

Curriculum Vitae: Dianne Helen Cook 2019

Department of Econometrics and Business Statistics, Monash University

Office Address: E762A Menzies

20 Chancellors Walk

Clayton, VIC 3800, Australia

Tel: +61 (03) 990 52608

Email: dicook@monash.edu

<http://dicook.org>

ORCID: 0000-0002-3813-7155

Degrees Held

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

Professional Experience

Professor of Business Analytics, EBS, Monash U.	Jul 2015-
Full Professor, Statistics, ISU	May 2005-Jun 2015
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 (2000-2015), Human Computer Interaction (1998-2015), SensiLab, Monash U. (2016-)

Professional Association Memberships: American Statistical Association, Institute of Mathematical Statistics, Statistical Society of Australia

Awards

Keynote speaker, IBC 2020, Seoul, South Korea, Jul 5-10, 2020

Keynote speaker, 7th International Statistical Ecology Conference, Sydney Jun 22-26, 2020

Keynote speaker, DSSV 2019, Kyoto, Japan, Aug 13-15 2019

ACEMS and Monash Master class, Melbourne, Feb 13, 2019

2018 ACEMS Impact and Engagement Award, as part of the Non-uniform Monash Business Analytics Team

Belz lecture, University of Melbourne, Oct 16, 2018

Keynote speaker, RStudio Conference, San Diego, CA Feb 2-3, 2018

Keynote speaker, Biometrics by the Border, IBS-AR 2017 Nov 26-30, Kingscliffe, Australia

Keynote speaker, Young Statisticians Conference, Sep 26-27 2017, Gold Coast, Australia

Ordinary Member (elected), The R Foundation, 2016

Dean's Research Award, 2016

Keynote Speaker, New Zealand Statistical Association Conference, Nov 27-29 2016, Auckland, NZ

Keynote Speaker, International Statistics Forum, May 27 2016, Renmin University, China
 Statistical Applications and Data Mining, Best paper award 2015
 Keynote Speaker, Bayes on the Beach, Dec 8 2015, Surfers Paradise, Australia
 Plenary Speaker, RSFAS Dec 2 2015 Summer Camp, Murrumurang, Australia
 Keynote Speaker, BDVA '15, September 2015, Hobart, Australia
 Keynote Speaker, useR! Jul 2015, Aalborg, Denmark
 Keynote Speaker, useR! Jun 2012, Nashville, TN
 LAS Career Research Award, 2012
 InfoVis 2010 Best paper award
 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. Majumder, M., Hofmann, H. and Cook, D. (2019) Human Factors Influencing Visual Statistical Inference. Revise and resubmit to Journal of American Statistical Associa-

- tion.
2. Tierney, N. and Cook, D. (2018) Expanding tidy data principles to facilitate missing data exploration, visualization and assessment of imputations, <https://arxiv.org/abs/1809.02264>.
 3. Wang, E., Cook, D. and Hyndman, R. J. (2019) A new tidy data structure to support exploration and modeling of temporal data. *Journal of Computational and Graphical Statistics* To appear, available at <https://doi.org/10.1080/10618600.2019.1695624>.
 4. Forbes, J., Cook, D. and Hyndman, R. J. (2019) Spatial modelling of the two-party preferred vote in Australian federal elections: 2001–2016. *The Australian and New Zealand Journal of Statistics*. To appear, available at <https://www.monash.edu/business/ebs/research/publications/ebs/wp08-2019.pdf>.
 5. Da Silva, N., Cook, D. and Lee, E.-K. (2018) A Projection Pursuit Forest Algorithm for Supervised Classification, In revision for the Journal of Computational and Graphical Statistics, <https://arxiv.org/abs/1807.07207>.
 6. Wang, E., Cook, D. and Hyndman, R. (2018) Calendar-based graphics for visualizing people’s schedules. *Journal of Computational and Graphics Statistics*, To appear, available at <https://doi.org/10.1080/10618600.2020.1715226>.
 7. Laa, U. and Cook, D. (2019) Using tours to visually investigate properties of new projection pursuit indexes with application to problems in physics. *Computational Statistics*, To Appear. Available at <https://arxiv.org/abs/1902.00181>
 8. Polak, J. and Cook, D. (2019) Kaggle-in-class Data Challenges Can Boost Student Learning. In revision for the Journal of Statistics Education.
 9. Rutter, L., Moran Lauter, A. N., Graham, M. A. and Cook, D. (2019) Visualization methods for differential expression analysis, *BMC Bioinformatics* **20**(458):1–31, <https://doi.org/10.1186/s12859-019-2968-1>.
 10. Rutter, L., Carrillo-Tripp, J., Bonning, B. C., Cook, D., Toth, A. L. and Dolezal, A. G. (2019) Transcriptomic responses to diet quality and viral infection in *Apis mellifera*, *BMC Genomics*, **20**(412):<https://bmcbgenomics.biomedcentral.com/articles/10.1186/s12864-019-5767-1>
 11. Kipp, M., Laa, U. and Cook, D. (2019) Connecting R with D3 for dynamic graphics, to explore multivariate data with tours, *The R Journal*, **11**(1):245–249.
 12. Rutter, L., Vanderplas, S., Cook, D. and Graham, M. (2019) ggenealogy: An R Package for Visualizing Genealogical Data, *Journal of Statistical Software*. **89**(13):<https://www.jstatsoft.org/article/view/v089i13>, DOI: 10.18637/jss.v089.i13.
 13. Lee, S., Cook, D. and Lawrence, M. (2019) plyranges: A grammar of genomic data transformation, *Genome Biology*, **20**(4):<https://doi.org/10.1186/s13059-018-1597-8>.
 14. Cook, D., Laa, U. and Valencia, G. (2018) Dynamical projections for the visualization of PDFSense data, *The European Physical Journal C*, **78**(9):742 <https://doi.org/10.1140/epjc/s10052-018-6205-2>.

