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EDUCATION

Ph.D. 8/91	Department of Statistics, Purdue University, West Lafayette, Indiana; Thesis – Numerical Integration in Bayesian Statistics; Advisor – Prof. J. O. Berger.
M.S. 10/88; 6/85	Computer Science and Business; Mathematics and Physics Education, Technical University and University of Vienna, Austria.

ACADEMIC POSITIONS

2007 – present	University of Texas, M.D. Anderson Cancer Center, Dept. of Biostatistics; Robert R. Herring Distinguished Professorship in Clinical Research.
2001 – 2007	University of Texas, M.D. Anderson Cancer Center, Dept. of Biostatistics; Professor.
2001 – present	Rice University, Dept. of Statistics; Adjunct Professor.
1991 – 2002	ISDS, Duke University; Associate Professor (1998 – 2002), Assistant Professor (1991–1998).
Visiting Scholar:	
Summer 1990 & 93	Inst. für Statistik und Ökonometrie, Univ. Basel, Switzerland.
Summer 1995 & 96	Universidad Politecnica de Madrid, Spain.
March 1996	Universidad Simon Bolivar, Caracas, Venezuela.
Summer 1997	Consiglio Nazionale delle Ricerche, CNR-IAMI, Milano, Italy.
Summer 1999	Universidad Catolica, Santiago, Chile.
Graduate Assistant: Fall 1986 – Fall 1991	Teaching assistant; Thesis related research; Statistical consulting; Department of Statistics, Purdue University.

HONORS

Fellow of the American Statistical Association.

RESEARCH INTERESTS

Numerical Integration in Bayesian Statistics:
Markov chain Monte Carlo methods, Simulation based optimal design, Dynamic models.

Nonparametric Bayes: Mixture of Dirichlet process models, Neural network models.

Modeling: Longitudinal data models, Pharmacokinetic/pharmacodynamic models, Case-control studies, Hierarchical models.

PUBLISHED PAPERS
Refereed Papers

1. Polson, N., Stroud, J., and Müller, P. (2007), "Practical Filtering with Sequential Parameter Learning." *Journal of the Royal Statistical Society, Series B (Methodological)*, to appear.

2. Ding, M., Rosner, G., and Müller, P. (2007), "Bayesian Optimal Design for Phase II Screening Trials". *Biometrics*, to appear.

3. Navarrete, C., Quintana, F.A. and Müller, P. (2007), "Some Issues on Nonparametric Bayesian Modeling Using Species Sampling Models", *Statistical Modeling: International Journal*, to appear.

4. Inoue, L., Etzioni, R., Morrell, C., and Müller, P. (2007), "Modeling Disease Progression with Longitudinal Markers." *Journal of the American Statistical Association*, to appear.

5. De la Cruz-Mesía, Quintana, F., and Müller, P. (2007), "Semiparametric Bayesian Classification with Longitudinal Markers." *Applied Statistics*, 56, 119-137.

6. Zhang, S. Shih, Y.-C., and Müller, P. (2007). "A Spatially-adjusted Bayesian Additive Regression Tree Model to Merge Two Datasets", *Bayesian Analysis* (to appear).

7. Morita, S., Thall, P.F., and Müller, P. (2007), "Determining the Effective Sample Size of a Parametric Prior" *Biometrics* (to appear).

8. Rossell, D., Müller, P. and Rosner, G. (2006), "Screening Designs for Drug Development." *Biostatistics*, doi:10.1093/biostatistics/kxl031 (on-line advance publication).

9. Müller, P., Berry, D.A., Grieve, A.P., and Krams, M. (2006). "A Bayesian Decision-Theoretic Dose Finding Trial", *Decision Analysis*, 3, 197-207.

10. Han,L.Y.,Landen, C.N.,Kamat, A.A., Lopez,A, Müller, P., Schmandt, R., Gershenson, D.M., and Sood, A.A. (2006). "Preoperative serum tissue factor (TF) levels are an independent prognostic factor in patients with ovarian carcinoma", *Journal of Clinical Oncology* 24(5):755-761.

