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Education:

Sept. 1971 –
June 1975

Department of Statistics, Princeton University
Princeton, N.J.
Degrees: Ph.D. 1975; M.A., 1973
Ph.D. topic: Non-linear Data Smoothing
Advisor: John W. Tukey

Sept. 1967–
June 1971

Dartmouth College, Hanover, NH.
Degree: A.B., 1971, Magna cum laude
Major: Mathematics and Social Science

Honors:

MacIntyre Award for Exemplary Teaching, 2013

Golden Key Honorary member, 2004

EDUCOM Medal (1998) (Only statistician to be awarded this medal.) for innovative use of technology in teaching

ICTCM Award for Excellence and Innovation with the Use of Technology in College Mathematics (1997)

Fellow of the American Statistical Association (1984)

Fellow of the American Association for the Advancement of Science

Phi Beta Kappa Honor Society (1971)

Experience:

July 1981 –

Associate Professor, Department of Social Statistics, School of Industrial and Labor Relations, Cornell University, Ithaca, NY.

1985 –

Founder, CEO, and Chief Scientist, Data Description, Inc., Ithaca, NY.

June 1975 –

Assistant Professor, Department of

June 1981	Social Statistics, School of Industrial and Labor Relations, Cornell University, Ithaca, NY.
July 1979 – August 1979	Visiting Associate Professor, Department of Statistics, Pennsylvania State University.
July 1977	Research Associate, Department of Statistics, Harvard University.

Publications:

Books

Intro Stats, with Richard DeVeaux and David E. Bock, Boston MA, Pearson, 2004; second edition, 2009; third edition, 2012, fourth edition, 2014.

Stats: Data and Models, with Richard DeVeaux and David E. Bock, Boston MA, Pearson, 2006; second edition, 2008, third edition 2011, fourth edition under contract 2016.

Stats: Modeling the World, with Richard DeVeaux and David E. Bock, Boston MA, Pearson, 2005; second edition, 2007, third edition, 2015.

Business Statistics, with Norean Sharpe and Richard DeVeaux, Boston MA, Pearson, 2010, second edition, 2012, third edition 2015.

Business Statistics; a First Course, with Norean Sharpe and Richard DeVeaux, Boston MA, Pearson, 2011, second edition 2014.

Stats in Your World, with David Bock, Tom Mariani, Bill Craine, and Richard De Veaux, Boston MA, Pearson, 2012, second edition under contract, 2016.

Data Desk Handbook, Statistics Guide, Reference Guide, and Quickstart Guide Ithaca, NY, Data Description. sixth ed., revised and extended, 2014.

Learning Data Analysis with Data Desk, Reading, MA, 3rd edition, Addison Wesley 1997. (earlier editions were published by W.H. Freeman, New York.)

Applications, Basics, and Computing of Exploratory Data Analysis, with David Hoaglin, Duxbury Press, 1981.

LEDA and The SWAN, with Thomas E. Kurtz, Kiewit Computation Center, Hanover, N.H., 1976.

Multimedia textbooks

ActioStats 2.0, Reading, MA, Addison Wesley Interactive, 1998, 2000, 2003, 2005, 2007

ActioStats with Excel, Reading, MA, Addison Wesley Interactive, 1999, 2003

ActioStats for SPSS, Reading, MA, Addison Wesley Interactive, 2000, 2003

ActioStats for JMP, Reading, MA, Addison Wesley Interactive, 2000, 2003

ActioStats for Minitab, Reading, MA, Addison Wesley Interactive, 2000, 2003

Teaching Aids

Instructors' Resource Guide to accompany *Intro Stats*, with Richard DeVeaux and David Bock. Addison Wesley 2004, revised editions in 2006, 2009, 2014

Instructors' Resource Guide to accompany *Stats: Modeling the World*, with Richard DeVeaux and David Bock, Addison Wesley 2005, revised 2007, 2015

Instructors' Resource Guide to accompany *Stats: Data and Models*, with Richard DeVeaux and David Bock, Addison Wesley 2005, 2014

Instructors' Resource Guide to accompany *Business Statistics*, with Richard DeVeaux, Addison Wesley 2005, 2015

Internet Resource

DASL, *The Data And Story Library*, a free source of real-world data for statistics teaching, published online at *StatLib*, <http://lib.stat.cmu.edu/DASL/DataArchive.html>

Articles

"Let's All Write and Teach with e-Books!" Invited discussion, to appear in *Technology Innovations in Statistics Education*, 2014.

