

September 13, 2011

**VITA**  
**George Casella**

**Address**

Department of Statistics  
102 Griffin-Floyd Hall  
University of Florida  
Gainesville, FL 32611

Email: casella@ufl.edu  
Phone: 352-392-273-2993  
Fax: 352-392-5175

**Current Positions**

Distinguished Professor, Department of Statistics, College of Agriculture, University of Florida  
Distinguished Member, Genetics Institute, University of Florida  
University of Florida Research Foundation Professor 2011-2014  
Member, Governing Board of the Statistical and Mathematical Sciences Institute (SAMSI)  
Member, Board of Trustees of the National Institute of Statistical Science (NISS)  
Member, Scientific Advisory Committee for the Oslo Centre of Statistics for Innovation, Norway  
Editor, Journal of the Royal Statistical Society, Series B

**Previous Positions**

Colonel Allan R. and Margaret G. Crow Term Professor, 2009-2010  
Distinguished Professor, Department of Statistics, College of Liberal Arts, University of Florida, 2004-2010  
Distinguished Professor and Chair, Department of Statistics, University of Florida  
Executive Editor, Statistical Science, 2002-2004  
Professor and Chair, Department of Statistics, University of Florida, 2000-2003  
Arun Varma Commemorative Term Professor, Department of Statistics, University of Florida  
Liberty Hyde Bailey Professor of Biological Statistics, Cornell University, Ithaca, New York 1997-2000  
Theory and Methods Editor, Journal of the American Statistical Association, 1996-1999  
Professor, Biometrics Unit, Cornell University, Ithaca, New York. 1989-1997  
Graduate Faculty Representative, Field of Statistics, Cornell University.  
Director, Statistics Center, Cornell University.  
Associate Professor, Biometrics Unit, Cornell University, Ithaca, New York 14853, 1983-1989.  
Visiting Professor, Department of Statistics, Purdue University, West Lafayette, IN, 1987-1988.  
Chairman, Biometrics Unit, Cornell University, Ithaca, NY, 1985-86.  
Visiting Associate Professor, Department of Statistics, North Carolina State University, Raleigh, NC, Jan.-May 1985.  
Assistant Professor, Biometrics Unit, Cornell University, Ithaca, NY, 1981-1983.  
Assistant Professor, Department of Statistics, Rutgers University, New Brunswick, NJ, 1977-1981.

## Honors

Foreign Member, Royal Academy of Sciences, Spain, elected 2009  
Medallion Lecturer, Joint Statistical Meetings, August 2009  
ISI “Highly Cited” Researcher [www.isihighlycited.com](http://www.isihighlycited.com)  
Twentieth Century Distinguished Service Award, Ninth Lukas Symposium  
SUNY Chancellors Award for Excellence in Teaching, 1999  
Distinguished Achievement Award, ASA Section on Statistics and the Environment, 1999  
Distinguished Alumnus, Purdue University School of Science, 1998  
Fellow, American Statistical Association, elected 1988.  
Fellow, Institute of Mathematical Statistics, elected 1988.  
Elected Fellow, International Statistics Institute, elected 1989.

## Education

School	Major	Degree	Date
Purdue University	Mathematical Statistics	Ph.D.	May, 1977
Purdue University	Applied Statistics	M.S.	May, 1974
Fordham University	Mathematics	B.A.	June, 1972

## Grants Held

Principal Investigator, NSF/SES/1028329: Collaborative Research: Identifying Structure in Social Data Models using Markov Chain Monte Carlo Algorithms  
Principal Investigator, NIHR01: Algorithms for Statistical Genomics. August 2008-July 2011  
Principal Investigator NSF/DMS/SES 0631632: Collaborative Research: Adaptive Markov Chain Monte Carlo Algorithms for Social Data Models. Jan 2007-Dec 2009  
Co-Principal Investigator, NSF Plant Genome Project: Dose-dependent genes affecting seed composition and weight. Dec 2006-August 2010  
Co-Principal Investigator, NSF Plant Genome Project: Association Genetics in Pine 2005-2009  
Principal Investigator, NSF Mathematical Biology Division: Functional Mapping of Quantitative Traits 2005-2009  
Principal Investigator for National Science Foundation Grants in Statistical Methodology:  
No. MCS79-05771 (June 1979-Nov. 1981), No. MCSS83-00875 (June 1983-Nov. 1985),  
No. DMS-8501973 (Sept. 1985-Feb. 1988), No. DMS-89-0039 (July 1989-Feb. 1992),  
No. DMS-91-00839 (July 1991-Feb. 1994), No. DMS-93-05547 (July 1993-Feb. 1997),  
No. DMS-96-25440 (July 1996-Feb. 2000), No. DMS-9971586 (July 1999-Feb. 2004),  
No. DMS-0405543 (July 2004-Feb. 2007), No. DMS-0631632 (Jan 2007- Dec 2009)  
Project Director, National Institutes of Health Training Grant EHS-1-T32-ES-7261-01, “Training in Statistics and Environmental Science,” 1990-1995, and Grant EHS-2-T32-ES-07261-6, 1995-2000.  
Co-Principal Investigator (with C. Robert) on the joint NSF-CNRS (France) INT-9216784, 1992-1996.  
Principal Investigator for National Security Agency Grant No. 90F-073, July 1991-Feb. 1994.  
Principal Investigator for Hatch Project NYC-1517402, “Empirical Bayes Data Analysis,” Oct. 1986-Sept. 1994.

## Experience

1. Teaching: Purdue University, Department of Statistics, 1972-1977. Rutgers University, Department of Statistics, 1977-1981. Cornell University, Biometrics Unit, 1981-2000. University of Florida, Department of Statistics, 2000-
2. Consulting: Statistical consultant for New Jersey Agricultural Experiment Station, Rutgers University, 1977-1981, Cornell University College of Agriculture & Life Sciences, 1981-2000, University of Florida 2000-. Extensive consulting experience, both university and industrial, including such projects as: detection of sex-based salary discrimination, modeling sulfur dioxide concentration around power plants, evaluation of risk to aircraft due to bird concentration around airports, analysis of efficacy and safety of a new drug, quality control in candy manufacturing, evaluation of studies concerning toxicity of power plant waste, assessing environmental impact of power plant operations on Hudson River fish population, evaluation of meta-analytic studies of fluoride-containing dentifrices, modeling mercury levels around solid waste plants, assessing predictors of prostate cancer, microarray analysis of soy isoflavones, reviews of Consumer Product Safety Commission study on arsenic risk from pressure-treated lumber in playgrounds.
3. Journal Referee: Served as referee for the following journals: Annals of Statistics, Annals of the Institute of Statistical Mathematics, Biometrics, Communication in Statistics, International Statistics Review, Journal of the American Statistical Association, Journal of Multivariate Analysis, SIAM Review, Technometrics.
4. Editorial Service: Executive Editor, Statistical Science, 2002-2004, Theory and Methods Editor, Journal of the American Statistical Association, 1996-1999, Associate Editor for the Journal of the American Statistical Association, 1980-88 and 1993-1994, Associate Editor of Book Reviews of the Journal of the American Statistical Association, 1985-1989, Associate Editor of The American Statistician 1987-1992, Associate Editor of Environmental Toxicology and Chemistry, 1990-1993, Editor of Statistical Science 1992-1994 and 1999-2001.