11. Kamat A.A., Fletcher M.S., Gruman L., Müller P, Lopez A., Landen C.N., Han L., Gershenson, D.M., and Sood A.K. (2006). The clinical relevance of stromal matrix metalloproteinase (MMP) expression in ovarian cancer. *Clinical Cancer Research* 12:1707-1714.

12. Müller, P., Parmigiani, G., and Rice, K. (2007), "FDR and Bayesian Multiple Comparisons Rules" in *Bayesian Statistics 8*, J.M. Bernardo, S. Bayarri, J.O. Berger, , A.P. Dawid, D. Heckerman, A.F.M. Smith, and M. West (eds.), Oxford University Press (to appear).

13. Müller, P., Berry, D., Grieve, A., Smith, M., and Krams, M. (2006). "Simulation-Based Sequential Bayesian Design" *Journal of Statistical Planning and Inference*, (to appear)

14. Müller, P., Quintana, F., and Rosner, G. (2007), "Semiparametric Bayesian Inference for Multilevel Repeated Measurement Data", *Biometrics*, 63, 280–289.

15. Swartz, M., Kimmel, M., Müller, P., and Amos, C. (2006), "Stochastic Search Gene Suggestion: A Bayesian Hierarchical Model for Gene Mapping," *Biometrics*, 62, 495–503. *Clinical Cancer Research*

16. Wang, E., Ngalame, Y., Panelli, M. C., Nguyen-Jackson, H., Deavers, M., Mueller, P., Hu, W., Savary, C. A., Kobayashi, R., Freedman, R. S. and Marincola, F. M. 2005, "Peritoneal and subperitoneal stroma may facilitate regional spread of ovarian cancer" 11, 113–122, *Clinical Cancer Research*

17. Do, K-A., Müller, P., and Tang, F. (2005). "A Bayesian Mixture Model for Differential Gene Expression." *Applied Statistics*, 54 (3), 627-644.

18. Müller, P., Rosner, G., De Iorio, M., and MacEachern, S. (2005). "A Nonparametric Bayesian Model for Inference in Related Studies." *Applied Statistics*, 54 (3), 611-626.

19. Menchero, A., Montes Diez, R., Rios Insua, D. and Müller, P. (2005), "Bayesian analysis of non-linear autoregression models based on neural networks," *Neural Computation*, 17, 453–485.

20. Kottas, A., Müller, P. and Quintana, F. (2004), "Nonparametric Bayesian modeling for multivariate ordinal data." *Journal of Computational and Graphical Statistics*, 13, 213-231.

21. Christen, J.A., Müller, P., Wathen, K., and Wolf, J. (2004). "A Bayesian Randomized Clinical Trial: A Decision Theoretic Sequential Design", *Canadian Journal of Statistics*, 32(4), 387–402.

22. Quintana, F., and Müller, P. (2004). "Optimal Sampling for Repeated Binary Measurements," *Canadian Journal of Statistics*, 32, 73–84.

23. Müller, P., Sansó, B., and DeIorio, M. (2004). "Optimal Bayesian Design by Inhomogeneous Markov Chain Simulation." *Journal of the American Statistical Association*, 99(467), 788-798.

24. De Iorio, M., Müller, P., Rosner, G., and Maceachern, S. (2004). "An ANOVA Model for Dependent Random Measures," *Journal of the American Statistical Association*, 99(465), 205–215.

25. Müller, P., Parmigiani, G., Robert, C., and Rousseau, J. (2004). "Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays.", *Journal of the American Statistical Association*, 99(468), 990-1001.

26. Müller, P., Quintana, F. and Rosner, G. (2004). "Hierarchical Meta-Analysis over Related Non-parametric Bayesian Models." *Journal of the Royal Statistical Society, Series B (Methodological)*, 66, 735–749.

27. Müller, P., and Quintana, F. (2004). "Nonparametric Bayesian Data Analysis," *Statistical Science*, 19, 95–110.

28. Liechty, J., Liechty, M., and Müller, P. (2004). "Bayesian Correlation Estimation," *Biometrika*, 91, 1–14.

29. Quintana, F., and Müller, P. (2004). "Nonparametric Bayesian Assessment of the Order of Dependence for Binary Sequences." *Journal of Computational and Graphical Statistics*, 13, 213–231.