15. Roy Chowdhury, N., Cook, D., Hofmann, H. and Majumder, M. (2018) Measuring Lineup Difficulty By Matching Distance Metrics with Subject Choices in Crowd-Sourced Data, *Journal of Computational and Graphical Statistics*, **27**(1):132-145. Source available at <https://github.com/niladrir/metrics-paper>.
16. Loy, A., Hofmann, H. and Cook, D. (2017) Model Choice and Diagnostics for Linear Mixed-Effects Models Using Statistics on Street Corners, *Journal of Computational and Graphical Statistics*, **23**(3):478-492. Available at https://github.com/aloys/sociology_chapter.
17. Edwards, R. D., Crisp, M., Cook, D. and Cook, L. G. (2017) Congruent biogeographical disjunctions at a continent-wide scale: quantifying and clarifying the role of biogeographic barriers in the Australian tropics, *PLOS One*, **12**(4): e0174812. Available at <https://doi.org/10.1371/journal.pone.0174812>.
18. Schloerke, B., Wickham, H., Cook, D. and Hofmann (2016) Escape from Boxland: Generating a Library of High-Dimensional Geometric Shapes, *The R Journal*, **8**(2):243-257. Available at <https://journal.r-project.org/archive/2016/RJ-2016-044/index.html>.
19. Cheng, X., Cook, D. and Hofmann, H. (2016) Enabling Interactivity on Displays of Multivariate Time Series and Longitudinal Data, *Journal of Computational and Graphical Statistics*, **25**(4):1057-1076.
20. Cook, D., Lee, E. K., Majumder, M. (2016) Data Visualization and Statistical Graphics in Big Data Analysis, *Annual Reviews of Statistics and Its Applications*, Invited Contribution, **3**:133-159.
21. Cheng, X., Cook, D. and Hofmann, H. (2015). Visually Exploring Missing Values in Multivariable Data Using a Graphical User Interface, *Journal of Statistical Software*, **68**(6):<https://www.jstatsoft.org/article/view/v068i06>.
22. Wickham, H., Cook, D., Hofmann, H. (2015) Visualising Statistical Models: Removing the Blindfold (with Discussion), *Statistical Analysis and Data Mining*, **8**(4):203-225, (Best paper award 2015).
23. Roy Chowdhury, N., Cook, D., Hofmann, H., Majumder, M., Lee, E. K., Toth, A. (2015) Using Visual Statistical Inference to Better Understand Random Class Separations in High Dimension, Low Sample Size Data, *Computational Statistics*, **30**(2):293-316, available at <http://rd.springer.com/article/10.1007/s00180-014-0534-x>.
24. 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*, **40**:299-306.
25. Moran Lauter, A. N., Peiffer, G. A., Yin, T, Whitham, S. A., Cook, D, Shoemaker, R. C., Graham, M. A. (2014) Identification of genes involved in early iron deficiency chlorosis signaling in soybean (*Glycine max*) roots and leaves, *BMC Genomics* **15**(702):10.1186/1471-2164-15-702.
26. 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.
27. 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.
 28. 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 Newsletter*, **82**:4–11, <http://www.amstat.org/education/stn/pdfs/STN82.pdf>.
 29. 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).
 30. 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>.
 31. 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.
 32. 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/>.
 33. 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.
 34. 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/>.
 35. 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.
 36. 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.
 37. 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.
 38. 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.

39. 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.
40. 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>.
41. 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
42. 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.
43. 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>.
44. 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, <https://doi.org/10.1098/rsta.2009.0120>.
45. 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>.
46. 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>.
47. 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.
48. 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.
49. 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.
50. 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.
51. Ahn, J. S., Hofmann, H. and Cook, D. (2003) A Projection Pursuit Method on the Multidimensional Squared Contingency Table, *Computational Statistics*, **18**(3):605–626.

52. Cook, D. (2003) Interactive and Dynamic Graphics for Data Analysis: A Case Study on Quasar Data, In Feigelson and Babu (ed) *Statistical Challenges of Astronomy III*, Springer-Verlag, New York, 255–264.
53. Sutherland, P., Rossini, A., Lumley, T., Dickerson, J., Cox, Z., and Cook, D. (2000). Orca: A Visualization Toolkit for High-Dimensional Data. *Journal of Computational and Graphical Statistics*, 9(3):509–529.
54. Symanzik, J., Cook, D., Lewin-Koh, N., Majure, J. J., and Megretskaja, I. (2000). Linking ArcView 3.0 and XGobi: Insight Behind the Front End. *Journal of Computational and Graphical Statistics*, 9(3):470–490.
55. Meyer, D. and Cook, D. (2000). Visualization of Data. *Current Opinion in Biotechnology*, 11:89–96.
56. 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.
57. 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.
58. 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.
59. 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.
60. 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>.
61. 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/>.
62. 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/>.
63. 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>.
64. 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>.

