

# Susan Vanderplas

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## Curriculum Vitae

### 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

- Present — Jul 2024 **Associate Professor**, *Statistics*, University of Nebraska-Lincoln
- Jul 2024 — 2020 **Assistant Professor**, *Statistics*, University of Nebraska-Lincoln
- Dec 2019 — Feb 2018 **Research Assistant Professor**, *Center for Statistics and Applications in Forensic Evidence*, Iowa State University
- Feb 2018 — Aug 2015 **Statistical Analyst**, Nebraska Public Power District
- Oct 2015 — Apr 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.

#### Peer Reviewed Publications




- 2024 — 25. Li, Weihao\*, Cook, Dianne, Tanaka, Emi, and **VanderPlas, Susan** (May 2024). "A Plot Is Worth a Thousand Tests: Assessing Residual Diagnostics with the Lineup Protocol". In: *Journal of Computational and Graphical Statistics*. ISSN: 1061-8600. URL: <https://www.tandfonline.com/doi/abs/10.1080/10618600.2024.2344612>.  
**Contribution:** Advising 10%.
- 2024 — 24. Ju, Wangqian\*, **VanderPlas, Susan R.**, and Hofmann, Heike (Jan. 2024). "One Model That Fits Them All: Psychometrics With Generalized Linear Mixed Effects Models". In: *Electronic Imaging* 36, pp. 1–8. ISSN: 2470-1173. DOI: [10.2352/EI.2024.36.1.VDA-358](https://doi.org/10.2352/EI.2024.36.1.VDA-358). URL: <https://library.imaging.org/ei/articles/36/1/VDA-358> (visited on 08/28/2024).  
**Contribution:** Advising 10%.
- 2024 — 23. Rogers, Rachel\* and **VanderPlas, Susan** (May 2024). "Demonstrative Evidence and the Use of Algorithms in Jury Trials". In: *Journal of Data Science* 22.2, pp. 314–332. ISSN: 1680-743X, 1683-8602. DOI: [10.6339/24-JDS1130](https://doi.org/10.6339/24-JDS1130).  
**Contribution:** Writing 20%, Advising 100%.

