

# Susan Vanderplas

## Curriculum Vitae

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🌐 [srvanderplas.github.io](https://srvanderplas.github.io)  
🐙 [srvanderplas](https://github.com/srvanderplas)

### Education

2009 — 2015 **Ph.D.**, *Statistics*, Iowa State University  
2009 — 2011 **MS**, *Statistics*, Iowa State University  
2005 — 2009 **BS**, *Psychology & Applied Mathematical Sciences*, Texas A&M University

### Professional Experience

2020 — **Assistant Professor**, *Statistics*, University of Nebraska-Lincoln  
Feb 2018 — Dec 2019 **Research Assistant Professor**, *Center for Statistics and Applications in Forensic Evidence*, Iowa State University  
Aug 2015 — Feb 2018 **Statistical Analyst**, Nebraska Public Power District  
Apr 2015 — Oct 2015 **Postdoc**, *Office of the Vice President for Research*, Iowa State University

### Publications

Student advisees indicated with \*. Contribution percentages estimated from git contributions using `git fame` where possible. Not all projects have github repositories for which this is meaningful. Most of these papers are highly collaborative, and intellectual contributions are typically shared between all authors.

### Software

Dates show initial involvement; only packages which are no longer maintained have end dates.

2021 — **ggpcp**, *Generalized parallel coordinate plots*, <https://github.com/heike/ggpcp>  
2020 — **vinference**, *Analysis of visual inference experiments*, <https://github.com/heike/vinference>  
2019 — 2021 **groovefinder**, *Identification of grooves in scans of bullet land engraved areas*, <https://github.com/heike/groovefinder>  
2019 — **cmcR**, *Automated matching of 3d cartridge case scans using the congruent matching cells algorithm*, <https://github.com/CSAFE-ISU/cmcR>  
2018 — **bulletxtctr**, *Automated matching of 3d bullet scans*, <https://github.com/heike/bulletxtctr>  
2018 — **x3ptools**, *Reading, manipulating, and visualizing x3p files*, <https://github.com/heike/x3ptools>  
2018 — **bulletsamplr**, *Resampling of bullet signatures*, <https://github.com/srvanderplas/bulletsamplr>  
2018 — 2020 **ShoeScapeR**, *Acquisition of shoe images and metadata from online retailers*, <https://github.com/srvanderplas/shoescraper>  
2018 — 2021 **ImageAlignR**, *Image registration algorithms for forensics*, <https://github.com/srvanderplas/imagealignr>

2013  
2015

**animint**, *Animated, interactive web graphics for R using ggplot2 and d3.js*, <https://github.com/tdhock/animint>

## Grants

### Under Review

2023

**NSF: CAREER**, *What Do You See? Perception, Decisions, and Statistical Graphics*, PI, Total: \$666,485

### Funded

2021  
2023

**NIJ: R&D In Forensic Science**, *Automatic Acquisition and Identification of Footwear Class Characteristics*, PI, Total: \$380,650

2021  
2022

**USDA-NIFA: Agriculture and Food Research Initiative**, *Corn Residue Adaptive Grazing Strategies*, Collaborator, Total: \$300,000

2020  
2025

**NIST: Center for Statistics and Applications in Forensic Evidence**, *Footwear Class Characteristics and Human Factors*, PI, Total: \$20,000,000, Sub: \$456,930

2021  
2023

**USDA-NRCS: Conservation Innovation Grant On-Farm Trials**, *Improving the Economic and Ecological Sustainability of US Crop Production through On-Farm Precision Experimentation*, PI, Total: \$4,000,000, Sub: \$400,000 (Split between 3 UNL co-PIs)

2020  
2023

**NSF: Smart and Connected Communities**, *Overcoming the Rural Data Deficit to Improve Quality of Life and Community Services in Smart & Connected Small Communities*, PI, Total: \$1,500,000, Sub: \$123,445

