Brett Presnell

Department of Statistics
University of Florida
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Degrees

PhD (Statistics) 1989, Florida State University

MS (Statistics) 1985, Florida State University

MS (Mathematics) 1981, Florida State University

BS (Mathematics) cum laude 1980, Florida State University

Academic Appointments

University of Florida. Associate Professor of Statistics, since 1998.

University of Florida. Chair, Department of Statistics, 2013–2017.

University of Florida. Interim Chair, Department of Statistics, 2012–2013.

Australian National University. ARC Research Associate, 1996–1998.

University of Florida. Assistant Professor of Statistics, 1990–1998.

Florida State University. Visiting Instructor (Statistics), 1989–1990. Teaching Assistant (Statistics), 1984–1986. Adjunct Instructor (Mathematics), 1982–1983. Teaching Assistant (Mathematics), 1980–1981.

Program for Afloat College Education, U.S. Navy. Adjunct Instructor (Mathematics), 1982–1983.

Shorter appointments: Cornell University, Visiting Fellow, Department of Biological Statistics and Computational Biology, Fall 2009. National Institute of Allergy and Infectious Diseases, Special Volunteer, Spring 2009. Australian National University, Visiting Fellow, Centre for Mathematics and its Applications, Summer 1999. Stanford University, Visiting Scholar, Department of Statistics, Fall 2001. North Carolina State University, Visiting Faculty, Department of Statistics, Spring 2002.

Professional Society Memberships

American Statistical Association.

Institute of Mathematical Statistics.

Bernoulli Society for Mathematical Statistics and Probability.

Honors and Awards

American Statistical Association Outstanding Statistical Application Award for 2002 (with Peter Hall and Don Poskitt).

Named as an Influential Teacher by Anderson/CLAS Scholars, University of Florida, 1999 and 2000.

Productivity Award, University of Florida, 1998-99.

Teaching Improvement Program Award, University of Florida, 1995–96.

Editorial Service

Associate Editor, *Journal of the American Statistical Association* (Theory and Methods), January 2002 – December 2004, January 2008 – July 2009.

Referee for *Journal of the American Statistical Association*, *The Annals of Statistics*, *Journal of the Royal Statistical Society (Series B)*, *Biometrika*, *Biometrics*, *Statistica Sinica*, *Canadian Journal of Statistics*, *Journal of Multivariate Analysis*, *The American Statistician*, *Journal of Statistical Planning and Inference*, *Australia and New Zealand Journal of Statistics*, *Annals of the Institute of Statistical Mathematics*, *Journal of Business and Economic Statistics*, *Electronic Journal of Statistics*, *Journal of Nonparametric Statistics*, *Lifetime Data Analysis*, *Statistical Modelling*, *Journal of Statistical Computation and Simulation*, *Naval Research Logistics Quarterly*, *IEEE Signal Processing Society Transactions*, *IEEE Transactions on Information Theory*, *Metrika*, *Environmental and Ecological Statistics*.

Research Interests

Nonparametric statistics, bootstrap methods, statistical computing, model misspecification, directional data analysis.

Refereed Publications

Giurcanu, M. and Presnell, B. (2019). Bootstrapping LASSO-type estimators in regression models. *Journal of Statistical Planning and Inference*, 199: 114–125. ISSN 0378-3758. doi:10.1016/j.jspi.2018.05.007.

Giurcanu, M. and Presnell, B. (2018). Oracle gmm estimation for misspecified models via thresholding. *Communications in Statistics—Theory and Methods*, 0(0): 1–38. doi:10.1080/03610926.2018.1472786. URL https://www.tandfonline.com/doi/abs/10.1080/03610926.2018.1472786

Giurcanu, M. and Presnell, B. (2017). Bootstrap inference for misspecified moment condition models. *Annals of the Institute of Statistical Mathematics*, 70(3): 605–630. ISSN 0020-3157. doi:10.1007/s10463-017-0604-2.

Rumcheva, P. and Presnell, B. (2017). An improved test of equality of mean directions for the Langevin-von Mises-Fisher distribution. *Australian & New Zealand Journal of Statistics*, 59(1): 119–135. ISSN 1467-842X. doi:10.1111/anzs.12183.

