Curriculum Vitae: Dianne Helen Cook 2015

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Degrees Held

Ph. D.	Rutgers University	May 1993	Statistics
M. S.	Rutgers University	October 1990	Statistics
B. S./Dip. Ed.	University of New England, N.S.W., Australia	Nov 1982	Pure Mathematics, Statistics, Biochemistry

Professional Experience

Full Professor, Statistics, ISU	May 2005-present
Associate Professor, Statistics, ISU	May 1998-May 2005
Assistant Professor, Statistics	Aug 1993-May 1998
Consultant, Bellcore, Morristown, NJ	1989-1990
Statistical Consultant, Office of Statistical Consulting, Rutgers University, NJ	1989-1990

Interdisciplinary Program Memberships:
Bioinformatics and Computational Biology
Human Computer Interaction

Professional Association Memberships:
American Statistical Association
Institute of Mathematical Statistics

Awards

Keynote Speaker, BDVA' 15, Hobart, Australia
Keynote Speaker, useR! 2015, Aalborg, Denmark
Keynote Speaker, useR! 2012, Nashville, TN
LAS Career Research Award, 2012
Fellow, American Statistical Association, 2005
Recognized by two outstanding undergraduates, one from Statistics 101 and the other from Statistics 407 as a teacher who was important to them, 2009
Center for Excellence in Learning and Teaching Memorable Teacher 2007
Delta Delta Delta Favorite Teacher Recognition 2005
University Foundation Award for Early Excellence in Research, 1999

Visiting Positions

Jan-May 2008	Isaac Newton Institute for Mathematical Sciences, Cambridge University, UK
Feb-May 2004	Macquarie University, Sydney, Australia
Jul 2002	University of Augsburg, Germany
Dec 2001	AT&T Labs, Florham Park, NJ
Oct 2001	Dept of Statistics, Macquarie University, Australia
Oct 2000	3D Visual Data Mining Group, University of Aalborg, Denmark
Apr-Jun 2000	Lucent Technologies, Indian Hill, IL
Jan-Apr 2000	BiometricsSA, Adelaide, Australia
Nov-Dec 1999	AT&T Labs, Florham Park, NJ
Oct 1999	Pfizer Inc, Groton, CT
Jun-Jul 1999, Oct-Nov 1998	National Research Center for Statistics and the Environment, University of Washington, Seattle, WA
Jun-Aug 1997, Jul-Sep 1999	Stanford University, CA
Mar 1996, Mar 1995, Nov 1994	AT&T Bell Labs, Murray Hill, NJ
Aug 1994	Humboldt University, Berlin, Germany
Jul 1994, Jul 1993, Jul 1991	Centre for Mathematics and its Applications, Australian National University.

Publications

Refereed Papers

1. Wickham, H., Cook, D., Hofmann, H. (2015) Visualising Statistical Models: Removing the Blindfold (with Discussion), *Statistical Analysis and Data Mining*, To appear.
2. Cook, D., Lee, E. K., Majumder, M. (2015) Data Visualization and Statistical Graphics in Big Data Analysis, *Annual Reviews of Statistics and Its Applications*, Invited Contribution, under review.
3. Cheng, X., Cook, D. and Hofmann, H. (2015). Visually Exploring Missing Values in Multivariable Data Using a Graphical User Interface, *Journal of Statistical Software*, To appear.
4. Roy Chowdhury, N., Cook, D., Hofmann, H., Majumder, M., Lee, E. K., Toth, A. (2015) Understanding High Dimension, Small Sample Size Problems Using Visual Statistical Inference, *Computational Statistics*, To appear, available at `http://rd.springer.com/article/10.1007/s00180-014-0534-x`.
5. Lin, Y. P., **Cook, D.**, Gullan, P. and Cook, L. G. (2015) Does host-plant diversity explain species richness in insects? A test using Coccidae (Hemiptera), *Ecological Entomology*, To appear.

6. Carey, V., Cook, D. (2014) Four Papers on Contemporary Software Design Strategies for Statistical Methodologists, *Statist. Sci.*, **29**(2):165–166, DOI:10.1214/14-STS481, ARXIV:1409.8415.

7. Zhao, Y., Cook, D., Hofmann, H., Majumder, M., Roy Chowdhury, N. (2014) Mind Reading: Using An Eye-tracker To See How People Are Looking At Lineups, *International Journal of Intelligent Technologies and Applied Statistics*, **6**(4):393–413.

8. Sanchez, J., Cook, D., Masegela J., Minosa, M. K. (2014) Kicking and Screaming about Statistics: How Soccer Data Can Potentially Alleviate Statistical Anxiety, *Statistics Teacher Newletter*, **82**:4–11, `http://www.amstat.org/education/stn/pdfs/STN82.pdf`.

9. Yin, T., Majumder, M., Roy Chowdhury, N., Cook D., Shoemaker, R. and Graham, M. (2013) Visual Mining Methods for RNA-Seq data: Examining Data structure, Understanding Dispersion estimation and Significance Testing, *Journal of Data Mining in Genomics & Proteomics*, **4**(139):doi: 10.4172/2153-0602.1000139 (web link).

10. Majumder, M., Hofmann, H. and Cook, D. (2013) Validation of Visual Statistical Inference, Applied to Linear Models, *Journal of the American Statistical Association*, **108**(503):942–956. Featured Article `http://amstat.tandfonline.com/doi/pdf/10.1080/01621459.2013.808157`.

11. Newell, M., Cook, D., Hofmann, H. and Jannink, J.-L. (2013) An Algorithm for Deciding the Number of Clusters and Validation using Simulated Data with Application to Exploring Crop Population Structure, **7**(4):1898–1916, *Annals of Applied Statistics* (Supplementary material, including videos available `http://streaming.stat.iastate.edu/~dicook/HighDClustering`).

12. Lee, Y. D., Cook, D., Park, J and Lee E.-K. (2013) PPtree: Projection Pursuit Classification Tree, *Electronic Journal of Statistics* **7**:1369–1386, http://imstat.org/ejs/.

13. Debinski, D., Caruthers, J. C., Cook, D., Crowley, J. and Wickham, H. (2013) Gradient-based Habitat Affinities Predict Species Vulnerability to Drought, *Ecology* **94**(5):1036–1045.

14. Unwin, A., Hofmann, H. and Cook, D. (2013) Let Graphics Tell the Story - Datasets in R, *The R Journal*, **5**(1):117–129, `http://journal.r-project.org/archive/2013-1/`.

15. Atwood, S. E., O'Rourke, J. A., Peier, G. A., Yin, T., Majumder, M., Zhang, C., Cianzio, S., Hill, J. H., Cook, D., Whitham, S. A., Shoemaker, R. C. and Graham, M. A. (2013), Gmrpa3 and the Iron Efficiency Stress Response in Soybean. *Plant Cell and Environment*, 3(1):3.

16. Yin, T., Cook, D. and Lawrence, M. (2012) ggbio: An R package for Extending the Grammar of Graphics for Genomic Data *Genome Biology*, **13**:R77, `http://genomebiology.com/2012/13/8/R77/abstract`, doi:10.1186/gb-2012-13-8-r77.

17. Wickham, H., Hofmann, H., Wickham, C. and Cook, D. (2012) Glyph-maps for Visually Exploring Temporal Patterns in Climate Data and Models, *Environmetrics*, invited

submission, **23**(5):151–182.

18. Huang, B, Cook, D. and Wickham, H. (2012) tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections, Journal of Statistical Software, **49**(6):http://www.jstatsoft.org/v49/i06, Special Issue on GUIs.

19. Emerson, J., Green, W., Schloerke, B., Crowley, J., Cook, D., Hofmann, H., Wickham, H. (2012) The Generalized Pairs Plot, *Journal of Computational and Graphical Statistics*, **22**(1):79–91.

20. Wickham, H., Cook, D. Hofmann, H. and Buja, A. (2011) tourr: An R Package for Exploring Multivariate Data with Projections, *Journal of Statistical Software*, **40**(2): http://www.jstatsoft.org/v40.

21. Newell, M., Cook, D., Tinker, N. and Jannink, J.-L. (2011) Population Structure and Linkage Disequilibrium in Oat (Avena sativa L.): Implications for genome-wide association studies, *Theoretical and Applied Genetics*, **122**(3):623–532

22. Hobbs, J., Wickham, H., Hofmann, H. and Cook, D. (2010) Glaciers Melt as Mountains Warm: A Graphical Case Study, *Computational Statistics*, **25**(4):569–586.