2019  
2020

**NIJ: R&D In Forensic Science**, *Statistical Infrastructure for the Use of Error Rate Studies in the Interpretation of Forensic Evidence*, Collaborator, Total: \$197,699, Sub: \$57,596

### Not Funded

2022

**NIJ: R&D In Forensic Science**, *Physical Simulation of Lower Body Biomechanics for Artificial Shoe Wear and Forensics Analysis*, Co-PI, Total: \$299,859, Sub: \$73,693

2020

**USDA-NIFA: Agriculture and Food Research Initiative**, *Practical Framework to Facilitate Adoption of In-Season N Management Technology in Commercial Fields*, Collaborator, Total: \$300,000

2020

**NSF: National Artificial Intelligence Research Institutes**, *AI Institute: AgroAI: The Institute for Advancing Agriculture and Food in a Changing World Using AI*, Collaborator, Total: \$20,000,000

2019

**USDA-AFRI: Sustainable Agricultural Systems**, *A Cyber-Physical System for Data-Intensive Farm Management*, PI, Total: \$3,000,000

2018


**NIJ: R&D In Forensic Science**, *Evaluating Photogrammetry for 3D Footwear Impression Recovery*, PI, Total: \$281,755

## Awards

2012

**Student Paper Award**, *Graphics Section, American Statistical Association*




## Talks

 provides a link to slides, where available

### Invited

2024

**Cultivating Insights: Harnessing the Power of Data Visualization in Agriculture** , *International Conference for On-Farm Precision Experimentation*, Corpus Christie, TX

2023	<b>Multimodal User Testing: Producing comprehensive, task-focused guidelines for chart design</b>  , <i>Australian Statistical Conference</i> , Wollongong, NSW, AUS
2023	<b>How Do You Define a Circle? Perception and Computer Vision Diagnostics</b>  , <i>International Association for Statistical Computing</i> , Asian Regional Section Meeting, Macquarie, NSW, AUS
2023	<b>Multimodal User Testing: Producing comprehensive, task-focused guidelines for chart design</b>  , <i>International Conference on Data Science</i> , Universidad Diego Portales, Chile
2023	<b>Testing Statistical Graphics</b>  , <i>JSM</i> , Section on Statistical Graphics, Toronto, ON, CA
2021	<b>How do you define a circle? Perception and Computer Vision Diagnostics</b>  , <i>JSM</i> , Section on Statistical Graphics, Seattle, WA
2021	<b>Pandemics, Graphics, and Perception of Log Scales</b>  , <i>R Ladies DC</i> , Washington, DC
2020	<b>Perception and Visual Communication in a Global Pandemic</b>  , <i>Data Science, Statistics, and Visualization</i> , SAMSI, Online
2020	<b>One of these things is not like the others: Visual Statistics and Testing in Statistical Graphics</b>  , <i>Data Science Symposium</i> , South Dakota State University, Brookings, SD
2020	<b>Big Data, Big Experiments, and Big Problems</b>  , <i>Plant and Animal Genome</i> , San Diego, CA
2019	<b>Statistical Lineups for Bayesians</b>  , <i>JSM</i> , Section on Statistical Graphics, Denver, CO
2018	<b>Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics</b>  , <i>SDSS</i> , Reston, VA
2015	<b>Animint: Interactive Web-Based Animations using Ggplot2's Grammar of Graphics</b>  , <i>JSM</i> , Section on Statistical Graphics, Seattle, WA
2014	<b>The curse of three dimensions: Why your brain is lying to you</b>  , <i>JSM</i> , Section on Statistical Graphics, Boston, MA
	<b>Contributed</b>
2022	<b>Local Population Footwear Class Characteristics - An End-to-End Pipeline for Automatic Data Acquisition and Analysis</b>  , <i>International Association for Identification Meeting</i> , Omaha, NE
2022	<b>From Scans to Scores</b> , <i>International Association for Identification Meeting</i> , Omaha, NE
2022	<b>How do you define a circle? Perception and Computer Vision Diagnostics</b>  , <i>SDSU Data Science Symposium</i> , South Dakota State University, Brookings, SD
2021	<b>Welcome to Forensic Statistics</b>  , <i>Data Mishaps Night</i> , Online
2018	<b>Framed Charts in the 1870 Statistical Atlas</b>  , <i>JSM</i> , Section on Statistical Graphics, Vancouver, BC, CA
2017	<b>A Bayesian Approach to Visual Inference</b> , <i>JSM</i> , Section on Statistical Graphics, Baltimore, MD
2016	<b>Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics</b>  , <i>JSM</i> , Section on Statistical Graphics, Chicago, IL
2015	<b>Visual Aptitude and Statistical Graphics</b> , <i>InfoVis</i> , IEEE, Chicago, IL
2014	<b>Do You See What I See? Using Shiny for User Testing</b>  , <i>JSM</i> , Section on Statistical Graphics, Boston, MA
2014	<b>Animint: Interactive, Web-Ready Graphics with R</b>  , <i>Great Plains R User Group</i> , Sioux Center, IA

