

# John W. Emerson

Yale University  
Department of Statistics and Data Science  
24 Hillhouse Avenue, New Haven, CT 06511

## Education

Ph.D. Statistics, Yale University, 1994-2002. Dissertation: *Asymptotic Admissibility and Bayesian Estimation*. Advisor: John Hartigan, Eugene Higgins Professor of Statistics.

M.Phil. Economics, Oxford University, 1992-1994. Thesis: *Finite-Sample Properties of Sample Selection Estimators: Principles and a Case Study*. Topics of Study: Micro and Macroeconomic Theory, Industrial Organization, and Econometrics.

B.A. Economics and Mathematics, Williams College, 1988-1992. Honors Thesis in Mathematics: *Bayesian Categorical Data Analysis with Multivariate Qualitative Measurements*.

## Academic Appointments

Professor Adjunct and Director of Graduate Studies, Department of Statistics and Data Science, Yale University, 2016-present

Yale-NUS Visiting Professor, Fall 2019

Yale-NUS Contributing Faculty, 2014-present

Associate Professor Adjunct and Director of Graduate Studies, Department of Statistics, Yale University, 2012-2016

Visiting Professor, Peking University, Summers 2007, 2009, 2014, 2017

Guest Professor, National Taipei University of Technology, Summer 2012

Associate Professor, Department of Statistics, Yale University, 2009-2012

Faculty Affiliate, Yale Center for Environment Law and Policy, 2006-present

Assistant Professor, Department of Statistics, Yale University, 2003-2009

Lecturer, Department of Statistics, Yale University, 2003

Graduate Instructor for special Data Analysis section for professionals offered at Pfizer, Inc., Groton, CT, 2001

Graduate Instructor, Department of Statistics, Yale University, 1996, 1997, 1999

## Other Employment and Professional Activity

Lead Statistician, Yale Environmental Performance Index, 2018 (most recent iteration) and 2020 (in progress)

Partner and Data Scientist, Constellation Research (a start-up effort collaborating with Dan Esty)

NORC Advisory Committee on Statistics, Machine Learning and High Performance Computing

Uptake, Inc., Data Science Advisory Board

University of Maryland Pharmaceutical Research Computing Board of Advisors

R Workshops (at a variety of lengths and levels), at Roche, Genentech, US Cellular, The Hartford, West Point, the Federal Trade Commission, the Census Bureau, the Government Accountability Office, Uptake, Merck, the University of Maryland, and public workshops in New York and Washington.

R Workshop onboard the USS George H.W. Bush aircraft carrier, 2017.

Summer at Census, Washington, D.C., June 2014 and August 2015. Presented a week-long intermediate-level workshop on statistical computing with R.

Summer at Census, Washington, D.C., May 2012. Collaborated with statisticians on survey productivity and cost analysis projects.

Statistical Consultant, FBI and the U.S. Department of Justice, District of Connecticut, 2002-present. Perform study design and analysis for investigations of insurance and billing fraud.

Advisor/Consultant, REvolution Computing. Consulted on project design, strategic planning and open-source community involvement; taught training classes at Novartis, Sybase, and conferences.

Consultant, Pfizer, Inc., 2006-2009. Conducted analysis of electrocardiogram data and developed software in R for use by researchers.

Systems Administrator, Department of Geology and Geophysics, Yale University, 1999-2003. Performed Solaris/Linux/Windows systems design and maintenance (extensive Perl and shell scripting), supporting research and teaching of faculty and staff (full-time job while finishing Ph.D.).

UNIX Systems Administrator, Department of Statistics, Yale University, 1995-1999. Maintained departmental computing resources (part-time).

Marketing Research Consultant, CBS Network Television, 1996-1998. Developed software in C and Perl for exploration of Nielsen panel viewer data.

## Academic Honors and Professional Memberships

John M. Chambers Statistical Software Award, 2010; with Michael Kane

Connecticut Academy of Arts and Sciences: Fellow (2009-present) and Treasurer (2012-2013), Vice-President (2013-present)

American Statistical Association: Member (1998-present), Secretary/Treasurer of the Section on Graphics (2010-2012), Program Chair and Newsletter Editor of the Section on Statistical Computing (2012-2013), Section on Statistics in Sports (2015), Chair of Section on Statistics in Sports (2016), Chair of Section on Statistical Graphics (2018).

