

# Susan Vanderplas

## Curriculum Vitae

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🌐 [srvanderplas.github.io](https://srvanderplas.github.io)  
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### Education

- 2009  
15 **Ph.D.**, *Statistics*, Iowa State University
- 2009  
11 **MS**, *Statistics*, Iowa State University
- 2005  
09 **BS**, *Psychology & Applied Mathematical Sciences*, Texas A&M University

### Professional Experience

- Since 2024 **Associate Professor**, *Statistics*, University of Nebraska-Lincoln
- 2020  
24 **Assistant Professor**, *Statistics*, University of Nebraska-Lincoln
- 2018  
19 **Research Assistant Professor**, *Center for Statistics and Applications in Forensic Evidence*, Iowa State University
- 2015  
18 **Statistical Analyst**, Nebraska Public Power District
- Apr 2015  
Oct **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.

#### Book Chapters

1. **Vanderplas, S.**, Carriquiry, A., Hofmann, H., Hamby, J., and Tai, X. H. (May 30, 2022). "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 May 30, 2022, pp. 365–390. DOI: <https://doi.org/10.1201/9780367527709>.  
**Contribution:** Writing (50%).

#### Peer Reviewed Publications

9. Cuellar, M., **Vanderplas, S.**, Luby, A., and Rosenblum, M. (Dec. 5, 2024). "Methodological problems in every black-box study of forensic firearm comparisons". In: *Law, Probability and Risk* 23.1, mgae015. ISSN: 1470-8396. DOI: <https://doi.org/10.1093/lpr/mgae015>.  
**Contribution:** Writing (20%).
8. Ju, W., **VanderPlas, S.**, and Hofmann, H. (Jan. 24, 2024). "One Model That Fits Them All: Psychometrics With Generalized Linear Mixed Effects Models". In: *Electronic Imaging* 36, pp. 1–8. DOI: <https://doi.org/10.2352/EI.2024.36.1.VDA-358>.  
**Contribution:** Advising 10%.
7. Li, W.\*, Cook, D., Tanaka, E., and **VanderPlas, S.** (May 22, 2024). "A Plot Is Worth a Thousand Tests: Assessing Residual Diagnostics with the Lineup Protocol". In: *Journal of Computational and Graphical Statistics*, pp. 1497–1511. ISSN: 1061-8600. DOI: <https://doi.org/10.1080/10618600.2024.2344612>.  
**Contribution:** Advising 10%.
6. Rogers, R.\* and **VanderPlas, S.** (May 2, 2024). "Demonstrative Evidence and the Use of Algorithms in Jury Trials". In: *Journal of Data Science* 22.2, pp. 314–332. DOI: <https://doi.org/10.6339/24-JDS1130>.  
**Contribution:** Writing 20%, Advising 100%.
5. Rosenblum, M., Chin, E. T., Ogburn, E. L., Nishimura, A., Westreich, D., Datta, A., **Vanderplas, S.**, Cuellar, M., and Thompson, W. C. (Jan. 9, 2024a). "Misuse of statistical method results in highly biased interpretation of forensic evidence in Gyll et al. (2023)". In: *Law, Probability and Risk* 23.1, mgad010. DOI: <https://doi.org/10.1093/lpr/mgad010>.  
**Contribution:** Writing (10%). This paper is a collaboration between all authors resulting from discussions about the Gyll et al. paper.
4. — (Nov. 5, 2024b). "Incorrect statistical reasoning in Gyll et al. leads to biased claims about strength of forensic evidence". In: *Proceedings of the National Academy of Sciences* 121.45, e2315431121. DOI: <https://doi.org/10.1073/pnas.2315431121>.
3. **Vanderplas, S.**, Blankenship, E., and Wiederich, T.\* (July 1, 2024). "Escaping Flatland: Graphics, Dimensionality, and Human Perception". In: *Human Interface and the Management of Information*. Ed. by H. Mori and Y. Asahi. Springer Nature Switzerland July 1, 2024, pp. 140–156. ISBN: 978-3-031-60114-9. DOI: [https://doi.org/10.1007/978-3-031-60114-9\\_11](https://doi.org/10.1007/978-3-031-60114-9_11).  
**Contribution:** Writing 100%, Analysis 70%.
2. **Vanderplas, S.**, Carriquiry, A., and Hofmann, H. (June 10, 2024). "Hidden Multiple Comparisons Increase Forensic Error Rates". In: *Proceedings of the National Academy of Sciences* 121.25, e2401326121. DOI: <https://doi.org/10.1073/pnas.2401326121>.  
**Contribution:** Programming and analysis (50%), Writing 70%.
1. Wiederich, T.\* and **Vanderplas, S.** (Apr. 24, 2024). "Evaluating Perceptual Judgements on 3D Printed Bar Charts". In: *Journal of Data Science* 22.2, pp. 176–190. ISSN: 1680743X. DOI: <https://doi.org/10.6339/24-JDS1131>.  
**Contribution:** Programming and analysis (40%), Writing (60%), Advising (100%).