23. Lee, E.-K., Cook, D. (2009) A Projection Pursuit Index for Large p Small n Data, *Statistics and Computing*, http://www.springerlink.com/content/g47n0n342761838m/#?p=d2ff5a7b69eb45ef8abf7ef3aba69557&pi=3.

24. Buja, A., Cook, D., Hofmann, H., Lawrence, M., Lee, E.-K., Swayne, D. F, Wickham, H. (2009) Statistical Inference for Exploratory Data Analysis and Model Diagnostics, *Royal Society Philosophical Transactions A*, **367**:4361–4383.

25. Wickham, H., Lawrence, M., Cook, D., Buja, A., Hofmann, H. and Swayne, D. F. (2008) The Plumbing of Interactive Graphics *Computational Statistics*, http://dx.doi.org/10.1007/s00180-008-0116-x.

26. Lawrence, M., Cook, D., Lee, E.-K., Babka, H. and Wurtele, E. (2008) explorase: Multivariate Exploratory Analysis and Visualization for Systems Biology, *Journal of Statistical Software*, **25**(9):http://www.jstatsoft.org/v25/i09.

27. Cook, D., Hofmann, H., Lee, E.-K., Yang, H., Nikolau, B., and Wurtele, E. (2007) Exploring Gene Expression Data, Using Plots, *Journal of Data Science,* **5***(2):151–182.*

28. Lee, E.-K., Cook, D., Klinke, S., and Lumley, T. (2005). Projection Pursuit for Exploratory Supervised Classification. *Journal of Computational and Graphical Statistics*, bf 14(4):831–846.

29. Swayne, D. F., Temple Lang, D., Buja, A. and Cook, D. (2003) GGobi: Evolving from XGobi into an Extensible Framework for Interactive Data Visualization, *Journal of Computational Statistics and Data Analysis*, **43**(4):423–444.

30. Wurtele, E., Li, J., Diao, L., Zhang, H., Foster, C., Fatland, B., Dickerson, J., Brown, A., Cox, Z., Cook, D., Lee, E. K., Hofmann, H. (2003) MetNet: software to build and

model the biogenetic lattice of Arabidopsis, *Comparative and Functional Genomics*, **4**:239–245.

31. Ahn, J. S., Hofmann, H. and Cook, D. (2003) A Projection Pursuit Method on the Multidimensional Squared Contingency Table, *Computational Statistics*, **18**(4):.

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35. Meyer, D. and Cook, D. (2000). Visualization of Data. *Current Opinion in Biotechnology*, 11:89–96.

36. Macedo, M., Cook, D., and Brown, T. (2000). Visual Data Mining in Atmospheric Science Data. *Data Mining and Knowledge Discovery: Special Issue on Computer Intensive Statistics in the Atmospheric Sciences*, 4(1):69–80.

37. Kim, S., Kwon, S., and Cook, D. (2000). Interactive Visualization of Hierarchical Clusters Using MDS and MST. *Metrika: Special Issue on Interactive Statistics*, 51(1):39–51.

38. Qi, R., Vittal, V., Kliemann, W., and Cook, D. (2000). Visualization of Stable Manifolds and Multidimensional Surfaces in the Analysis of Power System Dynamics. *Journal of Nonlinear Science*, 10:175–195.

39. Nelson, L., Cook, D., and Cruz-Neira, C. (1999). XGobi vs the C2: Results of an Experiment Comparing Data Visualization in a 3-D Immersive Virtual Reality Environment with a 2-D Workstation Display. *Computational Statistics: Special Issue on Interactive Graphical Data Analysis*, 14(1):39–52.

40. Cook, D., Cruz-Neira, C., Kohlmeyer, B. D., Lechner, U., Lewin, N., Nelson, L., Olsen, A., Pierson, S., and Symanzik, J. (1998). Exploring Environmental Data in a Highly Immersive Virtual Reality Environment. *Environmental Monitoring and Assessment*, 51(1-2):441–450. Also see `http://www.public.iastate.edu/~dicook/research/C2/statistic.html`.

41. Swayne, D. F., Cook, D., and Buja, A. (1998). XGobi: Interactive Dynamic Graphics in the X Window System. *Journal of Computational and Graphical Statistics*, 7(1):113–130. See also `http://www.research.att.com/areas/stat/xgobi/`.

42. Cook, D. (1997). Calibrate Your Eyes to Recognize High-Dimensional Shapes from Their Low-Dimensional Projections. *Journal of Statistical Software*, 2(6):`http://www.stat.ucla.edu/journals/jss/`.

43. Cook, D. and Buja, A. (1997). Manual Controls For High-Dimensional Data Projections. *Journal of Computational and Graphical Statistics*. **6**(4):464-480. Also see `http://www.public.iastate.edu/~dicook/research/papers/manip.html`.

44. Cook, D., Symanzik, J., Majure, J. J., and Cressie, N. (1997). Dynamic Graphics in a GIS: More Examples Using Linked Software. *Computers and Geosciences: Special Issue on Exploratory Cartographic Visualization*, 23(4):371–385, `http://www.elsevier.nl/locate/cgvis`.

45. Cook, D., Majure, J. J., Symanzik, J., and Cressie, N. (1996). Dynamic Graphics in a GIS: Exploring and Analyzing Multivariate Spatial Data using Linked Software. *Computational Statistics: Special Issue on Computer Aided Analyses of Spatial Data*, 11(4):467–480.

46. Buja, A., Cook, D., and Swayne, D. (1996). Interactive High-Dimensional Data Visualization. *Journal of Computational and Graphical Statistics*, 5(1):78–99. See also `http://www.research.att.com/~andreas/xgobi/heidel/`.

47. Marasinghe, M., Meeker, W., Cook, D., and Shin, T. (1996). Using Graphics and Simulation to Teach Statistical Concepts. *The American Statistician*, 50:342–351.

48. Cook, D., Buja, A., Cabrera, J., and Hurley, C. (1995). Grand Tour and Projection Pursuit. *Journal of Computational and Graphical Statistics*, 4(3), 155–172.

49. Cook, D., Buja, A., and Cabrera, J. (1993). Projection Pursuit Indexes Based on Orthonormal Function Expansions. *Journal of Computational and Graphical Statistics*, 2(3):225–250.

50. Goldberg, D. P., Bridges, K., Cook, D., Evans, B., and Grayson, D. A. (1990). Influence of social factors on common mental disorders: Destabilization and restitution. *British Journal of Psychiatry*, 156:704–713.

51. Grayson, D. A., Goldberg, D. P., Bridges, K., and Cook, D. (1990). Validity of diagnostic systems for common mental disorders. *Psychological Medicine*, 20(1):209–218.

Refereed Conference Proceedings

47. Hofmann, H., Follett, L., Majumder, M. and Cook, D. (2012) Graphical Tests for Power Comparison of Competing Designs, *IEEE Transactions on Visualization and Computer Graphics*, **18**(12):2441–2448, `http://doi.ieeecomputersociety.org/10.1109/TVCG.2012.230`.

48. Wickham, H., Cook, D., Hofmann, H. and Buja, A. (2010) Graphical Inference for Infovis, *IEEE Transactions on Visualization and Computer Graphics*, **16**(6):973–979, `http://doi.ieeecomputersociety.org/10.1109/TVCG.2010.161`. *Best paper award.*

49. Lee, E.-K., Cook, D., Hofmann, H., Wurtele, E., Kim, D., Kim, J., and An, H. (2004) GeneGobi: Visual Data Analysis Tools for Microarray Data, *COMPSTAT '04, Aug 22-27, 2004, Prague, Czech Republic*, Pages 1397-1404.

50. Cook, D., Caragea, D. and Honavar, V. (2004) Visualization in Classification Problems, *COMPSTAT '04, Aug 22-27, 2004, Prague, Czech Republic*, Pages forthcoming.

51. Caragea, D., Cook, D., Honavar, V. (2003) Towards Simple, Easy-to-Understand, yet Accurate Classifiers, *IEEE Conference on Data Mining, Nov 19-22, 2003, Melbourne, FL.* Pages 497–500.

52. Caragea, D., Cook, D., and Honavar, V. (2001). Gaining Insights into Support Vector Machines Using Projection-based Tour Methods. *Proceedings of the 7th International Conference of SigKDD (25% acceptance rate)*, Pages 251–256.