Román, J. C., Hobert, J. P., and Presnell, B. (2014). On reparametrization and the Gibbs sampler. *Statistics & Probability Letters*, 91: 110–116.

Capanu, M. and Presnell, B. (2008). Misspecification tests for binomial and beta-binomial models. *Statistics in Medicine*, 27: 2536–2554.

Presnell, B. and Rumcheva, P. (2008). The mean resultant length of the spherically projected normal distribution. *Statistics & Probability Letters*, 78(5): 557–563.

Presnell, B. and Boos, D. D. (2004). The IOS test for model misspecification. *Journal of the American Statistical Association*, 99(465): 216–227.

Agresti, A. and Presnell, B. (2002). Misvotes, undervotes, and overvotes: the 2000 presidential election in Florida. *Statistical Science*, 17(4): 436–440.

Hobert, J. P., Jones, G. L., Presnell, B., and Rosenthal, J. S. (2002). On the applicability of regenerative simulation in Markov chain Monte Carlo. *Biometrika*, 89(4): 731–743.

Hall, P., Poskitt, D. S., and Presnell, B. (2001). A functional data-analytic approach to signal discrimination. *Technometrics*, 43(1): 1–9.

Choi, E., Hall, P., and Presnell, B. (2000). Rendering parametric procedures more robust by empirically tilting the model. *Biometrika*, 87: 453–465.

Hall, P., Presnell, B., and Turlach, B. (2000). Reducing bias without prejudicing sign. *Annals of the Institute of Statistical Mathematics*, 52(3): 507–518.

Osborne, M. R., Presnell, B., and Turlach, B. A. (2000a). On the LASSO and its dual. *Journal of Computational and Graphical Statistics*, 9(2): 319–337.

Osborne, M. R., Presnell, B., and Turlach, B. A. (2000b). A new approach to variable selection in least squares problems. *IMA Journal of Numerical Analysis*, 20(3): 389–404.

Hall, P. and Presnell, B. (1999a). Intentionally-biased bootstrap methods. *Journal of the Royal Statistical Society. Series B. Methodological*, 61: 143–158.

Hall, P. and Presnell, B. (1999b). Biased bootstrap methods for reducing the effects of contamination. *Journal of the Royal Statistical Society. Series B. Methodological*, 61: 661–680.

Hall, P. and Presnell, B. (1999c). Density estimation under constraints. *Journal of Computational and Graphical Statistics*, 8: 259–277.

Presnell, B. and Bohn, L. L. (1999). U-statistics and imperfect ranking in ranked set sampling. *Journal of Nonparametric Statistics*, 10(2): 111–126.
URL http://dx.doi.org/10.1080/10485259908832756

Booth, J. and Presnell, B. (1998). Allocation of Monte Carlo resources for the iterated bootstrap. *Journal of Computational and Graphical Statistics*, 7(1): 92–112.

Gasser, T., Hall, P., and Presnell, B. (1998). Nonparametric estimation of the density and mode of a distribution of random curves. *Journal of the Royal Statistical Society. Series B. Methodological*, 60: 681–691.

Presnell, B. D., Morrison, S. P., and Littell, R. C. (1998). Projected multivariate linear models for directional data. *Journal of the American Statistical Association*, 93: 1068–1077.

Proschan, M. and Presnell, B. (1998). Expect the unexpected from conditional expectation. *The American Statistician*, 52: 248–252.

Presnell, B. (1996). Bootstrap unconditional p-values for the sign test with ties and the 2×2 matched pairs trial. *Journal of Nonparametric Statistics*, 13(5): 555–572.

Rosalsky, A., Stoyanov, J., and Presnell, B. (1995). An ergodic-type theorem à la Feller for nonintegrable strictly stationary continuous time processes. *Stochastic Analysis and Applications*, 13(5): 555–572.

Presnell, B., Hollander, M., and Sethuraman, J. (1994). Testing the minimal repair assumption in an imperfect repair model. *Journal of the American Statistical Association*, 89: 289–297.

Hollander, M., Presnell, B., and Sethuraman, J. (1992). Nonparametric methods for imperfect repair models. *Annals of Statistics*, 20(2): 879–896.