"Radiographic detection of long screw placement during volar plating of the distal radius," Jason Sullivan M.D., Randy Bindra M.D., Cari Cordell M.D., William Lanzinger M.D., Michael Bednar M.D., Terry Light M.D., Paul Velleman Ph.D., submitted to *The Journal of Bone and Joint Surgery*.

"Hand Dexterity in Children: Administration and Normative Values of the Functional Dexterity Test (FDT), Gloria R Gogola, MD, Paul F Velleman, PhD, Shuai Xu, BS, MS, Adrienne M Morse, BA. Barbara Lacy BS, Dorit Aaron, MA OTR CHT FAOTA, *Journal of Hand Surgery* 2012

"Data Desk: an interactive package for data exploration, display, model building, and data analysis," *WIRES Comput Stat* 2012. doi: 10.1002/wics.1208

"Exploratory Data Analysis," with David C. Hoaglin, *APA Handbook of Research Methods in Psychology: Vol. 3. Data Analysis and Research Publication*, 2012, H. Cooper (Editor-in-Chief), Chapter 3, pp 51-70.

"A Randomized Controlled Study of Contrast Baths on Patients with Carpal Tunnel Syndrome," with Robert G. Janssen and Deborah A. Schwartz, 2009, *Journal of Hand Therapy*.

"Trends in Dexterity and Normative Values for the Functional Dexterity Test (FDT)," SS Gray, PF Velleman, DH Aaron, BW Rose, GR Gogola, *Journal of Hand Therapy* 2011, 24 (4), 385.

"Hand Dexterity Values for 3-to 17-Year-Old Typically Developing Children," GR Gogola, B Lacy, AM Morse, D Aaron, P Velleman, *Journal of Hand Therapy*, 2010, 23 (4), e2

"Statistics and Hand Surgery," *The Journal of Hand Surgery*, 2010, 35 (5), 862 (refereed letter to the editor)

"Math is Music; Statistics is Literature," with Richard DeVeaux, *Amstat News*, Sept 2008, No 375, p. 54.

"Looking at Blood Sugar," with Wainer, H., *Chance* (2008), **21**:4

"Giving the Finger to Dating Services," with Lee, G. and Wainer, H., *Chance* (2008), **21**:3.

"Truth, Damn Truth, and Statistics," (July, 2008), *Journal of Statistics Education*, Volume 16, Number 2, <http://www.amstat.org/publications/jse/v16n2/velleman.html>

"Why Variances add – and Why it Matters," with David Bock, Chapter 25 of the 2006 NCTM Yearbook, *Thinking and Reasoning with Data and Chance*, National Council of Teachers of Mathematics, Reston, VA.

"Statistical Graphics: A guidepost for scientific discovery" with Howard Wainer, *Complementary Research Methods*, 2006, 503-519.

"Statistical Graphics: Mapping the Pathways of Science" with Howard Wainer, *Annual Review of Psychology*, **52**, 2001.

"Blocked Adaptive Computationally-efficient Outlier Nomination," with Nedret Billor and Ali Hadi., *Computational Statistics and Data Analysis*. 2000, **34**, 279-298

"Design Principles for technology-based statistics education," *Metrika*, with David Moore, **51**(1), 2000, 91-104.

"Shake, rattle and roll: some perturbation tools for analysis of regression data." With John Nash and Richard Goldstein, *Proceedings of the 31st Symposium on the Interface*, 1999, Berk and Pourahmadi (eds.), Interface Foundation of North America, 287-291.