4. Robinson, E.\* , Howard, R., and **VanderPlas, S.** (Jan. 12, 2023a). “You Draw It: Implementation of visually fitted trends with r2d3”. In: *Journal of Data Science* 21 (2), pp. 281–294. ISSN: 1680-743X. DOI: <https://doi.org/10.6339/22-JDS1083>.  
**Contribution:** Writing (10%), Advising (80%).
  3. Robinson, E. A.\* , Howard, R., and **VanderPlas, S.** (Oct. 2, 2023b). “Eye Fitting Straight Lines in the Modern Era”. In: *Journal of Computational and Graphical Statistics* 32.4, pp. 1537–1544. ISSN: 1061-8600. DOI: <https://doi.org/10.1080/10618600.2022.2140668>.  
**Contribution:** Programming and analysis (10%), Writing (10%), Advising (60%).
  2. **VanderPlas, S.**, Ge, Y.\* , Unwin, A., and Hofmann, H. (Apr. 21, 2023). “Penguins Go Parallel: a grammar of graphics framework for generalized parallel coordinate plots”. In: *Journal of Computational and Graphical Statistics* 32.4, pp. 1572–1587. DOI: <https://doi.org/10.1080/10618600.2023.2195462>.  
**Contribution:** Writing (50%).
  1. Zemmels, J.\* , **Vanderplas, S.**, and Hofmann, H. (Feb. 9, 2023). “A Study in Reproducibility: The Congruent Matching Cells Algorithm and cmcR package”. In: *R Journal* 14 (4), pp. 79–102. DOI: <https://doi.org/10.32614/RJ-2023-014>.  
**Contribution:** Programming and analysis (10%), Writing (20%), Advising (40%).
- 2022
2. Bradford, D.\* and **VanderPlas, S.** (Dec. 2022). “Exploring Rural Shrink Smart Through Guided Discovery Dashboards”. In: *Journal of Data Science*, pp. 1–12. ISSN: 1680-743X. DOI: <https://doi.org/10.6339/22-JDS1080>.  
**Contribution:** Programming and analysis (10%), Writing (10%), Advising (100%).
  1. Wilhelm, A. and **VanderPlas, S.** (Nov. 1, 2022). “Visual Narratives of the Covid-19 pandemic”. In: *Journal of Data Science, Statistics, and Visualisation* 2.7, pp. 84–113. DOI: <https://doi.org/10.52933/jdssv.v2i7.64>.  
**Contribution:** Writing (60%).
- 2021
2. Hofmann, H., Carriquiry, A., and **Vanderplas, S.** (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%).
  1. **Vanderplas, S.**, Röttger, C., Cook, D., and Hofmann, H. (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%).
- 2020
2. **Vanderplas, S.**, Cook, D., and Hofmann, H. (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%).
  1. **Vanderplas, S.**, Nally, M., Klep, T., Cadevall, C., and Hofmann, H. (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%).