Non-Refereed Publications

Agresti, A. and Presnell, B. (2001). Statistical issues in the 2000 U. S. presidential election in florida. *Journal of Law and Public Policy*, 13(1): 117–133.

Booth, J. and Presnell, B. (1999). Resampling methods for sample surveys. In *Bulletin of the International Statistical Institute, 52nd Session Proceedings*.

Hall, P. and Presnell, B. (1998). Applications of intentionally biased bootstrap methods. In *Proceedings of the International Congress of Mathematicians (Berlin, 1998)*, vol. III (extra) of *Documenta Mathematica*. Fak. Math., Univ. Bielefeld, Postf. 100131, 33501 Bielefeld, Germany, pages 257–266. URL `http://www.mathematik.uni-bielefeld.de/documenta/xvol-icm/12/12.html`

Osborne, M. R., Presnell, B., and Turlach, B. A. (1998). Knot selection for regression splines via the LASSO. In S. Weisberg, ed., *Dimension Reduction, Computational Complexity, and Information*, vol. 30 of *Computing Science and Statistics*. Interface Foundation of North America, Inc., Fairfax Station, VA 22039–7460, pages 44–49.

Hollander, M., Presnell, B., and Sethuraman, J. (1990). Nonparametric inference under minimal repair. In *Proceedings of the Thirty-fifth Conference on the Design of Experiments in Army Research and Testing*, vol. 90. U.S. Army Research Office, P.O. Box 12211, Research Triangle Park, NC, pages 103–111.

Book Reviews

Presnell, B. (2002). Book review: *Bootstrap Methods: A Practitioner's Guide* by Michael R. Chernick. *Journal of the American Statistical Association*, 97(457): 355.

Presnell, B. (2000). Book review: *Nonparametric Smoothing and Lack-of-Fit Tests* by Jeffrey D. Hart. *Journal of the American Statistical Association*, 95(449): 333–334.

Presnell, B. (1996). Book review: *Modern Applied Statistics with S-Plus* by W. N. Venables and B. D. Ripley. *Journal of the American Statistical Association*, 91(433): 433–434.

Presentations

Invited Papers

The 50th Anniversary Celebration of the Florida State University Department of Statistics, April 18, 2009. "The Hybrid Bootstrap."

2005 ENAR Spring Meeting (International Biometric Society Eastern North American Region), Austin, Texas, March 21, 2005. "The IOS Test for Model Misspecification."

2003 Annual Meeting of the Florida Chapter of the American Statistical Association, University of Florida, February 22, 2003. "The In-and-Out-of-Sample (IOS) Likelihood Ratio Test for Model Misspecification."

Nonparametric Statistics Research Conference, Florida State University, January 18, 2003. "Biased-Bootstrap Recycling."

Southeastern Section Meeting of the American Mathematical Society, University of Central Florida, November 9, 2002. "The In-and-Out-of-Sample (IOS) Likelihood Ratio Test for Model Misspecification."

The 40th Anniversary Celebration of the Florida State University Department of Statistics, April 22, 2000. "U-Statistics and Imperfect Ranking in Ranked Set Sampling."

The 27th Annual Meeting of the Statistical Society of Canada, Regina Saskatchewan, June 7, 1999. "U-Statistics and Imperfect Ranking in Ranked Set Sampling."

The University of Florida Statistics Symposium on Selected Topics in Nonparametric Methods, Gainesville, Florida, January 22, 1999. "Robust Estimation via the Biased-Bootstrap."

Contributed Papers

Joint Statistical Meetings, Salt Lake City, UT, August 1, 2007. "Some New Models and Procedures for Directional Data."

Joint Statistical Meetings, New York, NY, August 12, 2002. "Biased-Bootstrap Recycling."

Joint Statistical Meetings, Baltimore, Md., August 10, 1999. "Transformation-Based Methods for Unimodal Density Estimation."

Fourteenth Biennial Australian Statistical Conference, Gold Coast, Queensland, Australia, July 7, 1998. "Biased Bootstrap Methods for Reducing the Effects of Contamination."

New Zealand Statistical Association 48th Annual Conference, Auckland, New Zealand, July 10, 1997. "Intentionally Biased Bootstrap Methods."