30. Stroud, J., Müller, P., and Polson, N. (2003). "Nonlinear State-Space Models with State-Dependent Variance Functions." *Journal of the American Statistical Association*, 98, 377-386.

31. Freitas Lopes, H., Müller, P., and Rosner, G. (2003). "Meta-Analysis for Longitudinal Data Models using Multivariate Mixture Priors." *Biometrics*, 59, 66-75.

32. Barnes, T.G., Jefferys, W.H., Berger, J.O., Müller, P. Orr, K., and Rodriquez, R. (2003). "A Bayesian Analysis of the Cepheid Distance Scale." *Astrophysics Journal*, 592, 539-554.

33. Thall, P., Millikan, R., Müller, P., and Lee, S-J. (2003). "Dose-Finding with two agents in phase I oncology trials." *Biometrics*, 59 (3), 487.

34. Calder, C., Lavine, M., Müller, P., and Clark, J. (2003). "Incorporating Multiple Sources of Stochasticity into Dynamic Population Models." *Ecology*, 84(6), 1395–1402.

35. Müller, P., Rosner, G, Inoue, L., and Dewhirst, M.W. (2001). "A Bayesian Model for Detecting Changes in Nonlinear Profiles." *Journal of the American Statistical Association*, 96,1215-1222.

36. Stroud, J., Müller, P., and Sanso, B. (2001). "Dynamic Models For Spatio-Temporal Data." *Journal of the Royal Statistical Society, Series B,* 63, 673-689.

37. Stroud, J.R., Müller, P. and Rosner G.L. (2001). "Optimal Sampling Times in Population Pharmacokinetic Studies," *Applied Statistics*, 50, 345-359.

38. Berry, D.A., Müller, P. Grieve, A.P, Smith, M., Parke, T., Blazek, R., Mitchard, N., and Krams, M. (2000). "Adaptive Bayesian Designs for Dose-Ranging Drug Trials," in *Case Studies in Bayesian Statistics V*, pp. 99-182 (C. Gatsonis, R. E. Kass, B. Carlin, A. Carriquiry, A. Gelman, I. Verdinelli, and M. West, eds.), Springer-Verlag, New York.

39. MacEachern, S. and Müller, P. (2000). "Efficient MCMC Schemes for Robust Model Extensions using Encompassing Dirichelt Process Mixture Models," in *Robust Bayesian Analysis*, F. Ruggeri and D. Rios Insua (eds.), Springer-Verlag.

40. Bielza, C., Müller, P., and Rios Insua, D. (1999). "Monte Carlo Methods for Decision Analysis with Applications to Influence Diagrams," *Management Science*, 45 (7), 995-1007.

41. Müller, P. (1999). "Simulation Based Optimal Design," in *Bayesian Statistics 6*, J.O. Berger, J.M. Bernardo, A.P. Dawid and A.F.M. Smith (eds.), pp. 459–474, Oxford University Press.

42. Müller, P., Parmigiani, G., Schildkraut, J. and Tardella, L. (1999). "A Bayesian Hierarchical Approach for Combining Case-control and Prospective Studies," *Biometrics*, 55, 258–266.

43. Müller, P., and Vidakovic, B. (1999). "Bayesian Inference with Wavelets: Density Estimation," *Journal of Computational and Graphical Statistics*, **7**, 456-468.

44. Müller, P. and Vidakovic, B. (1999). "MCMC Methods in Wavelet Shrinkage: Non-Equally Spaced Regression, Density and Spectral Density Estimation," in *Bayesian Inference in Wavelet-Based Models* (P. Müller and B. Vidakovic, eds.), pp. 187–202, Springer-Verlag, New York.

45. Palmer, J.L. and Müller, P. (1999). "Population Models for Hematologic Data", in *Case Studies in Bayesian Statistics IV*, (C. Gatsonis, R. E. Kass, B. Carlin, A. Carriquiry, A. Gelman, I. Verdinelli, and M. West, eds.), pp. 355–366, Springer-Verlag, New York.