## Professional Societies

American Statistical Association	Institute of Mathematical Statistics
Canadian Statistical Society	Royal Statistical Society
International Statistical Institute	

## Professional Service

1. Advisory Board of SAMSI (Statistics and Mathematical Sciences Institute)
2. Member, Selection Committee for DeGroot Prize (awarded every other year for the best book in Bayesian Statistics), 2006
3. Advisory Board for National Institute of Statistical Sciences
4. Chair, Committee to Select the Theory and Methods Editor, Journal of the American Statistical Association, 2004
5. Member, Science and Outreach Advisory Committee, USDA/IFAFA Grant for Allele Discovery for Economic Pine Traits (ADEPT)
6. Chair, Academic Program Representatives of the American Statistics Association 2003
7. Member of the Board on Mathematical Sciences, National Research Council, 1998-2002

8. Chair, Section on Statistics and the Environment, American Statistical Association, 1997
9. Member, Council of the Institute of Mathematical Statistics 1995-1998
10. Biometrics Section representative to the Board of Directors of the American Statistical Association, 1984-1986.
11. Chairman, Committee on Restructuring of the Constitution of the American Statistical Association, 1987-1989.
12. External Examiner in Statistics, University of the West Indies, Queen's University (Ontario).
13. Organizer of the Cornell Workshop on Conditional Inference, June, 1991; UF Winter Workshop on Monte Carlo Methods, Jan 2001; UF Winter Workshop on Imaging, Clustering and Classification, Jan. 2002; UF Winter Workshop on Functional Data Analysis, Jan. 2003,

## University Service

1. Search Committees; Statistics (Chair); IFAS Statistics, Microbiology and Cell Science, School of Forestry.
2. Chair, Department of Statistics, IFAS
3. Chair, Department of Statistics, College of Medicine
4. Participated in University Bioinformatics Initiative. Chaired a committee to develop a Graduate Program in Bioinformatics. Completed October 2001.
5. Provost's COI Monitoring Committee
6. Graduate Admissions Chairman, Fields of Statistics and Biometry. 1985-1992
7. Director of Graduate Studies, Fields of Statistics and Biometry, 1998-2000.
8. University Promotion and Tenure Committee
9. Undergraduate Advisor

## State of Florida

Advisor to the Medicaid Fraud Unit of the State of Florida. Provide direction on sampling plans for auditing of records

## Books

1. *Statistical Inference*. Wadsworth/Brooks Cole, 1990. (With R.L. Berger.)
2. *Variance Components*. John Wiley, 1992. (With S.R. Searle and C.E. McCulloch.)
3. *Theory of Point Estimation, Second Edition*. Springer-Verlag, 1998. (With E. L. Lehmann.)
4. *Monte Carlo Statistical Methods*. Springer-Verlag, 1999. (with C. Robert)
5. *Statistical Inference, Second Edition*. Duxbury, 2001. (With R.L. Berger.)
6. *Monte Carlo Statistical Methods, Second Edition*. Springer-Verlag, 2004. (with C. Robert)
7. *Statistical Genomics of Complex Traits* (with C-X Ma and R. Wu). Springer-Verlag, 2007
8. *Statistical Design*. Springer-Verlag, 2008
9. *Introduction to Monte Carlo Methods with R*. Springer-Verlag, 2009. (with C. Robert)

## Books Edited

1. *Statistical Design: Theory and Practice*. Proceeding of a Conference in Honor of W.T. Federer. Cornell University, 1986. (With C.E. McCulloch, S.J. Schwager, and S.R. Searle.)
2. *Statistics: A Guide to the Unknown, Fourth Edition* (with Roxy Peck and others)

## Publications - Statistics

1. Minimax Estimation of a Normal Mean with Arbitrary Quadratic Loss and Unknown Covariance Matrix. *Ann. Stat.* 5, 763-771, 1977. (With J. Berger, M.E. Bock, L. Brown, and L. Gleser.)
2. Minimax Ridge Regression Estimation. *Ann. Statist.* 8, 1036-1056, 1980.
3. Confidence Bands for Linear Regression with Restricted Predictor Variables. *JASA* 75, 862-868, 1980. (With W.E. Strawderman.)
4. Estimating a Bounded Normal Mean. *Ann. Statist.* 9, 870-878, 1981. (With W.E. Strawderman.)
5. Minimax Confidence Sets for the Mean of a Multivariate Normal Distribution. *Ann. Statist.* 10, 868-881, 1982. (With J.T. Hwang.)
6. Limit Expressions for the Risk of James-Stein Estimators. *The Canadian Journal of Statist.* 10, 305-309, 1982. (With J.T. Hwang.)
7. Leverage and Regression Through the Origin. *The American Statist.* 37, 147-152, 1983.
8. Empirical Bayes Confidence Sets for the Mean of a Multivariate Distribution. *Journal of the American Statistical Association* 78, 688-697, 1983. (With J.T. Hwang.)
9. Improved Set Estimators for a Multivariate Normal Mean. *Statistics and Decisions, Supplement Issue No. 1*, 3-16, 1984. (With J.T. Hwang.)
10. The Existence of the First Negative Moment. *The American Statist.* 39, 60-62, 1985. (With W.W. Piegorsch.)
11. An Introduction to Empirical Bayes Data Analysis. *The American Statist.* 39, 83-87, 1985.
12. Matrix Conditioning and Minimax Ridge Regression Estimation. *Journal of the American Statistical Association* 80, 753-758, 1985.
13. Stabilizing Binomial  $n$  Estimators. *Journal of the American Statistical Association*, 81, 172-175, 1986.
14. Confidence Sets and the Stein Effect, Special Issue on Stein Estimation. *Communications in Statistics* 15, 2043-2064, 1986. (With J.T. Hwang.)
15. Refining Binomial Confidence Intervals. *Canadian Journal of Statist.*, 14, 113-129, 1986.
16. Employing Vague Prior Information in the Construction of Confidence Sets. *Journal of Multivariate Analysis* 21, 79-104, 1987. (With J.T. Hwang.)
17. Conditional Properties of Interval Estimators of the Normal Variance. *Annals of Statistics* 15, 1372-1388, 1987. (With J. Maatta.)
18. Conditionally Acceptable Recentered Set Estimators. *Annals of Statistics* 15, 1363-1371, 1987.
19. Confidence Bands for Logistic Regression with Restricted Predictor Variables. *Biometrics* 44, 739-750, 1988. (With W.W. Piegorsch.)
20. De meilleures régions de confiance pour les distributions à symétrie sphérique. *Statistique*, 233-236, 1989. (With C. Robert.)