22. 2024 **Vanderplas, Susan**, Blankenship, Erin, and Wiederich, Tyler\* (2024). "Escaping Flatland: Graphics, Dimensionality, and Human Perception". In: *Human Interface and the Management of Information*. Ed. by Hirohiko Mori and Yumi Asahi. Cham: Springer Nature Switzerland 2024, pp. 140–156. ISBN: 978-3-031-60114-9. DOI: [10.1007/978-3-031-60114-9\\_11](https://doi.org/10.1007/978-3-031-60114-9_11).  
**Contribution:** Writing 100%, Analysis 70%.
21. 2024 **Vanderplas, Susan**, Carriquiry, Alicia, and Hofmann, Heike (June 2024). "Hidden Multiple Comparisons Increase Forensic Error Rates". In: *Proceedings of the National Academy of Sciences* 121.25, e2401326121. DOI: [10.1073/pnas.2401326121](https://doi.org/10.1073/pnas.2401326121).  
**Contribution:** Writing 70%, Analysis 50%.
20. 2024 Rosenblum, Michael, Chin, Elizabeth T, Ogburn, Elizabeth L, Nishimura, Akihiko, Westreich, Daniel, Datta, Abhirup, **Vanderplas, Susan**, Cuellar, Maria, and Thompson, William C (Jan. 1, 2024). "Misuse of statistical method results in highly biased interpretation of forensic evidence in Guyll et al. (2023)". In: *Law, Probability and Risk* 23.1, mgad010. ISSN: 1470-8396. DOI: [10.1093/lpr/mgad010](https://doi.org/10.1093/lpr/mgad010). URL: <https://doi.org/10.1093/lpr/mgad010>.  
**Contribution:** Writing (10%). This paper is a collaboration between all authors resulting from discussions about the Guyll et al. paper.
19. 2023 Robinson, Emily A.\*, Howard, Reka, and **VanderPlas, Susan** (Oct. 2, 2023). "Eye Fitting Straight Lines in the Modern Era". In: *Journal of Computational and Graphical Statistics* 32.4, pp. 1537–1544. ISSN: 1061-8600. DOI: [10.1080/10618600.2022.2140668](https://doi.org/10.1080/10618600.2022.2140668).  
**Contribution:** Programming and analysis (10%), Writing (10%), Advising (60%).
18. 2023 **VanderPlas, Susan**, Ge, Yawei\*, Unwin, Antony, and Hofmann, Heike (Mar. 2023). "Penguins Go Parallel: a grammar of graphics framework for generalized parallel coordinate plots". In: *Journal of Computational and Graphical Statistics*. DOI: [10.1080/10618600.2023.2195462](https://doi.org/10.1080/10618600.2023.2195462).  
**Contribution:** Writing (50%).
17. 2023 Zemmels, Joseph\*, **Vanderplas, Susan**, and Hofmann, Heike (Feb. 9, 2023). "A Study in Reproducibility: The Congruent Matching Cells Algorithm and cmcR package". In: *R Journal* 14 (4), pp. 79–102. DOI: [10.32614/RJ-2023-014](https://doi.org/10.32614/RJ-2023-014).  
**Contribution:** Programming and analysis (10%), Writing (20%), Advising (40%).
16. 2023 Robinson, Emily\*, Howard, Reka, and **VanderPlas, Susan** (Jan. 2023). "You Draw It: Implementation of visually fitted trends with r2d3". In: *Journal of Data Science*. ISSN: 1680-743X. DOI: [10.6339/22-JDS1083](https://doi.org/10.6339/22-JDS1083).  
**Contribution:** Writing (10%), Advising (80%).
15. 2022 Bradford, Denise\* and **VanderPlas, Susan** (Dec. 2022). "Exploring Rural Shrink Smart Through Guided Discovery Dashboards". In: *Journal of Data Science*, pp. 1–12. ISSN: 1680-743X. DOI: [10.6339/22-JDS1080](https://doi.org/10.6339/22-JDS1080).  
**Contribution:** Programming and analysis (10%), Writing (10%), Advising (100%).
14. 2022 Wilhelm, Adalbert and **VanderPlas, Susan** (Nov. 2022). "Visual Narratives of the Covid-19 pandemic". In: *Journal of Data Science, Statistics, and Visualisation* 2.7, pp. 84–113. DOI: [10.52933/jdssv.v2i7.64](https://doi.org/10.52933/jdssv.v2i7.64).  
**Contribution:** Writing (60%).
13. 2021 Hofmann, Heike, Carriquiry, Alicia, and **Vanderplas, Susan** (May 5, 2021). "Treatment of inconclusives in the AFTE range of conclusions". In: *Law, Probability and Risk* 19.3-4, pp. 317–364. ISSN: 1470-8396. DOI: <https://doi.org/10.1093/lpr/mgab002>.  
**Contribution:** Writing (50%).
12. 2021 **Vanderplas, Susan**, Röttger, Christian, Cook, Dianne, and Hofmann, Heike (Dec. 1, 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%).