65. 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.
66. 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/>.
67. Marasinghe, M., Meeker, W., Cook, D., and Shin, T. (1996). Using Graphics and Simulation to Teach Statistical Concepts. *The American Statistician*, 50:342–351.
68. 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.
69. 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.
70. 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.
71. 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

72. 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>.
73. 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*.
74. 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.
75. Cook, D., Caragea, D. and Honavar, V. (2004) Visualization in Classification Problems, *COMPSTAT '04, Aug 22-27, 2004, Prague, Czech Republic*.
76. 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.
77. 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.

78. 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

79. Hofmann, H. and Cook, D. (2017) Exploratory Data Analysis using R, Available at <https://github.com/heike/data-technologies>, in development.
80. 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

81. Cook, D. (2016) The Twentieth Century Computer Graphics Revolution in Statistics. In Kostelnick, C. and Kimball, M. (Eds.) *Visible Numbers*, Ashgate Publishing Limited, UK.
82. 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.
83. 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>.
84. 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>.
85. 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>.
86. 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

87. Fostveldt, L., Shum, A., Lyttle, I. and Cook, D. (2016) What Does the Data Collected During PISA Testing of Teenagers Tell Us About Education Around the World? *Chance*, In revision.
88. 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.
89. Budrus, S., Vanderplas, S. and Cook, D. (2013) In Tennis, Do Smashes Win Matches? *Significance*, **10**(3):1740–9713.
90. Mosley, L., Cook, D., Hofmann, H., Kielion, C., and Schloerke, B. (2010) Monitoring the Election Visually, *Chance*, **23**(3):online.
91. Cook, D. (2008) From Restaurants to Climate Change. <http://plus.maths.org/issue49/index.html>

Software

R Packages, available on CRAN, or Bioconductor:

92. Lee, S., Cook, D. and Lawrence, M. (2019–) plyranges: a grammar of genomic data transformation, <https://bioconductor.org/packages/release/bioc/html/plyranges.html>.
93. Rutter, L. and Cook, D. (2019–) bigPint: Big multivariate data plotted interactively, <https://bioconductor.org/packages/release/bioc/html/bigPint.html>.
94. Tierney, N., Cook, D., McBain, M., Fay, C., O’Hara-Wild, M., Hester, J. and Smith, L. (2019–) naniar: Data Structures, Summaries, and Visualisations for Missing Data, <https://cran.r-project.org/web/packages/naniar/index.html>.
95. Spyrison, N. and Cook, D. (2019–) spinifex: Manual Tours, Manual Control of Dynamic Projections of Numeric Multivariate Data, <https://cran.r-project.org/web/packages/spinifex/index.html>.
96. Wang, E., Cook, D. and Hyndman, R. J. (2018–) sugrrants: Supporting Graphs for Analysing Time Series, <https://cran.r-project.org/web/packages/sugrrants/index.html>.
97. Cook, D., Ebert, A., Hofmann, H., Hyndman, R., Lumley, T., Marwick, B., Sievert, C., Sun, M., Talagala, D., Tierney, N., Tomasetti, N. Zhou, F., , Commonwealth of Australia AEC (2016–) eechidna: Exploring Election and Census Highly Informative Data Nationally for Australia , <https://cran.r-project.org/web/packages/eechidna/index.html>.
98. 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/>.

99. Wickham, H. and Cook, D. (2011–) nullabor: Generate lineups and roschach plots automatically. Updated 2014 to add metrics, <https://github.com/niladri/nullabor>.
100. Yin, T., Lawrence, M. and Cook, D. (2011–) ggbio: Visualization of biological data, <http://www.bioconductor.org/packages/release/bioc/html/ggbio.html>.
101. Wickham, H. and Cook, D. (2010–) tourr: Explore multivariate data using low dimensional projections, <https://github.com/ggobi/tourr>.
102. Huang, B., Cook, D. and Wickham, H. (2010–) tourrGUI: Provides a graphical user interface to the tourr package, <https://github.com/ggobi/tourr-gui>
103. 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>
104. 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.
105. 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:

106. 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.
107. Cook, D., Sutherland, P., Honavar, V., Miller, L., Suarez, M. and Jing Zhang (1999-). Limn: Visualizing extremely large data sets. <http://www.public.iastate.edu/~dicook/\Limn/index.html>.
108. Sutherland, P., Rossini, A., Lumley, T., Dickerson, J., Cox, Z., and Cook, D. (1998-). ORCA: Multivariate Data Viewers using JAVA.
109. Swayne, D., Cook, D., and Buja, A. (1990-). XGobi: software for exploratory graphical analysis of high-dimensional data using scatterplot manipulation.
110. 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

111. Videos on various topics available at <https://vimeo.com/user14048736>.

112. Majure, J. J., Cook, D., Symanzik, J., and Megretskaja, I. (1996). An Interactive Environment for the Graphical Analysis of Spatial Data. ASA Statistical Graphics Video Lending Library <http://stat-graphics.org/movies/interactive-spatial.html>.
113. 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>.
114. 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. ASA Statistical Graphics Video Lending Library <http://stat-graphics.org/movies/spatial-ecdf.html>.
115. Symanzik, J., Majure, J. J., and Cook, D. (1995). Dynamic Graphics in a GIS: Analyzing and Exploring Multivariate Spatial Data. ASA Statistical Graphics Video Lending Library <http://stat-graphics.org/movies/dynamic-gis.html>.
116. 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>.
117. 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>.
118. Swayne, D. F., Cook, D. and Buja, A. (1991) XGobi: Dynamic Graphics for Data Analysis <http://stat-graphics.org/movies/xgobi.html>.