46. Parmigiani, G., Berry, D., Iversen, E., Müller, P., Schildkraut, J. and Winer, E.P. (1999). "Modeling Risk of breast cancer and decisions about genetic testing," in *Case Studies in Bayesian Statistics IV*, (C. Gatsonis, R. E. Kass, B. Carlin, A. Carriquiry, A. Gelman, I. Verdinelli, and M. West, eds.), pp. 133–204, Springer-Verlag, New York.

47. Sansó, B. and Müller, P. (1999). "Redesigning a Network of Rainfall Stations," in *Case Studies in Bayesian Statistics IV*, (C. Gatsonis, R. E. Kass, B. Carlin, A. Carriquiry, A. Gelman, I. Verdinelli, and M. West, eds.), pp. 383–394, Springer-Verlag, New York.

48. Vidakovic, B. and Müller, P. (1999). "An Introduction to Wavelets," in *Bayesian Inference in Wavelet-Based Models* (P. Müller and B. Vidakovic, eds.), pp. 1–18, Springer-Verlag, New York.

49. Damien, P. and Müller, P. (1998). "A Bayesian Bivariate Failure Time Regression Model", *Computational Statistics and Data Analysis*, **28**, 77-85.

50. MacEachern, S.N. and Müller, P. (1998). "Estimating Mixture of Dirichlet Process Models," *Journal of Computational and Graphical Statistics*, **7**, 223–239.

51. Müller, P. and Rios Insua, D. (1998). "Issues in Bayesian Analysis of Neural Network Models," *Neural Computation*, **10**, 571–592.

52. Müller, P. and Rosner, G. (1998), "Semi-parametric PK/PD Models," in *Practical Nonparametric and Semiparametric Bayesian Statistics*, Dey, D., Müller, P. and Sinha, D. (eds.), pp. 323-338, Springer-Verlag, New York,

53. Müller, P. and Pole, A. (1998). "Monte Carlo posterior integration in GARCH models," *Sankhya, Series B*, **60**, 127-144.

54. Palmer, J. and Müller, P. (1998). Bayesian Optimal Design in Population Models of Hematologic Data. *Statistics in Medicine* **17**, 1613-1622.

55. Rios Insua, D. and Müller, P. (1998). "Feedforward neural networks for nonparametric regression," in *Practical Nonparametric and Semiparametric Bayesian Statistics*, Dey, D., Müller, P. and Sinha, D. (eds.), pp. 181-194, Springer-Verlag, New York.

56. Cargnoni, C., Müller, P., and West, M. (1997). "Bayesian Forecasting of Multinomial Time Series Through Conditionally Gaussian Dynamic Models," *Journal of the American Statistical Association*, **92**, 640-647.

57. Müller, P. and Roeder, K. (1997). "A Bayesian Semiparametric Model for Case-Control Studies With Errors in Variables," *Biometrika*, **84**, 523-537.

58. Müller, P. and Rosner, G. (1997). "A Bayesian population model with hierarchical mixture priors applied to blood count data," *Journal of the American Statistical Association*, **92**, 1279-1292.

59. Müller, P., West, M. and MacEachern, S. (1997). "Bayesian Models for Non-Linear Auto-Regressions," *Journal for Time Series Analysis*, **18**, 593–614.

60. Rosner, G. and Müller, P. (1997). "Bayesian population pharmacokintecs and pharmacodynamic analyses using mixture models", *Journal of Pharmacokinetics and Biopharmaceutics*, **25** (2), 209-233.

61. Terborgh, J., Cesar Flores, N., Müller, P., and Davenport, L. (1997), "Estimating the ages of successional stands of tropical trees from growth increments," *Journal of Tropical Ecology*, **14**, 833-856.

62. Clyde, M., Müller, P. and Parmigiani, G. (1996). "Inference and Design Strategies for a Hierarchical Logistic Regression Model," in *Bayesian Biostatistics*, Berry D.A. and Stangl, D. (eds.), pp. 297-320, Marcel Deckker, New York.

63. Müller, P., Erkanli, A., and West, M. (1996). "Bayesian curve fitting using multivariate normal mixtures," *Biometrika*, **83**, 67-79.