- pre 2020
8. Rutter, L., **Vanderplas, S.**, Cook, D., and Graham, M. (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. Sievert, C., **Vanderplas, S.**, Cai, J., Ferris, K., Khan, F. U. F., and Hocking, T. D. (Apr. 1, 2019). "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>.
  6. **Vanderplas, S.**, Goluch, R. C., and Hofmann, H. (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%).
  5. **Vanderplas, S.** and Hofmann, H. (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. **VanderPlas, S.** and Hofmann, H. (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. **Vanderplas, S.** and Hofmann, H. (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. Towfic, F., **Vanderplas, S.**, Oliver, C. A., Couture, O., Tuggle, C. K., Greenlee, M. H. W., and Honavar, V. (Apr. 29, 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. Hull, R., Bortfeld, H., and **Koons, S.** (Apr. 3, 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. *Submitted as an invited response to Hullman & Gelman's "Designing for Interactive Exploratory Data Analysis Requires Theories of Graphical Inference"*.  
**VanderPlas, S.** (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. Carriquiry, A., Hofmann, H., Tai, X. H., and **Vanderplas, S.** (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. *Submitted as an invited response to Donoho's "50 years of Data Science"*. Hofmann, H. and **Vanderplas, S.** (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. Budrus, S., **Vanderplas, S.**, and Cook, D. (June 13, 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       | <b>courtr</b> , Tools to create visually appealing courtroom studies, <a href="https://github.com/rachelesrogers/courtr">https://github.com/rachelesrogers/courtr</a>                       |
| 2023       | <b>highlightr</b> , Analysis of edited text data, <a href="https://github.com/rachelesrogers/highlightr">https://github.com/rachelesrogers/highlightr</a>                                   |
| 2021       | <b>ggpcp</b> , Generalized parallel coordinate plots, <a href="https://github.com/heike/ggpcp">https://github.com/heike/ggpcp</a>   |
| 2020       | <b>vinference</b> , Analysis of visual inference experiments, <a href="https://github.com/heike/vinference">https://github.com/heike/vinference</a>   |
| 2019<br>21 | <b>groovefinder</b> , Identification of grooves in scans of bullet land engraved areas, <a href="https://github.com/heike/groovefinder">https://github.com/heike/groovefinder</a>           |
| 2019       | <b>cmcR</b> , Automated matching of 3d cartridge case scans using the congruent matching cells algorithm, <a href="https://github.com/CSAFE-ISU/cmcR">https://github.com/CSAFE-ISU/cmcR</a> |
| 2018       | <b>bulletxtrctr</b> , Automated matching of 3d bullet scans, <a href="https://github.com/heike/bulletxtrctr">https://github.com/heike/bulletxtrctr</a>                                      |
| 2018       | <b>x3ptools</b> , Reading, manipulating, and visualizing x3p files, <a href="https://github.com/heike/x3ptools">https://github.com/heike/x3ptools</a>                                       |
| 2018       | <b>bulletsamplr</b> , Resampling of bullet signatures, <a href="https://github.com/srvanderplas/bulletsamplr">https://github.com/srvanderplas/bulletsamplr</a>                              |
| 2018<br>20 | <b>ShoeScrapeR</b> , Acquisition of shoe images and metadata from online retailers, <a href="https://github.com/srvanderplas/shoescraper">https://github.com/srvanderplas/shoescraper</a>   |
| 2018<br>21 | <b>ImageAlignR</b> , Image registration algorithms for forensics, <a href="https://github.com/srvanderplas/imagealignr">https://github.com/srvanderplas/imagealignr</a>                     |
| 2013<br>15 | <b>animint</b> , Animated, interactive web graphics for R using ggplot2 and d3.js, <a href="https://github.com/tdhock/animint">https://github.com/tdhock/animint</a>                        |

## Grants

### Under Review

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| 2024 | <b>NSF: CAREER</b> , What Do You See? Perception, Decisions, and Statistical Graphics, PI, Total: \$666,485 |
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### Funded

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| 2021<br>2023 | <b>NIJ: R&amp;D In Forensic Science</b> , <i>Automatic Acquisition and Identification of Footwear Class Characteristics</i> , PI, Total: \$380,650   |
| 2021<br>2022 | <b>USDA-NIFA: Agriculture and Food Research Initiative</b> , <i>Corn Residue Adaptive Grazing Strategies</i> , Collaborator, Total: \$300,000  |
| 2020<br>2025 | <b>NIST: Center for Statistics and Applications in Forensic Evidence</b> , <i>Footwear Class Characteristics and Human Factors</i> , PI, Total: \$20,000,000, Sub: \$456,930   |
| 2021<br>2023 | <b>USDA-NRCS: Conservation Innovation Grant On-Farm Trials</b> , <i>Improving the Economic and Ecological Sustainability of US Crop Production through On-Farm Precision Experimentation</i> , PI, Total: \$4,000,000, Sub: \$400,000 (Split between 3 UNL co-PIs) |
| 2020<br>2023 | <b>NSF: Smart and Connected Communities</b> , <i>Overcoming the Rural Data Deficit to Improve Quality of Life and Community Services in Smart &amp; Connected Small Communities</i> , PI, Total: \$1,500,000, Sub: \$123,445                                       |
| 2019<br>2020 | <b>NIJ: R&amp;D In Forensic Science</b> , <i>Statistical Infrastructure for the Use of Error Rate Studies in the Interpretation of Forensic Evidence</i> , Collaborator, Total: \$197,699, Sub: \$57,596   |