2013

**Signs of the Sine Illusion – why we need to care**, *JSM*, Section on Statistical Graphics, Montreal, ON, CA

## Seminars

2024

**Building a CV with R and Google Sheets** [📄](#), *Graphics Group*, University of Nebraska, Online

2024

**Using Git Submodules** [📄](#), *Graphics Group*, University of Nebraska, Online

2023

**Graphics and Cognition: How Do We Perceive Charts?** [📄](#), *Graphics Group*, University of Nebraska-Lincoln, Iowa State University, and other interested affiliates, Online

2023

**What Makes a Good Graph? Graphical Testing and Principles for Graph Design** [📄](#), *Center for Brain, Biology, and Behavior*, University of Nebraska, Lincoln, NE

2023

**Inconclusive Conclusions: Biases and Consequences** [📄](#), *Biostatistics*, Johns Hopkins University, Baltimore, MD

2022

**Reproducible Science: Statistics, Forensics, and the Law** [📄](#), *Statistics*, University of Nebraska - Lincoln, Lincoln, NE

2022

**How to make good charts** [📄](#), *Complex Biosystems*, University of Nebraska - Lincoln, Lincoln, NE

2022

**Pandemics, Graphics, and Perception of Log Scales** [📄](#), *Math*, University of Nebraska - Omaha, Omaha, NE

2022

**Automatic Acquisition of Footwear Class Characteristics** [📄](#), *Center for Statistical Applications in Forensic Evidence*, Online

2021

**Pandemics, Graphics, and Perception of Log Scales** [📄](#), *NUMBATS*, Monash University, Melbourne, Vic, AUS

2021

**Exploring Rural Quality of Life Using Data Science and Public Data** [📄](#), *QQPM*, University of Nebraska - Lincoln, Lincoln, NE

2021

**Inconclusive Conclusions: Biases and Consequences** [📄](#), *Law and Psychology Brown Bag*, University of Nebraska - Lincoln, Lincoln, NE

2021

**Visual Statistics: Communication and Graphical Testing** [📄](#), *Animal Science*, University of Nebraska - Lincoln, Lincoln, NE

2021

**How to Make Good Charts** [📄](#), *Biological and Systems Engineering GSA*, University of Nebraska - Lincoln, Lincoln, NE

2020

**Statistical Evaluation of Firearms and Toolmark Evidence** [📄](#), *Statistics*, University of Nebraska - Lincoln, Lincoln, NE

## Teaching

2024

**STAT 151**, *Introduction to Statistical Computing*, University of Nebraska - Lincoln, Flipped synchronous

2024

**STAT 251**, *Data Wrangling*, University of Nebraska - Lincoln, Flipped synchronous

2023

**STAT 151**, *Introduction to Statistical Computing*, University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.55 (mean), 5 (median)