Joint Statistical Meetings, Orlando, Fl., August 15, 1995. "Optimal Allocation of Monte Carlo Resources for the Iterated Bootstrap."

Annual Meeting of the IMS, Boston, Mass., August 12, 1992. "Testing the Minimal Repair Assumption in an Imperfect Repair Model."

Annual Meeting of the IMS, Washington, D.C., August 7, 1989. "Nonparametric Inference for Imperfect Repair Models."

Colloquia and Seminars

"On Bootstrap Inconsistency and Its Repair via the Biased Bootstrap." Presented at Cornell University, 18 November 2009.

"The Biased Bootstrap and Its Applications." Presented at University of Minnesota, 21 February 2006; Cornell University, 1 March 2006.

"The IOS Test for Model Misspecification." Presented at University of Minnesota, 14 November 2002; University of Florida, 11 September 2003; Cornell University, 4 May 2005; University of California at Irvine, 13 February 2006.

"Biased-Bootstrap Recycling." Presented at North Carolina State University, 22 February 2002; University of North Carolina at Chapel Hill, 8 April 2002.

"U-Statistics and Imperfect Ranking in Ranked Set Sampling." Presented at the University of South Florida, 28 April, 2000.

"Robust Estimation via the Biased-Bootstrap." Presented at University of Adelaide, Australia, 8 July, 1999.

"Biased Bootstrap Methods for Reducing the Effects of Contamination." Presented at the University of Florida, Fall, 1998.

"The Biased Bootstrap: Applications of Constrained Bootstrap Estimation." Presented at Sydney University, Australia, 22 May, 1998; University of Adelaide, Australia, 17 June, 1998.

"Projected Linear Models for Directional Data." Presented at the Australian National University, 16 Oct, 1996.

"Optimal allocation of monte carlo resources for the iterated bootstrap." Presented at the University of Florida, fall, 1995.

"Testing the minimal repair assumption in an imperfect repair model." Presented at the University of Florida, fall, 1991.

"Nonparametric inference for imperfect repair models." Presented at the University of Florida, Purdue University, and the University of Georgia, spring, 1990.

Teaching Experience

Aug, 1990– Present	**Department of Statistics, University of Florida** GRADUATE COURSES: Limit Theory; Probability Theory I and II; Stochastic Processes I; Theory of Nonparametric Statistics; Smoothing Methods in Statistics; Analysis of Directional Data; Generalized Linear Models; Regression Analysis; Statistical Methods in Social Research I and II. UNDERGRADUATE COURSES: Categorical Data Analysis; Mathematical Statistics I and II; Mathematical Statistics with Computer Applications; Introduction to Statistics I.

Sept, 1989–	**Department of Statistics, Florida State University**
June, 1990	GRADUATE COURSES: Applied Nonparametric Statistics.
	UNDERGRADUATE COURSES: Statistics Through Example.

Jan, 1984–	**Department of Statistics, Florida State University**
Apr, 1986	UNDERGRADUATE COURSES: Statistics Through Example; Fundamental Business Statistics.

Sept–Dec, 1983,	**Department of Mathematics, Florida State University**
Sept–Dec, 1982	UNDERGRADUATE COURSES: Calculus with Analytic Geometry I and II.

Jan–July, 1983,	**Program for Afloat College Education, US Navy.**
Jan–Mar, 1982	UNDERGRADUATE COURSES: College Algebra; Analytic Trigonometry; Calculus I.

Mar, 1980–	**Department of Mathematics, Florida State University**
Dec, 1981	UNDERGRADUATE COURSES: Basic College Algebra; Precalculus Algebra; Intermediate Algebra for Business and Non-Physical Sciences; Analytic Trigonometry; Calculus for Business.

PhD Students Directed

Marinela Capanu. Summer 2005. Dissertation title: *Tests of Misspecification for Parametric Models.* Associate Attending Biostatistician, Department of Epidemiology and Biostatistics, Memorial Sloan-Kettering Cancer Center.

Pavlina Rumcheva. Summer 2005. Dissertation title: *Projected Multivariate Linear Models for Directional Data.* Senior Service Fellow, National Center for Health Statistics, U.S. Centers for Disease Control and Prevention.