"The Philosophical Past and The Digital Future of Data Analysis: 375 years of Philosophical Guidance for Software Design," *The Practice of Data Analysis, Essays in Honor of John W. Tukey*, D. R. Brillinger, L.T. Fernholz, S. Morgenthaler, eds., pp 317-337, Princeton University Press, 1998.

"Discussion" of Hand's article on scale types, *Journal of the Royal Statistical Society*, 1997. (An invited discussion of a featured article by Hand.)

"Multimedia for Teaching Statistics: Promises and Pitfalls," with David S. Moore, *The American Statistician*, August 1996.

"A Critical Look at Some Analyses of Major League Baseball Salaries," with D. Hoaglin, *The American Statistician*, 1995.

"Electronic Publication of Journals, Ready or not, Here it comes," with D. Solomon, B. Trumbo, and Tim Arnold, *The American Statistician*, 1994.

"A Debate on Scale Types" with Warren Sarle *Statistical Consultant Newsletter* 1994

"Nominal, Ordinal, Interval, and Ratio Typologies are Misleading" with Leland Wilkinson. *The American Statistician*.47:1, February, 1993, 65-72. Anthologized in *Categorical Data Analysis*, Keming Yang (ed) SAGE Publications Ltd, June 2014.

"Measurement Theory: Fallacies & Transformations," a debate with Warren S. Sarle, *The Statistical Consultant*, 10:3, Winter, 1993

"Teaching Statistics with Computers" with Ronald Thisted, in *Perspectives on Contemporary Statistics*, MAA Notes Series, 1992, Vol 21.

"Data Analysis" with David Hoaglin. in *Perspectives on Contemporary Statistics*, MAA Notes Series, 1992, Vol 21, pp. 19-39.

"Serendipitous Data and Future Statistical Software," *The Future of Statistical Software: Proceedings of a Forum*, Panel on Guidelines for Statistical Software, National Research Council; 1991, pp 15-22.

"A Graphical Interface for Data Analysis", with Paul Pratt *Journal of Statistical Computation and Simulation*, **32**, Vol 32, 1989, pp. 223-228.

Discussion of "Diagnosing Near Collinearities in Least Squares Regression", by G.W. Stewart, with A. Hadi *Statistical Science* 1987.

Discussion of "Influential Observations, High Leverage Points, and Outliers in Linear Regression", by S. Chatterjee and A. Hadi, *Statistical Science*, **1**, 1986, 412-413.

"Efficient Scores, Variance Decompositions, and Monte Carlo Swindles", with Iain Johnstone, *Journal of American Statistical Association*, **80**, December 1985, 851-862.

"The Resistant Line and Related Regression Methods", with Iain Johnstone, *Journal of American Statistical Association*, **80**, December 1985, 1041-1054.

"Ethnic Residential Concentration and the Protected Market Hypothesis", with Aldrich, Cater, Jones and McEvoy, *Social Forces*, 1985.

"Comment on 'More Intelligent Statistical Software and Statistical Expert Systems: Future Directions'" *The American Statistician*, **39**, February 1985, 10-11.

"Generating Test Data with Independently Controllable Features for Multivariate General Linear Forms", with R. Heiberger and A. Ypelaar, *Journal of the American Statistical Association*, **78**, September 1983, 585-595.

"Using Exploratory Data Analysis to Monitor Socioeconomic Data Quality in Developing Countries", with David Williamson, in *Statistical Methods and the Improvement of Data Quality*, T. Wright (ed.), Academic Press, 1983, 177-192.

"Interactive Regression Modeling: Response", with Harold Henderson, *Biometrics*, **38**, June 1982, 513-516.

"Applied Nonlinear Data Smoothing", in *Sociological Methodology*, 1982, Samuel Leinhardt (ed.), Josey-Bass, 141-177.

"Building Multiple Regression Models Interactively," with Harold Henderson, *Biometrics*, **37**, June 1981 391-411.

"Efficient Computing of Regression Diagnostics", with Roy E. Welsch, *American Statistician*, **37**, November 1981, 234-242.