## Awards

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| 2012 | <b>Student Paper Award</b> , <i>Graphics Section, American Statistical Association</i> |
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## Talks

 provides a link to slides, where available

### Invited

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| 2024 | <b>Web Scraping Olympics: Python</b>  , <i>Statistical Computing Section Mini-Symposium</i> , Online  |
| 2024 | <b>A Plot is Worth a Thousand Tests: Assessing Residual Diagnostics with the Lineup Protocol</b>  , <i>JSM</i> , Section on Statistical Graphics, Portland, Or                                      |
| 2024 | <b>Escaping Flatland: Graphics, Dimensionality, and Human Perception</b>  , <i>Human Computer Interaction International</i> , Washington DC   |
| 2024 | <b>Cultivating Insights: Harnessing the Power of Data Visualization in Agriculture</b>  , <i>International Conference for On-Farm Precision Experimentation</i> , 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  |

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|------|---|
| 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   |
|      | <b>Contributed</b>  |
| 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  |
|      | <b>Seminars</b>   |
| 2024 | <b>Creating Effective Graphics</b> <a href="#">📄</a> , <i>Undergraduate Creative Activities and Research Experience</i> , Lincoln, NE   |



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| 2024 | <b>Creating Good Graphics</b> <a href="#">📄</a> , <i>UNL REU seminar</i> , University of Nebraska - Lincoln, 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, Epidemiology and Biostatistics Seminar</i> , Chicago, IL (Online) |
| 2024 | <b>Building a CV/Blog Automatically</b> <a href="#">📄</a> , <i>Graphics Group</i> , University of Nebraska, Online   |
| 2024 | <b>Building a CV with R and Google Sheets</b> <a href="#">📄</a> , <i>Graphics Group</i> , University of Nebraska, Online   |
| 2024 | <b>Using Git Submodules</b> <a href="#">📄</a> , <i>Graphics Group</i> , University of Nebraska, Online   |
| 2023 | <b>Graphics and Cognition: How Do We Perceive Charts?</b> <a href="#">📄</a> , <i>Graphics Group</i> , University of Nebraska-Lincoln, Iowa State University, and other interested affiliates, Online   |
| 2023 | <b>What Makes a Good Graph? Graphical Testing and Principles for Graph Design</b> <a href="#">📄</a> , <i>Center for Brain, Biology, and Behavior</i> , University of Nebraska, Lincoln, NE   |
| 2023 | <b>Inconclusive Conclusions: Biases and Consequences</b> <a href="#">📄</a> , <i>Biostatistics</i> , Johns Hopkins University, Baltimore, MD  |
| 2022 | <b>Reproducible Science: Statistics, Forensics, and the Law</b> <a href="#">📄</a> , <i>Statistics</i> , University of Nebraska - Lincoln, Lincoln, NE  |
| 2022 | <b>How to make good charts</b> <a href="#">📄</a> , <i>Complex Biosystems</i> , University of Nebraska - Lincoln, Lincoln, NE   |
| 2022 | <b>Pandemics, Graphics, and Perception of Log Scales</b> <a href="#">📄</a> , <i>Math</i> , University of Nebraska - Omaha, Omaha, NE   |
| 2022 | <b>Automatic Acquisition of Footwear Class Characteristics</b> <a href="#">📄</a> , <i>Center for Statistical Applications in Forensic Evidence</i> , Online  |
| 2021 | <b>Pandemics, Graphics, and Perception of Log Scales</b> <a href="#">📄</a> , <i>NUMBATS</i> , Monash University, Melbourne, Vic, AUS   |
| 2021 | <b>Exploring Rural Quality of Life Using Data Science and Public Data</b> <a href="#">📄</a> , <i>QQPM</i> , University of Nebraska - Lincoln, Lincoln, NE  |
| 2021 | <b>Inconclusive Conclusions: Biases and Consequences</b> <a href="#">📄</a> , <i>Law and Psychology Brown Bag</i> , University of Nebraska - Lincoln, Lincoln, NE   |
| 2021 | <b>Visual Statistics: Communication and Graphical Testing</b> <a href="#">📄</a> , <i>Animal Science</i> , University of Nebraska - Lincoln, Lincoln, NE  |
| 2021 | <b>How to Make Good Charts</b> <a href="#">📄</a> , <i>Biological and Systems Engineering GSA</i> , University of Nebraska - Lincoln, Lincoln, NE   |
| 2020 | <b>Statistical Evaluation of Firearms and Toolmark Evidence</b> <a href="#">📄</a> , <i>Statistics</i> , University of Nebraska - Lincoln, Lincoln, NE  |