Winner, Student Paper Competition of the ASA Section on Statistical Graphics, 1998

Dissertation Fellowship, Yale University, 1998-1999

Graduate Fellowship, Yale University, 1994-1998

Stirling Fellowship, Yale University, 1994-1996

Donovan and Moody Fellowships for graduate study at Exeter College, Oxford, 1992-1994

Class of 1960 Scholar in Economics, Williams College, 1992

Phi Beta Kappa and Sigma Xi, Williams College, 1992

## Ph.D. Students

Chandra Erdman. Dissertation: *Bayesian Change Point Analysis with Applications to Microarray Data*, 2009

Michael Kane. Dissertation: *Scalable Strategies for Computing with Massive Data*, 2010

Taylor Arnold. Secondary non-dissertation advisor, 2012

Susan Wang. Dissertation: *Generalized Bayesian Change Point Analysis*, 2014

## Patent

*Cone-beam Computed Tomography on a Multimodal Imaging System*. With Ming Jiang et.al, Peking University, 2010

## Grant

Federal Express R09621, "Trade and Environmental Linkage Study," Principal Investigator (\$250,000, 2010-2011)

## Additional Sources of Funding

Yale Center for Environmental Law and Policy, lead statistician on the 2010, 2012 (also Principle Investigator), 2014, and 2018 Environmental Performance Indices, presented at the World Economic Forum, Davos, Switzerland, 2009-present.

Yale-NUS, curriculum development and faculty hiring committee, 2012-2013.

## Selected Refereed Publications

Esty, Daniel C., and John W. Emerson (2018). "From Crisis and Gurus to Science and Metrics: Yale's Environmental Performance Index and the Rise of Data-Driven Policymaking." In *Routledge Handbook on Sustainability Indicators*.

Isakov, Emerson, Campbell, Galerneau, Anders, Lee, Subramanyam, Roberts, and Kliman (2017). "Estimated Placental Volume and Gestational Age." *American Journal of Perinatology*, DOI: 10.1055/s-0037-1615285.

- Kane, Michael J., John W. Emerson, and Stephen Weston (2013). "Scalable Strategies for Computing with Massive Data." *Journal of Statistical Software* 55:14: 1-19.
- Hsu, Angel, Ainsley Lloyd, and John W. Emerson (2013). "What progress have we made since Rio? Results from the 2012 Environmental Performance Index (EPI) and Pilot Trend EPI." *Environmental Science & Policy*, 33:171-185.
- Emerson, John W., Walton A. Green, Barret Schloerke, Di Cook, Heike Hofmann, and Hadley Wickham (2012). "The Generalized Pairs Plot." *Journal of Computational and Graphical Statistics*, 22 (1), 79-91; doi: 10.1080/10618600.2012.694762.
- Yanbin Lu, Jiansheng Yang, John W. Emerson, Heng Mao, Tie Zhou, Yuanzheng Si, and Ming Jiang (2012). "Cone-beam reconstruction for the 2-circles plus line trajectory." *Physics in Medicine and Biology* 57 (9); doi:10.1088/0031-9155/57/9/2689.
- Buonocore, Samuel D., R. Sawh-Martinez, John W. Emerson, P. Mohan, M. Dymarczyk, T.G. Thomson (2012). "The Effects of Edema and Self Adherent Wrap on the Work of Flexion in a Cadaveric Hand." *Journal of Hand Surgery* 37 (7), 1349-1355.
- Arnold, Taylor B. and John W. Emerson (2011). "Goodness-of-Fit Tests for Discontinuous Distributions." *The R Journal*, 3/2, December 2011.
- Emerson, John W. and Taylor Arnold (2011). "Statistical Sleuthing by Leveraging Human Nature: A Study of Olympic Figure Skating." *The American Statistician*, 65 (3), 143-148.
- Emerson, John W. and Silas Meredith (2011). "Nationalistic Judging Bias in the 2000 Olympic Diving Competition." *Math Horizons*, 18 (3), 8-11.
- Crimin, Kimberly S., John W. Emerson, and Robb J. Muirhead (2010). "Reference regions for beat-to-beat ECG data." *Pharmaceutical Statistics* doi: 10.1002/pst.444.
- Emerson, John W., Miki Seltzer, and David Lin (2009). "Assessing Judging Bias: an Example from the 2000 Olympic Games." *The American Statistician* 63 (2), 124-131.
- Emerson, John W., Marisa Dolled-Filhart, Lyndsay Harris, David L. Rimm, and David P. Tuck (2009). "Quantitative Assessment of Tissue Biomarkers and Construction of a Model to Predict Outcome in Breast Cancer Using Multiple Imputation." *Cancer Informatics* 2009:7, 29-40.
- Erdman, Chandra and John W. Emerson (2008). "A fast Bayesian change point analysis for the segmentation of microarray data." *Bioinformatics* 24 (19) 2143-2148; doi: 10.1093/bioinformatics/btn404.
- Erdman, Chandra, and John W. Emerson (2007). "bcp: A Bayesian Analysis for Change Point Problems Using R." *Journal of Statistical Software* 23 (3).
- Emerson, John W. (2007). "Chance, On and Off the Ice." *Chance* 20 (2).
- Levin, Hillel Y. and John W. Emerson (2006). "Biases in the Jury Selection Process: A Study in Connecticut." *Connecticut Law Review* 38 (3), 325-353.
- Shachar, Ron and John W. Emerson (2000). "Cast Demographics, Unobserved Segments, and Heterogeneous Switching Costs in a TV Viewing Choice Model." *Journal of Marketing Research* 37 (2), 173-186.