64. Müller, P. and Parmigiani, G. (1996). "Numerical evaluation of information theoretic measures," in *Bayesian Statistics and Econometrics: Essays in Honor of A. Zellner*, Berry D.A., Chaloner K.M., and Geweke J.F. (eds.), pp. 397-406, Wiley, New York.

65. Clyde, M., Müller, P. and Parmigiani, G. (1995). "Optimal Design for Heart Defibrillators," in *Case Studies in Bayesian Statistics, II*, C. Gatsonis, J. Hodges, R. E. Kass, N. Singpurwalla (eds.), pp. 278-292, Springer-Verlag, New York.

66. Müller, P. and Parmigiani, G. (1995). "Optimal design via curve fitting of Monte Carlo experiments," *Journal of the American Statistical Association*, **90**, 1322-1330.

67. Rosner, G. and Müller, P. (1994). "Pharmacodynamic Analysis of Hematologic Profiles," *Journal of Pharmacokinetics and Biopharmaceutics*, **22**, 499-524.

68. West, M., Müller, P., and Escobar, M.D. (1994). "Hierarchical priors and mixture models, with application in regression and density estimation," in *Aspects of Uncertainty: A tribute to D. V. Lindley*, A.F.M. Smith and P. Freeman, (eds.), pp. 363-386, Wiley, New York.

Not Refereed Writings and Proceedings

69. Lopes, H.F., Ravishanker, N., and Müller, P. (2007), "Bayesian Computational Methods in Biomedical Research", in *Computational Methods in Biomedical Research* (eds. R. Khattree and D.N. Naik), Marcel Dekker/Francis & Taylor, to appear.

70. Malec, D. and Müller, P. (1999). "A Bayesian Semi-Parametric Model for Small Area Estimation." in *Festschrift in Honor of J.K. Ghosh* (eds. S. Ghoshal and B. Clarke), IMS, to appear.

71. National Research Council Committee on Human Health Risks of Trichloroethylene. In press. "Assessing Human Health Risks of Trichloroethylene: Key Scientific Issues." Washington, DC: National Academies Press.

72. Müller, P., Robert, C., and Rousseau, J. (2006), "Sample Size Choice for Microarray Experiments", in *Bayesian Inference for Gene Expression and Proteomics*, Do, K.-A., Müller, P., and Vannucci, M. (eds.), Cambridge University Press, (to appear).

73. Guindani, M., Do, K.-A., Müller, P., and Morris, J. (2006), "Bayesian Mixture Models for Gene Expression and Protein Profiles" in *Bayesian Inference for Gene Expression and Proteomics*, Do, K.-A., Müller, P., and Vannucci, M. (eds.), Cambridge University Press, (to appear).

74. Parke, T., Krams, M., Müller, P., and Berry, D. (2006), "Efficient Dose-Response Finding Strategies for Acute Neuroemergency Treatments", in *Handbook of Neuroemergency Clinical Trials*, eds. W.M. Alves and B.E. Skolnick, Chapter 9, Elsevier, San Diego.

75. Müller, P., and Rosner, G. (2006), "Semi-Parametric Bayesian Models for Population Pharmacokinetics and Pharmacodynamics." in *Bayesian Statistics and Its Applications*, edited by S.K. Upadhyay, Umesh Singh and Dipak K. Dey, Anamaya Publishers, New Delhi.

76. Rosner, G., Müller, P., Lunagomez, S., and Thompson, P. (2005), "Pharmacokinetics in Clinical Oncology: Statistical Issues." In *Handbook of Statistics in Oncology; Second Edition, Revised and Expanded,* Crowley, J., (ed.), CRC Press, in press.

77. Rosner, G., Müller, P., Tang, F., Madden, T., and Andersson, B, (2004), "Dose Individualization for High-Dose Anti-Cancer Chemotherapy." In *Advanced Methods of Pharmacokinetics and Pharmacodynamic Systems Analysis, Volume III*, D'Argenio, D.Z., Ed., Kluwer Academic Publishers, New York.

78. Müller, P. (2004) "Optimal Design: Simulation Approaches," in *Handbook of Statistics.*

79. Polson, N., Stroud, J., and Müller, P. (2004) "Practical Filtering for Stochastic Volatility Models," in *State Space and Unobserved Component Models* (Harvey, A., Koopman, S.J., and Shephard, N. eds.), Cambridge University Press, 236–247.