11. 2020 **Vanderplas, Susan**, Carriquiry, Alicia, Hofmann, Heike, Hamby, James, and Tai, Xiao Hui (2020). "An introduction to firearms examination for researchers in statistics". In: *Handbook of Forensic Statistics*. Ed. by Banks, D., Kafadar, K., Kaye, D., and Tackett, M. New York: Chapman and Hall/CRC 2020. DOI: <https://doi.org/10.1201/9780367527709>.  
**Contribution:** Writing (50%).
10. 2020 **Vanderplas, Susan**, Nally, Melissa, Klep, Tylor, Cadevall, Cristina, and Hofmann, Heike (Mar. 1, 2020). "Comparison of three similarity scores for bullet LEA matching". In: *Forensic Science International* 308, p. 110167. ISSN: 0379-0738. DOI: <https://doi.org/10.1016/j.forsciint.2020.110167>.  
**Contribution:** Programming and analysis (20%), Writing (55%).
9. 2020 **Vanderplas, Susan**, Cook, Dianne, and Hofmann, Heike (Mar. 1, 2020). "Testing Statistical Charts: What Makes a Good Graph?" In: *Annual Review of Statistics and Its Application* 7.1, pp. 61–88. DOI: <https://doi.org/10.1146/annurev-statistics-031219-041252>.  
**Contribution:** Writing (85%).
8. 2019 Rutter, Lindsay, **Vanderplas, Susan**, Cook, Dianne, and Graham, Michelle (May 29, 2019). "ggenealogy: An R Package for Visualizing Genealogical Data". In: *Journal of Statistical Software* 89.13, pp. 1–31. DOI: <https://doi.org/10.18637/jss.v089.i13>.
7. 2019 **Vanderplas, Susan**, Goluch, Ryan C, and Hofmann, Heike (Apr. 1, 2019). "Framed! Reproducing and Revisiting 150-Year-Old Charts". In: *Journal of Computational and Graphical Statistics* 28.3, pp. 620–634. DOI: <https://doi.org/10.1080/10618600.2018.1562937>.  
**Contribution:** Programming and analysis (60%), writing (50%).
6. 2018 Sievert, Carson, **Vanderplas, Susan**, Cai, Jun, Ferris, Kevin, Khan, Faizan Uddin Fahad, and Hocking, Toby Dylan (Nov. 14, 2018). "Extending ggplot2 for Linked and Animated Web Graphics". In: *Journal of Computational and Graphical Statistics* 28.2, pp. 299–308. DOI: <https://doi.org/10.1080/10618600.2018.1513367>.
5. 2017 **Vanderplas, Susan** and Hofmann, Heike (Apr. 24, 2017). "Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics". In: *Journal of Computational and Graphical Statistics* 26.2, pp. 231–242. DOI: <https://doi.org/10.1080/10618600.2016.1209116>.  
**Contribution:** Programming and analysis (90%), writing (50%).
4. 2016 **VanderPlas, Susan** and Hofmann, Heike (Dec. 31, 2016). "Spatial Reasoning and Data Displays". In: *IEEE Transactions on Visualization and Computer Graphics* 22.1, pp. 459–468. DOI: <https://doi.org/10.1109/TVCG.2015.2469125>.  
**Contribution:** Programming and analysis (90%), writing (75%).
3. 2015 **Vanderplas, Susan** and Hofmann, Heike (Dec. 10, 2015). "Signs of the Sine Illusion - why we need to care". In: *Journal of Computational and Graphical Statistics* 24.4, pp. 1170–1190. DOI: <https://doi.org/10.1080/10618600.2014.951547>.  
**Contribution:** Programming and analysis (50%), writing (60%).
2. 2010 Towfic, Fadi, **Vanderplas, Susan**, Oliver, Casey A, Couture, Oliver, Tuggle, Christopher K, Greenlee, M Heather West, and Honavar, Vasant (2010). "Detection of gene orthology from gene co-expression and protein interaction networks". In: *BMC bioinformatics* 11.Suppl 3, S7. DOI: <https://doi.org/10.1186/1471-2105-11-S3-S7>.
1. 2009 Hull, Rachel, Bortfeld, Heather, and **Koons, Susan** (2009). "Near-infrared spectroscopy and cortical responses to speech production". In: *The open neuroimaging journal* 3, p. 26. DOI: <https://doi.org/10.2174/1874440000903010026>.