## Other Refereed Publications

Shehzad, Zarrar, Clare Kelly, Philip Reiss, R. Cameron Craddock, John W. Emerson, Katie McMahon, David Copland, F. Xavier Castellanos, Michael P. Milham (2014). "A multivariate distance-based analytic framework for connectome-wide association studies." *NeuroImage*, DOI 10.1016/j.neuroimage.2014.02.024.

Voutchkova, A. M., Emerson, J. W., Osimitz, T., Zimmerman, J. B., and Anastas, P. T. (2011) "Towards Rational Molecular Design: Derivation of Property Guidelines for Reduced Acute Aquatic Toxicity." *Green Chemistry* 13 (9), 2373-2379.

Klein, A., Evan Beach, John W. Emerson, and Julie Zimmerman (2010). "Accelerated solvent extraction of lignin from *Aleurites moluccana* (candlenut) nutshells." *Journal of Agricultural and Food Chemistry* 58 (18), 10045-10048, DOI 10.1021/jf1019856.

Simpson, Andrew K., J. Sabino, P. Whang, John W. Emerson, and Jonathan Grauer (2009). "The Assessment of Cervical Foramina with Oblique Radiographs: the Effect of Film Angle on Foraminal Area." *Journal of Spinal Disorders and Techniques* 22 (1), 21-25.

Bruscia, Emanuela M., Ping-Xia Zhang, Elisa Ferreira, Christina Caputo, John W. Emerson, David Tuck, Diane Krause, and Marie Egan (2008). "Microphages directly contribute to the exaggerated inflammatory response in *Cftr*  $-/-$  mice." *American Journal of Respiratory Cell and Molecular Biology* 40, 295-304.

Goldstein, Robin, Johan Almenbert, Anna Dreber, John W. Emerson, Alexis Herschkowitsch, and Jacob Katz (2008). "Do More Expensive Wines Taste Better? Evidence from a Large Sample of Blind Tastings." *Journal of Wine Economics* 3 (1), 2008.

George, Mathew K., John W. Emerson, Sameer A. Cheema, Robert McGlynn, Bryce Ford, James F. Martone, Milton Bruce Shields, and Martin Wand (2008). "Evaluation of a modified protocol for Selective Laser Trabeculoplasty." *Journal of Glaucoma* 17 (3), 197-202.

Bible, Jesse E., Andrew K. Simpson, John W. Emerson, Debudt Biswas, and Jonathan N. Grauer (2008). "Quantifying the Effects of Age, Gender, Degeneration, and Adjacent Level Degeneration on Cervical Spine Range of Motion Using Multivariate Analyses." *Spine* 33 (2), 1793-1799.

Arya, Adarsh V., John W. Emerson, Michael Engelbert, Curtis Hagedom, and Ron A. Adelman (2006). "Surgical management of Pseudophakic Retinal Detachments." *Ophthalmology* 113 (10), 1724-1733.

George, Mathew K, Thomas Kuriakose, Brian M. DeBroff and John W. Emerson (2006). "The effect of Gonioscopy on keratometry and corneal surface topography." *BMC Ophthalmology* 6:26; doi:10.1186/1471-2415-6-26.

Bertagnoli, Rudolf, James J. Yue, Trace Kershaw, Rahul V. Shah, Frank Pfeiffer, Andrea Fenk-Mayer, Regina Nanieva, Amin Karg, Daniel Husted, and John W. Emerson (2006). "Lumbar total disc arthroplasty utilizing the ProDisc prosthesis in smokers versus nonsmokers: a prospective study with 2-year minimum follow-up." *Spine* 31 (9), 992-997.

Bertagnoli, Rudolf, James J. Yue, Regina Nanieva, Andrea Fenk-Mayer, Daniel Husted, Rahul V. Shah, and John W. Emerson (2006). "Lumbar total disc arthroplasty in patients older than 60 years of age: a prospective study of the ProDisc prosthesis with 2-year minimum follow-up period." *Journal of Neurosurgery: Spine* 4 (2).