21. Refining Poisson Confidence Intervals. *Canadian Journal of Statistics* 17, 45-58, 1989. (With C. Robert.)
22. The Early Use of Matrix Diagonal Increments in Statistical Problems. *SIAM Review* 31, 428-434, 1989. (With W.W. Piegorsch.)
23. Estimators with Nondecreasing Risk: Application of a Chi-Squared Identity. *Statistics and Probability Letters* 10, 107-109, 1989.
24. Improved Confidence Sets in Spherically Symmetric Distributions. *The Journal of Multivariate Analysis* 32, 84-94, 1990. (With C. Robert.)
25. The Relevance Density Method for Multi-Topic Queries in Information Retrieval. (With Y. Kane-Esrig, L.A. Streeter, and S. Dumais.) *P. Comp. Sc. St.* 23, 407-410, 1991.
26. Evaluating Confidence Sets Using Loss Functions. *Statistica Sinica* 1, 159-173, 1991. (With J.T. Hwang.)
27. Improved Invariant Confidence Intervals for a Normal Variance. *Ann. of Stat.* 19, 1991. (With C. Goutis.)
28. Conditional Inference from Confidence Sets, in *Current Issues in Statistical Inference: Essays in Honor of D. Basu.* (Ghosh and Pathak, eds.) *IMS Monograph Series* 1992, 1-12.
29. Improving the EM Algorithm. *Computer Science and Statistics. Proceedings of the 23rd Conference on the Interface.* (With D. Lansky.)
30. Estimation of Accuracy in Testing. *Ann. Stat.* 20, 1992. (With J.T. Hwang, C. Robert, M.T. Wells, and R.H. Farrell.)
31. Goutis, C. and Casella, G. (1992). Increasing the Confidence in Student's  $t$ . *Ann. Statist.* **20** 1501-1513.
32. Explaining the Gibbs Sampler. *American Statistician* 46, 1992. (With E.I. George.)
33. Deriving Generalized Means as Least Squares and Maximum Likelihood Estimates. *American Statistician* 46, 279-282, 1992. (With R.L. Berger.)
34. Illustrating Empirical Bayes Methods. *Chemolab* 16, 107-125, 1992.
35. A Paradox in Decision-Theoretic Set Estimation. *Statistica Sinica* 3, 141-155, 1993. (With J.T. Gene Hwang and C. Robert.)
36. Loss Functions for Set Estimation. *Proceedings of the Fifth Purdue Symposium on Decision Theory and Related Topics.* (With J.T. Gene Hwang and C. Robert.)
37. Improved Confidence Statements for the Usual Multivariate Normal Confidence Set. *Proceedings of the Fifth Purdue Symposium on Decision Theory and Related Topics.* (With C. Robert.)
38. An Empirical Bayes Confidence Report. *Statistica Sinica* 4, 617-638, 1994. (With E.I. George.)
39. Estimation with Selected Binomial Information. *Journal of the American Statistical Association* 89, 1080-1090, 1994. (With R.L. Berger.). Reprinted in *Anthology of Statistics in Sports (2005)*, J. Albert, J. Bennet and J. J. Cochran, eds. *ASA-SIAM Series on Statistics and Applied Probability*, SIAM, Philadelphia, ASA, Alexandria, VA.
40. Distance weighted loss functions for testing and confidence set estimation. *Theorie Estadistica* 3, 163-182, 1994. (With C. Robert.)
41. Evaluating the Efficiency of Blocking without Assuming Compound Symmetry. *Journal of Statistical Planning and Inference* 38, 237-248, 1994. (With M.L. Samuels and G.P. McCabe.)
42. On Estimating Several Binomial  $N$ 's. *Sanky* 56, 115-120, 1994. (With W.E. Strawderman.)
43. Optimal Confidence Sets, Bioequivalence, and the Limacon of Pascal. *Journal of the American Statistical Association* 90, 508-515, 1995. (With J.T.G. Hwang and L.D. Brown.)

44. Improved Invariant Set Estimation for General Scale Families. *J. Statist Plann. Inference* 44, 327-340, 1995. (With C. Goutis.)
45. Nonparametric Empirical Bayes Growth Curve Analysis. *Journal of the American Statistical Association* 90, 508-515, 1995. (With N.S. Altman.)
46. Frequentist Post-Data Inference. *International Statistical Institute Review*, 63, 325-344, 1995. (With C. Goutis.)
47. Recycling Rejected Values in Accept-Reject Estimators (with Christian Robert). *C.R. Acad. Sci. Paris* 321, 1621-1626, 1995.
48. Convergence of Posterior Odds (1995). *J. Statist Plan. Inf.* 55 331-344 (with R. Levine).
49. Rao-Blackwellization of Sampling Schemes. (With C. Robert.) *Biometrika* 83, 81-94, 1996
50. Comparing p-values to Neyman-Pearson tests. (With M.T. Wells.) *Bayesian Analysis in Statistics and Economics: Essays in Honor of Arnold Zellner* (D.A. Berry, K.M. Chaloner and J.K. Geweke, eds.), 507-514, 1996.
51. The effect of improper priors on Gibbs sampling in hierarchical linear models (1996). *Journal of the American Statistical Association* 91 1461-1473. (With J. Hobert.)
52. Practical Small Sample Asymptotics for Regression Problems. *Journal of the American Statistical Association*, 91, 643-654, 1996. (With R.L. Strawderman and M.T. Wells.)
53. Une Implémentation de Théorème de Rao-Blackwell en Simulation avec Reject (with Christian Robert). *C.R. Acad. Sci. Paris I*, 571-576, (1996).
54. Assessing Evidence in Multiple Hypotheses (1996). (With C. Goutis and M. Wells.) *J. Amer. Statist. Assoc.* 91, 1268-1277.
55. Empirical Bayes Estimation for Logistic Regression and Extended Parametric Regression Models (1996). *Journal of Agricultural, Biological and Graphical Statistics.* 1, 231-247. (with W. Piegorisch)
56. Relationships Between Post-data Accuracy Measures (1997). *Ann. Inst. Statist. Math.* 49 711-726. (with C. Goutis.)
57. An Application of Gibbs Sampling to Estimation in Meta Analysis: Accounting for Publication Bias. *Journal of Educational and Behavioral Statistics* 22, 141-154. (1997) (with Richard Cleary).
58. Frequentist Post-Data Inference (1997). *International Statistical Institute Review* . (With C. Goutis.)
59. Post-Processing Accept-Reject Samples: Recycling and Rescaling. (1998). *J. Comp. Graph. Statist.* 7 139-157. (with C. P. Robert)
60. Functional compatibility, Markov chains, and Gibbs sampling with improper posteriors. (1998). *J. Comp. Graph. Statist.* 7 42-60. (With J. Hobert.)
61. Explaining the Saddlepoint Approximation. (1999) . *The American Statistician.* 53 216-224 (with C. Goutis)
62. Eberly, Lynn E. , and Casella, George (1999), "Bayesian estimation of the number of unseen studies in a meta-analysis", *Journal of Official Statistics*, 15 , 477-494
63. Correlation in a Bayesian Framework. (2000). (with A. DasGupta, M. Delampady, C. Genest, H. Rubin, and W. E. Strawderman). *Canadian Journal of Statistics* 28 675-687.
64. Implementations of the Monte Carlo EM Algorithm. (2001). *Journal of Computational and Graphical Statistics* 10 422-439. (with R. Levine)
65. Predictive Environmental Risk Analysis (with YS Joo) (2001). *Envirometrics* 12 647-658
66. A new approach to default priors and robust Bayes methodology (2001) (with M. Delampady, A. DasGupta, H. Rubin & W. E. Strawderman). *Canadian Journal of Statistics* 29 437-450..