53. Majure, J. J., Cressie, N., Cook, D., and Symanzik, J. (1996). GIS, Spatial Statistical Graphics, and Forest Health. In *Proceedings of the Third International Conference/Workshop on Integrating GIS and Environmental Modeling, Santa Fe, NM, January 21–26, 1996*, Santa Barbara, CA. National Center for Geographic Information and Analysis. CD and `http://www.ncgia.ucsb.edu/conf/SANTA_FE_CD-ROM/main.html`.

Books

54. Cook, D., and Swayne, D. (with contributions from Buja, A., Temple Lang, D., Hofmann, H., Wickham, H. and Lawrence, M.) (2007). Interactive and Dynamic Graphics for Data Analysis with examples using R and GGobi, Springer, New York. With additional data, R code and demo movies at `http://www.ggobi.org`.

Reprinted in 2008.

Book Chapters

55. Cook, D. (2015) The Twentieth Century Computer Graphics Revolution in Statistics. In Kostelnick, C. and Kimball, M. (Eds.) Visible Numbers, Springer.

56. Cook, D. (2009) Incorporating Exploratory Methods using Dynamic Graphics into Multivariate Statistics Classes: Curriculum Development. In M. C. Shelley II, L. D. Yore, & B. Hand (Eds.), Quality research in literacy and science education: International perspectives and gold standards (pp. 339–358). Dordrecht, The Netherlands, Springer.

57. Caragea, D., Cook, D., Wickham, H. and Honavar, V. (2008) Visual Methods for Examining SVM Classifiers. In Visual Data Mining: Theory, Techniques and Tools for Visual Analytics, Simonoff, S., Böhlen, M., Mazeika, A. (eds), Springer, `http://www.springer.com`.

58. Cook, D., Buja, A., Lee, E. K. and Wickham, H. (2007) Grand Tours, Projection Pursuit Guided Tours and Manual Controls. In Handbook of Computational Statistics (Volume III) Data Visualization, C.-H. Chen, W. Härdle, W., A. Unwin (eds), Springer, `http://www.springer.com`.

59. Cook, D., Miller, L. (2006) Rotating Plots. In Graphics of Large Datasets - Visualizing a Million, Unwin A.R., Theus M., Hofmann H. (eds), Springer, http://www.springer.com.

60. Buja, A., Cook, D., Asimov, D. and Hurley, C. (2005). Computational Methods for High-Dimensional Rotations in Data Visualization. In Handbook of Statistics: Data Mining and Visualization, Elsevier/North Holland, http://www.elsevier.com.

Magazine Articles

61. Kaplan, A., Hare, E., Hofmann, H., Cook, D. (2014) Can You Buy a President? Politics After Tillman Act.*Chance*, **27**(1): cover and lead article.

62. Budrus, S., Vanderplas, S. and Cook, D. (2013) In Tennis, Do Smashes Win Matches? Significance, **10**(3):1740–9713.

63. Mosley, L., Cook, D., Hofmann, H., Kielion, C., and Schloerke, B. (2010) Monitoring the Election Visually, *Chance*, **23**(3):online.

64. Cook, D. (2008) From Restaurants to Climate Change. http://plus.maths.org/issue49/index.html

Software

R Packages, available on CRAN, or Bioconductor:

65. Wickham H., Hofmann, H., Lawrence, M., Xie, Y., Vendettuoli, M., Schloerke, B., Yin, T., Cook, D. and Swayne, D. (2010–) cranvas: Interactive and dynamic graphics in R. To be submitted to CRAN. *This is a major development, that hoped would replace ggobi but portability has been an issue.* https://github.com/ggobi/cranvas, http://cranvas.org/.

66. Wickham, H., Cook, D., Roy Chowdhury, N. (2011-) nullabor: Generate lineups and rorschach plots automatically. Updated 2014 to add metrics, https://github.com/niladrir/nullabor.

67. Yin, T., Lawrence, M. and Cook, D. (2011) ggbio: Visualization of biological data, available on Bioconductor, http://www.bioconductor.org/packages/release/bioc/html/ggbio.html.

68. Wickham, H. and Cook, D. (2010) tourr: Explore multivariate data using low dimensional projections, https://github.com/ggobi/tourr.

69. Huang, B., Cook, D. and Wickham, H. (2010) tourrGUI: Provides a graphical user interface to the tourr package, https://github.com/ggobi/tourr-gui

70. Schloerke, B., Cook, D., Hofmann, H. and Wickham, H. (2010) GGally: A variation on scatterplot matrices that recognizes different data types and plots them appropriately in the pairwise array. (Updated, and expanded by Jason Crowley in 2011 to include parallel coordinate plots.) https://github.com/ggobi/ggally

71. Schloerke, B., Cook, D. and Wickham, H. (2009) `geozoo`: Methods for generating and viewing high-dimensional geometric shapes, and data sets for shapes that cannot be easily generated.

72. Lawrence, M., Lee, E.-K., Cook, D., Hofmann, H. (2006) exploRase: an interface to R and GGobi for exploratory analysis of data from microarray, proteomics, metabolomics experiments in association with metabolic networks. (Formerly GeneGobi.)

General software:

73. Swayne, D., Temple Lang, D., Cook, D., and Buja, A. (2001-), with Wickham, H., Lawrence, M. and Hofmann, H. (2005-), GGobi: software for exploratory graphical analysis of high-dimensional data. *Available publicly from* `http://www.ggobi.org`. There is an associated R package `rggobi` which provides a tight coupling of R and ggobi, with command line control of ggobi.

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75. Sutherland, P., Rossini, A., Lumley, T., Dickerson, J., Cox, Z., and Cook, D. (1998-). ORCA: Multivariate Data Viewers using JAVA.

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77. Majure, J. J., Symanzik, J., and Cook, D. (1996). ArcView 2.1 - XGobi link: software connecting a GIS with dynamic statistical graphics program for multivariate data.

Videos

78. Videos on various topics available at `https://vimeo.com/user14048736`.

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80. Morton, S., Cook, D., Stuetzle, W., and Buja, A. (1995). Computer Graphics in Statistics: The Last 30 Years in Brief. ASA Statistical Graphics Video Lending Library `http://stat-graphics.org/movies/last30years.html`.

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83. McDougall, A. and Cook, D. (1994). Exploring Time Series Using Interactive Graphics. ASA Statistical Graphics Video Lending Library `http://stat-graphics.org/movies/time-series.html`.

84. Cook, D., Buja, A., Cabrera, J., and Swayne, D. (1993). Grand Tour and Projection Pursuit. ASA Statistical Graphics Video Lending Library `http://stat-graphics.org/movies/grand-tour.html`.

85. Swayne, D. F., Cook, D. and Buja, A. (1991) XGobi: Dynamic Graphics for Data Analysis `http://stat-graphics.org/movies/xgobi.html`.

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Cook, D. (2009) Dynamic Graphics. Encyclopedia of Database Systems.
`http://refworks.springer.com/mrw/index.php?id=1217`

Multimedia Contributions

Cook, D. and Sutherland, P. (2000). Calibrate Your Eyes to Recognize High-Dimensional Shapes from Their Low-Dimensional Projections (Revision). *Journal of Statistical Software*, `http://www.public.iastate.edu/~dicook/JSS/paper/paper.html` (This article adds new java applets to the original refereed publication,
2(6):`http://www.stat.ucla.edu/journals/jss/`).

Cook, D., Theus, M. and Hofmann, H. (2004) Poster series for the American Statistical Association Section on Statistical Graphics, `http://www.amstat-online.org/sections/graphics/`.

Invited Commentary

Cook, D. and Wickham, H. (2009) Comments on "The Future of Statistical Computing" by Leland Wilkinson, *Technometrics*, **50**(4):442–443.

Book Reviews

Tyner, S. and Cook, D. (2014) Review of 'Reproducible Research with R and RStudio' by C. Gandrud, *The American Statistician.*

Cook, D. and Hofmann, H. (2011) Review of 'R Graphics (2nd ed)' by P. Murrell. *Journal of Statistical Software.*

Wickham, H. and Cook, D. (2006) Review of 'R Graphics' by P. Murrell. *The American Statistician.*

Cook, D. (2002) Review of 'The Visual Display of Quantitative Information (Second Edition)' by E. Tufte. *SIAM Review.*

Cook, D. (1995). Review of 'An Introduction to Regression Graphics' by R. Dennis Cook and Sanford Weisberg. *Journal of the American Statistical Association*, 90(431):1126–1127.