Invited Commentary

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

Book Reviews

120. Cook, D., Wright, J. and Polak, J. (2016) Review of ‘Graphical Data Analysis with R’ by A. Unwin, *Journal of the American Statistical Society*.
121. Tyner, S. and Cook, D. (2014) Review of ‘Reproducible Research with R and RStudio’ by C. Gandrud, *The American Statistician*.
122. Cook, D. and Hofmann, H. (2011) Review of ‘R Graphics (2nd ed)’ by P. Murrell. *Journal of Statistical Software*.
123. Wickham, H. and Cook, D. (2006) Review of ‘R Graphics’ by P. Murrell. *The American Statistician*.
124. Cook, D. (2002) Review of ‘The Visual Display of Quantitative Information (Second Edition)’ by E. Tufte. *SIAM Review*.

125. 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.

Blog

In 2014, I began a blog called *Visiphilia*, available at <http://www.dicook.org>. The posts include

- Apr 22, 2018 Analysing my energy usage
- June 24, 2016 A quick look at the effect of BREXIT on exchange rates
- June 18, 2016 Using MDS to virtually re-construct a sculpture
- May 26, 2016 Explore Australian elections data with R
- April 3, 2016 Pedestrian patterns in Melbourne CBD
- December 26, 2015 Better cricket plots
- September 28, 2014 How good is Nick Kyrgios?
- September 25, 2014 Facetted barcharts, and fluctuation diagrams are good alternatives to stacked barcharts
- September 13, 2014 A Graphical Expedition into a Statistics Gradebook

Invited Talks

1. Sep 18, 2019 Statistics on Street Corners, CSIRO Data61, Canberra, Australia
2. Aug 18-23, 2019, *Building plots to explore data* 62nd ISI World Statistics Congress, Kuala Lumpur, Malaysia
3. Aug 14, 2019 *Human vs computer: In Visualising Data, Who Wins?* DSSV '19, Kyoto, Japan
4. Jul 30, 2019, *Give Your Statistician Colleague Iris Bulbs for Their House Warming!* JSM 2019, Denver, Colorado
5. Oct 15, 2018 *Human vs computer: when visualising data, who wins?* Belz Lecture, Statistical Society of Victoria
6. Sep 12, 2018 *Visualisation of high-dimensional spaces with application to econometric data and models* Melbourne Uni, Melbourne, Australia
7. Jul 30, 2018 *EDA: A Historical Perspective and a Path Forward* JSM 2018, Vancouver, Canada
8. Aug 28, 2018 *Visualisation of high-dimensional particle physics* IASCB-ASC 2018, Melbourne, Australia
9. Mar 7, 2018 *Myth busting and apophenia in data visualisation: is what you see really there?* Ihaka Lecture, University of Auckland, NZ (named lecture).

10. Feb 12, 2018 *Visualising high-dimensional spaces with application to particle physics models*, NUS/IMS Workshop and Tutorial on Social Networks, Singapore.
11. Feb 2, 2018 *To the Tidyverse and Beyond: Challenges for the Future in Data Science*, RStudio conference, San Diego, CA (Keynote).
12. Nov 27, 2017 *Statistics on Street Corners*, Biometrics by the Border, Kingscliff, NSW (Keynote).
13. Sep 26, 2017 *Statistics on Street Corners*, Young Statisticians Conference 2017, Coolangatta, QLD (Keynote).
14. Jul 29, 2017 *A girl geek's guide to new research on interactive data visualization for statistics with lots of data*. JSM '17, Baltimore, MD.
15. May 18, 2017 *The Glue that Binds Statistical Inference, Tidy Data, Grammar of Graphics, Visual Inference*, Finance, Actuarial Studies & Statistics, Australian National University, Canberra.
16. May 19, 2017 *The Glue that Binds Statistical Inference, Tidy Data, Grammar of Graphics, Visual Inference*, School of Maths and Stats, Sydney University, Canberra.
17. Mar 3, 2017 *Accessing data and developing analysis software, to study game strategies, with examples from tennis and soccer*, ACEMS Workshop: Maths and Stats for Sports Research, Brisbane, Australia.
18. Nov 27-30, 2016 *Statistics on Street Corners*, 2016 Joint New Zealand Statistical Association/Operations Research Society of New Zealand Conference, Auckland, New Zealand (Keynote).
19. Nov 25, 2016 *The Role of Open Data, Open Source Software and Data Visualisation in Developing Quantitative Citizenship*, Auckland Teachers Day, New Zealand.
20. Oct 27, 2016 *Harnessing Crowd-Sourcing to Select Genes based on Effect Size Using Visual Inference Methods*, Vic Biostat, Melbourne, Australia.
21. Oct 20, 2016 *Taskforce on Women in R*, Women in Statistics, Charlotte, NC.
22. Oct 18, 2016 *The Role of R and Data Visualisation in Understanding Our World*, R Ladies, Melbourne, Australia.
23. May 28, 2016 *Statistics on Street Corners*, International Statistics Forum, Beijing, China (Keynote).
24. May 27, 2016 *Really? Using the nullabor package to learn if what we see is really there?*, China-R, Capital of Statistics, Beijing, China. (This meeting was started by my student Yihui Xie before he came to the USA to start a PhD. It is now larger than the largest statistics meeting in the USA.)
25. Mar 15, 2016 *Is what you see really there? Combining statistical inference with exploratory data analysis*, University of Melbourne, Australia.
26. Feb 19, 2016, *Really? Using the nullabor package to learn if what we see is really there?* WOMBAT 2016, Melbourne, Australia.