67. The Existence of the First Negative Moment Revisited (with A. Khuri). (2001). *The American Statistician* 56 44-47
68. Explaining the Perfect Sampler (with M. Lavine and C. Robert). (2001). *The American Statistician* 55 299-305.
69. Empirical Bayes Gibbs Sampling. (2001). *Biostatistics* 2 485-500.
70. Conditional Inference Following Group Sequential Testing. (2003) *Biometrical Journal* 45, 515-526. (With P. Ohman-Strickland)
71. Perfect Slice Samplers for Mixtures of Distributions (with C. Robert, K. Mengersen and D. M. Titterton) *Journal of the Royal Statistical Society* 64 777-790 (2002)
72. Estimated Saddlepoint Approximations (2002). *Canadian Journal of Statistics* 30 97-108. (with P. Ohman)
73. Implementing Matching Priors for Frequentist Inference (with R. Levine). (2003). *Biometrika* 90, 127-137.
74. Booth, J.G., Casella, G., Friedl, H., and Hobert, J. (2003). Negative Binomial Loglinear Mixed Models. *Statistical Modelling* 3 179-191.
75. Eberly, Lynn E. , and Casella, George (2003), "Estimating Bayesian credible intervals", *Journal of Statistical Planning and Inference*, 112 (1-2) , 115-132
76. Casella, G. Robert, C. P., and Wells, M.T. (2004). Generalized Accept-Reject Sampling. In *A Festschrift for Herman Rubin*. Beachwood, Ohio: IMS Monograph Series Volume 45, 342-347.
77. Gill, J. and Casella, G. (2004). Dynamic Tempered Transitions for Exploring Multimodal Posterior Distributions. *Political Analysis* 12 425-443
78. Casella, G. Robert, C. P., and Wells, M.T. (2004). Latent Variables, Mixture Models, and Partitioned Importance Sampling. *Statistical Methodology* 1 1-18.
79. Casella, G. and Moreno, E. Intrinsic Meta-Analysis of Contingency Tables. (2005) *Statistics in Medicine* 24, 583-604
80. Moreno, E, Casella, G, and Garcia-Ferrar, A. (2005). An Objective Bayesian Analysis of the Changepoint Problem. *Stochastic Environmental Research and Risk Assessment* 19 191-204
81. Moreno, E., Torres, F, and Casella, G. (2005). Testing Equality of Regression Coefficients in Heteroscedastic Normal Regression Models. *J. Statist. Plann. Inf* 131, 117-134
82. Casella, G. and Moreno, E. (2006) Objective Bayes Variable Selection. *Journal of the American Statistical Association* —bf 101 157-167.
83. Hitchcock, D, Booth, J. and Casella, G. (2006) Pre-Processing of Functional Data for Cluster Analysis. *Journal of the American Statistical Association* 101 211-222
84. Levine, R. and Casella, G. (2006). Optimizing Random Scan Gibbs Samplers. *Journal of Multivariate Analysis* 97 2071-2100.
85. Hitchcock, D, Booth, J. and Casella, G. (2007) The Effect of Pre-Smoothing of Functional Data on Cluster Analysis. *Journal of Computational and Graphical Statistics.* 77, 1043-1055.
86. Joo, Y., Casella, G., Booth, J. G., Lee, K. and Enkemann, S.. (2007). Normalization of Dye Bias in Microarray Data Using the Mixture of Splines Model. *Statistical Applications in Genetics and Molecular Biology* 6, Article 2.
87. Wu, S.S, Li, H., and Casella, G. (2006). Tests with Optimal Average Power in Multivariate Analysis. *Statistica Sinica* 16 255-266.
88. Joo, Y. and Casella, G. (2006). Partial Intrinsic Bayes Factors. *Journal of the Korean Statistical Society*.

89. Booth, J. G., Casella, G. and Hobert, J. P. (2008). Clustering using objective functions and stochastic search. *Journal of the Royal Statistical Society, Series B* **70** 119-140.
90. Joo, Y. , Booth, J. G., Namkoong, Y. and Casella, G. (2008). Model-Based Bayesian Clustering (MBBC). *Bioinformatics* **24** 874-875
91. Park, T. and Casella, G. (2008). The Bayesian Lasso. *Journal of the American Statistical Association* **103** 681-686
92. Yang, J, Wu, R and Casella, G. (2009). Nonparametric Functional Mapping of QTL. *Biometrics* **65** 30-39. Chosen by the Co-Editors of *Biometrics* to be presented in the session "Breakthroughs in Bioinformatics and Statistical Genetics", Joint Statistical Meetings, August 2010.
93. Casella, G., Girón, F. J. and Moreno, E. (2009). Consistent Model Selection in Regression. *Annals of Statistics* **37** 1207-1228
94. Brumback, B. A, Winner, L. H., Casella, G., Ghosh, M., Hall, A., Zhang, J., Chorba, Lorna, and Duncan, P. (2008). Estimating a Weighted Average of Stratum-Specific Parameters. *Statistics in Medicine* **27** 4972-4991.
95. Gill, J and Casella, G. (2009). Nonparametric Priors for Ordinal Bayesian Social Science Models. *Journal of the American Statistical Association* **104** 453-464.
96. Casella, G. and Moreno, E. (2009). Assessing Robustness of Intrinsic Tests of Independence in Two-way Contingency Tables. *Journal of the American Statistical Association* **104** 1261-1271.
97. Kyung, M, Gill, J. and Casella, G. (2009). Characterizing the variance improvement in linear Dirichlet random effects models. *Statistics and Probability Letters* **79** 2343-2350.
98. Kyung, M., Gill, J. and Casella, G. (2009). Estimation in Dirichlet Random Effects Models. *Annals of Statistics* **38** 979 -1009.
99. Moreno, E., Girón, F. J., and Casella, G. (2010) Consistency of Objective Bayes Factors as the Model Dimension Grows. *Annals of Statistics* **38** 1937-1952.
100. Kyung, M., Gill, J., Ghosh, M. and Casella, G. (2010) Penalized Regression, Standard Errors, and Bayesian Lassos. *Bayesian Analysis* **5**, 369 - 412.
101. Y. Joo, G. Casella, and J. P. Hobert (2010). Bayesian model-based tight clustering for time course data. *Comput Stat* **25:17-38**. DOI 10.1007/s00180-009-0159-7
102. F. J. Girón, E. Moreno, G. Casella and M. L. Martínez. (2010). Consistency of objective Bayes factors for nonnested linear models and increasing model dimension. *Revista de la Real Academia de Ciencias Exactas, Físicas, y Naturales: Series A: Mathematicas (RACSAM)* **104** (1) 57 - 67. DOI:10.5052/RACSAM.2010.06
103. Robert, C.P. and Casella, G. (2010). A Short History of Markov Chain Monte Carlo - Subjective Recollections from Incomplete Data. In *Handbook of Markov Chain Monte Carlo: Methods and Applications*, edited by Steve Brooks, Andrew Gelman, Galin Jones, and Xiao-Li Meng (to appear). Available as arXiv0808.2902. Also in published in 2011 *Statistical Science* **26** 102-115.
104. Y. Joo, M. T. Wells, and G. Casella. (2010). Model Selection Error Rates in Nonparametric and Parametric Model Comparisons. To appear in the *Institute of Mathematical Statistics Collections: In Honor of the Seventieth Birthday of Larry Brown*.
105. Gopal, V., Fuentes, C., and Casella, G. (2010). *bayesclust*: An R package for Testing and Searching for Significant Clusters. To appear in the *Journal of Statistical Software*.
106. Casella, G. and Hwang, J. T. G. (2010). Shrinkage Confidence Procedures. To appear in *Statistical Science*.