Technical Reports

Zhao, Y. Cook, D., Hofmann, H., Majumder, M and Roy Chowdhury, N. (2012) Mind Reading Using an Eyetracker to See How People are Looking at Lineups, ISU Tech Report #2012-10.

Majumder, M. Hofmann, H. and Cook, D. (2012) Validation of Visual Statistical Inference, with Applications to Linear Models, ISU Tech Report #2012-04.

Roy Chowdhury, N., Cook, D., Hofmann, H. Majumder, M. and Zhao, Y. (2012) Where's Waldo: Looking closely at a Lineup, ISU Tech Report #2012-02.

Majumder, M. Hofmann, H. and Cook, D. (2011) Visual Statistical Inference For Regression Parameters, ISU Tech Report #2011-13.

Ibanez, E. and Cook, D. (2011) Visualization and Analysis of Multiobjective Solutions to the Energy and Transportation Investment Optimization Problem, ISU Tech Report #2011-09.

Cook, D., Miller, L., Suarez, M., Sutherland, P., and Zhang, J. (2004). Using multimedia animation with real-time graphic overlays for visualizing a million cases of multivariate data. Technical Report 04-01:`http://www.stat.iastate.edu/preprint/articles/2004-01.pdf`, Department of Statistics, Iowa State University. To be published as part of a book.

Cook, D., Caragea, D. and Honavar, V. (2004). Visualization For Classification Problems, With Examples Using Support Vector Machines, Technical Report 04-04:`http://www.stat.iastate.edu/preprint/articles/2004-04.pdf`, Department of Statistics, Iowa State University.

Cook, D., Hofmann, H., Lee, E.-K., Yang, H., Nikolau, B. and Wurtele, E. (2004). Visual Methods For Data From Two Factor Single-Replicate Gene Expression Studies, Technical Report 04-05:`http://www.stat.iastate.edu/preprint/articles/2004-05.pdf`, Department of Statistics, Iowa State University.

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Lee, E.-K. and Cook, D. (2004). Projection Pursuit For a Small Sample Size With a Large Number of Variables, Technical Report 04-08:`http://www.stat.iastate.edu/preprint/articles/2004-06.pdf`, Department of Statistics, Iowa State University.

Klinke, S. and Cook, D. (1995). Kernel-based Projection Pursuit Indices in XGobi. Technical Report 95-37, ISU Statistical Laboratory Preprint Series.

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Cook, D., Buja, A., and Cabrera, J. (1993). Grand Tour and Projection Pursuit. Technical Report 93-33, ISU Statistical Laboratory Preprint Series.

McDougall, A. and Cook, D. (1992). Exploratory Time Series. Technical Report 92-07, Dept of Statistics, Rutgers University, New Brunswick, NJ.

Swayne, D., Cook, D., and Buja, A. (1992). A User's Manual for XGobi: A Dynamic Graphics Program for Data Analysis Implemented in the X Window System. Technical Memorandum, Bellcore, Morristown, N.J.

Cook, D. and Bunger, A. (1989). Developing a User Interface for Interactive Data Analysis with X and Unix. Technical Report 25, Rutgers University, New Brunswick, NJ.

Unrefereed Papers

Cheng, X. and Cook, D. and Hofmann, H. (2014) Enabling Interactivity on Displays of Multivariate Time Series and Longitudinal Data, **ArXiv e-prints**, **stat**(1412.6675):1–28, `http://arxiv.org/abs/1412.6675`.

Roy Chowdhury, N., Cook, D., Hofmann, H., Majumder, M., Zhao, Y. (2014) Utilizing Distance Metrics on Lineups to Examine What People Read From Data Plots, **ArXiv e-prints**, **stat**(1408.1889):1–28, `http://arxiv.org/abs/1408.1889`

Majumder, M., Hofmann, H., Cook, D. (2014) Human Factors Influencing Visual Statistical Inference, **ArXiv e-prints**, **stat**(1408.1974):1–18, `http://arxiv.org/abs/1408.1974`.

Zhang, Z., Miller, L., Cook, D., Hardjasamudra, A., Hofmann, H. (2003) Densityplot Matrix Display for Large Distributed Data, *IEEE Conference on Data Mining, Nov 19-22, 2003, Melbourne, FL.* Visual Data Mining Workshop notes, Pages 59–70.

Symanzik, J., Swayne, D. F., Temple Lang, D., and Cook, D. (2002). Software Integration for Multivariate Exploratory Spatial Data Analysis. In *New Tools for Spatial Data Analysis: Proceedings of the Specialist Meeting, May 10-11, 2002*, Center for Spatially Integrated Social Science, Santa Barbara, California.

Klinke, S. and Cook, D. (1997). Kernel-based Projection Pursuit Indices in XGobi. *Statistical Software Newsletter in Computational Statistics and Data Analysis.* **25**(3): 363-369.

Symanzik, J., Klinke, S., Schmelzer, S., Cook, D., and Lewin, N. (1997b). The ArcView/XGobi/
XploRe Environment: Technical Details and Applications for Spatial Data Analysis In *ASA Proceedings of the Section on Statistical Graphics*, Alexandria, Virginia. American Statistical Association, Forthcoming.

Symanzik, J., Kötter, T., Schmelzer, S., Klinke, S., Cook, D., and Swayne, D. F. (1998). Spatial Data Analysis in the Dynamically Linked ArcView/XGobi/XploRe Environment. *Computing Science and Statistics*, 30. Forthcoming.

Symanzik, J., Cook, D., Kohlmeyer, B. D., Lechner, U., and Cruz-Neira, C. (1997). Dynamic Statistical Graphics in the C2 Virtual Reality Environment. *Computing Science and Statistics*, 29(2):41–47.

Symanzik, J., Majure, J. J., and Cook, D. (1997). The Linked ArcView 2.1 and XGobi Environment — GIS, Dynamic Statistical Graphics, and Spatial Data. In Shekhar, S. and Bergougnoux, P., editors, *Proceedings of the Fourth ACM Workshop on Advances in Geographic Information Systems, Rockville, Maryland, November 15–16, 1996*, pages 147–154,

New York, NY. ACM.

Cook, D. (1996). Escape From Pillai Trace? *Computing Science and Statistics*, 28:352–360.

Cook, D. (1996). Graphical Methods for Multivariate Analysis. EPA Training Workshop Notes.

Symanzik, J., Cook, D., Kohlmeyer, B. D., and Cruz-Neira, C. (1996). Dynamic Statistical Graphics in the CAVE Virtual Reality Environment. Working paper for Dynamic Statistical Graphics Workshop, Sydney, July 7 1996 (Invited).

Symanzik, J., Megretskaia, I., Majure, J. J., and Cook, D. (1996). Implementation Issues of Variogram Cloud Plots and Spatially Lagged Scatterplots in the Linked ArcView 2.1^{TM} and XGobi Environment. *Computing Science and Statistics*, 28:369–374.

Jones, P. and Cook, D. (1995). Multivariate Q-Q Plots Based on Quantile Contours. *Computing Science and Statistics*, 27:269–273.

Majure, J., Cook, D., Cressie, N., Kaiser, M., Lahiri, S., and Symanzik, J. (1995). Spatial CDF Estimation and Visualization with Applications to Forest Health Monitoring. *Computing Science and Statistics*, 27:93–101.

Symanzik, J., Majure, J., and Cook, D. (1995). Dynamic Graphics in a GIS: A Bidirectional Link between ArcView 2.0 and XGobi. *Computing Science and Statistics*, 27:299–303.

Cook, D., Cressie, N. A. C., Majure, J., and Symanzik, J. (1994). Some Dynamic Graphics for Spatial Data (with Multiple Attributes) in a GIS. In Dutter, R. and Grossman, W., editors, *COMPSTAT '94: Proceedings in Computational Statistics*. Physica-Verlag, Heidelberg, Germany, pages 103–119.

Symanzik, J., Majure, J., Cook, D., and Cressie, N. (1994). Dynamic Graphics in a GIS: A Link between ARC/INFO and XGobi. *Computing Science and Statistics*, 26:431–535.

McDougall, A. and Cook, D. (1994). Interactive Approach to Exploratory Time Series Analysis. *Computing Science and Statistics*, 25:366–370.