Mihai Gircanu. Summer 2007. Dissertation title: *Biased Bootstrap Methods for Semiparametric Models.* Research Associate Professor, Biostatistics Laboratory, Department of Public Health Services, The University of Chicago.

Undergraduate Honors Theses Directed

Evelyn C. Calvo (1993). A Study of the Use of Randomization Tests in Statistics. Selected for presentation at Undergraduate Research Symposium at the University of Florida. Evelyn was subsequently awarded a graduate minority fellowship by the University of Florida and earned a masters degree in statistics.

Christopher J. Wiggenhorn (1994). Iterating the Bootstrap for Confidence Interval Correction. Christopher was subsequently awarded an NSF fellowship for graduate study in the mathematical sciences and earned a PhD in statistics at the University of Minnesota.

PhD Committees in Statistics

Chung, Daehyun. *Estimation of the Baseline Hazard Function in Cox's Regression Model Under Order Restriction* (Spring, 1992). Advisor: Myron Chang.

Kim, Dal-Ho. *Robust Bayesian Inference in Finite Population Sampling* (Summer, 1994). Advisor: Malay Ghosh.

Kim, Dong Uk. *Improved Exact Methods for Statistical Inference in Contingency Tables* (Summer, 1994). Advisor: Alan Agresti.

Um, Yonghwan. *Multivariate Nonparametric Tests for Independence and for Multi-Sample Location Problems* (Fall, 1995). Advisor: Ronald R. Randles.

Morrison, Scott. *A Multiple Regression Model for Angular Responses* (Fall, 1995). Advisor: Ramon Littell.

Jones, Galin. *Convergence Rates and Monte Carlo Standard Errors for Markov Chain Monte Carlo Algorithms* (Summer 2001). Advisor: James Hobert.

Jank, Wolfgang. *Monte Carlo Estimation Methods in General Hierarchical Models* (Summer 2001). Advisor: James Booth.

Marchev, Dobrin. *Monte Carlo Methods for Posterior Distributions Associated with Multivariate Student's t Data* (Summer 2004). Advisor: James Hobert.

Hitchcock, David. *Smoothing Functional Data for Cluster Analysis* (Summer 2004). Co-advisors: James Booth and George Casella.

Mergel, Viktor. *Divergence Loss for Shrinkage Estimation, Prediction and Prior Selection* (Summer 2006). Advisor: Malay Ghosh.

Lee, Keunbaik. *Marginalized Regression Models for Longitudinal Categorical Data* (Summer 2007). Advisor: Michael Daniels.

Roy, Ananya. *Empirical and Hierarchical Bayesian Methods with Applications to Small Area Estimation* (Summer 2007). Advisor: Malay Ghosh.

Roy, Vivekanda. *Theoretical and Methodological Developments for Markov chain Monte Carlo Algorithms for Bayesian Regression* (Summer 2008). Advisor: Jim Hobert.

Wang, Chenguang. *Bayesian Methods and Sensitivity Analysis for Incomplete Longitudinal Data* (Summer 2010). Advisor: Michael Daniels.

Touloumis, Anestis. *Generalized Estimating Equations for Multinomial Responses* (Summer 2011). Advisor: Alan Agresti.

Kim, Chanmin. *Bayesian Methods for Inference on the Causal Effects of Mediation* (Summer 2013). Advisor: Michael Daniels.

Wu, Yang. *Bayesian Inference with Composite Likelihoods* (Summer 2015). Advisor: Malay Ghosh.

Xu, Dandan. *Bayesian Methods for Analysis of Electronic Health Records* (Summer 2016). Advisor: Michael Daniels.

Ha, Trung Thanh. *Convergence Analysis of Birth-Death Markov Chains and Gibbs Samplers* (Summer 2016). Advisor: James Hobert.

Wu, Xiao. (In progress). Advisor: Michael Daniels.

Luo, Xuan. (In progress). Advisor: Michael Daniels.

PhD Committees in Other Departments

Eric Spellman, Computer and Information Science and Engineering, University of Florida. *Fusing Probability Distributions with Information Theoretic Centers.* Advisor: Baba Vemuri. Completed Summer 2005.