27. Dec 8, 2015 *Is what you see really there? Combining statistical inference with exploratory data analysis*, Bayes on the Beach, Surfers Paradise, Australia (Keynote).
28. Dec 2, 2015 *Visualisation in Big Data Analysis: Constructing useful plots, using interactivity, incorporating inference*, Research School of Finance, Actuarial Studies and Applied Statistics Summer Camp, Murrumurang, Australia (Plenary).
29. Nov 4, 2015 *Statistical Inference by Crowd-Sourcing*, Cornell University, Ithaca, NY.
30. Sep 24, 2015 *Is what you see really there?*, Big Data Visual Analytics '15, Hobart, Australia (Keynote).
31. Jul 2, 2015 *A survey of two decades of efforts to build interactive graphics capacity in R*, UseR '15. Aalborg, Denmark (Keynote).
32. Jun 29, 2015, *Eye-balling is OK again: Using an eye-tracker to see how people read data plots*, Data meets Vis: Interactions and Interactivity, Augsburg, Germany.
33. Jan 19, 2015 *Data Visualization and Statistical Graphics in Big Data Analysis*, Statistical Inference, Learning and Models for Big Data, Boot Camp, Fields Institute, Toronto, Canada.
34. Aug 3, 2014 *Harnessing Crowd-Sourcing to Select Genes based on Effect Size Using Visual Inference Methods*, JSM '14, Boston, MA.
35. Jul 11, 2014 *Statistical Inference by Crowd-Sourcing*, ASC, Sydney, Australia.
36. Apr 21, 2014 *Statistical Inference by Crowd-Sourcing*, Montana State University, Bozeman, MT.
37. Feb 18, 2014 *Statistical Inference by Crowd-Sourcing*, Michigan State University, East Lansing, MI.
38. Aug 4 2013 *Big Data and R, Discussant*, JSM '13, Montreal, Canada.
39. Jun 10, 2013 *Recent Advances in Visualization Techniques*, NCSES Digital SEQ, Washington, DC.
40. Oct 18, 2012 *Statistical Inference for Data Visualization*, Carl Morris Honorary Symposium, Washington D. C. Video available at <http://www.youtube.com/watch?v=3CqQcxYtmQ&feature=youtu.be>
41. Jun 19, 2012 *Every Plot Must Tell a Story*, Keynote address, useR! 2012, Nashville, TN.
42. May 16, 2012 *ggbio: Extending the Grammar of Graphics to Genomic Data*, Interface Between Statistics and Computing Science, Houston, TX.
43. Feb 20, 2012 *An Overview of Statistical Inference*, Dagstuhl Information Visualization, Visual Data Mining and Machine Learning, Dagstuhl, Germany,
44. Feb 13, 2012 *Overview of Biological Visualization*, ISU BCB Seminar Series, Ames, IA.
45. Oct 20, 2011, Christian Petersen Art Museum, Morrill Hall *Show Me the Data*, Ames, IA.
46. Aug 1 2011 *Visualizing Climate Change Data*, JSM 2011, Miami, FL.

47. Aug 2 2011 *Introductory Overview Lecture: Statistical Graphics*, JSM 2011, Miami, FL.
48. Jun 3 2011 *Exploring Dose Response Data and Repeated Measures Data Using Interactive Graphics*, SCVMMI, Dubuque, IA.
49. Apr 22 2011 *Statistical Inference for Visual Methods*, International Indian Statistical Association, Raleigh, NC.
50. Feb 16 2011 *Visual communication*, CEAH Colloquium, Ames, IA.
51. Feb 8 2010, Iowa State University *Statistical Inference for Visual Methods*
52. Oct 15 2009, University of Washington, St Louis *Statistical Inference for Visual Methods*
53. Aug 18 2009, ISI 2009, Durban, South Africa *Using R and GGobi to Enhance the Learning of Multivariate Analysis and Data Mining*.
54. 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*
55. Mar 27 2009, Second Midwest Statistics Research Colloquium, University of Chicago, *Exploring Longitudinal Data: A Peek at Workforce Experiences*.
56. Feb 23 2009, Mathematics on the Road Experience, Prairie Lakes AEA, *From Restaurants to Climate Change: Using Statistics to Understand Our World*.
57. Feb 10 2009, Houston Chapter of the American Statistical Society, *Statistical Inference for Visual Methods*.
58. 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*.
59. Jun 25 2008, Data Vis VI, Bremen, Germany *Categorical Variable Linking for Exploring Longitudinal Data*
60. May 30 2008, Seminar in Statistik, ETH, Zurich *Using R and GGobi for Exploratory Data Analysis*.
61. May 29 2008, Zürcher Kolloquium, ETH, Zurich *Exploring Longitudinal Data: A Look at Workforce Experiences*.
62. 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*.
63. Jan 10 2008, Contemporary Frontiers in High-Dimensional Statistical Data Analysis, *Statistical Looking at Models in High-Dimensional Data Space*.
64. Aug 2007, Introductory Overview Lecture, JSM '07, *Improving Statistical Posters*.
65. Aug 2007, JSM '07, *Exploring models for clustering data*.
66. Dec 2006, University of Auckland, New Zealand, May 2006, University of California, Los Angeles *An EDA of my CDs*.