“Constructing Regressions with controlled Features: A Method of Probing Robust Regression Performance”, with Agelia Ypelaar, *Journal of the American Statistical Association*, **75**, December 1980, 839–844.

“Definition and Comparison of Robust Nonlinear Data Smoothing Algorithms”, *Journal of the American Statistical Association*, **75**, September 1980, 609–615.

“Robust Non-linear Data Smoothers: Definition and Recommendations”, *Proceedings of the National Academy of Sciences*, **74**, February 1977, 434–436.

“On Evaluating Interactive Statistical Program Packages”, with Roy Welsh, *Communications in Statistics (B)*, 1977, 197–205.

“Criteria and Considerations in the Evaluation of Statistical Program Packages”, with Ivor Francis and Richard M. Heiberger, *The American Statistician*, **29**, February 1975, 52–56.

“Project IMPRESS, Several Perspectives: Interactive Computing and Data Analysis”, *Behavioral Research Methods and Instrumentation*, **6**, March 1974, 248–253.

An overview of one of the first interactive data analysis programs.

“MECCA Users Manual”, in *The Impress Manual*, Project IMPRESS, Hanover, N.H.; 1971, 122–164.

Letters and Notes

Letter to the Editor, *Journal of Hand Surgery*, re: Song, Haas, and Chung article *Applications of Statistics in Hand Surgery*. 2010.

“Editor’s Notes” Commentary, *The American Statistician*.47:1, February, 1993,46-47.

“Nominal, Ordinal, Interval, and Ratio Typologies are Misleading; Response,” with Lee Wilkinson, *The American Statistician*, 47:4, November 1993, 315-316.

Book Reviews

Information Graphics, *Journal of the American Statistical Association*., 1999

The Practice of Data Analysis, Essays in Honor of John W. Tukey, *Journal of the American Statistical Association*. December 1998.

Computation for the Analysis of Designed Experiments, *Journal of Quality Technology*, July 1991

Residuals and Influence in Regression, *American Scientist*, 1984

Monte Carlo Studies on Robustness, *Journal of the American Statistical Association*, **76**, September 1981, 752–753.

Proceedings of the Computer Science and Statistics: 12th Annual Symposium on the Interface. *Journal of the American Statistical Association*, **76**, June 1981, 492.

Residuals and Influence in Regression, *American Scientist*, November 1984, 636 –637.

Selected Invited Addresses

“Interacting with Students; Yesterday, Today, and Tomorrow,” Invited by the ASA Council of

Sections for the Joint Statistics Meeting, August 2014.

"Surfing the Data Deluge," Address for Math Awareness Month, Cornell University, 2012.

"Truth, Damn Truth, and Statistics," Invited presentation, Department of Statistics, the Wharton School of the University of Pennsylvania, 2009.

"Teaching Statistics to Humans." Inaugural Berk Lecture, Illinois State University, Normal, IL, 2009.

"Truth, Damn Truth, and Statistics," Invited keynote address to the second U.S. Conference on Teaching Statistics, Columbus OH, 2007.

"I Read It in the Journal. Should I Change My Practice?" Presented to the American Association for Hand Surgery annual meeting, 2007.

"The Beautiful Statistics Course," Presented to the 17th annual ICTCM conference, 2006.

"The First Statistics Course: What to teach and what to omit," Presented to the first ICOTS conference, 2005.

"Thinking with Data in Seven Unnatural Acts and Ten 400-year old Aphorisms," address invited by the mu sigma rho Statistics honor society of Virginia Tech, 2005.

"Human Limitations When Thinking with Data," capstone address, 33rd Carnegie Mellon Symposium on Cognition, 2004.

"Thinking Statistically," keynote address, Beyond the Formula Conference, 2003.

"Carving the Introductory Statistics Course" keynote address to the annual Beyond the Formula Conference, 2003. (Note: the invited Keynote speaker for this conference both opens and closes the conference with addresses. My closing address was then selected as the theme of the 2004 meeting of this conference)

"The Business Statistics Course: What's unique?" presented to the MMSMBE conference at the JSM, San Francisco, 2003.