80. DeIorio, M., Müller, P., Rosner, G. L., and MacEachern, S. N., (2002). "ANOVA DDP models: A review," *in* D. D. Denison, M. H. Hansen, C. C. Holmes, B. Mallick and B. Yu (eds), *Nonlinear Estimation and Classification*, Springer-Verlag, p. 467.

81. Müller, P. (2001). "Markov Chain Monte Carlo Methods," in *International Encyclopedia of the Social & Behavoiral Sciences*. Pergamon, Oxford. N.J. Smelser and P.B. Baltes eds. pp. 9236-9240.

82. Müller, P. and Palmer, J. L. (1998). "Optimal Design in Longitudinal Data Models," in *Applied Decision Analysis*, F.J. Girón and M.L. Martínez (eds.), pp. 123-131, Kluwer, Boston.

83. Rios Insua, D, Salewicz, A., Müller, P. and Bielza, C. (1997). "Bayesian methods in reservoir operations: the Zambezi river case," in *The Practice of Bayesian Analysis*, S. French, J. Smith, (eds.), pp. 107–130, Wiley, New York.

84. Müller, P. and Rios Insua, D. (1996). "Posterior simulation for feed forward neural network models," in *COMPSTAT, Proceedings in Computational Statistics* (A. Prat ed.), pp. 385-390, Physica-Verlag, Heidelberg.

85. Rosner, G. and Müller, P. (1995). "Modeling multiple pharmacodynamic endpoints," in *Advanced Methods of Pharmacokinetic and Pharmacodynamic Systems Analysis*, Volume 2, (D.Z. D'Argenio, ed.), pp. 45-60. Plenum Press, New York.

86. Parmigiani, G. and Müller, P. (1994). "Simulation Approach to One-Stage and Sequential Optimal Design Problems," in *MODA 4 - Advances in Model-Oriented Data Analysis*, Kitsos, C.P. and Müller, W.G. (eds.), pp. 37-48. Physica-Verlag, Heidelberg.

87. Polasek, W. and Müller, P. (1994). "Gibbs Sampling for ARCH models in finance," in *MODA 4 - Advances in Model-Oriented Data Analysis*, Kitsos, C.P. and Müller, W.G. (eds.), pp. 251–260, Physica-Verlag, Heidelberg.

88. Erkanli, A., Stangl, D.K., and Müller, P. (1993). "A Bayesian analysis of ordinal data using mixtures," *ASA Proceedings of the Section on Bayesian Statistical Science*, 51-56.

89. Müller, P. (1992). "Posterior integration in dynamic models," *Computing Science and Statistics* 24, 318–324.

90. Müller, P. (1991). "Monte Carlo integration in general dynamic models," *Contemporary Mathematics* 115, 145-164.

Discussions

91. Müller, P. and Rosner, G. (2007), "Discussion of Simple, Defensible Sample Sizes Based on Cost Efficiency, by P. Bacchetti, C.E. McCulloch, and M.R. Segal," *Biometrics*, to appear.

92. Müller, P. (1999), Discussion of T.S. Shively, R. Kohn and S. Wood, "Variable Selection and Function Estimation in Additive Nonparametric Regression Using a Data-Based Prior," *Journal of the American Statistical Association*, to appear.

93. Müller, P. (1997), Discussion of Diggle, P. and Al Wasel, I., "Spectral Analysis of Replicated Biomedical Time Series," *Journal of the Royal Statistical Society, Series B*, to appear.

94. Müller, P. (1997), Discussion of Dupuis, J.A. and Robert, C., "Bayesian variable selection in qualitative models", in *Proceedings of the Workshop on Model Selection*, Universitá di Cagliari, Cagliari.

95. Müller, P. (1996), Discussion of Polson, N. G., "Convergence of Markov Chain MonteCarlo Algorithms," in *Bayesian Statistics 5*, Bernardo, J. M., Berger, J. O., Dawid, A. P. and Smith A. F. M., (eds.), pp. 297-322, University Press, Oxford.