67. Oct 2005, “Gold Standard(s)” for Education conference, *Graphics for Multivariate Data*, Vancouver Island, BC, Canada.
68. Mar 2005, University of Iowa *Exploring Microarray Data with Plots*
69. Jul 15 2004, International Federation of Classification Societies annual meeting, Chicago, IL *Visualizing Class and Cluster Structure beyond 3D*.
70. 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*.
71. Mar 16 2004, Department of Statistics, Macquarie University, Sydney, Australia, Apr 21 2004 CSIRO, Sydney, Australia *Data through the windshield in p-dimensions*.
72. Feb 27 2004 Sydney Summer Statistics Workshop, Sydney University, Australia, *EDA using Direct Manipulation Graphics*.
73. 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*.
74. 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.)
75. Dec 13 2002 Department of Statistics, Harvard University *Classification Tours Applied to Microarray Data*.
76. 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*.
77. Sep 12-13 2002 Cambridge HealthTech Institute Conference, Washington, DC, *Visualization of Microarrays Using Tours and Projection Pursuit*.
78. Jul 11 2002 University of Augsburg, Germany, *Limn: Using Movie Technology to Drive Graphics for Massive Amounts of Data*.
79. Jul 15-19 2002 Current Advances and Trends in Nonparametric Statistics, Crete, Greece, *Understanding Support Vector Machine Classifiers using Graphics*.
80. Apr 9, 2002 Geology Department, ISU, *Dynamic Graphics for Multivariate Space-Time Data*
81. Dec 10-14 2001 American Geophysical Union San Francisco, *Visual Data Mining of Large, Multivariate Space-Time Data*.
82. Oct 2001 Department of Statistics, Macquarie university, Australia, *Visual Data Mining: Interactive Dynamic Graphics for Data Analysis*.
83. Jul 2001 Workshop on Statistical Challenges in Modern Astronomy, Penn State University, State College, PN *Interactive and Dynamic Graphics for Data Analysis*.

84. May 2001 Dept of Statistics, University of Western Australia *Visual Data Mining: Interactive Dynamic Graphics for Data Analysis.*
85. 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.*
86. 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.)
87. Nov 2000 Dept of Statistics, Southern Methodist University, Dallas, TX *Visual Methods for Classification Problems.*
88. Jul 2000 NRCSE/GSP Workshop, Boulder, CO (Invited) *Issues and Approaches for Visualization of Large Multi-Dimensional Data.*
89. Mar 2000 Statistical Society of South Australia Annual General Meeting, Adelaide, Australia *Stopping to Look at the Flowers.*
90. Apr 2000 Roche, Sydney, Australia *Interactive and Dynamic Graphics for Data Analysis using XGobi* (Translated to Japanese).
91. Dec 1999 AT&T Labs, Florham Park, NJ *ORCA: A Visualization Toolkit for High-dimensional Data.*
92. Aug 1999 Joint Statistical Meetings, Baltimore, MD *ORCA: Multivariate (Space-Time) Data Viewers* (Technical exhibit).
93. May 1999 Large Data Sets workshop, University of Waterloo *Visualizing Cluster Structure in Large Data Sets.*
94. Jul 1998 Statistics and the Internet workshop, NJ *VRML in Statistical Applications* (With Kathy Shelley, Chuck Peterson).
95. Jul 1998 Pfizer Central Research, Mar 1998 University of Puerto Rico, *Recent Developments in Exploring Data with Interactive Dynamic Graphics.*
96. Apr 1998 ENAR 98, Albany, NY. *Statistics, GIS, Graphics and Computing.*
97. 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.*
98. Jul 1997 Stanford University, Jul 1998 Data Visualization in Statistics workshop. *Manual Controls for High-Dimensional Data Projections.*
99. Aug 1997 ISI, Istanbul, Turkey *Using Dynamic Statistical Graphics in a Highly Immersive Virtual Reality Environment to Understand Multivariate Spatial Data.*
100. Aug 1997 Joint Statistics Meeting '97 *Immersed in Statistics: Your Worst Nightmare or Your Wildest Dream?*
101. Aug 1997 Joint Statistics Meeting '97 (Organizer/Chair.) *Publishing in the Electronic Age.*