"Statistics: Ready, Tech, Go," Keynote address to the Annual Georgia Perimeter College Mathematics Conference, 2003.

"AP Statistics: Think, Show, and Tell." National Council of Teachers of Mathematics, annual meeting 2002.

"The Technically Integrated Statistics Course," 12th annual ICTCM conference, November 2000

"Multimedia in Teaching Business Statistics," 14th Annual Conference on Statistics in the Business Curriculum, Babson College, 1999.

"Shake, Rattle, and Roll," with J Nash and R. Goldstein, 31st Annual Conference on the Interface between Computing and Statistics, Chicago 1999.

"Visualizations for Teaching Statistics," Workshop on Data Visualization, 1998.

"Technologies for Teaching: Melding the Modes," Keynote address to the 1998 ASA

Conference on Statistics Teaching, Babson College.

"Modern Statistics Teaching" presented to the 1997 International Conference on Technology in College Mathematics, Chicago, IL.

"Multimedia for Teaching Statistics," Keynote address to the 1997 SoftStat conference, Heidelberg, Germany, 1997. This work appears in the *Proceedings* as a short written paper and a CD-ROM bound with the book.

"New Multimedia Approaches for Statistics," presented to the Second World Conference of the International Association for Statistical Computing, Pasadena, 1997.

"Multimedia for Teaching Statistics," presented to AERA annual meeting, New York, April 1996.

"Multimedia tools for Statistics," special invited address, Boston chapter of ASA meeting on statistics education, March 1996.

"DASL, the Data and Story Library: An Online Resource for Teaching Statistics," with Hutcheson, M.C., Meyer, M.M., and Walker, J.H., 1996 *Proceedings* of the Statistics Education Section of the American Statistical Association.

"The Philosophical Past and The Digital Future of Data Analysis: 375 years of Philosophical Guidance for Software Design," presented to a conference in honor of John W. Tukey, Princeton, NJ, 1995.

"Designing Statistics Software," presented at the annual meeting of the American Statistical Association, 1994.

"Multimedia Promises and Pitfalls", presented at the International Conference on the Teaching of Statistics, Marrakech Morocco, July 1994.

"A Graphical Interface for the General Linear Model," *Computing Science and Statistics, Proceedings of the 25th Symposium on the Interface*, Interface Foundation of North America, published by American Statistical Association, Alexandria, VA. 1993.

"Modern Data Analysis", keynote address, conference on Computing and Statistics, Rhode Island College, 1993.

"A Critical Analysis of Some Analyses of Baseball Salaries", with David Hoaglin, Presented to the 1991 Annual Meeting of the American Statistical Association, August 1991. *Proceedings of the Statistical Graphics Section*,

"Serendipitous Data and Future Statistical Software", Presented to *The Future of Statistical Software*, a public forum presented by the Panel on Guidelines for Statistical Software of the Committee on Applied and Theoretical Statistics of the Board on Mathematical Sciences of the National Research Council, February 1991.

"Computing and Modern (Exploratory) Data Analysis", *Proceedings of the Statistical Computing Section*, American Statistical Association, Alexandria, VA., 46-54.

"Dynamic Graphics on the Desktop", Presented at the annual conference sponsored by the Delaware chapter of the American Statistical Association, April 1990.

"New Platforms for Exploratory Data Analysis", Keynote address to the NERCOMP conference on Statistics and Computing, January 1989.

"New Approaches to Data Analysis", presented to the annual meeting of the Apple University Consortium, 1989.

"Visualization; new methods and tools", Presented at a special conference on statistical computing at the University of Heidelberg, April 1989.

"Practical High-Interaction Graphics", Presented at the 5th Conference on the Scientific Use of Statistical Software, April 1989, Heidelberg.

"The Future of Data Analysis (+28)", Presented at a *festschrift* in honor of John Tukey on the occasion of his receipt of the Mony A. Ferst Award, May 1989.