Vinh Nghiem, Computer and Information Science and Engineering, University of Florida. Advisor: Baba Vemuri. Completed Fall 2009.

Ajit Rajwade, Computer and Information Science and Engineering, University of Florida. Advisors: Anand Rangarajan and Arunava Banerjee. Graduated Fall 2010.

Ting Chen, Computer and Information Science and Engineering, University of Florida. Advisor: Baba Vemuri. Graduated Fall 2011.

Guang Cheng, Computer and Information Science and Engineering, University of Florida. Advisor: Baba Vemuri. Graduated Spring 2012.

Surendra Boppana, Computer and Electrical Engineering, University of Florida. Advisor: John Shea. Graduated Summer 2008.

Shilpa Patil, Rehabilitation Science, University of Florida. Advisor: Carolynn Patten. Graduated Fall 2013.

Wei Xu, Research and Evaluation Methodology, University of Florida. Advisor: David Miller. Graduated Summer 2016.

Masters Committees in Statistics

Kim Menezes, John Hughson, Kadir Battal, Marc Boyer, Martine Ferguson Rebecca Deen, David Hitchcock (chair), Pavlina Rumcheva (chair), Madhu Trehan (chair), John Yap, Aixin Tan (chair), Anestis Touloumis (chair), Yingxia Wan (chair), Michael Hyman, (chair) Chen Li (chair), Quan Tran (chair), Lei Bai (chair), Lei Huang (chair), Nate Holt, Zhe Chen (chair), Xiaofan Xu (chair), Xiaolong Zhong (chair), Steven Foti (chair), Kevin Murphey (chair), Ruoxuan Xiang (chair), Yang Wu, Truang Ha, Shu Ye

Masters Committees in Other Departments

Robert Jackson (345-54-7848). Department of Mathematics, University of Florida. MAT/MST Supervisory Committee. (1995–96)

Departmental Governance and Service at the University of Florida

Department Chair (2013–2017)

Interim Department Chair (2012–2013)

Undergraduate Coordinator (2012–2013)

Associate Chair (2004–2006)

Computing Coordinator (1998–2005)

Computing Committee (1990–1996)

PhD Electives Committee (2005)

Graduate Program Committee (1998–2001)

Graduate Curriculum Committee (2001-2002)

PhD Qualifying Exam Committee (2002; Chair 2003–2008 and 2010–2012)

PhD Part B Examination Committees (Fall, 1991; Spring, 1992; Summer, 1992; Summer, 1995)

Search Committee Chair (tenure-track faculty search) (2018-2019)

Search Committee (tenure-track faculty search) (1999–2000, 2001–2002, 2002–2003 (chair), 2007–2008, 2010–2011, 2011–2012)

Search Committee (lecturer search) (2002–2003)

Departmental Task Force on Development of Junior Faculty (1993)

Teaching Improvement Program (TIP) Award Committee (1998-1999)

Library Committee (chair: 1995–1996; member 1999-present)

Social Committee (1990–93)

Other Professional Activities

Conference organizer for "Monte Carlo in the New Millennium," held January 12-13, 2001 at the University of Florida. Other organizers were Jim Booth, George Casella, Jim Hobert, and Ranjini Natarajan.

Conference organizer for "Workshop on Imaging, Clustering, and Classification," held January 11-12, 2002 at the University of Florida. Other organizers were George Casella, Sam Wu, Jim Booth, Dave Wilson, Rongling Wu, Alan Hutson and Jim Kepner.

Conference organizer for "An IMS Mini-Meeting on Functional Data Analysis," held January 10-11, 2003 at the University of Florida. Other organizers were George Casella, Sam Wu, Jim Booth, Jim Hobert, Bhramar Mukherjee, Clyde Schoolfield, and Alex Trindade.

Grant reviewer for The National Science Foundation.

Grant reviewer for The National Security Agency.

External examiner for PhD dissertation at Australian National University (2003)

External examiner for PhD dissertation at Monash University, Australia (2008)

Institute of Mathematical Statistics representative to the Management Committee for the Current Index to Statistics (2011–2014)

April, 2019