## Teaching

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| 2024 | <b>STAT 151</b> , <i>Introduction to Statistical Computing</i> , University of Nebraska - Lincoln, Flipped synchronous |
| 2024 | <b>STAT 251</b> , <i>Data Wrangling</i> , University of Nebraska - Lincoln, Flipped synchronous                        |



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| 2024 | <b>STAT 892</b> , <i>Writing in Statistics/TA Prep</i> , University of Nebraska - Lincoln, In person synchronous  |
| 2024 | <b>Stat 992</b> , <i>Special Topics in Data Visualization</i> , University of Nebraska Lincoln, In person synchronous   |
| 2023 | <b>STAT 151</b> , <i>Introduction to Statistical Computing</i> , University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.55 (mean), 5 (median)                            |
| 2023 | <b>STAT 251</b> , <i>Data Wrangling</i> , University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.30 (mean), 5 (median)   |
| 2023 | <b>STAT 892</b> , <i>Data Technologies for Statistical Analysis</i> , University of Nebraska - Lincoln, Co-taught with ISU Stat 585, Hybrid synchronous                           |
| 2023 | <b>STAT 850</b> , <i>Computing Tools for Statisticians</i> , University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.31 (mean), 5 (median)                                |
| 2023 | <b>STAT 892</b> , <i>Writing in Statistics/TA Prep</i> , University of Nebraska - Lincoln, In person synchronous. Evals: 4.13 (mean), 4 (median)                                  |
| 2022 | <b>STAT 151</b> , <i>Introduction to Statistical Computing</i> , University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.95 (mean), 5 (median)                            |
| 2022 | <b>STAT 218</b> , <i>Introduction to Statistics</i> , University of Nebraska - Lincoln, Online asynchronous. Evals: 3.72 (mean), 4 (median)                                       |
| 2022 | <b>STAT 850</b> , <i>Computing Tools for Statisticians</i> , University of Nebraska - Lincoln, Flipped synchronous. Evals: 4.33 (mean), 5 (median)                                |
| 2022 | <b>STAT 892</b> , <i>Writing in Statistics/TA Prep</i> , University of Nebraska - Lincoln, In person synchronous. Evals: 4.29 (mean), 5 (median)                                  |
| 2022 | <b>STAT 982</b> , <i>Advanced Inference</i> , University of Nebraska - Lincoln, Co-taught with Bertrand Clarke. Evals: 4.34 (mean), 5 (median)                                    |
| 2021 | <b>STAT 218</b> , <i>Introduction to Statistics</i> , University of Nebraska - Lincoln, Online asynchronous.. Evals: 4.01 (mean), 4 (median)                                      |
| 2021 | <b>STAT 850</b> , <i>Computing Tools for Statisticians</i> , University of Nebraska - Lincoln, Hybrid, flipped, synchronous. Evals: 4.79 (mean), 5 (median)                       |
| 2020 | <b>STAT 218</b> , <i>Introduction to Statistics</i> , University of Nebraska - Lincoln, Initially in person synchronous, then online asynchronous. Evals: 4.20 (mean), 4 (median) |
| 2020 | <b>STAT 850</b> , <i>Computing Tools for Statisticians</i> , University of Nebraska - Lincoln, Hybrid, flipped, synchronous. Evals: 4.76 (mean), 5 (median)                       |
| 2019 | <b>STAT 585</b> , <i>Data Technologies for Statistical Analysis</i> , Iowa State, Co-taught with Heike Hofmann. Evals: 4.92 (mean), 5 (median)                                    |