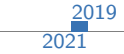




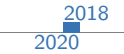
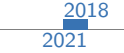

#### Other Publications

4. 2021 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* 3.3. DOI: <https://doi.org/10.1162/99608f92.7d099fd0>.
3.  2019 Carriquiry, Alicia, Hofmann, Heike, Tai, Xiao Hui, and **Vanderplas, Susan** (Apr. 1, 2019). "Machine learning in forensic applications". In: *Significance* 16.2, pp. 29–35. DOI: <https://doi.org/10.1111/j.1740-9713.2019.01252.x>.  
**Contribution:** Writing (50%).
  2.  2017 Submitted as an invited response to Donoho's "50 years of Data Science".  
Hofmann, Heike and **Vanderplas, Susan** (Dec. 19, 2017). "All of This Has Happened Before. All of This Will Happen Again: Data Science". In: *Journal of Computational and Graphical Statistics* 26.4, pp. 775–778. DOI: <https://doi.org/10.1080/10618600.2017.1385474>.  
**Contribution:** Writing (75%).
  1.  2013 Budrus, Sarah, **Vanderplas, Susan**, and Cook, Dianne (2013). "In tennis, do smashes win matches?" In: *Significance* 10.3, pp. 35–38. DOI: <https://doi.org/10.1111/j.1740-9713.2013.00665.x>.


## Software

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



-  2024 **Quarto-audiobook**, Generate audiobooks from quarto markdown books using text-to-speech AI functionality, <https://github.com/qngyn/quarto.audiobook>
-  2021 **ggpcp**, Generalized parallel coordinate plots, <https://github.com/heike/ggpcp>
-  2020 **vinference**, Analysis of visual inference experiments, <https://github.com/heike/vinference>
-  2021 2019 **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 **bulletxtrctr**, Automated matching of 3d bullet scans, <https://github.com/heike/bulletxtrctr>
-  2018 **x3ptools**, Reading, manipulating, and visualizing x3p files, <https://github.com/heike/x3ptools>
-  2018 **bulletsamplr**, Resampling of bullet signatures, <https://github.com/srvanderplas/bulletsamplr>
-  2020 2018 **ShoeScrapeR**, Acquisition of shoe images and metadata from online retailers, <https://github.com/srvanderplas/shoescraper>
-  2021 2018 **ImageAlignR**, Image registration algorithms for forensics, <https://github.com/srvanderplas/imagealignr>
-  2015 2013 **animint**, Animated, interactive web graphics for R using ggplot2 and d3.js, <https://github.com/tdhock/animint>

## Grants

### Under Review

-  2024 **NSF: CAREER**, *What Do You See? Perception, Decisions, and Statistical Graphics*, PI, Total: \$666,485

### Funded

-  2023 2021 **NIJ: R&D In Forensic Science**, *Automatic Acquisition and Identification of Footwear Class Characteristics*, PI, Total: \$380,650
-  2022 2021 **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

2023

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

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

**A Plot is Worth a Thousand Tests: Assessing Residual Diagnostics with the Lineup Protocol** , *JSM*, Section on Statistical Graphics, Portland, OR


2024

**Escaping Flatland: Graphics, Dimensionality, and Human Perception** , *Human Computer Interaction International*, (Online session), Washington, DC

2024

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


2023

**Multimodal User Testing: Producing comprehensive, task-focused guidelines for chart design** , *Australian Statistical Conference*, Wollongong, NSW, AUS

2023

**How Do You Define a Circle? Perception and Computer Vision Diagnostics** , *International Association for Statistical Computing*, Asian Regional Section Meeting, Macquarie, NSW, AUS

2023

**Multimodal User Testing: Producing comprehensive, task-focused guidelines for chart design** , *International Conference on Data Science*, Universidad Diego Portales, Chile