PAPERS UNDER REVIEW

96. Zhang, S., Müller, P., and Do, K.-A. (2007), "A Bayesian Semiparametric Method for Jointly Modeling a Primary Endpoint and Longitudinal Measurements."

97. Quintana, F., Müller, P., and Rosner, G. (2007), "Semi-parametric Bayesian Inference for Multi-Season Baseball Data",

98. Liz Y. Han, Mavis S. Fletcher, Michael T. Deavers, Diana L. Urbauer, Peter Mueller, Charles N. Landen, Aparna A. Kamat, Yvonne G. Lin, William M. Merritt, Whitney Spannuth, David M. Gershenson, Susan K. Lutgendorf, Soldano Ferrone, and Anil K. Sood (2007), "HLA class I antigen processing machinery component expression and intratumoral T-cell infiltrate as independent prognostic markers in ovarian carcinoma"

99. Chen, Y.,A., Almeida, J.S., Richards, A.J., Müller, P., Carroll, R.J., and Roherer, B. (2006), "A nonparametric approach to detect local correlation in gene expression."

100. DeIorio, M., Johnson, W., Müller, P., and Rosner, G. (2006). "A DDP Model for Survival Regression"

101. Quintana, F., Müller, P., and Rosner, G. (2006) "A Semiparametric Bayesian Model for Repeated Repeated Binary Outcomes".

102. Rosner, G., Müller, P. and Tang, F. (2006). "Designing Dose Individualization for Transplant Anti-Cancer Therapy based on Bayesian Population Pharmacokinetic Model."

103. Liechty, M.W., Liechty, J.C., and Müller, P. (2005), "The Shadow Prior"

104. Müller, P., Do, K.-A., Bandyopadhyay, R., and Baggerly, K. (2006), "A Bayesian Mixture Model for Protein Biomarker Discovery"

105. Harvey, C., Liechty, J., Liechty, M., and Müller, P. (2004), "Portfolio Selection with Higher Moments."

106. Polson, N., Stroud, J., and Müller, P. (2001). "Affine State Dependent Variance Models," submitted to *Journal of Business and Economic Statisticss.*

OTHER PAPERS

107. Clyde, M., Müller, P., and Parmigiani, G. (1995), "Exploring Expected Utility Surfaces by Markov Chains," Discussion paper 95-39, ISDS, Duke University.

108. MacEachern, S. and Müller, P. (1994). "Efficient estimation of mixture of Dirichlet process models," Discussion paper 94-38, ISDS, Duke University.

109. Müller, P. (1991). "A Bayesian vector ARCH model for exchange rate data," Discussion paper 9109, Institut für Statistik und Ökonometrie, University of Basel.

110. Müller, P. (1991). "Numerical integration in general dynamic models."

111. Müller, P. (1991). "A generic approach to posterior integration and Bayesian sampling," Technical Report 91-09, Statistics Department, Purdue University.

112. Müller, P. (1989). "Optimal mix of accept/reject and importance sampling," Technical Report, Stochastic Modeling and Simulation Series 89-12, Department of Industrial Engineering, Purdue University.

BOOKS

113. Do, K.-A., Vannucci, M., and Müller, P. (eds.) (2006). *Bayesian Inference for Gene Expression and Proteomics*, Cambridge University Press, to appear.

114. Müller, P. and Vidakovic, B. (eds.) (1999). *Bayesian Inference in Wavelet-Based Models*, Springer-Verlag, New York.

115. Dey, D., Müller, P. and Sinha, D. (eds.) (1998). *Practical Nonparametric and Semiparametric Bayesian Statistics*, Springer-Verlag, New York.

SOFTWARE

All programs are available (directly or linked) at *http://odin.mdacc.tmc.edu/∼pm/prog.html*.

Drug screening: Screening designs for drug development (R package *seqdesphII*).

Microarray group comparison: A semiparametric Bayesian mixture model for differential gene expression.

Semiparametric mixture models: Bayesian inference for Dirichlet process mixture of normal models (R package *mdp*).

Dependent random probability measures: Hierarchical DP mixture of normals (R package *hdpmn*)

Dependent DP models: ANOVA DDP model (R package *ddpanova*).