107. Kyung, M., Gill, J. and Casella, G. (2011). Sampling Schemes for Generalized Linear Dirichlet Process Random Effects Models (with discussion). To appear in the *Journal of the Italian Statistical Society*.
108. Kyung, M., Gill, J. and Casella, G. (2011). New Findings from Terrorism Data: Dirichlet Process Random Effects Models for Latent Groups. To appear in the *Journal of the Royal Statistical Society, Series C*.
109. Neal, D., Casella, G., Yang, M. C. K., and Wu, S. (2011) Interval estimation in two-stage, drop-the-losers clinical trials with flexible treatment selection. To appear in *Statistics in Medicine*
110. Leon-Novelo, L., Moreno, E., and Casella, G. (2011). Objective Bayes Model Selection in Probit Models. To appear in *Statistics in Medicine*

### **Publications with Discussion - Statistics**

1. Reconciling Bayesian and Frequentist Evidence in the One-Sided Testing Problem. *Journal of the American Statistical Association* 82, 106-111, 1987, with discussion. (With R.L. Berger.)
2. Conditionally Acceptable Frequentist Solutions. *Statistical Decision Theory and Related Topics, IV, Vol. I*, 73-111, 1988, with discussion. S.S. Gupta and J.O. Berger, eds. Springer-Verlag, New York.
3. Developments in Decision-Theoretic Variance Estimation, with discussion. *Statistical Science* 5, 90-120, 1990. (With J.M. Maatta.)
4. Interpreting Blocks and Random Factors (with discussion). *Journal of the American Statistical Association* 86, 798-821, 1991. (With M.L. Samuels, G.P. McCabe.)
5. Statistical Theory and Computational Algorithms (with Discussion). (1996) *Theorie Estimatice*. 5, 249-344.
6. F. J. Girón, E. Moreno and G. Casella (2007). Objective Bayesian analysis of multiple changepoint models (with discussion). *Bayesian Statistics 8*, Oxford Press. 227-252.
7. C. Fuentes and G. Casella (2009). Testing for the Existence of Clusters (with discussion). *Statistics and Operations Research Transactions* 33 (2) 115-146.

### **Publications - Statistical Genetics and Genomics**

1. A Maximum Likelihood-Based Method for Mining Major Genes Affecting a Quantitative Trait (with R. Wu, B. Li and S.S. Wu). (2001) *Biometrics* 57 764-768
2. A Multivalent Pairing Model of Linkage Analysis in Autotetraploids (with R. Wu, Z-B Zheng, C-X Ma, M. C. K. Yang, and S.S. Wu). (2001). *Genetics* 159 1339-1350.
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## Special Invited Presentations

1. 1998 Myra Samuels Memorial Biostatistics Lecture, Purdue University, April 1998 "Random Cows, Random Corn and Random Effects Models"
2. 1998 Snedecor Statistics Lecture, Department of Statistics, Iowa State University, December 1998 "Data Driven Gibbs Sampling"
3. Special Invited Presentation, Italian Statistical Society, Trieste, Italy, October 2000 "Algorithms, Approximations, and Inference"
4. "Algunas cuestiones estadísticas en Bioinformática", Escuela Superior de Ciencias Experimentales y Tecnología, Universidad Rey Juan Carlos, Madrid, November 8, 2002 (as part of the Semana de las Ciencias in Spain)
5. Ralph Bradley Memorial Lecture, "Objective Bayes Variable Selection", University of Georgia, April 2003
6. "Objective Bayes Variable Selection" Special Invited Paper, Biometrics Society Eastern North American Region, Atlanta Georgia, March 2007.
7. "Model Selection; Theory and Methods. Special Invited Presentation. Workshop on Statistical Modeling, Barcelona, Spain July 2007.
8. "Bayesian and Frequentist Methods in Clinical Pharmacology" presented at the 37th Annual Meeting of the American College of Clinical Pharmacology, Philadelphia, PA, September 2008.
9. Craig Lectures, University of Iowa, May 2009. "From R. A. Fisher to Microarrays" and "Estimation in Dirichlet Random Effects Models"
10. IMS Medallion Lecture, August, 2009, Washington, D. C. "From R. A. Fisher to Microarrays"
11. "Estimation in Dirichlet Process Random Effects Models", plenary lecture, presented at *X Jornadas Nacionales de Bioestadística*, Santiago, Chile, January 2010.
12. "Nuevos Descubrimientos en Datos de Terrorismo: Modelos de Efectos Aleatorios con Proceso Dirichlet para Grupos Subyacentes. Induction Lecture, Real Academia de Ciencias Exactas, Físicas y Naturales de España, Madrid, Spain, May 2010
13. "Estimation in Dirichlet Process Random Effects Models", Plenary Lecture, 45<sup>th</sup> Meeting of the Italian Statistical society, Padova, Italy, June 2010.

## Selected Meeting Presentations

1. "Bayes, Empirical Bayes, and Conditional Frequency Approaches to Statistical Inference." Panel discussion presented at the Spring Regional Meeting, Biometric Society and American Statistical Association, March 1983. (J.O. Berger and C.N. Norris, co-panelists.)
2. "Conditional Properties of James-Stein Estimators." The Conference on Bayesian Inference, Rutgers University, October 1984.
3. "Reconciling Bayesian and Frequentist Evidence." Conference on Bayesian Inference, Mexico City, January 1986.
4. "Conditionally Acceptable Frequentist Solutions." The Purdue Symposium on Decision Theory and Related Topics, June 1986.
5. "Empirical Bayes Crop Prediction," The Biometric Society Spring Regional Meeting, March 1988.
6. "Uses of Frequency Calculations in Bayesian Robustness." Panel Discussion with D. Draper, C. Morris, and H. Rubin. Workshop on Bayesian Robustness, W. Lafayette, Indiana, March, 1989.