Bertagnoli, Rudolf, James J. Yue, Andrea Fenk-Mayer, Jonathan Eerulkar, and John W. Emerson (2006). "Treatment of symptomatic adjacent-segment degeneration after lumbar fusion with total disc arthroplasty by using the prodisc prosthesis: a prospective study with 2-year minimum follow-up." *Journal of Neurosurgery: Spine* 4 (2).

Emerson, John W. (1998). "Mosaic Displays in S-PLUS: A General Implementation and a Case Study." *Statistical Computing and Graphics Newsletter* 9(1), 17-23.

## Non-refereed Publications

Wendling, Zachary, D. Esty, J. Emerson, M. Levy, A. de Sherbinin, N. Spiegel, V. Pinkerton, L. Boucher, S. Ratte, S. Mardell, and M. Ichihara. *The 2018 Environmental Performance Index*. New Haven, CT: Yale Center for Environmental Law and Policy. Available at <http://www.epi.yale.edu>.

Emerson, John W. and Michael J. Kane (2012). "Don't drown in the data." *Significance* 9 (4), 38-39.

Hsu, A., J. Emerson, M. Levy, A. de Sherbinin, L. Johnson, O. Malik, J. Schwartz, and M. Jaiteh. *The 2014 Environmental Performance Index*. New Haven, CT: Yale Center for Environmental Law and Policy. Available at <http://www.epi.yale.edu>.

Emerson, John W., Daniel C. Esty, Angel Hsu, Marc A. Levy, Alex de Scherbinin, Valentina Mara, and Malanding Jaiteh. *2012 Environmental Performance Index*. New Haven: Yale Center for Environmental Law and Policy.

Emerson, John W., Daniel C. Esty, Tanja Srebotnak, and Diana Connett (2011). "Exploring Trade & the Environment: An Empirical Examination of Trade Openness and National Environmental Performance." New Haven: Yale Center for Environmental Law and Policy.

Emerson, John W., Daniel C. Esty, Mark A. Levy, and William Dornbos (2011). "The Environmental Performance Index." *Berkshire Encyclopedia of Sustainability: Measurements, Indicators, and Research Methods Sustainability*.

Shehzad, Z., Reiss, P., Adelstein, J., Emerson, John W., Chabernaud, C., Mennes, M., ... & Milham, M. (2011). "Connectome-wide association studies (CWAS): a multivariate distance-based approach." *Annual Meeting of the Organization for Human Brain Mapping*.

Emerson, John W., D.C. Esty, M.A. Levy, C.H. Kim, V. Mara, A. de Sherbinin, and T. Srebotnjak (2010). *2010 Environmental Performance Index*. New Haven: Yale Center for Environmental Law and Policy.

Emerson, John W. (2008). "Review of Interactive and Dynamic Graphics for Data Analysis." *Biometrics* 64 (4), 1301-1302.

Emerson, John W. and Walton Green (2006). "The Spark Mat: a graphical method of exploring spatially distributed time series." JASA poster competition, 2006.

## Work in Progress and in Submission

"STV: an R Package for Processing Single Transferable Vote Elections Results." With Saksham Chandra and Lilla Orr (and an expanded set of collaborators at the University of Washington).

"Bayesian Change Point Analysis of Linear Models on Graphs." With Xiaofei Wang (for re-submission).

"OvSim: a Simulation of the Population Dynamics of Mammalian Ovarian Follicles." With Joshua Johnson, Xin Chen, and Xiao Xu, under revision.

"Evaluation of steady-state visual evoked potentials in diabetic retinopathy." Mathew George, George Hu, John W. Emerson, Veena Rao, Ron Adelman, James Tsai, and John Huang, under review.

“A Comprehensive Rehabilitation Protocol for Lumbar Disc Replacement: The Straubing Rehabilitation Index.” With James Yue et.al, under review.

“Minimalist Sufficient Statistics.” John W. Emerson, in preparation.

*R is for Racing*. Book project with Colin Magee (redesigned).

*R is for Environmental Performance* Book project (new).

*Engaging Data*. Book project (tabled in favor of other approaches, above).

## R Packages

**STV** (final development): Single Transferrable Voting (STV).

**big.char** (work in progress): extending **bigmemory** to handle big vectors of character data. <https://github.com/jayemerson/big.char>

**big.data.frame** (work in progress): extending **bigmemory** and **big.char** to support data-frame-like objects. <https://github.com/jayemerson/big.data.frame>

**ShinyHelper** (work in progress): a toolkit of wrapper functions for the automated authoring of Shiny applications. <https://github.com/jayemerson/ShinyHelper>

Bayesian change point analysis (with R and C/C++), with Xiaofei Wang and Chandra Erdman: package **bcp** (<http://cran.r-project.org/web/packages/bcp/>). A major new edition of the package was released in the summer of 2015 and is still being revised and maintained.

