Log Scales, R-Ladies DC, Washington, DC

2020	Perception and Visual Communication in a Global Pandemic, Data Science, Statistics, and Visualization Conference, SAMSI, Online
2020	One of these things is not like the others: Visual Statistics and Testing in Statistical Graphics, Data Science Symposium, South Dakota State University, Brookings, SD
2020	Big Data, Big Experiments, and Big Problems , Plant and Animal Genome, San Diego, CA
2019	Statistical Lineups for Bayesians, JSM, Section on Statistical Graphics, Denver, CO
2018	Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics, SDSS, Reston, VA
2015	Animint: Interactive Web-Based Animations Using Ggplot2's Grammar of Graphics, <i>JSM</i> , Seattle, WA
2014	The curse of three dimensions: Why your brain is lying to you , <i>JSM</i> , Section on Statistical Graphics Student Paper Session, Boston, MA
	Contributed Talks
2021	Welcome to Forensic Statistics, Data Mishaps Night, Online
2018	Framed! Reproducing 150 year old charts, JSM, Vancouver, BC
2017	A Bayesian Approach to Visual Inference, JSM, Baltimore, MD
2016	Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics, JSM, Chicago, IL
2015	Visual Aptitude and Statistical Graphics, InfoVis, Chicago, IL
2015	Animint: Interactive, Web-Ready Graphics with R, Great Plains R User Group, Sioux Center, IA
2014	Do You See What I See? Using Shiny for User Testing, JSM, Boston, MA
2013	Signs of the Sine Illusion – why we need to care, JSM, Montreal, ON
	Seminar Talks
2021	Pandemics, Graphics, and Perception of Log Scales, NUMBATS Seminar, Monash University, Melbourne, Australia
2021	Exploring Rural Quality of Life Using Data Science and Public Data , <i>QQPM Seminar</i> , University of Nebraska, Lincoln
2021	Inconclusive Conclusions: Biases and Consequences, Law and Psychology Brown Bag Seminar, University of Nebraska, Lincoln
2021	Visual Statistics: Communication and Graphical Testing , <i>Animal Science Seminar</i> , University of Nebraska, Lincoln
2021	How to Make Good Charts , <i>Biological and Systems Engineering GSA</i> , University of Nebraska, Lincoln
2020	Statistical Evaluation of Firearms and Toolmark Evidence , <i>Statistics Department Seminar</i> , University of Nebraska, Lincoln
	Software
2020	Dates show initial involvement; only packages which are no longer maintained have end dates.
2020	vinference, Analysis of visual inference experiments



2020	Ved Piyush, Statistics, MS, Machine Learning and Computer Vision
2019 2022	Joseph Zemmels, Statistics, MS, Ph.D, Analysis and Matching of Cartridge Cases Completed MS (Spring 2020). Co-advised with Heike Hofmann.
2019	Eryn Blagg , <i>Statistics</i> , MS, Ph.D, Analysis of Wear Development in Three-Dimensional Shoe Scans.
	Completed MS (Spring 2020). Co-advised with Heike Hofmann
2018	Miranda Tilton , <i>Statistics</i> , MS, Footwear Class Characteristics and Computer Vision. Completed MS (Spring 2019).
	Undergraduate Students
2021	Xinyu Liu , <i>Actuarial Science and Computer Science</i> , UNL FYRE Program, Machine learning for shoe sole images
2019	Jason Seo , <i>Computer Science and Statistics</i> , Undergraduate Research, R package for visualization of neural networks using the python library keras-vis.
2018 2019	Talen Fisher , <i>Computer Engineering</i> , Undergraduate Research, Tools for working with x3p files, database design for storing bullet scans and intermediate analysis products.
	Summer Research Programs
2019	Molly McDermott and Andrew Maloney, Research Experience for Undergraduates, Summer 2019, Bullet Scan Quality and Machine Learning
2019	Syema Ailia, Emmanuelle Hernandez Morales, Tiger Ji, Research Experience for Undergraduates, Summer 2019, Rapid Quality Control Tools for Confocal Microscopy Scans
2018	Ben Wonderlin and Jenny Kim , <i>Young Engineers and Scientists</i> , Summer 2018, Footwear Class Characteristics and Computer Vision
	Outreach
	Forensic Practitioners
2021	Blog Post , <i>CSAFE</i> , Q&A - Treatment of Inconclusive Results in Error Rates of Firearm Studies (Link)
2021	Webinar, CSAFE, Treatment of Inconclusive Results in Error Rates of Firearm Studies
2020	CSAFE Firearms Workshop, Invited Talk: Open Source Software in Forensics
	Service
	Service to the Discipline
2021	Associate Editor, Journal of Computational and Graphical Statistics
2020	Associate Editor, R Journal
2020 2022	Graphics Section Program Chair (2021) , <i>ASA</i> , Official duties include planning JSM sessions in 2020 and running the Data Expo in 2022
2020	Program Committee (Graphics) , Symposium on Data Science and Statistics 2020, Visualization Track co-chair

2019	Gertrude Cox Scholarship Committee Member, ASA
2021	Assisted with selection of the Gertrude Cox Scholarship recipients and honorable mentions
2019	Uncoast Unconference Organizing Committee, Des Moines, IA
	Organized the first R Uncoast Unconference to bring R developers in flyover country together for a 3-day event. Over 50% of the participants at the conference were women or minorities, and participants included students, academics, and industry R programmers with a variety of experience levels in R programming.
2017	Graphics Section Representative to the Council of Sections, ASA
	Department and Institutional Service
2021	R Workshop Coordinator
	Develop and coordinate a week of R workshops taught in January, May, and August each year
2021	Faculty Advisory Council, Vice-Chair
2021	MS Comp Exam Committee
2021	Committee to evaluate the current MS Stat Day presentation component and consider other options for the MS program Digital Ag Minor Committee
	Committee to develop a digital ag minor.
2021	Data Science Joint Committee Committee of Math, Computer Science, and Statistics departments to develop a comprehensive undergraduate data science program.
2020	Seminar Organizer
2020	Arrange speakers for the department seminar.
•	SCIL 101 Poster Judge, Fall Semester
2019	Undergraduate Program Committee Design an undergraduate statistics major and submit the proposal to the university.
	Training & Professional Development
2021	Peer Review of Teaching Program Create a course portfolio for Stat 850 in order to assess course design and analyze student engagement and learning
2020	New Faculty Development Program
2020	Summer Institute for Online Teaching Online course structure and backwards design principles