2023

**STAT 251**, *Data Wrangling*, University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.30 (mean), 5 (median)

2023

**STAT 892**, *Data Technologies for Statistical Analysis*, University of Nebraska - Lincoln, Co-taught with ISU Stat 585, Hybrid synchronous

2023

**STAT 850**, *Computing Tools for Statisticians*, University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.31 (mean), 5 (median)

2023

**STAT 892**, *Writing in Statistics/TA Prep*, University of Nebraska - Lincoln, In person synchronous. Evals: 4.13 (mean), 4 (median)

2022

**STAT 151**, *Introduction to Statistical Computing*, University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.95 (mean), 5 (median)

2022

**STAT 218**, *Introduction to Statistics*, University of Nebraska - Lincoln, Online asynchronous. Evals: 3.72 (mean), 4 (median)

2022

**STAT 850**, *Computing Tools for Statisticians*, University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.33 (mean), 5 (median)

2022

**STAT 892**, *Writing in Statistics/TA Prep*, University of Nebraska - Lincoln, In person synchronous. Evals: 4.29 (mean), 5 (median)

2022

**STAT 982**, *Advanced Inference*, University of Nebraska - Lincoln, Co-taught with Bertrand Clarke. Evals: 4.34 (mean), 5 (median)

2021

**STAT 218**, *Introduction to Statistics*, University of Nebraska - Lincoln, Online asynchronous.. Evals: 4.01 (mean), 4 (median)

2021

**STAT 850**, *Computing Tools for Statisticians*, University of Nebraska - Lincoln, Hybrid, flipped, synchronous. Evals: 4.79 (mean), 5 (median)

2020

**STAT 218**, *Introduction to Statistics*, University of Nebraska - Lincoln, Initially in person synchronous, then online asynchronous. Evals: 4.20 (mean), 4 (median)

2020

**STAT 850**, *Computing Tools for Statisticians*, University of Nebraska - Lincoln, Hybrid, flipped, synchronous. Evals: 4.76 (mean), 5 (median)

2019

**STAT 585**, *Data Technologies for Statistical Analysis*, Iowa State, Co-taught with Heike Hofmann. Evals: 4.92 (mean), 5 (median)

## Mentoring

Ph.D.

2023

**Tyler Wiederich**, *Perception of Three Dimensional Graphics*, University of Nebraska - Lincoln

2023

**Muxin Ha**, *Automatic Recognition of Shoe Class Characteristics*, University of Nebraska - Lincoln

2022

**Weihao (Patrick) Li**, *Advances in Artificial Intelligence for Data Visualization: Developing Computer Vision Models to Automate Reading of Data Plots, with Application to Predictive Model Diagnostics*, co-advised with Dianne Cook and Emi Tanaka, Monash University

2021

**Denise Bradford**, *Dashboards for Exploratory Multivariate Data Analysis*, University of Nebraska - Lincoln

2021

2024

**Rachel Rogers**, *Explainable Machine Learning for Forensics in Courtrooms*, University of Nebraska - Lincoln

2020

2023

**Alison Kleffner**, *Spatial Statistics and Visualization in Ecology and Agriculture*, co-advised with Yawen Guan, University of Nebraska - Lincoln

2020

2023

**Joseph Zemmels**, *Analysis and Matching of Cartridge Cases*, co-advised with Heike Hofmann, Iowa State University

2020

2022

**Emily Robinson**, *Perception of Log Scales*, co-advised with Reka Howard, University of Nebraska - Lincoln

## MS

2023  
2025 **Carson Trego**, *A Statistical Approach to Learning Computer Vision*, University of Nebraska - Lincoln

2022  
2023 **Tyler Wiederich**, *Perception of Three Dimensional Graphics*, University of Nebraska - Lincoln

2022  
2023 **Muxin Ha**, *Automatic Recognition of Shoe Class Characteristics*, University of Nebraska - Lincoln