Cook, D., Buja, A., and Cabrera, J. (1992). An Analysis of Polynomial-based Projection Pursuit. *Computing Science and Statistics*, 24:478–482.

Cabrera, J. and Cook, D. (1992). Projection Pursuit Indices based on Fractal Dimension. *Computing Science and Statistics*, 24:474–477.

Cook, D., Buja, A., and Cabrera, J. (1991). Direction and Motion Control in the Grand Tour. *Computing Science and Statistics*, 23:180–183.

Swayne, D. F., Cook, D., and Buja, A. (1991). XGobi: Interactive Dynamic Graphics in the X Window System with a Link to S. In *ASA Proceedings of the Section on Statistical Graphics*. American Statistical Association, Alexandria, VA, pages 1–8.

Technical Slides

Nelson, L., Cook, D., Cruz-Neira, C. (1997). *Statistical Analysis of Multivariate Stream Data on Chemical Contamination in Streams.* Association of Computing Machinery (ACM) Special Interest Group in Computer Graphics(SIGGRAPH) Conference, Technical Slide Set, Slide #33, Los Angeles, California, Aug 1997.

Talks

Invited

1. Sep 23, 2015 Keynote speaker, IEEE International Symposium on Big Data Visual Analytics, *TBD*, Hobart, Tasmania, Australia.
2. Jul 1, 2015 Keynote speaker, useR! 2015 *A Survey of Two Decades of Efforts to Build Interactive Graphics Capacity in R*, useR! 2015, Aalborg, Denmark.
3. Jun 29, 2015 *Eye-balling is OK Again: Using an Eye-Tracker to See How People Read Data Plots*, Augsburg, Germany.
4. Jan 19, 2015, Fields Institute, *Data Visualization and Statistical Graphics in Big Data Analysis*, Toronto, Canada. Video available at `http://www.fields.utoronto.ca/video-archive/2015/01/315-4132`.
5. Nov 10, 2014, United Nations, *An Exploratory Data Analysis of OECD's 2012 PISA Surveys, or Seven Things That Affect Education Around the World*. Video available at `https://unite.un.org/techevents/eda`, `https://plus.google.com/events/cj68mces4jggki4c7b4clvj7tak`.
6. Aug 3, 2014 JSM '14, *Harnessing Crowd-Sourcing to Select Genes based on Effect Size Using Visual Inference Methods*, Boston, MA.
7. Jul 11, 2014 ASC, *Statistical Inference by Crowd-Sourcing*, Sydney, Australia.
8. Apr 21, 2014 Montana State University, *Statistical Inference by Crowd-Sourcing*, Bozeman, MT.
9. Feb 18, 2014 Michigan State University, *Statistical Inference by Crowd-Sourcing*, East Lansing, MI.
10. Aug 4 2013, JSM '13, *Big Data and R, Discussant*, Montreal, Canada.
11. Jun 10, 2013 NCSES Digital SEQ, *Recent Advances in Visualization Techniques*, Washington, DC.
12. Oct 18, 2012 Carl Morris Honorary Symposium, *Statistical Inference for Data Visualization*, Washington D. C. Video available at `http://www.youtube.com/watch?v=3CqQcxYMtmQ&feature=youtu.be`
13. Jun 19, 2012 useR! 2012 *Every Plot Must Tell a Story*, Keynote address, Nashville, TN.
14. May 16, 2012 Interface Between Statistics and Computing Science, *ggbio: Extending the Grammar of Graphics to Genomic Data*, Houston, TX.
15. Feb 20, 2012 Dagstuhl Information Visualization, Visual Data Mining and Machine Learning, *An Overview of Statistical Inference*, Dagstuhl, Germany,
16. Feb 13, 2012 ISU BCB Seminar Series, *Overview of Biological Visualization*, Ames, IA.
17. Oct 20, 2011, Christian Petersen Art Museum, Morrill Hall *Show Me the Data*, Ames, IA.

18. Aug 1 2011, JSM 2011 *Visualizing Climate Change Data*, Miami, FL.
19. Aug 2 2011, JSM 2011 *Introductory Overview Lecture: Statistical Graphics*, Miami, FL.
20. Jun 3 2011, SCVMMI *Exploring Dose Response Data and Repeated Measures Data Using Interactive Graphics*, Dubuque, IA.
21. Apr 22 2011, International Indian Statistical Association *Statistical Inference for Visual Methods*, Raleigh, NC.
22. Feb 16 2011, CEAH Colloquium *Visual communication*, Ames, IA.
23. Feb 8 2010, Iowa State University *Statistical Inference for Visual Methods*
24. Oct 15 2009, University of Washington, St Louis *Statistical Inference for Visual Methods*
25. Aug 18 2009, ISI 2009, Durban, South Africa *Using R and GGobi to Enhance the Learning of Multivariate Analysis and Data Mining.*
26. Jul 15 2009 Seminar on Innovative Approaches to Turn Statistics into Knowledge, 15-16 July 2009, US Census Bureau, Washington DC *Exploring Variation in Data with Statistical Graphics*
27. Mar 27 2009, Second Midwest Statistics Research Colloquium, University of Chicago, *Exploring Longitudinal Data: A Peek at Workforce Experiences.*
28. Feb 23 2009, Mathematics on the Road Experience, Prairie Lakes AEA, *From Restaurants to Climate Change: Using Statistics to Understand Our World.*
29. Feb 10 2009, Houston Chapter of the American Statistical Society, *Statistical Inference for Visual Methods.*
30. Jun 27 2008, PCST-10 (Public Communication in Science and Technology), Malmo, Sweden *Brain Candy: Using Data Graphics to Learn about Variability and Uncertainty in Our World.*
31. Jun 25 2008, Data Vis VI, Bremen, Germany *Categorical Variable Linking for Exploring Longitudinal Data*
32. May 30 2008, Seminar in Statistik, ETH, Zurich *Using R and GGobi for Exploratory Data Analysis.*
33. May 29 2008, Zürcher Kolloquium, ETH, Zurich *Exploring Longitudinal Data: A Look at Workforce Experiences.*
34. Mar 6 2008, Department of Statistics, Oxford University, UK, Mar 28 2008, Department of Statistics, University of Glasgow, UK, Apr 25 2008 Department of Statistics, University of Bristol, UK, *An Exploratory Approach to Longitudinal Data Analysis.*
35. Jan 10 2008, Contemporary Frontiers in High-Dimensional Statistical Data Analysis, Statistical *Looking at Models in High-Dimensional Data Space.*
36. Aug 2007, Introductory Overview Lecture, JSM '07, *Improving Statistical Posters.*

37. Aug 2007, JSM '07, *Exploring models for clustering data.*

38. Dec 2006, University of Auckland, New Zealand, May 2006, University of California, Los Angeles *An EDA of my CDs.*

39. Oct 2005, "Gold Standard(s)" for Education conference, *Graphics for Multivariate Data*, Vancouver Island, BC, Canada.

40. Mar 2005, University of Iowa *Exploring Microarray Data with Plots*

41. Jul 15 2004, International Federation of Classification Societies annual meeting, Chicago, IL *Visualizing Class and Cluster Structure beyond 3D.*

42. Apr 19 2004, Department of Statistics, University of Newcastle, Newcastle, Australia, Apr 22 2004, University of New South Wales, Sydney, Australia *Visual Methods for Data from Two Factor Single-Replicate Gene Expression Studies.*

43. Mar 16 2004, Department of Statistics, Macquarie University, Sydney, Australia, Apr 21 2004 CSIRO, Sydney, Australia*Data through the windshield in p-dimensions.*

44. Feb 27 2004 Sydney Summer Statistics Workshop, Sydney University, Australia, *EDA using Direct Manipulation Graphics.*

45. Sep 10 2003 Data Mining and Machine Learning workshop, Statistical and Applied Mathematical Science Institute, Research Triangle Park, NC *Using Graphics in Exploratory Data Analysis and Data Mining: An Application of Supervised Classification in Olive Oil Quality.*

46. Apr 10 2003 Workshop on Microarrays, Victorian Microarray Technology Consortium, Melbourne, Victoria, Australia *Some Dynamic Graphical Tools to Assist Analysis of Microarray Data.* (Keynote address.)