A collection of tools for exploratory data analysis, with Walton Green: package **YaleToolkit** (<http://cran.r-project.org/web/packages/YaleToolkit/>), packages **barcode** (<http://cran.r-project.org/web/packages/barcode/>) and **gpairs** (<http://cran.r-project.org/web/packages/gpairs/>).

The Bigmemory Project (<http://www.bigmemory.org/>), with Michael Kane: a family of R packages (with R and C++) for scalable solutions to computing with massive data (package **bigvideo** available on R-Forge, **bigmemory**, **biganalytics**, **bigtabulate**, **bigalgebra**, and **synchronicity** available on CRAN).

A package for the efficient distribution of Boost libraries, with Michael Kane, Dirk Eddelbuettel, JJ Allaire, and Romain Francois: package **BH** (<http://cran.r-project.org/web/packages/BH/>).

Analysis of electrocardiogram QT/TQ data, with Robb Muirhead: package **QTTQ** (used internally at Pfizer, Inc.).

Methods for one-sample goodness-of-fit tests with discrete distributions, with Taylor Arnold: package **dgof** (<http://cran.r-project.org/web/packages/dgof/>).

## Committees and Service

### At Yale University

Module Instructor, Current Topics in Science (1st-year seminar), 2019

“Teaching and Research with the R Language for Statistical Computing and Graphics” for the 2018 Faculty Academy

Faculty Search Committee, Yale-NUS Division of Computer Science, Mathematics, and Statistics, 2018

Bulldog Days Masterclass, 2017-2018.

STEM Forum presentations for Yale Admissions, 2017.

Jonathan Edwards College Master and Dean Search Committees, 2016

Department of Statistics and Data Science committee on new undergraduate and graduate programs in Statistics and Data Science, 2016-present

Faculty of Arts and Sciences Senate Election Implementer, from the start through 2018.

Faculty of Arts and Sciences Senate Implementation Committee, 2014-2015

Department of Statistics and Data Science Director of Graduate Studies, 2006-2007, 2012-present

Department of Statistics and Data Science Admissions Committee, 2006-present

Department of Statistics and Data Science Statistical Consulting Clinic Faculty Lead, 2003-present

Quantitative Reasoning Committee, 2008-present

Secretary of the Fellows, Jonathan Edwards College, 2007-present

Bookie to the Fellows, Jonathan Edwards College, 2006-2013, 2015 (revenues support undergraduates with financial emergencies)

Organizer, 50<sup>th</sup> Anniversary Celebration, Department of Statistics, 2012-2013

Volunteer Instructor, Yale Center for Analytical Sciences Summer Young Scholars Program (teaching New Haven area high school students), 2010-2012

MCDB 900 Annual Guest Lecture: “Statistics and Statistics at Yale,” 2010-present

Bates Fellowship Committee 2007-2012

Quan 199 Guest Lecture Module: Quantitative Methods across the Disciplines, 2007

Jonathan Edwards Senior Essay Awards Committee, 2007-2008, 2011, 2014-2015

Department of Statistics Computer Committee, Chair, 2003-2009

Teaching & Learning Committee, 2005-2007

Teaching & Learning Portal Advisory Committee, 2005-2007

Library Hiring Committee, Social Science Data Librarian, 2005-2006

Department of Statistics Hiring Committee, 2004-2006

Department of Statistics Library Coordinator, 2003-2006

Bioinformatics Admissions Committee, 2003-2005

Graduate Coordinator, Hall of Graduate Studies, 1998-1999

Dean’s Committees, Yale Graduate School, 1995-1997: McDougal Committee (designing the new Graduate Student Center); Kutzinski Committee (reviewing the Teaching Fellow Program)

### Outside of Yale University

Yale-NUS Contributing Faculty Visitor, 2016.  
 NORC Advisory Committee on Statistics, Machine Learning and High Performance Computing, 2015-present  
 ASA Traveling Course (one of four in the ASA), 2016  
 Honors Examiner, Swarthmore College, 2012, 2014, 2015  
 Chair, American Statistical Association Section on Statistics in Sports, 2016  
 Vice-President, Connecticut Academy of Arts and Sciences, 2013-present  
 Associate Editor, Computational Statistics, 2011-present  
 Associate Editor, Journal of Statistical Software, 2010-present  
 Newsletter Editor, American Statistical Association Section on Statistical Computing, 2013  
 Program Chair, American Statistical Association Section on Statistical Computing, 2012  
 Treasurer, Connecticut Academy of Arts and Sciences, 2012-2013  
 Reviewer, *Theoretical Biology and Medical Modeling*, *Bioinformatics*, *The R Journal*, *The American Statistician*, *Journal of Industrial Ecology*, *International Journal of Biostatistics*, *Journal of Marketing*, *Journal of Computational and Graphical Statistics*  
 Secretary/Treasurer, American Statistical Association Section on Statistical Graphics, 2010-2012  
 Program Chair Elect, American Statistical Association Section on Statistical Computing, 2011  
 Board of Directors, Yale Co-op, 1995-1999