7. "Noninformative Robust Priors." Invited discussion of Professor L. Wasserman's presentation, Fourth Valencia International Meeting on Bayesian Statistics, Peniscola, Spain, April 15-20, 1991.
8. "Methods for Post-Data Inference." Purdue University Workshop on Decision Theory and Conditional Inference, West Lafayette, Indiana, July 22-26, 1991.
9. "Estimation of Accuracy in Testing and Set Estimation." Statistische Entscheidungstheorie (Conference on Statistical Decision Theory), Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, October 27-November 2, 1991.
10. "Meta-Analysis Fundamentals." Procter and Gamble Statistics Symposium, Cincinnati, Ohio, October 1992.
11. "Illustrating Empirical Bayes Methods." Tutorial presented at the Applied Statistics Conference, Atlantic City, N.J., December 1992.
12. "Bayesian and Frequentist Methods in Oceanography." Aha Hulikoa Hawaiian Winter Workshop on Probability Concepts in Physical Oceanography, University of Hawaii at Manoa, January 1993.
13. "Implementation and Inference in DNA Sequence Accuracy." Workshop on Case Studies in Bayesian Statistics, Carnegie Mellon University, Pittsburgh, Pennsylvania, October 1993.
14. "Graduate Training in Environmental Statistics." Annual Meeting of the International Environmental Statistics Society, Burlington, Ontario, Canada, August 1994.
15. "The Bayesian/Frequentist Compromise." Discussion of the papers by Das Gupta and George, Annual Meeting of the American Statistical Association, Toronto, Ontario, Canada, August 1994.
16. "Estimation with Selected Binomial Information." Annual Meeting of the American Statistical Association, Toronto, Ontario, Canada, August 1994.
17. "The Future of Environmental Statistics" Annual Meeting of the American Statistical Association, Anaheim, CA, August 1997.
18. "A Personal History of MCMC" Monte Carlo in the New Millennium, University of Florida, January 2001. Also presented at the Northern Florida ASA Chapter Meeting, February, 2001.
19. "Gibbs, MCMC and Importance Sampling" Invited Presentation at the NIST Mathematical and Computational Sciences Division and Statistical Engineering Division Symposium, April, 2001.
20. Making Sense of Complexity: Report on a Workshop on Dynamical Modeling of Complex Biological Systems. National Research Council Chairs Colloquium, Washington DC, November 2001.
21. "How to Successfully Publish in Statistical Journals", New Researchers Conference, Institute of Mathematical Statistics, Atlanta GA August 2001.
22. "Discussion of Bayes and Minimax Estimation by W. Strawderman", Joint Statistical Meetings, Atlanta GA August 2001.
23. "Objective Bayes Variable Selection", Workshop on Objective Bayesian Methods, Granada, Spain, December 2002. Also presented at the Ninth Biannual CDC Symposium, Atlanta, GA, January 2002; the Department of Statistics, University of Florida, January 2002, and University Carlos III, Madrid, October 10, 2002.
24. "Introducción para las métodos estadística de Monte Carlo". University of Malaga, Nov, 2002. Also presented at the University of Murcia, Nov 28, 2002 (in Spanish)
25. "Teaching Introductory Biometry". Invited presentation, Statistics Liberal Arts Workshop, Bowdoin College, July 2003.

26. "Intrinsic Priors for Contingency Tables" Presented at the Conference in Honor of Leon J. Gleser, Pittsburgh, PA May 2006
27. "Stochastic Search Methods for Variable Selection" Presented at the International Meeting on Forecasting, Santander, Spain June 2006

### Selected Seminars

1. "Stabilizing Binomial  $n$  Estimators," Department of Statistics, North Carolina State University, February 1985, and Biometry Department, NIEHS, March 1985.
2. "Conditional Problems with Frequentist Procedures," Department of Statistics, University of North Carolina at Chapel Hill, April 1985.
3. "Modeling Ichthyoplankton Entrainment in the Hudson River," Department of Statistics, North Carolina State University, May 1985.
4. "Reconciliation of Evidence," Department of Statistics, Penn State University, October 1986.
5. "Post-Data Confidence Statements," Bell Labs, Morristown, NJ, October 1986.
6. "Coherent Frequentist Post-Data Inference," Queens University, Department of Mathematics, Kingston, Ontario, March 1987.
7. "Refining Discrete Confidence Intervals," Department of Statistics, Purdue University, April 1987, Ohio State University, October 1987, Bowling Green State University, October 1987, University of Missouri at Columbia, November 1987, University of Chicago, January 1988.
8. "Loss Functions for Set Estimators," Institute of Statistics, Duke University, January 1989, Statistics Seminar, McGill University, May 1989.
9. "Estimating Acceptance Probabilities," Cornell University, September 1989; Carleton University, October 1989; Johns Hopkins University, April 1990.
10. "Estimation of Accuracy," Cornell University, July 1990; University of Toronto, September 1990; Colorado State University, October 1990; Ohio State University, October 1990; University of Buffalo, November 1990.
11. "Reconciliation, Coherence, and p-values," University of Rouen, France, April 1991.
12. "Estimation of Accuracy in Testing and Set Estimation," Cornell University, October 1991; Carnegie-Mellon University, October 1991.
13. "Optimal Confidence Sets, Bioequivalence, and the Limacon of Pascal," University of South Carolina, October 1992; University of Texas-Austin, Southern Methodist University, and Texas A&M University, April 1993; Duke University and University of North Carolina-Chapel Hill, November 1993.
14. "Estimation with Selected Binomial Information." Purdue University, April 1994; University of Michigan, April 1994; Université du Montréal, January 1995; University of North Carolina, March 1995.
15. "Statistical theory and Computational Algorithms." University of Granada, Spain, October 1996; CREST-INSEE, Paris, October 1996, University of Chicago, March 1996, University of Manitoba, March 1996, Florida State University, November 1995.
16. "Gibbs Sampling and the Linear Mixed Model". Institut National de la Recherche Agronomique, Jouy-en-Josas, France. (Presented in French) October 1996.
17. "Data-Driven Gibbs Sampling" University of Florida January 1998; SUNY Binghamton March 1998, Cornell University March 1998.
18. "Discussion of "Methods for Analysis of Categorical Data", June 1999 Conference on the Interface, Chicago