47. Dec 13 2002 Department of Statistics, Harvard University *Classification Tours Applied to Microarray Data.*

48. Oct 8 2002 How to Visualize a Million, Augsburg, Germany *Using Multimedia Animation with Real-time Graphic Overlays for Visualizing a Million Cases of Multivariate Data.*

49. Sep 12-13 2002 Cambridge HealthTech Institute Conference, Washington, DC, *Visualization of Microarrays Using Tours and Projection Pursuit.*

50. Jul 11 2002 University of Augsburg, Germany, *Limn: Using Movie Technology to Drive Graphics for Massive Amounts of Data.*

51. Jul 15-19 2002 Current Advances and Trends in Nonparametric Statistics, Crete, Greece, *Understanding Support Vector Machine Classifiers using Graphics.*

52. Apr 9, 2002 Geology Department, ISU, *Dynamic Graphics for Multivariate Space-Time Data*

53. Dec 10-14 2001 American Geophysical Union San Francisco, *Visual Data Mining of Large, Multivariate Space-Time Data.*

54. Oct 2001 Department of Statistics, Macquarie university, Australia, *Visual Data Mining: Interactive Dynamic Graphics for Data Analysis.*

55. Jul 2001 Workshop on Statistical Challenges in Modern Astronomy, Penn State University, State College, PN *Interactive and Dynamic Graphics for Data Analysis.*

56. May 2001 Dept of Statistics, University of Western Australia *Visual Data Mining: Interactive Dynamic Graphics for Data Analysis.*

57. Jan 2001 Workshop on Non-parametric Statistics, Southern Methodist University, Dallas, TX *Limn, to present an image or lifelike imitation of; Limit-n, to explore any data set to its limits.*

58. Nov 2000 Da Vinci Colloquium, Dallas, TX *Immersed in Statistics: your worst nightmare or your wildest dream!* (Special evening dinner discussion seminar to paying public.)

59. Nov 2000 Dept of Statistics, Southern Methodist University, Dallas, TX *Visual Methods for Classification Problems.*

60. Jul 2000 NRCSE/GSP Workshop, Boulder, CO (Invited) *Issues and Approaches for Visualization of Large Multi-Dimensional Data.*

61. Mar 2000 Statistical Society of South Australia Annual General Meeting, Adelaide, Australia *Stopping to Look at the Flowers.*

62. Apr 2000 Roche, Sydney, Australia *Interactive and Dynamic Graphics for Data Analysis using XGobi* (Translated to Japanese).

63. Dec 1999 AT&T Labs, Florham Park, NJ *ORCA: A Visualization Toolkit for High-dimensional Data.*

64. Aug 1999 Joint Statistical Meetings, Baltimore, MD *ORCA: Multivariate (Space-Time) Data Viewers* (Technical exhibit).

65. May 1999 Large Data Sets workshop, University of Waterloo *Visualizing Cluster Structure in Large Data Sets.*

66. Jul 1998 Statistics and the Internet workshop, NJ *VRML in Statistical Applications* (With Kathy Shelley, Chuck Peterson).

67. Jul 1998 Pfizer Central Research, Mar 1998 University of Puerto Rico, *Recent Developments in Exploring Data with Interactive Dynamic Graphics.*

68. Apr 1998 ENAR 98, Albany, NY. *Statistics, GIS, Graphics and Computing.*

69. Apr 1998 Case Western University, Dec 1997 Electrical and Computer Eng, ISU, Oct 1997 University of Iowa, *Exploratory Data Analysis of Multivariate Data using Interactive Dynamic Graphics.*

70. Jul 1997 Stanford University, Jul 1998 Data Visualization in Statistics workshop. *Manual Controls for High-Dimensional Data Projections.*

71. Aug 1997 ISI, Istanbul, Turkey *Using Dynamic Statistical Graphics in a Highly Immersive Virtual Reality Environment to Understand Multivariate Spatial Data.*

72. Aug 1997 Joint Statistics Meeting '97 *Immersed in Statistics: Your Worst Nightmare or Your Wildest Dream?*

73. Aug 1997 Joint Statistics Meeting '97 (Organizer/Chair.) *Publishing in the Electronic Age.*

74. Aug 1997 Joint Statistics Meeting '97 *Using Graphics to Teach Statistics and Statistics to Teach Graphics* (Discussant of Session.)

75. May 1997 Interface between Computing Science and Statistics '97, Houston, TX, Apr 1997 EMAP meeting, Albany, NY *Exploring Associations Among Mid-Atlantic Stream Indicators using Dynamic Multivariate Graphics and Geographic Mapping in a Highly Immersive Virtual Reality Environment.*

76. Jul 1996 Interface between Computing Science and Statistics '96, Sydney, Australia *Escape From Pillai Trace?*

77. Mar 1996 Physics Dept, University of Illinois, Champaign *Exploring Multivariate Relations in High Energy Particle Physics Data Using the Grand Tour and Projection Pursuit.*

78. Nov 1995 VI CLAPEM, Viña del Mar, Chile. *Data Through the Windshield in p-Dimensions.*

79. Aug 1995 Joint Statistics Meetings, Orlando, FL. *Through the Windshield in p-Dimensions.*

80. Jun 1995 Interface '95, Pittsburgh, PA. *Spatial CDF Estimation and Visualization with Applications to Forest Health Monitoring.*

81. Jun 1995 Interface '95, Pittsburgh, PA. *Grand Tour and Projection Pursuit.* (Journal of Computational and Graphical Statistics Invited paper.)

82. Oct 1995 39th Annual Fall Technical Conference, St Louis, MO. *Discussant to "Graphics for Assessing the Adequacy of Regression Models (Dennis Cook)".*

83. May 1995 ENAR 95, Birmingham, AL. *'Tours' into Data Analysis.*

84. Aug 1994 COMPSTAT '94, Vienna, Austria. *Dynamic Graphics for Some Spatial Statistics in a GIS.*

85. Jul 1994 12th Australian Statistical Society Conference, Melbourne, Australia, Mar 1995 International Biometric Society, Eastern North American Region, Spring Meeting, Birmingham, Alabama. *Tours into Data Analysis.* (Invited Paper Session "Current Issues in Biostatistical Computing", Discussant: Terry Therneau, Mayo Clinic.)

86. Oct 1994 Oregon State University, Corvallis, Oregon, Aug 1994 Humboldt University, Berlin, Germany, Aug 1994 University of Augsburg, Augsburg, Germany, Apr 1994 University of Minnesota, Minneapolis, MN, Sep 1993 Duke University, Durham, NC, Dec 1993 Dalhousie University, Halifax, Nova Scotia, Canada, Jul 1993 University of NSW, Sydney, Australia, Apr 1993 University of Maryland, Baltimore, MD, Feb 1993

Iowa State University, Ames, IA, Feb 1993 Carnegie Mellon University, Pittsburgh, PA, Feb 1993 University of Florida, Gainesville, FL, Jan 1993 UCLA, Los Angeles, CA. *Exploring Multidimensional Data with the Grand Tour and Projection Pursuit.*

87. Oct 1992 Visualization '92, Workshop on Multivariate/Multidimensional Data Visualization and video contribution to tutorial session. *Grand Tour and Projection Pursuit.*

88. Jul 1992 Gordon Research Conference on Statistics in Chemistry and Chemical Engineering, New Hampton, NH. *Finding Structure in High Dimensional Data using Projection Pursuit Methods.* (Invited poster.)

Contributed

83. Aug 2004 COMPSTAT'04 Prague, Czech Republic *Visualization in Classification Problems.*

84. Mar 1992 24th Symp. on the Interface between Comput. Sci. and Stat., College Station, TX. *An Analysis of Polynomial-based Projection Pursuit.*

85. Mar 1992 24th Symp. on the Interface between Comput. Sci. and Stat., College Station, TX. *Projection Pursuit Indices based on Fractal Dimension.*

86. Jul 1991 Australian National University, Canberra, Australia, Aug 1991 Auckland University, Auckland, New Zealand. *Projection Pursuit Guided Tour.*

87. Apr 1991 23rd Symp. on the Interface between Comput. Sci. and Stat., Seattle, WA. *Direction and Motion Control in the Grand Tour.*

88. Nov 1990 Statistical Computing Meeting, Rutgers University, New Brunswick, NJ. *Alternative Methods for Subspace Interpolation in Dynamic Graphics based on Householder Reflections and Givens Rotations.*

89. Feb 1990 International S Software Workshop, Wellington, New Zealand. *Xdataviewer: a Dynamic Graphics Program Implemented in X with a Link to S.*

90. May 1989 Rutgers-Temple Statistical Computing Meeting, Rutgers University, New Brunswick, NJ. *Data Analysis with the X Window System.*

Workshops

Delivered

1. Jul 8-10, 2015 *Visualization of Biomedical Big Data*, Summer Institute in Statistics for Big Data (SISBID), University of Washington, Seattle, Washington.