## Teaching

### Courses at Yale University

Stat 662, Statistical Computing (created the course), 2008, 2011, 2012, 2014, 2017, 2018  
 Stat 661, Advanced Data Analysis, 2003, 2004, 2006, 2009  
 Stat 627, Statistical Consulting (created the course), 2003-present  
 Stat 626, Practical Work, 2007, 2008, 2009, 2011-present  
 Stat 625, Case Studies, 2003-2006, 2008, 2009, 2011-2016  
 Stat 242/542, Theory of Statistics, 2003  
 Stat 230/530, Introductory Data Analysis, 2004, 2011-2017  
 Stat 128, Real-World Statistics (created the course), 2009  
 S&DS 110, An Introduction to R for Statistics and Data Science (created the course), 2017  
 Stat 100, Introductory Statistics (initiated the course, in 2005, refreshing the course in 2018) 2005, 2006, 2007, 2018

### Other Teaching

"Teaching and Research with the R Language for Statistical Computing and Graphics" for the 2018 Faculty Academy  
 "Quantitative Reasoning" in the Common Curriculum, Yale-NUS, fall 2018  
 "Statistical Case Studies", Yale-NUS, fall 2018  
 "2017 Data Science Immersion: An Intensive Course in Data Analysis and Statistical Computing with R," Peking University, summer 2017

“Data Analysis and Statistical Computing Immersion” for faculty and students, Peking University, summer 2014

“Introductory Statistics,” National Taipei University of Technology, summer 2012

“An Intensive Course in Data Analysis with Statistical Case Studies,” Peking University, summers 2007 and 2009

## Conferences, Presentations and Workshops

*An Introduction to R for Programmers*. Federal Trade Commission, 2018.

Yale Admissions Bulldog Days Masterclass and STEM Forums, 2017.

*Data Science Immersion: An Intensive Course in Data Analysis and Statistical Computing with R*, Peking University, 2017.

Workshop, *Life in the Sea of Statistics and Data Science*, USS George HW Bush aircraft carrier, CVN-77, 2017.

R workshop, Core Informatics, 2017.

*An Introduction to R for Programmers*. Federal Trade Commission, 2017.

Invited Speaker, *Scalable Programming Strategies for Massive Data in R*, Lyon, 2017.

Invited Speaker, *Hedging Risk in Tumbling Markets: Systematic Tactical Asset Allocation Strategies and Quantitative Investment Models*. Zurich, 2016.

Invited Speaker, *Facts of Life: Real-World Data Are Messy*. Joint Statistical Meetings, Chicago, 2016.

Organizer, *Open Source Statistical Software for Data Science*. Joint Statistical Meetings, Chicago, 2016.

Conference presentation, *Topics in High-Performance Computing with R*. 12<sup>th</sup> International Meeting on High Performance Computing for Computational Science, Porto, 2016.

*Programming and Data Science with R*. The Federal Trade Commission, 2016.

Conference workshop, “High-Performance Computing with R.” ENAR 2016.

Invited speaker, Yale Center Beijing, “Having Fun with Big Data.” 2016.

Inaugural speaker, Center for Data Science, University of Sri Lanka, 2015.

Invited speaker, University of Kuala Lumpur, 2015.

AT&T Research Seminar: “Statistics in Sports: From Probabilities to Predictions.” New York, 2015.

*An Introduction to R and Intermediate R*. US Cellular, 2014 (2 workshops), 2015 (2 workshops).

Invited speaker, “Topics in Statistics in Sports.” Liberty Mutual Statistical Forum, 2015.

Seminar speaker, “Topics in High-Performance Computing with R.” University of Connecticut, 2015.

*Data Science with R*. School of Pharmacy, University of Maryland, 2015.

Conference presentation, “Preparing Students for the Future of Statistics.” Joint Statistical Meetings, Seattle, 2015.

Summer at Census weeklong statistical computing with R workshop, Census Bureau, 2015.

Keynote Address, "The Changing Landscape of Statistical Computing." RBras Conference, Presidente Prudente, Brazil, 2015.

HPC with R masterclass, RBras Conference, Presidente Prudente, Brazil, 2015.

Conference presentation, "Visualization technologies don't mislead people – people mislead people." Augsburg, 2015.