19. "Empirical Bayes Gibbs Sampling", December 1999, University of California, Davis
20. "Algorithms, Approximations and Inference", February 2000, University of Florida.
21. "Design of Microarray Experiments", presented in the ICBR Workshop on Microarray analysis, December 2001 and February 2002
22. "Introduccion para las metodos estadística de Monte Carlo". University of Malaga, Nov 2002. Also presented at the University of Murcia, Nov 2002 (in Spanish)
23. "Objective Bayesian Analysis of Contingency Tables", presented at University of Florida, October 2004 and University of Pennsylvania, November 2004
24. "Clustering Functional Data" presented at the Department of Biostatistics, Harvard University, May 2005
25. "Intrinsic Priors for Contingency Tables" presented at the University of Granada and the University of Malaga (Spain) July 2006 (in Spanish)
26. "From RA Fisher to Microarrays: Why 70-year Old Theory is Relevant Today", presented in the Department of Biostatistics, Johns Hopkins University, April 2008.
27. "A Historical Introduction to Markov Chain Monte Carlo" Series of two lectures at Washington University, St. Louis, MO, September 2008.
28. Estimation in Dirichlet Random Effects Models. Seminar presented at the University of Bath, Bath UK, and University of Bristol, UK, October 2008.
29. Discussion of the paper "Maximum likelihood estimation of a multidimensional logconcave density" By Cule, Samwarth and Stewart. Royal Statistical Society, London, England, May 2010.
30. "Estimation in Dirichlet Process Random Effects Models". Seminar presented at Harvard University, November 2010.

## Short Courses

1. "Empirical Bayes Data Analysis," Two-day short course given to the Division of Computer Resources and Technology, National Institutes of Health, Bethesda, MD. November 1985.
2. One Day Short Course, "Monte Carlo Statistical Methods", Ninth Biannual CDC Symposium, Atlanta, GA, January 2002.
3. "Monte Carlo Statistical Methods" short course presented at the Alaska Meeting of the American Statistical Association, July 2007.
4. "Statistical Design" short course presented at the Annual Meeting of the American Statistical Association, August 2008, Denver CO.
5. "Monte Carlo Statistical Methods" short course presented at Universidad Carlos III, Madrid Spain, May 2008.
6. "Statistical Design", short course presented at *X Jounadas Nacionales de Bioestadística*, Santiago, Chile, January 2010.
7. "Statistical Design", short course presented at *Annual Meeting of the Royal Statistical Society*, Brighton, England, September 2010.
8. "An Introduction to Monte Carlo Methods with R", short course presented at the 45<sup>th</sup> Meeting of the Italian Statistical society, Padova, Italy, June 2010.
9. "An Introduction to Monte Carlo Methods with R", short course presented at *XI Jounadas Nacionales de Bioestadística*, Santiago, Chile, January 2011 (in Spanish).

## Post-Doctoral Supervision

1. Minjung Kyung (PhD 2007, North Carolina State University) 2007-2010. Currently Assistant Professor, Washington University.
2. Luis Leon-Novelo (PhD 2009, Rice University/MD Anderson) 2009-2012.
3. Andrew Womack (PhD 2011, Washington University) 2011-2013.

## Theses Directed

1. Piegorsch, Walter W. "On the Estimation of the Join Point in Bilinear Segmented Regression." (Master's Thesis, completed May 1982.)
2. Breau, Patricia. "Optimal Designs for Segmented Polynomial Regression." (Master's Thesis, completed May 1983.)
3. Cece, Margaret. "Estimating a Bounded Regression Line." (Master's Thesis, completed May 1983.)
4. Maatta, Jon. "Limiting the Risk of Regression Coefficient Estimates." (Master's Thesis, completed August 1983.)
5. Piegorsch, Walter W. "Admissibility and Optimality of Regression Confidence Bands." (Ph.D. Thesis, completed May 1984.)
6. Berry, Calvin. "Estimation of a Common Mean." (Ph.D Thesis, completed May 1985.)
7. Maatta, Jon. "Conditional Properties of Interval Estimators of the Normal Variance." (Ph.D. Thesis, completed May 1985.)
8. Zanelli, Marta. "Empirical Bayes Methods in Mixed Linear Models." (Ph.D. Thesis, completed August 1985.)
9. Cece, Margaret. "A Conditional Approach to Two-Stage Selection." (Ph.D. Thesis, completed December 1985.)
10. Frongillo, Edward. "Estimation of Nonlinear Growth Curves with Autocorrelated Errors." (Master's Thesis, completed May 1987.)
11. Lansky, David. "Confidence Intervals for p-Values." (Master's Thesis, completed August 1988.)
12. Strang, Laura. "Statistics of Dendrochronological Cross-Dating." (Master's Thesis, completed December 1988.)
13. Goutis, Costas. "Invariant Confidence Intervals for a Normal Variance." (Ph.D. Thesis, completed May 1989.)
14. Barnard, John. "Sets of Regression Predictors with Positive Regression Sum of Squares." (Undergraduate Honors Thesis, completed May 1990.)
15. Kane-Esrig, Yana. "Information Retrieval and Estimation with Auxiliary Information." (Ph.D. Thesis, completed August 1990.)
16. Lansky, David. "Acceleration, Convergence, and Invariance Properties of the EM Algorithm." (Ph.D. Thesis, completed May 1991.)
17. Frongillo, Edward. "Combining Information Using Hierarchical Models." (Ph.D. Thesis, completed August 1991.)
18. Umbach, David. "Methodologies for Testing Distributional Form." (Ph.D. Thesis, completed May 1992.)

19. Cleary, Richard. "Selection Bias and Meta-Analytic Inference." (Ph.D. Thesis, completed January 1993.)
20. Levine, Richard. "Limiting Posterior Odds Ratios." (Master's Thesis, completed January 1994.)
21. Eberly, Lynn. "Estimating the Unseen Studies in Meta-Analyses." (Master's Thesis completed January 1994.)
22. Hobert, James. "Gibbs Sampling with Improper Priors." (Ph.D. Thesis, completed August 1994.)
23. Ohman, Pamela. "Conditional Properties of Sequential Confidence Intervals." (Masters Thesis, completed May 1995.)
24. Levine, Richard. "Post-Processing Random Variables." (Ph.D. Thesis, completed August 1996.)
25. Slack, Rebecca. "Optimizing Convergence Rates and Variances in Gibbs Sampling Modeling Maternal Depletion and Repletion." (Masters Thesis, completed August 1996.)
26. Eberly, Lynn. "Combining Confidence Intervals." (Ph.D. Thesis, completed May 1997.)
27. Jou, Ying-Ming. "Saddlepoint Approximations of Variance." (Masters Thesis completed May 1997.)
28. Ohman, Pamela. "Estimated Saddlepoint Approximations." (Ph.D. Thesis, completed May 1997.)
29. Scherrer, J. Andrew. "Estimation in Capture-Recapture Models with Gibbs Sampling." (Masters Thesis, completed May 1997)
30. Guo, Fang Fang. "Covariance in the Metropolis-Hastings Algorithm" (Masters Thesis completed August 1998.)
31. Tong, Derek. "Fisher Information in Proportional Hazard Models. Undergraduate Honors Thesis, May 1999.
32. Joo, Yong Sung "Predictive Environmental Risk Analysis" (Masters Thesis completed May 2000.)
33. Fink, Daniel "An Adaptive Optimal Importance Sampler" (Masters Thesis completed August 2000.)
34. Santana, Damaris "A Monte Carlo EM Algorithm for the State Space Model" (Masters Thesis completed May 2001.)
35. Joo, Yong Sung "Infinite-Dimensional Model Selection" (PhD Thesis completed May 2003.)
36. Hitchcock, David. "Markov chain clustering methods "" (PhD Thesis completed May 2004.)
37. Yang, Jie. "Nonparametric Functional Mapping of QTL". (PhD Thesis completed August 2006.)
38. Santana, Damaris. "A Genome-wide Gibbs Sampler for QTL analysis." (PhD Thesis completed August 2005.)
39. Yuehua Cui,. "Functional mapping model for programmed cell death in organisms" (PhD Thesis completed August 2005). Jointly directed with Rongling Wu.
40. Arlene Naranjo, "Estimation in the State Space Model with Missing Data." Jointly directed with Alex Trindade (Statistics) (PhD Thesis completed December 2007)
41. Jessica Zhen Li. "Association Mapping with Missing Data". (PhD Thesis completed August 2008.)
42. Claudio Fuentes. "Bayes Factors for Detecting the Presence of Clusters." (Masters Thesis expected completion May 2008).