2023

**Testing Statistical Graphics** , *JSM*, Section on Statistical Graphics, Toronto, ON, CA



2021	<b>How do you define a circle? Perception and Computer Vision Diagnostics</b> <a href="#">📄</a> , <i>JSM</i> , Section on Statistical Graphics, Seattle, WA
2021	<b>Pandemics, Graphics, and Perception of Log Scales</b> <a href="#">📄</a> , <i>R Ladies DC</i> , Washington, DC
2020	<b>Perception and Visual Communication in a Global Pandemic</b> <a href="#">📄</a> , <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> <a href="#">📄</a> , <i>Data Science Symposium</i> , South Dakota State University, Brookings, SD
2020	<b>Big Data, Big Experiments, and Big Problems</b> <a href="#">📄</a> , <i>Plant and Animal Genome</i> , San Diego, CA
2019	<b>Statistical Lineups for Bayesians</b> <a href="#">📄</a> , <i>JSM</i> , Section on Statistical Graphics, Denver, CO
2018	<b>Clusters Beat Trend!? Testing Feature Hierarchy in Statistical Graphics</b> <a href="#">📄</a> , <i>SDSS</i> , Reston, VA
2015	<b>Animint: Interactive Web-Based Animations using Ggplot2's Grammar of Graphics</b> <a href="#">📄</a> , <i>JSM</i> , Section on Statistical Graphics, Seattle, WA
2014	<b>The curse of three dimensions: Why your brain is lying to you</b> <a href="#">📄</a> , <i>JSM</i> , Section on Statistical Graphics, Boston, MA
	Contributed
2022	<b>Local Population Footwear Class Characteristics - An End-to-End Pipeline for Automatic Data Acquisition and Analysis</b> <a href="#">📄</a> , <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> <a href="#">📄</a> , <i>SDSU Data Science Symposium</i> , South Dakota State University, Brookings, SD
2021	<b>Welcome to Forensic Statistics</b> <a href="#">📄</a> , <i>Data Mishaps Night</i> , Online
2018	<b>Framed Charts in the 1870 Statistical Atlas</b> <a href="#">📄</a> , <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> <a href="#">📄</a> , <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> <a href="#">📄</a> , <i>JSM</i> , Section on Statistical Graphics, Boston, MA
2014	<b>Animint: Interactive, Web-Ready Graphics with R</b> <a href="#">📄</a> , <i>Great Plains R User Group</i> , Sioux Center, IA
2013	<b>Signs of the Sine Illusion – why we need to care</b> , <i>JSM</i> , Section on Statistical Graphics, Montreal, ON, CA
	Seminars
2024	<b>Creating Good Graphics</b> <a href="#">📄</a> , <i>Undergraduate Creative Activities and Research Experiences (UCARE)</i> , Summer Enrichment Session, Lincoln, NE
2024	<b>Graphical Perception in a Pandemic: Log Scales, Exponential Growth, and the Importance of User Testing</b> , <i>University of Illinois Chicago School of Public Health</i> , Epidemiology and Biostatistics Seminar, Chicago, IL (Online)

- 2024 **Building a CV/Blog Automatically** [📄](#), *Graphics Group*, University of Nebraska, Online
- 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
- 2024 **STAT 892**, *Writing in Statistics/TA Prep*, University of Nebraska - Lincoln, In person synchronous. Evals: 4.13 (mean), 4 (median)
- 2024 **STAT 992**, *Special Topics in Data Visualization*, University of Nebraska - Lincoln, In person 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	<b>Emily Robinson</b> , <i>Perception of Log Scales</i> , co-advised with Reka Howard, University of Nebraska - Lincoln
MS	
2023	<b>Carson Trego</b> , <i>A Statistical Approach to Learning Computer Vision</i> , University of Nebraska - Lincoln
2023	<b>Maksuda Aktar Toma</b> , <i>An Historical Analysis of Pie and Bar Chart Experiments</i> , University of Nebraska Lincoln
2023	<b>Dinuwanthi Lianage</b> , University of Nebraska
2022 2023	<b>Tyler Wiederich</b> , <i>Perception of Three Dimensional Graphics</i> , University of Nebraska - Lincoln
2022 2023	<b>Muxin Ha</b> , <i>Automatic Recognition of Shoe Class Characteristics</i> , University of Nebraska - Lincoln
2021 2022	<b>Jayden Stack</b> , <i>Automatic Recognition of Shoe Class Characteristics</i> , University of Nebraska - Lincoln
2020	<b>Ved Piyush</b> , <i>Machine Learning and Computer Vision</i> , University of Nebraska - Lincoln
2019 2020	<b>Joseph Zemmels</b> , <i>Analysis and Matching of Cartridge Cases</i> , co-advised with Heike Hofmann, Iowa State University
2019 2020	<b>Eryn Blagg</b> , <i>Analysis of Wear Development in Three-Dimensional Shoe Scans</i> , co-advised with Heike Hofmann, Iowa State University
2018 2019	<b>Miranda Tilton</b> , <i>Footwear Class Characteristics and Computer Vision</i> , Iowa State University
Undergraduate	
2021	<b>Xinyu Liu</b> , <i>Machine Learning for Shoe Sole Images</i> , UNL FYRE Program, University of Nebraska - Lincoln
2019	<b>Jason Seo</b> , <i>R package for visualization of neural networks using the python library keras-vis</i> , Iowa State University
2018 2019	<b>Talen Fisher</b> , <i>Database engineering and tools for working with x3p files</i> , Iowa State University
Summer	
2019	<b>Molly McDermott and Andrew Maloney</b> , <i>Bullet Scan Quality and Machine Learning</i> , Iowa State University
2019	<b>Syema Ailia, Emmanuelle Hernandez Morales, Tiger Ji</b> , <i>Rapid quality control tools for confocal microscopy scans</i> , Iowa State University
2018	<b>Ben Wonderlin, Jenny Kim</b> , <i>Footwear Class Characteristics and Computer Vision</i> , Young Engineers and Scientists Program, Iowa State University
NA	
2024	<b>Rachel Rogers</b> , <i>Explainable Machine Learning and Open Source Software for Forensics in Courtrooms</i> , University of Nebraska
<b>Service</b>	
<b>Discipline</b>	
2023 2025	<b>Member</b> , <i>Advisory Committee on Forensic Science</i> , ASA
2023 2024	<b>Chair</b> , <i>Section on Statistical Graphics</i> , ASA
2022 2023	<b>Chair-Elect</b> , <i>Section on Statistical Graphics</i> , ASA