102. Aug 1997 Joint Statistics Meeting '97 *Using Graphics to Teach Statistics and Statistics to Teach Graphics* (Discussant of Session.)
103. 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.*
104. Jul 1996 Interface between Computing Science and Statistics '96, Sydney, Australia *Escape From Pillai Trace?*
105. Mar 1996 Physics Dept, University of Illinois, Champaign *Exploring Multivariate Relations in High Energy Particle Physics Data Using the Grand Tour and Projection Pursuit.*
106. Nov 1995 VI CLAPEM, Viña del Mar, Chile. *Data Through the Windshield in p-Dimensions.*
107. Aug 1995 Joint Statistics Meetings, Orlando, FL. *Through the Windshield in p-Dimensions.*
108. Jun 1995 Interface '95, Pittsburgh, PA. *Spatial CDF Estimation and Visualization with Applications to Forest Health Monitoring.*
109. Jun 1995 Interface '95, Pittsburgh, PA. *Grand Tour and Projection Pursuit.* (Journal of Computational and Graphical Statistics Invited paper.)
110. Oct 1995 39th Annual Fall Technical Conference, St Louis, MO. *Discussant to "Graphics for Assessing the Adequacy of Regression Models (Dennis Cook)".*
111. May 1995 ENAR 95, Birmingham, AL. *'Tours' into Data Analysis.*
112. Aug 1994 COMPSTAT '94, Vienna, Austria. *Dynamic Graphics for Some Spatial Statistics in a GIS.*
113. 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.)
114. 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.*
115. Oct 1992 Visualization '92, Workshop on Multivariate/Multidimensional Data Visualization and video contribution to tutorial session. *Grand Tour and Projection Pursuit.*
116. 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.)

Workshops Delivered

1. Sep 18, 2019 *Visualization of Data*, CSIRO Data61, Canberra, Australia.
2. Jul 25-27, 2019 *Visualization of Big Biomedical Data*, SISBID '19, Seattle, WA (with Heike Hofmann).
3. Jul 9-12, 2019 *Visualization of Data*, useR! 2019, Toulouse, France.
4. Jul 25-27, 2018 *Visualization of Big Biomedical Data*, SISBID '18, Seattle, WA (with Heike Hofmann).
5. Nov 26, 2017 *Exploring data and models visually*, Biometrics by the Border, Kingscliff, NSW.
6. Sep 25, 2017 *Developing Your Career to Thrive in a Data-rich, Technology-driven, Reproducible Research Environment*, Young Statisticians Conference 2017, Coolangatta, QLD.
7. Jul 12-14, 2017 *Visualization of Big Biomedical Data*, SISBID '17, Seattle, WA (with Heike Hofmann).
8. May 30, 2017 *Visualisation for Data Mining*, A Week of Data Science Melbourne, Vic, slides at <http://bit.ly/dmvis2017>.
9. Apr 27, 2017 Model Creation and Validation, *Data Science for Managers*, Melbourne, Australia.
10. Apr 27, 2017 Fundamentals of Statistics, *Data Science for Managers*, Melbourne, Australia.
11. Apr 27, 2017 Data wRangling, *Data Science for Managers*, Melbourne, Australia.
12. Dec 1, 2016 *Visualising data with R*, NZSA/ORSNZ Conference 2016, Auckland, New Zealand
13. Oct 23, 2016 *Empowering Women with Self-defense Skills using R* (with Heike Hofmann and Sam Tyner)
14. Oct 11, 2016 Model Creation and Validation, *Data Science for Managers*, Melbourne, Australia.
15. Oct 11, 2016 Fundamentals of Statistics, *Data Science for Managers*, Melbourne, Australia.
16. Oct 11, 2016 Data wRangling, *Data Science for Managers*, Melbourne, Australia.
17. Jul 13-15, 2016, *Visualization of Big Biomedical Data*, SISBID '16, Seattle, WA (with Heike Hofmann).
18. Jun 30, 2016 *Introduction to Multilevel Models with R*, ISCR, Melbourne, Australia.
19. May 24-26, 2016 *Introduction Exploring Data with R*, Remin University, Beijing, China.
20. May 20, 2016 *Introduction to Data Analysis and Visualisation with R*, ISCR, Melbourne, Australia.
21. Apr 12, 2016 Data wRangling, *Data Science for Managers*, Melbourne, Australia.

22. Mar 31, 2016 *Big Data Challenge Day*, Monash University, Australia.
23. Feb 23-25, 2016 *R Bootcamp for Honors students*, Monash University, Melbourne, Australia.
24. Jul 8-10, 2015, *Visualization of Big Biomedical Data*, SISBID '15, Seattle, WA (with Hadley Wickham).
25. May 15-18, 2015 *Working with R to Analyze and Plot Data*, ASA travelling workshop, Los Angeles, Orange County, San Diego, CA.
26. Feb 1-4, 2015, *Data Visualization: Discover, Explore and be Skeptical*, Programm Doctoral en Statisttique et Probalitités Appliquées, Les Diablerets, Switzerland.
27. Sep 25-27, 2013 XXVIII Foro Nacional de Estadística, *Visual Methods for Multivariate Analysis*, Aguascalientes, Mexico.
28. May 13-17, 2013 NCAR, IMAGE, *Visualization of Climate Change*, Boulder, CO.
29. Apr 9-11, 2013 CENSUS, *Interactive Graphics for Data Analysis*, Washington, DC.
30. Oct 14, 2012 InfoVis '12 *Visualizing data in R and ggobi*, Seattle, WA.
31. Aug 15-18 2011 *SARMA/TIES workshop on visualization of climate data*, <http://www.nrcse.washington.edu/NordicNetwork/visual1.html>, Reykjavik, Iceland.
32. Jul 30-31 2009 GGobi Foundation workshop, Washington DC *Looking at Data*
33. Jun 17-19 2009 34th Annual Summer Institute of Applied Statistics, Brigham Young University, *Exploring Data Visually*.
34. Oct 20-21 2008 Army Conference on Applied Statistics *Introduction to R*.
35. Oct 31, 2007, Infovis 2007 Tutorial, *Looking at Data*, Sacramento, California (Half-day, joint with Hadley Wickham, Deborah Swayne).
36. 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).
37. Jun 18 2006, UCLA Program for Undergraduates, Visualization and its Role in the Practice of Statistics (Half-day hands-on workshop).
38. Jul 29-30 2004, XLSolutions, Boston, MA *Interactive and Dynamic Graphics for Data Analysis Using XGobi/GGobi* (Two day hands-on workshop).
39. May 28-30 2003, Alaska Chapter of the American Statistical Association meeting, Hatcher's Pass, Alaska *Multivariate Data Visualization* (Two day hands-on workshop, joint with Heike Hofmann).
40. Feb 2001, Dept of Fisheries, Iowa, *Interactive Dynamic Graphics for Data Analysis* (Full day hands-on workshop).
41. Oct 2000, 3D Visual Data Mining group, Aalborg, Denmark. *Interactive Dynamic Graphics for Data Analysis: A series of seminars*.