Mini-workshop for non-profit, ConnCan, New Haven, 2015.

Invited speaker, "Further Growth of the Bigmemory Family of Packages." New England Statistical Symposium, 2015.

Seminar speaker, Xi'an University, 2015.

Seminar speaker, Xidian University, 2015.

*An Introductory R Workshop for SAS Professionals.* Genentech, 2014, 2015.

*Parallel Processing and Big Data in R.* Chicago R Meetup, 2014.

*An Introduction to Shiny.* Chicago R Meetup, 2014.

*An Introduction to R for Programmers.* Federal Trade Commission, 2014.

*HPC in DC.* A one-day public workshop on high-performance computing with R, 2014.

*An Introduction to R for Non-Programmers* and *An Introduction to R for Programmers.* Public workshops in New York, 2014.

*An Introduction to R for Teachers.* Two-day workshop at the West Point Military Academy, New York, 2014.

*Intermediate R.* Roche Pharmaceuticals, 2014.

Summer at Census weeklong statistical computing with R workshop, Census Bureau, 2014.

*An Introduction to R.* The Hartford insurance company, 2014.

Invited Speaker, "The Web According to Emerson", Columbia University, 2013.

Invited Speaker, Joint Meeting of the IASC Satellite Conference for the 59th ISI WSC and the 8th Conference of the IASC-Asian Regional Section, Korea, 2013.

Invited speaker, data visualization workshop, Census Bureau, 2013.

Program Chair for the Section on Statistical Computing, Joint Statistical Meetings, Montreal, 2013.

R in Finance, 2013.

Organizer, 50<sup>th</sup> Anniversary Celebration, Department of Statistics, Yale University, 2013.

*An Intermediate R Workshop,* McKinsey & Company, 2013.

Seminar Speaker, Department of Biostatistics, Brown University, 2012.

*Introduction to Data Visualization and Analysis with R.* Co-instructor, continuing education course, Joint Statistical Meetings, San Diego, 2012.

Presenter, Joint Statistical Meetings, San Diego, 2012: "Visualizing and Interacting with Data Over the Web."

Organizer and Chair, Joint Statistical Meetings, San Diego, 2012: "The Evolution of Statistical Graphics and Visual Analytics."

*Workshop on R*. Workshop for faculty and students, Vassar College, 2012.

*An Introduction to R*. Workshop with consulting, World Resources Institute, Washington, DC, 2012.

*Towards High-Performance Computing with R* Workshop, ENAR, Washington, DC, 2012.

Presenter, R in Finance, Chicago, 2012: "Towards Terabytes of TAQ."

Invited Speaker, Achieving Sustainable Development in Africa International Conference at the University of Pittsburgh, 2012: "Lessons Learned from the 2012 Environmental Performance Index."

Invited Speaker, New Haven Connecticut R Meetup, 2012: "Getting started and being productive with the R language."

Presenter of the 2012 Environmental Performance Index (press conference), World Economic Forum, Davos, Switzerland, 2012.

Invited Speaker, Predictive Analytics World and the New York Predictive Analytics Group, 2011: "Bayesians, Frequentists, and Big Data: Musings on Statistics in the 21st Century."

Invited Speaker, Seoul National University, Korea, 2011.

Organizer, Invited Session, Joint Statistical Meetings, Miami 2011: "The Future of Statistical Computing Environments."

Organizer and Speaker, Topic Contributed Session, Joint Statistical Meetings, Miami 2011: "Statistical Analyses of Judging in Athletic Competitions."

Invited Speaker, Statistical Methods for Very Large Data Sets Conference, Baltimore, 2011.

R in Finance, Chicago, 2011.

Invited Speaker, American Association for the Advancement of Science, Washington, DC, 2011.

Presenter for expert review panel, Yale Center for Environmental Law and Policy, Washington, DC, 2010.

Presenter, Chicago R-Meetup, 2010.

Seminar series speaker, Yale Center for Analytical Sciences, 2010.

Invited Speaker, seminar/workshop series, UNICAMP, Campinas, Brazil, 2010.

Invited Speaker, seminar/workshop series, IME-USP, Sao Paulo, Brazil, 2010.

Invited Speaker, IM-UFRJ, Rio do Janeiro, Brazil, 2010.

Invited Speaker, Boston University, 2010.

Invited Speaker, Census Bureau, Washington, DC, 2010.

Presenter, UseR! Topic Contributed Session, Washington, DC, 2010.

Presenter, Interface 2010 Topic Contributed Session, Seattle, 2010.

Presenter, New York City R-Meetup, 2010.

Invited Neyman Seminar Speaker, University of California, Berkeley, 2010.