2. May 15, 16, 18, 2015 *ASA Travelling workshop on R*, San Francisco, Orange County, San Diego

3. Feb 1-4, 2015, Swiss Doctoral School, *Data Visualization: Discover, Explore and be Skeptical* Three seminar series, Les Diablerets, Switzerland. (Lecture notes and code available at `https://github.com/dicook/lesdiablerets-code`)

4. Sep 25-27, 2013 XXVIII Foro Nacional de Estadistica, *Visual Methods for Multivariate Analysis*, Aguascalientes, Mexico.
5. May 13-17, 2013 NCAR, IMAGe, *Visualization of Climate Change*, Boulder, CO.
6. Apr 9-11, 2013 CENSUS, *Interactive Graphics for Data Analysis*, Washington, DC.
7. Oct 14, 2012 InfoVis '12 *Visualizing data in R and ggobi*, Seattle, WA.
8. Aug 15-18 2011 *SARMA/TIES workshop on visualization of climate data*, `http://www.nrcse.washington.edu/NordicNetwork/visual1.html`, Reyjkavik, Iceland.
9. Jul 30-31 2009 GGobi Foundation workshop, Washington DC *Looking at Data*
10. Jun 17-19 2009 34th Annual Summer Institute of Applied Statistics, Brigham Young University, *Exploring Data Visually.*
11. Oct 20-21 2008 Army Conference on Applied Statistics *Introduction to R.*
12. Oct 31, 2007, Infovis 2007 Tutorial, *Looking at Data*, Sacramento, California (Half-day, joint with Hadley Wickham, Deborah Swayne).
13. Jul 28, 2007, GGobi Foundation workshop, *Looking at Data: Learning to explore data with R and GGobi*, Salt Lake City (Full day hands-on workshop, joint with Hadley Wickham).
14. Jun 18 2006, UCLA Program for Undergraduates, Visualization and its Role in the Practice of Statistics (Half-day hands-on workshop).
15. Jul 29-30 2004, XLSolutions, Boston, MA *Interactive and Dynamic Graphics for Data Analysis Using XGobi/GGobi* (Two day hands-on workshop).
16. May 28-30 2003, Alaska Chapter of the American Statistical Association meeting, Hatchers Pass, Alaska *Multivariate Data Visualization* (Two day hands-on workshop, joint with Heike Hofmann).
17. Feb 2001, Dept of Fisheries, Iowa, *Interactive Dynamic Graphics for Data Analysis* (Full day hands-on workshop).
18. Oct 2000, 3D Visual Data Mining group, Aalborg, Denmark. *Interactive Dynamic Graphics for Data Analysis: A series of seminars.*
19. Aug 2000 Joint Statistics Meeting, Indianapolis, IN, Jun 1999 WNAR, Seattle, WA *Data Mining with the Right Side of the Brain: Interactive Dynamic Graphics for Data Analysis* (Full day workshop with Deborah F. Swayne and Andreas Buja).
20. Oct 1999 Pfizer Inc, Groton. CT *Interactive Dynamic Graphics for Data Analysis* (Two full morning workshops).
21. Feb 2000 CSIRO, Sydney, Australia *Data Mining with the Right Side of the Brain: Interactive Dynamic Graphics for Data Analysis* (Full day hands-on workshop).

22. Mar 1998 University of Puerto Rico *Exploratory Data Analysis with XGobi and ArcView: Focusing on Multivariate Spatially Referenced Data* (Individually presented two day hands-on workshop).
23. Aug 1997 KDD '97, Newport Beach, CA. *Role of Visualization in Data Analysis/Data Mining.* (Invited tutorial, joint with Deborah Swayne.)
24. Apr 1996 EPA Statistical Training Program, Research Triangle Park and George Mason University *Information Visualization: Graphical Tools for Statisticians* (Invited tutorial, joint with Dr Daniel Carr).
25. Feb 1996 Workshop on Computer Intensive Statistics and Applications in the Atmospheric Sciences, San Francisco, CA. *Dynamic Graphics for Multivariate Spatial Data* (Tutorial).
26. Jun 1994 Interface'94, Research Triangle Park, NC. *Data Analysis using Interactive Dynamic Graphics: An Introduction to XGobi* (Invited tutorial, joint with Deborah Swayne).

Invited Participation

24. Sep 11-12 2008 *NSF-Visualization Workshop*, Arlington, VA.
25. Jan-May 2008, *Statistical Theory and Methods for Complex High-dimensional Data*, Newton Institute for Mathematical Sciences, Cambridge University.
26. May 6-9, 2007 *Computing in the Statistics Curriculum*, MSRI, CA.
27. May 4, 2006 *UCLA Urban Sensing Summit*, Los Angeles, CA.
28. Aug 1-2, 2003 *Workshop on Statistical Inference, Computing and Visualization for Graphs*, Sponsored by the Institute of Mathematical Statistics, Stanford University, CA.
29. Sep 1999 National Research Council, Washington DC, *Statistical Models for Reducing Uncertainty in Ocean Science Models.*
30. Jul 1998 Drew University, NJ, *Data Visualization in Statistics.*
31. Jul 1998 Drew University, NJ, *Statistics and the Internet.*
32. Jul 1996 Macquarie University, Sydney, Australia *Dynamic Statistical Graphics (chair).*
33. Jun-Jul 1994 Centre for Mathematics and its Applications, Australian National University, Canberra, Australia, *Workshop on New Directions in Curve Estimation.*

Grants

Research

National Science Foundation (co-PI with Amy Froelich) (2013-2015) ∼$180000
USDA (PI) 2013-2015 ∼$85000

National Science Foundation (co-PI with Heike Hofmann, Hadley Wickham, Andreas Buja) (2010-2014) $283139
Genentech Gift of graduate assistantship $29160 (2010-2011), $29160 (2011-2012)
National Science Foundation (PI with co-PI Heike Hofmann) (2007-2012) $416,461
Novartis (PI with co-PI Heike Hofmann) (2007-2014) $198,218
National Science Foundation (co-PI with Eve Wurtele, Julie Dickerson, Dan Berleant, Les Miller, Heike Hofmann) (2005-2008) $800,000
National Science Foundation (co-PI with Meeker, Carriquiry, Nettleton, Opsomer) *Computing Equipment to Support Research in Statistics*, $73000
USDA (co-PI with Roger Wise, Julie Dickerson, Dan Nettleton, Volker Brendel) (2002-2004) $406654
National Science Foundation (co-PI with Eve Wurtele, Julie Dickerson) (2002-2005) $91646
John Deere (co-PI with Julie Dickerson, Carolina Cruz-Neira) (2001-2004) $150000
John Deere (co-PI with Julie Dickerson, Carolina Cruz-Neira, Hung Pham) (2000-2001) $131316
NSF Large Scientific Visualization Program (PI with co-PIs Vasant Honavar, Les Miller) (1999-2003) $370000
Atlantic Richfield Corporation (1999-2000) $50435
University Foundation Award for Early Excellence in Research, 1999 $1000
College of Liberal Arts and Science Spring Research Initiation Grant, 1999 $7500.
John Deere Foundation (1996-1999) $45000
NSF Small Grant for Exploratory Research (1996-1999) $50000
EMAP (with Cressie, Kaiser, Lahiri, Majure) (1994-1999) $822,923.03

Education

NSF Instructional Learning Instrumentation (1992-1994 $55000), (1997-2000 $70000)
Center for Online Learning (co-PI Bill Duckworth) with (2006) $7000
Center for Online Learning (co-PI Bob Stephenson, Any Froelich, Bill Duckworth) with (2002-2003) $2000.