"Why we Need to Rotate Plots", with Paul A. Tukey, Presented to the 1989 annual meeting of the American Statistical Association.

"The Future of Desktop Statistical Computing", Presented to the 1989 annual meeting of the American Statistical Association.

"Graphical Specification of Linear Model Designs" Presented at: Computer Science and Statistics: the 21st Symposium on the Interface", April 1989.

"Graphics for Specification: A Graphic Syntax for Statistics", Proceedings of Computer Science and Statistics: the 17th Symposium on the Interface", 1985.

"The Grouped Alternative for Fitting a Line to Y vs X ", (joint with J.W. Tukey), presented at the 1985 Annual Meetings of the American Statistical Association.

This was part of an invited session on the problem of fitting a line to bivariate data.

"Expert Software: Discussion", presented at the 1983 Annual Meetings of the American Statistical Association.

"Monte Carlo Swindles Based on Variance Decomposition", with Iain Johnstone, American Statistical Association, 1983, *Proceedings of the Statistical Computing Section*, 52-59.

"Selecting Statistics Software for Microcomputers", presented to the New Jersey Chapter of the American Statistical Association in May 1983 and to the Boston Chapter of the American Statistical Association in November 1983, both at special conferences on microcomputers.

"Using Exploratory Data Analysis to Assess Nutrition in Developing Countries", with David Williamson, presented to Special Conference on the Improvement of the Quality of Data collected by Data Collection System, Oak Ridge, TN, November 1982.

"Data Analysis on Personal Computers: Thoughts on the Coming Revolution in Statistical Computing", American Statistical Association, 1982, *Proceedings of the Statistical Computing Section*, 36-39.

"Effects of Ridge Regression on High-Leverage Points in the Data", with Carolyn Lichtenstein, presented to the 1981 annual meeting of the ENAR of the Biometrics Association.

"Do Statistics Packages Help or Hinder Data Analysis?", American Statistical Association, 1981,

Proceedings of the Statistical Computing Section.

“Regression Model Building Methods: Past, Present, and Some Thoughts About the Future”, presented at the Army Research Office Workshop in Modern Data Analysis, Raleigh, NC, June 1980.

“Some Hazards of Automated Regression”, with Harold Henderson, presented to IMS Special Topics Conference on Regression, 1979.

“Package Developers as the Salvation of the Social Sciences”, Keynote address delivered to the first annual ISSUE (SPSS users' organization) conference, Chicago, 1978.

“Computer Graphics in Statistical Software”, with Barbara F. Ryan, *American Statistical Association*, 1977, *Proceedings of the Statistical Computing Section*, 48-55.

“Evaluating Package Regression Routines”, with Jeffrey Seaman, and I.

Elaine Allen, *American Statistical Association*, 1977, *Proceedings of the Statistical Computing Section*, 82-92.

“Some Criteria for Evaluating Data Analysis Graphics Software”, *Proceedings of Computer Science and Statistics, Ninth Symposium on the Interface*, 1976, 22-27.

“Some Evaluation Criteria for Interactive Statistical Program Packages”, with Roy E. Welsch, *American Statistical Association*, 1975, *Proceedings of the Statistical Computing Section*, 10-12.

Selected Contributed Papers

“Design Considerations for Statistical Analysis Support in a Tablet Environment,” with William Sribney, Presented at the Joint Statistics Meeting, 2013.

“What to Tell Students about Student”, Presented to the Joint Statistics Meeting, 2011.

“BAC Clustering, a Robust, Computationally-Efficient Clustering Method” with John Walker. Presented to the Joint Statistics Meetings, 2001.

"Computationally Efficient Adaptive Methods for Identifying Multiple Outliers," with Ali Hadi, presented to the 1997 Joint Statistics Meetings, Anaheim, 1997.