Invited Speaker, Choate Rosemary Hall, 2010.

Invited Speaker, Bristol-Myers Squibb, 2010.

Department Seminar Speaker, Yale University, 2010.

Invited Seminar Speaker, Middlebury College, 2010.

Presenter, New York City R-Meetup, 2010.

Presenter of the 2010 Environmental Performance Index (press conference), World Economic Forum, Davos, Switzerland, 2010.

“60 Years: Antony Unwin. Mathematisches Festkolloquium.” Augsburg, Germany, 2010.

Department Seminar Speaker, Biostatistics, Yale University, 2009.

*A hands-on introduction to R.* Workshop co-instructor, Annual Meeting of the American College of Clinical Pharmacology, San Antonio, 2009.

Presenter, UseR! Focus Session, Rennes, France, 2009.

Speaker, Rmetrics Workshop, Meielisalp, Switzerland, 2009.

Speaker, Chinese Environmental Performance Index Workshop, Hong Kong, 2009.

Invited Seminar Speaker, Department of Statistics and Mathematics, Vienna University of Economics and Business Administration, Vienna, Austria, 2009.

Invited Seminar Speaker, New York City Chapter of the American Statistical Association, 2009.

*R and Statistics.* Instructor, West Point, New York, 2009.

*What's the Fuss about R?* Workshops, New York City, April, May, November 2009.

Invited Seminar Speaker, Iowa State University, 2008.

Organizer and Presenter, Joint Statistical Meetings, Denver, 2008.

Presenter, UseR! Focus Session, Dortmund, Germany, 2008.

Workshop Instructor, Pfizer, Inc., Groton, CT, 2008.

Invited Seminar Speaker, Boston University, 2008.

Workshop Instructor, Novartis. Boston, 2008.

Invited Seminar Speaker and Guest Lecturer, Augsburg, Germany, 2008.

Invited Seminar Speaker, Colby College, 2008.

Invited Seminar Speaker, Middlebury College, 2007 and 2005.

Invited Panel Participant and Session Chair, Joint Statistical Meetings, Salt Lake City, 2007.

Presenter, Joint Statistical Meetings, Seattle, 2006.

Invited Lecture, Pfizer, Inc., Groton, CT, 2006.

Keynote Speaker, Annual Meeting of the Connecticut Independent Teachers Association, Greenwich, CT, 2006.

Speaker, UseR! Vienna, Austria, 2006.

Joint Statistical Meetings, Minneapolis, 2005.

Joint Statistical Meetings, Toronto, 2004.

## In Popular Media

DarienTimes.com (3/27/2014). "Feds use survey with high error ratio to determine aid eligibility." Quoted.

ScienceNews (2/5/2014). "Figure skating judges get a 10 for duplicity." Quoted.

Wall Street Journal (4/8/2013). "Everyone's Bracket Looked Good Once." Supervised analysis by Yale senior Kartik Venkatraman.

Reuters (2/17/2012). "Exclusive: SEC widens probe of exchange-traded funds." Quoted and contributed to the analysis.

Wall Street Journal (10/25/2010). "In Medicaid's Data Trove, Clues to Curing Cost Crisis." Contributor to methodology and analysis.

Newsday.com (2/22/2010). "Statistics say skating judges still don't have it right." Quoted.

The Statesman (1/28/2010). "The 2010 Environmental Performance Index." Quoted.

Wall Street Journal (6/20/2008). "World's Greatest Athlete: How we did it." Contributor to methodology and analysis.

Wall Street Journal (4/24/2008). "Ford's Googol Googol Console Options." Quoted.

Wall Street Journal (3/31/2007). "Reservations at Top Restaurants." Conducted analysis and produced the graphics.

Emerson, John W. (2006). "Stat prof assesses the Game day data." *Yale Daily News* Yale-Harvard Special Issue, November 17.

Wall Street Journal (3/18/2006). "The Perfect Payday." Collaborated with eventual Pulitzer Prize winning authors Charles Forelle and James Bandler on the methodology (and implemented the R code for the analysis) leading to the infamous stock option backdating scandal.

Wall Street Journal (3/23/2006). "Picking the Perfect NCAA Bracket." Quoted.

ABC World News Tonight (2/17/2006). "John Berman on the new scoring system in skating." Interviewed, following my analysis of a problem with the new scoring system leading up to the Winter Olympics.

Wall Street Journal (2/15/2006). "Does the New Way of Judging Skating Actually Add Up?" Author Charles Forelle wrote the first piece on my analysis, with subsequent coverage appearing in *Scientific American* and many online news outlets.

Emerson, John W. (2005). "On the Court, In the Office: A Game of Statistics." *Hartford Courant*, March 17.

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