42. 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).
43. Oct 1999 Pfizer Inc, Groton. CT *Interactive Dynamic Graphics for Data Analysis* (Two full morning workshops).
44. 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).
45. 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).
46. Aug 1997 KDD '97, Newport Beach, CA. *Role of Visualization in Data Analysis/Data Mining*. (Invited tutorial, joint with Deborah Swayne.)
47. 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).
48. Feb 1996 Workshop on Computer Intensive Statistics and Applications in the Atmospheric Sciences, San Francisco, CA. *Dynamic Graphics for Multivariate Spatial Data* (Tutorial).
49. Jun 1994 Interface'94, Research Triangle Park, NC. *Data Analysis using Interactive Dynamic Graphics: An Introduction to XGobi* (Invited tutorial, joint with Deborah Swayne).

Grants

Research

R Consortium, 2018-2019 \$50000

Australian Research Council (co-CI with German Valencia, Csaba Balacz) 2017-2019 \$394000

R Consortium, 2017-2018 \$25000

National Science Foundation (co-PI with Amy Froelich) (2013-2015) ~\$180000

USDA (PI) 2013-2015 ~\$70000

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

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

Monash University

- Normal teaching load is 2 units (6 hours face time) per year.
- ETC3250 is a new course, and I jointly created content with Dr Rob Hyndman and Dr Souhaib Ben Taieb. I also added a data competition component.
- ETC2420/5242 is a complete re-design of existing courses. It is now focused on modern computational methods for statistical thinking. I also added a data competition component.

ETC2420/5242 Statistical Methods for Insurance	S2 2016
ETC3250 Business Analytics	S2 2016
ETC3250 Business Analytics	S2 2015

Honours supervisions:

Huize Zhang	2019
Jeremy Forbes	2018
Jason Tran	2017
Michael Kipp	2017
Gavin Chin	2017
Nathaniel Tomasetti	2015
James Maine	2015

Undergraduate project supervisions:

Pat Healy	2018
Huize Zhang	2018
Jeremy Forbes	2017
Dean Dagan	2017
Stephanie Kobakian	2016
Braden Churcher	2016
Alwin Wang	2016
Madeline Jom	2016

Google Summer of Code supervisions:

Sayani Gupta	2019
Earo Wang	2017
Lindsay Rutter	2017
Barret Schloerke	2016
Haley Jeppson	2016
Md-Nafiz Hamid	2015
Xiaoyue Cheng	2013

Iowa State University

- 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 online.
- Materials including videos explaining concepts and multivariate graphics for Statistics 407 are publicly available online..
- 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.

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	Ryan Thompson (EBS, Mar 2023)
	Nicholas Spyrison (FIT, Mar 2022)
	Sayani Gupta (EBS, Mar 2022)
	Stuart Lee (EBS, Mar 2021)
	Earo Wang (EBS, Mar 2020)
	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, Shandong Agricultural University)
	Michael Lawrence (PhD in BCB, May 2008, 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
Danny Bero (May 2015)	
Justin Zwolski (Dec, 2015), Jessica Short (May 2015)	
Xiaoping Wang (Jul 2014), Omesh Johar (Aug 2014)	
Yifan Zhao (Jul 2012)	
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)	

Service

Broader Community: Program chair useR! 2018, Brisbane (first time to be held in Australia); Organiser WOMBAT MeDaScIn 2017, a week of Data Science, Melbourne (sold out 350 attendees); Chair-elect, Chair, past-Chair, American Statistical Association, 2017-2019; Editor, Journal of Computational and Graphical Statistics, 2016-2018; Organiser, WOMBAT 2016, Melbourne; Guest Editor, Statistical Science, Special Issue on Future of Statistical Computing 2013 ; Session organizer, Interface 2012 ; Associate Editor, Environmetrics 2011-2015; 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 ; Associate Editor, Journal of Computational and Graphical Statistics, 2006-2015; 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, Friburg, 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 and University of Auckland PhD theses.