"DASL, The Data And Story Library; An Online Resource for Teaching Statistics," with Matthew Hutcheson, Michael Meyer, and John Walker, *Proceedings of the Statistical Computing Section*, 1996, The American Statistical Association, Alexandria, VA

“The Kodiak Island Crab Fishery: A Graphical and Analytical Data Analysis” with Ali Hadi, 1990, *Proceedings of the Statistical Computing Section*, The American Statistical Association, Alexandria, VA. 275-280.

“Tukey’s Resistant Line and Related Methods: Asymptotics and Algorithms”, American Statistical Association, 1982, *Proceedings of the Statistical Computing Section*, 218-223.

“Index of Available Statistical Software”, with R.F. Kohm and T.A. Ryan, American Statistical Association, 1977, *Proceedings of the Statistical Computing Section*, 283.

“The Performance of Package Regression Routines Under Stress: A Preliminary Trial of a Regression Evaluation Method”, with I. Elaine Allen, American Statistical Association, 1976, *Proceedings of the Statistical Computing Section*, 297–304.

“Simulation Methods for Testing Non-Linear Data Smoothing Algorithms”, American Statistical Association, 1976, *Proceedings of the Statistical Computing Section*, 293–296.

“Straining Regressions”, with Ivor Francis, *Proceedings of Computer Science and Statistics, Eighth Annual Symposium on the Interface*, 1975, 122–127.

“Interactive Computing for Exploratory Data Analysis I: Display Algorithms”, American Statistical Association, *Proceedings of the Statistical Computing Section*, 142–147. 1973

Teaching

The textbooks that I've written differ from other books in the discipline in a number of important ways. Unlike other statistics texts, they assume the availability of technology. This alters many aspects of our approach to teaching the subject. The books are bound with individual CD's holding the ActivStats multimedia materials and the Data Desk statistics program (or, optionally, student versions of Minitab, JMP, SPSS, or an Excel add-in). They thus bring together much of the work I've done in Statistics Education over my career into a single coherent, innovative approach to teaching Statistics.

Courses I have developed include multivariate methods, statistical computing, and statistical graphics. Recently, I have revised the introductory statistics course to make extensive use of multimedia, web site materials, email, and in-class computer demonstrations. I have also developed that course as a distance learning course taught through Cornell Summer Session.

In Fall 2010 I developed a new course on Linear Models and began work on a textbook for that course. The approach is innovative in teaching matrix algebra alongside the statistics content. Previous courses and books have: 1) ignored matrix algebra, teaching only the use of the methods without understanding why they work, 2) assumed that students knew matrix algebra, or 3) taught a week or two of matrix methods at the start of the course.

In Spring of 2012, I plan to adapt the work for the Linear Models course in teaching a Multivariate methods course.

During my career at Cornell, I was responsible for the first introduction of computing into the introductory statistics course (ILR 210), the first use of interactive computing in a statistics course on the Cornell campus, the first use of desktop computers in a statistics course on the Cornell campus (and the availability of the first desktop computer laboratory in the ILR school, as part of a grant from Apple supporting my software development work), the first desktop-computer-based statistics software used for teaching at Cornell (and at many other schools), and the multimedia materials, *ActivStats*, now used in many Cornell statistics courses and throughout the world.

I have published widely on teaching statistics, and especially on the use of technology to enhance students' learning experiences. The EDUCOM medal acknowledges this work.

Software

I am the founder and President of Data Description, Inc., and the designer and original developer of *Data Desk*[®], a statistics program designed to support data exploration, visualization, and analysis. I continue to consult on the design and function of *Data Desk*, to provide technical advice on statistics, and to write support and educational material. *Data Desk* has earned several awards including the *MacWorld* Editors' Choice award (in 1996 and again in 1997) and the *MacUser* Eddy award.

I designed and authored *ActivStats*, a multimedia CD-ROM for teaching statistics. *ActivStats* was developed with the support of the team at Data Description with financial support from NSF and Addison Wesley Interactive. That work has been honored with the first ICTCM Award for contributions to Mathematics teaching through technology, and with the Golden Technology Award.