43. Xiabo Li, "Association Genetics in Pine". Jointly directed with Gary Peter (Forestry). (PhD Thesis expected completion August 2009.)
44. Nabanita Mukherjee "Correlation and Convergence in MCMC." (PhD Thesis completed May 2011)
45. Claudio Fuentes. "Estimation and Inference with Selected Information." (PhD Thesis completed August 2011).
46. Viknesh Gopal "Parallel Processing of MCMC." (PhD Thesis completed August 2011).
47. Chen Li. "Coverage Probability of Dirichlet Random Effects Confidence Intervals". (PhD Thesis expected completion May 2012)

## Courses Developed and Taught

1. Biometry 101: Introduction to Biometry I. Introductory freshman survey course covering mathematical and statistical modeling in biology. Covers mathematical topics such as Markov chains, differential and integral calculus, probability models, curve fitting, and applies these techniques to forestry models, population growth, pharmacokinetics, and other biological problems using real data sets. There is extensive use of the symbolic manipulation program Mathematica. This course represents a unique, interdisciplinary introduction to mathematics and statistics for the life sciences. A recent initiative of the National Research Council is to foster the development of such courses, and Biometry 101 is being used as an example in the development of similar courses with emphasis in the physical and engineering sciences.
2. Biometry 102: Introduction to Biometry II. This is the second semester of Biometry 101. The mathematical and statistical concepts are treated in more detail, and a number of case studies are examined in detail. These include studies about comparing growth rates in different insect populations, examining chemical kinetic models, and testing for quantitative trait loci in genetic studies. Mathematical and statistical topics include eigenanalysis, Taylor series, variance component analysis, regression, and simulation.
3. Statistics 604: Applied Experimental Design. In the College of Agriculture and Life Sciences there is a great need for a course that addresses applied questions in the design of statistical experiments. This course, a second-year (graduate) methods course in Applied Experimental Design, was developed to answer those needs. Some theory and much real-data implementation of advanced designs are covered (split-plot, incomplete blocks, fractional factorials, crossovers, and covariance analysis). Textbooks used include those by Mead; Lentner and Bishop; and Kuehl.
4. Statistics 672: Environmental Statistics. To accompany the training program leading to a Ph. D. in Environmental Statistics, this course is taught every semester. It is a combination of methodology, applications and case studies relating to the environment. The students form working groups (2-4 per semester) and undertake projects ranging from data analysis of existing data, to consulting on ongoing projects, to contributing to statistical methodology. The course serves both as a focal point for the training program, and a means for involving students in long-term projects with faculty in environmental sciences. When the training grant was submitted for competitive renewal (which it won) the review committee commented that "Through the Statistics 672 seminar series, faculty and students have collaborated on nine projects which have resulted in working papers of immediate impact on recognized environmental problems. The program is a model for how to apply statistics, within an interdisciplinary context, to real-world environmental health concerns."

5. Statistics 694a: Theory of Point Estimation. To help develop the revision of the 1983 text, Theory of Point Estimation by E. L. Lehmann, this course was taught in Spring 1994. The 1994-1995 academic year was spent writing the second edition, and in Spring 1996 a course based on the second edition was taught.
6. Statistics 694b: Monte Carlo Statistical Methods. This course was taught for the first time in the Fall of 1998. It examines a variety of computationally intensive statistical methods that have proven to be extremely useful in obtaining solutions to complex statistical problems. The course develops the underlying theory in detail, and applies the methodology to real problems. The course was taught from notes for a text that was published by Springer-Verlag in 1999, Monte Carlo Statistical Methods by C. P. Robert and George Casella.
7. Statistics 605: Advanced Regression Techniques. This course was mainly concerned with the application of empirical Bayes methods in applied regression problems. Some development of the theory was done, and the effect of the new techniques, and their effect on resulting inference, was examined.
8. Statistics 697: Special Topics in Statistical Confidence. This was a special topics course at the level of Lehmann's Testing Statistical Hypotheses. Topics included confidence set estimation, methodologies of inference (frequentist, Bayes and likelihood), estimation of accuracy, saddlepoint and sampling-based methods.
9. STA 6934: Monte Carlo Methods. Further development of Statistics 694b. The course lectures are now on PowerPoint slides, so the students have a copy of all the lecture notes in from of them. There has been much computing integrated into the lectures, programs in R and WinBugs are run interactively during class. All program and lectures are available on the web.
10. PMCB: Bioinformatics and Genomics. This course was developed with John Davis of the School of Forestry. It is in "journal club" format, where every week there is a presentation of a current paper (usually from PNAS or Science) that addresses a problem in bioinformatics or genomics. Often the statistical methods are closely examined and a reanalysis of the data is performed.
11. STA 6178: Statistical Genetics, with Prof. Rongling Wu. Have developed much new material applying Monte Carlo methods to problems in statistical genetics. This is a one semester course that teaches basic statistical genetics, then moves to more contemporary topics such as linkage analysis, QTL mapping, and microarray analysis. The course also introduces more sophisticated statistical concepts such as likelihood estimation, simultaneous testing, and Bayesian methods. Statistical computing algorithms are also introduced and used, in particular the EM algorithm and the Gibbs sampler.
12. Methodes de Monte Carlo : Developed a Spanish-language version of the course "Monte Carlo Statistical Methods", given at the University of Granada, Spain, in Fall 2002.
13. STA 6209: Design of Experiments. The material for this course has been developed over the last 15 years, starting at Cornell and finishing at UF. Topics and data have been gathered from experiments ranging from field plots of alfalfa to microarrays of stem cells. The material has finally been published in the book Statistical Design (2008, Springer-Verlag).