Competitions

First prize useR! 2014 Visualization of PISA education data.
Organized the 2011 JSM Data Expo, and assisted 2013 JSM Data Expo.
First prize winners, Sunlight Labs, Design for America, *Making A Full Recovery*, (2010) $5000
Second prize winners, Data Expo JSM 09, *Delayed, Cancelled, On Time, Boarding, ... Flying in the USA*, $500
Second prize winners, Data Expo JSM 06, *Glaciers Melt as Mountains Warm*, $500
First prize winners, Info Vis Challenge 2005, *Boom and Bust of Technology Companies at the Turn of the 21st Century*

Teaching

- Normal teaching load is 3 courses (9 credits) per year.
- Ratings are consistently between good and excellent, averaging 4.0-4.5/5.
- Material for Statistics 503, Exploratory Methods and Data Mining. Materials including videos explaining concepts and multivariate graphics are publicly available at `http://streaming.stat.iastate.edu/~dicook/EDA.and.datamining/`
- Materials including videos explaining concepts and multivariate graphics for Statistics 407 are publicly available at `http://streaming.stat.iastate.edu/~dicook/multivariatelectures/`.
- With Dr Hofmann, I have developed a new graduate class, Statistics 585, Data Technologies for Statistics, in 2012, and taught again in 2014 (`http://dicook.github.io/stat585/`).
- Currently working with Dr Froelich to develop a large online question database for introductory statistics, and reporting system to automatically generate reports on homeworks for multiple sections and approximately 500 students per semester.

Courses taught

Statistics 690F Advanced Statistical Graphics	Fall 2007
Statistics 585 Data Technologies for Statistical Analysis	Spring 2012, 2014
Statistics 503 Exploratory Methods and Data Mining	Spring 1999, 2001, 2003, 2005, 2007, 2009, 2011, 2013
Statistics 501 Multivariate Statistical Methods	Spring 1995, 1997, 2002, 2003
Statistics 407 Methods of Multivariate Analysis	Fall 1996, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013
Statistics 415 Advanced Statistical Methods for Research Workers (1 credit)	Spring 1999, 2001, 2003, Fall 2011
Statistics 401 Statistical Methods for Research Workers	Fall 1993, 1995, 1997
Statistics/English 332 Visual Communication of Quantitative Information	Spring 2006, 2007, Fall 2009, 2011, 2012
Statistics 201 Principles of Statistics (Honors)	Spring 2014
Statistics 101 Principles of Statistics	Fall 1997, Spring 1999, 2001, Fall 2003, Fall 2004, Fall 2005, 2006, 2007, 2008, 2009, Spring 2010, 2011, 2012

Student Advising

PhD students	Natalia Da Silva (Statistics, May 2017) Lindsay Rutter (BCB. May 2016) Xiaoyue Cheng (PhD, Statistics May 2015) Niladri Roy-Chowdhury (PhD, Statistics Jul 2014) Yihui Xie (PhD, Statistics December 2013) Mahbubul Majumder (PhD, Statistics May 2013) Tengfei Yin (PhD in GDCB, June 2013, funded by Genentech) Xiaoyong Sun (PhD in BCB, May 2010, research scientist at Vaccine and Gene Therapy Institute, Florida) Michael Lawrence (PhD in BCB, May 2008, currently at Genentech San Francisco, CA) Hadley Wickham (PhD, May 2008, research scientist at RStudio) Eun-Kyung Lee (Jun 2003, Associate Professor, EWHA, Seoul, Korea) Ozlem Ilk (May 2004, currently employed as faculty METU, Ankara, Turkey) Marcia Macedo (Dec 2000, co-major with EEB) Sunhee Kwon (May 1999, working at Roche Pharmaceuticals, CA)
MS students	Justin Zwolski (Dec 2015), Jessica Short (May 2015), Danny Bero (May 2015), Xiaoping Wang (Jul 2014), Omesh Johar (Aug 2014) Sarah Budrus (May 2014), Qi Wang (Dec 2011) Jason Crowley (May 2011), Lawrence Mosley (May 2009) Axel Preuss (Aug 2008), Lixia Diao (May 2004) Hao Yang (Jun 2003) Manuel Suarez (Dec 2002) Denize Barbosa (Oct 2002) Jason Sinnwell (May 2002, Mayo Clinic) Mallika Bachan (Sept 2001, MS in Computer Science) Matt Puumala (Jul 2001, Biostat, U. Minnesota) Ozlem Ilk (May 2001, continuing to PhD) Younghun Han (May 2001) Charles Petersen (Feb 1999, working in Statistics, ISU) Marcia Macedo (finished, Spring 1998, continued to PhD) Peter Anderson (took job before completion) Shawn Bates (1995), Philip G. Jones (1995)
BCB rotation students	Nafiz Hamid (2015, Lindsay Rutter (2014), Jennifer Chang (2012), Divya Mistry (2009), Yeun Sook Lee (2009), Yuanyuan Huang (2008), Xiayong Sun (2008), Olga Nikolova (2008), Michael Lawrence (2005), Darrin Lemmer (2005)
Undergraduate RA students	Mengjia Ni (2014), Barret Schloerke (May 2007-2012), Chris Kielion (Jan 2008-Dec 2009), Bei Huang (Jan 2008-2010)

Service

ISU

Search Committee, Big Data Political Science/Statistics (2015)
Search Committee Chair, Big Data (2014)
Computing Advisory Committee, Chair (2012-2014)
Chair's Advisory Committee 2013-2014
Memorial Lectures Committee, 2013-2014
Department Promotion and Tenure (2010-2012)
Department Graduate Committee, Chair (2010)
LAS Promotion and Tenure (2008-2013)
Distance Education Committee (2007-8)
Chair's Advisory Committee Spring 2007-2010
College of Liberal Arts and Sciences Representative Assembly 1998-2003
Computing Advisory Committee (co-Chair 2001-2007, member 2007-)
Seminar committee (1995-6), Program Committee, H. A. David Conference (1995)
Member of Human Computer Interaction, Bioinformatics and Computational Biology, and Plant Sciences Institute
Occasional consulting with students and faculty outside Statistics

Broader Community

Editor, Journal of Computational and Graphical Statistics 2015-
Associate Editor, Environmetrics 2011-
Associate Editor, Journal of Computational and Graphical Statistics, 2006-2015
Successfully guided three ASA Fellows nominations through in 2014, 2015
Guest Editor, Statistical Science, Special Issue on Future of Statistical Computing 2013
Session organizer, Interface 2012
ASA Statistical Computing and Graphics Data Expo 2011 organizer, NSF Proposal Review panel, Nov 2011
NSF Proposal Review panel, Jan 2009
Treasurer, GGobi Foundation 2007-
IASC Council Member 2007-
Program Chair, useR! 2007, Ames, IA, Aug 2007
Chair, Management Committee, Journal of Computational and Graphical Statistics, 2004-2006
Program Committee, Workshop on "Visualization of Uncertain Information" sponsored by the National Security Agency, National Research Council, Division of Engineering & Physical Sciences, Board on Mathematical Sciences and their Applications, Mar 2005
Program Committee, COMPSTAT '04, Aug 23-27, 2004, Prague, Czech Republic
IMS Representative and Chair of the Management Committee of the Journal of Computational Statistics (2004-2007)
Program Committee for Workshop on Visual Data Mining at IEEE Conference on Data

Mining, Nov 19-22, 2003, Melbourne, FL
Program Committee, IEEE 2001 Symposium on Parallel and Large-Data Visualization and Graphics, San Diego, CA, Oct 2001
Program Committee, International Workshop on Visual Data Mining, (2th European Conference on Machine Learning (ECML'01) and 5th European Conference on Principles and Practice of Knowledge Discovery in Databases, Frieburg, Germany, Sep 2001
Program Committee, Workshop on the Future of Statistical Computing, Costa Mesa, CA, Jun 2001
Session Organizer, Interface 2001, Costa Mesa, CA, Jun 2001
Chair-elect, Chair, Past-Chair American Statistical Association Statistical Graphics section 1998-2000
Program Chair for 2000 Joint Meetings Invited Technical Program and Posters
Program Chair for 1997 Joint Meetings Statistical Graphics section
American Statistical Association Statistical Computing and Statistical Graphics section newsletter editor, 2000-present
Associate Editor for The American Statistician, 1996-2000
Associate Editor (for graphical and computational articles) Journal of Educational and Behavioral Statistics Jul 1994-7
Editorial board for Journal of Statistical Software (new electronic journal, now special section of JCGS) Sep 1995-present
1999-present Reviewed articles for Journal of Computational and Graphical Statistics, Annals of Statistics, Computational Statistics and Data Analysis, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Visualization and Computer Graphics, Annals of Applied Statistics, InfoVis conferences, Journal of Statistical Education, Journal of Statistical Software, Statistical Analysis and Data Mining, The American Statistician, National Science Foundation Research Grants, external reviewer of Australian National University PhD thesis