I designed and wrote the guidance material for *Viz!on* (pronounced "vision"), an Excel spreadsheet add-in that provides data visualization and data mining for spreadsheet data. *Viz!on* provides extensive guidance and built-in data analysis expertise. *Viz!on* was nominated for the 2000 Eddy Award.

I was principal investigator and designer of the Data And Story Library (DASL, pronounced "dazzle"). DASL is a free on-line archive of data and stories about those data indexed to facilitate their use in teaching. DASL is hosted by the Statlib site at Carnegie-Mellon University and can be found at

<http://lib.stat.cmu.edu/DASL/DataArchive.html>

The principal thrust of much of this work has been to extend, advance, and enhance statistics education and the use of technology in innovative data analysis. In recognition of these contributions, in 1998 I became the only statistician ever awarded the EDUCOM Medal, recognizing my contributions to statistics education through technology.

Other Professional Activities:

ASA Committee on Electronic Communications, Chair 2000 -2003

ASA Taskforce on Technology, 1997 - 2002

ASA Council of Sections, representing the Statistical Computing Section. 1991 - 1993.

ASA Committee on Publications, 1989 - 1992, 1993 - 1996.

Subcommittee on electronic publications

Subcommittee on copyright (chair).

Management Board for *Journal of Computational and Graphical Statistics* 1990 - 1993.

ASA Working Group on Section Newsletters, 1990 -91

ASA Working Group on color in ASA publications, 1990 -92

ASA Representative to AAAS, 1987-89, 1990-91.

Publications Liaison, Statistical Graphics Section, American Statistical Association, 1988-1990.

Chair, Editor Search Committee for *Journal of Computational and Graphical Statistics*, appointed by ASA President. 1990

Science Software Review Advisory Committee. 1987-1988.

Advisory Council, *Computers and the Social Sciences*, 1985–1987.

Associate Editor, *Journal of American Statistical Association*, Theory and Methods, 1980–1985.

Chair, Statistical Computing Section, American Statistical Association, 1985.

ASA Committee to Study the Policy of Co-Sponsorship of Meetings with Other Societies, 1984–1985.

Program Chair (1983 ASA meetings) Statistical Computing Section, American Statistical Association.

Statistical Computing Section Committee on Statistics Software Quality, 1982–1984.

University Activities

Faculty Advisory Board on Information Technology 2000 -

Chair 2011 -

Faculty Online Forum advisory board 1999 - 2004

Chair 2003 - 2005

Distance Learning Committee (1997 - 2000)

Faculty Issues subcommittee (1997 - 2000)

Chair, Dept of Social Statistics (1990 - 1993)

Strategic Planning committee on Faculty Contract (1993-1994)

University Computing Board (1980 - 1990)

Ad Hoc Committee on University Copyright Policy (1988)

ILR Computing Committee (1988 - 1992, 2001 -) (Chair 1988-1990)

ILR Director of Computing (1981 - 1987)

ILR Graduate Committee (1979 - 1982 (chair 1981 - 82)), 1993

ILR Dean Search Committees (2)

ILR Dean's *ad hoc* Advisory Committee (1990 - 92)

ILR *ad hoc* Committee on Teaching Evaluation (1991 - 92)

Consulting

The organizations for whom I have consulted include:

Bell Labs (smoothing, statistics software, data analysis)

Corning Glass Works (nonlinear smoothing)

E.I. Dupont (computer applications)

N.B.C. (election night prediction)

Polaroid (statistics software for microcomputers)

U.S. A.I.D. (nutrition survey in Indonesia)
U.S. D.O.E. (design and selection of statistics software)
U.S. E.P.A. (Love Canal Data)
U.S. Army Material Systems Analysis Activity (Two short courses on Data Analysis and Regression)
Tektronix (Statistics Software and Graphics)
Apple Computer (Software design)
N.I.H. (Exploratory data analysis)
Zipf-Davis Publishing (Data Analysis, Design of Experiments, Graphics)
Rohm and Haas (Data Analysis, Computer Applications)
RAND (Data Analysis)
Health Process Management (Data Analysis, Data Visualization)
Health Financial Analytics (Data Analysis)