## Mentoring

### Ph.D.

|      |   |
|------|---|
| 2023 | <b>Tyler Wiederich</b> , <i>Perception of Three Dimensional Graphics</i> , University of Nebraska - Lincoln     |
| 2023 | <b>Muxin Ha</b> , <i>Automatic Recognition of Shoe Class Characteristics</i> , University of Nebraska - Lincoln |

|              |   |
|--------------|---|
| 2021         | <b>Denise Bradford</b> , <i>Dashboards for Exploratory Multivariate Data Analysis</i> , University of Nebraska - Lincoln  |
| 2022<br>2024 | <b>Weihao (Patrick) Li</b> , <i>Advances in Artificial Intelligence for Data Visualization: Developing Computer Vision Models to Automate Reading of Data Plots, with Application to Predictive Model Diagnostics</i> , co-advised with Dianne Cook and Emi Tanaka, Monash University |
| 2021<br>2024 | <b>Rachel Rogers</b> , <i>Explainable Machine Learning for Forensics in Courtrooms</i> , University of Nebraska - Lincoln   |
| 2020<br>2023 | <b>Alison Kleffner</b> , <i>Spatial Statistics and Visualization in Ecology and Agriculture</i> , co-advised with Yawen Guan, University of Nebraska - Lincoln  |
| 2020<br>2023 | <b>Joseph Zemmels</b> , <i>Analysis and Matching of Cartridge Cases</i> , co-advised with Heike Hofmann, Iowa State University  |
| 2020<br>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<br>2023 | <b>Tyler Wiederich</b> , <i>Perception of Three Dimensional Graphics</i> , University of Nebraska - Lincoln                                    |
| 2022<br>2023 | <b>Muxin Ha</b> , <i>Automatic Recognition of Shoe Class Characteristics</i> , University of Nebraska - Lincoln                                |
| 2021<br>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<br>2020 | <b>Joseph Zemmels</b> , <i>Analysis and Matching of Cartridge Cases</i> , co-advised with Heike Hofmann, Iowa State University                 |
| 2019<br>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<br>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<br>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 |

## Service

### Discipline

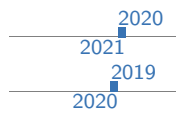
|      |  |
|------|--|
| 2024 | <b>Organizer</b> , <i>Nebraska R User Group (NEBRUG)</i> , Co-chair, Group for R users across Nebraska to connect and learn new skills.  |
| 2023 | <b>Member</b> , <i>Advisory Committee on Forensic Science</i> , ASA  |
| 2025 | <b>Chair</b> , <i>Section on Statistical Graphics</i> , ASA  |
| 2023 | <b>Chair-Elect</b> , <i>Section on Statistical Graphics</i> , ASA  |
| 2024 | <b>Associate Editor</b> , <i>Journal of Computational and Graphical Statistics</i>   |
| 2022 | <b>Associate Editor</b> , <i>R Journal</i>   |
| 2023 | <b>Program Chair</b> , <i>Section on Statistical Graphics</i> , ASA  |
| 2021 | <b>Program Committee (Graphics)</b> , <i>Symposium on Data Science and Statistics (2020)</i>   |
| 2024 | <b>Member</b> , <i>Gertrude Cox Scholarship Committee</i> , ASA  |
| 2020 | <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. |
| 2022 | <b>Council of Sections Representative</b> , <i>Section on Statistical Graphics</i> , ASA   |
| 2020 |  |
| 2019 |  |
| 2021 |  |
| 2019 |  |
| 2017 |  |
| 2019 |  |

### Institution

|      |   |
|------|---|
| 2024 | <b>Member</b> , <i>Faculty Senate</i> , Executive Committee   |
| 2027 | <b>Member</b> , <i>Ad-Hoc Committee on EM 16</i> , Faculty Senate   |
| 2023 | <b>Representative</b> , <i>Statistics Department</i> , Faculty Senate   |
| 2024 | <b>Vice-Chair</b> , <i>Statistics Department Representative</i> , Faculty Advisory Council  |
| 2022 | <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 |
| 2022 | <b>Poster Judge</b> , <i>SCIL 101</i> , Fall Semester   |
| 2021 |   |
| 2021 |   |
| 2020 |   |

### Department

|      |  |
|------|--|
| 2021 | <b>Member</b> , <i>MS Comprehensive Exam Committee</i>   |
| 2022 | <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 |
| 2021 |  |

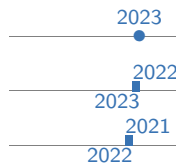


**Organizer, Seminar,** Statistics Department

**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



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

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

**Peer Review of Teaching Program,** Create a course portfolio for Stat 850 in order to assess course design and analyze student engagement and learning

**New Faculty Development Program**



**Summer Institute for Online Teaching,** Online course structure and backwards design principles