2021	<b>Associate Editor</b> , <i>Journal of Computational and Graphical Statistics</i>
2024	
2020	<b>Associate Editor</b> , <i>R Journal</i>
2026	
2020	<b>Program Chair</b> , <i>Section on Statistical Graphics</i> , ASA
2022	
2020	<b>Program Committee (Graphics)</b> , <i>Symposium on Data Science and Statistics (2020)</i>
2019	
2021	<b>Member</b> , <i>Gertrude Cox Scholarship Committee</i> , ASA
2019	<b>Organizing Committee</b> , <i>Uncoast Unconference</i> , 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	<b>Council of Sections Representative</b> , <i>Section on Statistical Graphics</i> , ASA
	Institution
2023	<b>Member</b> , <i>Ad-Hoc Committee on EM 16</i> , Faculty Senate
2022	<b>Representative</b> , <i>Statistics Department</i> , Faculty Senate
2021	<b>Vice-Chair</b> , <i>Statistics Department Representative</i> , Faculty Advisory Council
2022	
2021	<b>Member</b> , <i>Digital Ag Minor Committee</i>
2021	<b>Member</b> , <i>Data Science Joint Committee</i> , Committee of Math, Computer Science, and Statistics departments to develop a comprehensive undergraduate data science program
2020	<b>Poster Judge</b> , <i>SCIL 101</i> , Fall Semester
	Department
2022	<b>Member</b> , <i>Technology Committee</i> , Statistics Department
2021	<b>Member</b> , <i>MS Comprehensive Exam Committee</i>
2022	
2021	<b>Coordinator</b> , <i>R workshops</i> , University of Nebraska Lincoln, Develop and coordinate a week of R workshops taught in January and May each year
2020	<b>Organizer</b> , <i>Seminar</i> , Statistics Department
2021	
2019	<b>Member</b> , <i>Undergraduate Program Committee</i> , 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.
2020	
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

	<b>Professional Development</b>
2023	<b>Digital Accessibility Training</b> , <i>Online training - creating accessible digital content</i>
2022	<b>Faculty Fellow</b> , <i>Nebraska Governance and Technology Center</i>
2023	
2021	<b>Peer Review of Teaching Program</b> , <i>Create a course portfolio for Stat 850 in order to assess course design and analyze student engagement and learning</i>
2022	
2020	<b>New Faculty Development Program</b>