2021  
2022 **Jayden Stack**, *Automatic Recognition of Shoe Class Characteristics*, University of Nebraska - Lincoln

2020 **Ved Piyush**, *Machine Learning and Computer Vision*, University of Nebraska - Lincoln

2019  
2020 **Joseph Zemmels**, *Analysis and Matching of Cartridge Cases*, co-advised with Heike Hofmann, Iowa State University

2019  
2020 **Eryn Blagg**, *Analysis of Wear Development in Three-Dimensional Shoe Scans*, co-advised with Heike Hofmann, Iowa State University

2018  
2019 **Miranda Tilton**, *Footwear Class Characteristics and Computer Vision*, Iowa State University

## Undergraduate

2021 **Xinyu Liu**, *Machine Learning for Shoe Sole Images*, UNL FYRE Program, University of Nebraska - Lincoln

2019 **Jason Seo**, *R package for visualization of neural networks using the python library keras-vis*, Iowa State University

2018  
2019 **Talen Fisher**, *Database engineering and tools for working with x3p files*, Iowa State University

## Summer

2019 **Molly McDermott and Andrew Maloney**, *Bullet Scan Quality and Machine Learning*, Iowa State University

2019 **Syema Ailia, Emmanuelle Hernandez Morales, Tiger Ji**, *Rapid quality control tools for confocal microscopy scans*, Iowa State University

2018 **Ben Wonderlin, Jenny Kim**, *Footwear Class Characteristics and Computer Vision*, Young Engineers and Scientists Program, Iowa State University

## Service

### Discipline

2023  
2025 **Member**, *Advisory Committee on Forensic Science*, ASA

2023  
2024 **Chair**, *Section on Statistical Graphics*, ASA

2022  
2023 **Chair-Elect**, *Section on Statistical Graphics*, ASA

2021  
2024 **Associate Editor**, *Journal of Computational and Graphical Statistics*

2020  
2026 **Associate Editor**, *R Journal*

2020  
2022 **Program Chair**, *Section on Statistical Graphics*, ASA

2020 **Program Committee (Graphics)**, *Symposium on Data Science and Statistics (2020)*

2019  
2021 **Member**, *Gertrude Cox Scholarship Committee*, ASA

2019

**Organizing Committee**, *Uncoast Unconference*, 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

2019

**Council of Sections Representative**, *Section on Statistical Graphics*, ASA

### Institution

2023

**Member**, *Ad-Hoc Committee on EM 16*, Faculty Senate

2022

**Representative**, *Statistics Department*, Faculty Senate

2021

2022

**Vice-Chair**, *Statistics Department Representative*, Faculty Advisory Council

2021

**Member**, *Digital Ag Minor Committee*

2021

**Member**, *Data Science Joint Committee*, Committee of Math, Computer Science, and Statistics departments to develop a comprehensive undergraduate data science program

2020

**Poster Judge**, *SCIL 101*, Fall Semester

### Department

2021

2022

**Member**, *MS Comprehensive Exam Committee*

2021

**Coordinator**, *R workshops*, University of Nebraska Lincoln, Develop and coordinate a week of R workshops taught in January and May each year

2020

2021

**Organizer**, *Seminar*, Statistics Department

2019

2020

**Member**, *Undergraduate Program Committee*, Statistics Department, Design the undergraduate statistics program, propose new classes to support the program, and submit proposals to the university for new courses and programs.

Reviewing

I have provided peer reviews for CRC/Chapman & Hall Book, IEEE InfoVis, Journal of Computational and Graphical Statistics, R Journal, Forensic Science International, Symmetry, Forensic Sciences Research, Law, Probability, and Risk, Harvard Data Science Review, Journal of the American Statistical Association, The American Statistician

### Professional Development

2023

**Digital Accessibility Training**, *Online training - creating accessible digital content*

2022

2023

**Faculty Fellow**, *Nebraska Governance and Technology Center*

2021

2022

**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*