Special purpose software: several additional software packages that implement specific examples in published papers.

GRANTS

Major Grants

"Population PK/PD: Statistical Issues," NIH, co-P.I. (with G. Rosner), 2007-2011,

"Continuous Drug Screening: Simulation Based Sequential Design," NIH/BISTI, P.I. (with G. Rosner), 2003-2005 (extension until 2006).

Gynecologic Cancer NIH/SPORE (Specialized Programs of Research Excellence), P50 CA098259, 2002-2007, PI Biostatistics Core.

"Population Pharmacokinetics/Dynamics: Statistical Issues," NIH, co-PI (with G. Rosner, P.I), 2001-2006, $398,850.

"Statistical Methodology for Spatial Modeling and Interpolation of Air and Deposition Pollutants," with M. Fuentes (P.I.), EPA, 2000-2002, $469,978.

"Multi-Scale Modeling and Simulation in Scientific Inference: Hierarchical Methods for Parameter Estimation in Porous Flow," With J. Trangenstein, D. Higdon, A. Datta-Gupta (P.I.'s) and other collaborators, NSF, KDI (Knowledge and distributed intelligence) program, 1999-2002, $ 2,300,000 ($ 800,000 at ISDS).

"Bayesian preposterior simulation", NSF/DMS (DMS-9704934), Principal investigator, $146,000, 1997-2001.

"Population Pharmacokinetics/Dynamics: Statistical Issues," NIH (1R01CA75981-01), Principal investigator (with G. Rosner), $253,000, 1998-2001.

"Bayesian Regression in Nonlinear AR, Neural Networks, Wavelet Representations and Longitudinal Data Models", NSF/DMS (DMS-9404151), Principal investigator, $65,000, 1994–96.

"Mathematical Sciences Computing Research Environments," SCREMS grant, NSF/DMS (DMS-9305699), Collaborating investigator (3 out of 5 subprojects), $88,978, 1993–95.

NIH: "Functional Data Analysis" co-investigator 10%, (P.I. J. Morris, Biostatistics)

Minor Grants

NIH/NCI R01: "HOX genes in ovarian neoplasia", co-investigator 5%, (PI: H. Naora, Gyn. Oncology).

"Fourth International Workshop on Objective Prior Methodology," NSF/DMS-0245166. Travel support grant, P.I., 2003.

"Simulation based sequential design: Species Diversity", NSF/INT, P.I. (with A. Christen, Guanajuato), pending.

"International: Bayesian preposterior simulation – Partially Exchangeable Binary Sequences," NSF/INT, P.I. (with F. Quintana, Santiago), $4,312.

"ICTNEO: A Decision Support System for Jaundice Management in Newborn Babies," FIS (Spanish equivalent of NIH), consultant, 1997/98.

"A New Methodology for Hydropower Resources Management," Iberdrola Foundation (Spain), consultant, 1996/97.

"Meta analysis over related case-control studies", Duke University Research Council Grant, 1996/97, $2500.

Estancias temporales de cientificos y tecnologos extranjeros en España (Visiting grants for foreign researchers in Spain). With S. Rios Insua, UPM Madrid, Pts. 1,920,000 (= $12,000), 1995.

"Computational Procedures for Optimal Design of Experiments under Uncertainty" Duke University Research Council, Seed grant, co-principal investigator (with G. Parmigiani, co-principal investigator), 1993/94, $2200.

DELIVERED TALKS

Invited Talks at Conferences and Workshops (2004 – present)

Bayesian decision-theoretic dose finding, Biometric Society Region Österreich-Schweiz Seminar 2007, Bern, Switzerland, September 2007.

Bayesian Clustering with Regression, WNAR, Irvine, CA, June 2007.

Optimal discovery procedure and Bayesian decision rules, Objective Bayesian Analysis, Roma, Italy, June 2007.

Optimal discovery procedure and Bayesian decision rules, 3rd Lehmann Symposium, Houston, TX, May 2007.

Bayesian Clustering with Regression, SBIES (Seminar on Bayesian Inference in Econometrics), St. Louis, MO, May 2007.

Optimal discovery procedure and Bayesian decision rules, Workshop on Statistical Bioinformatics and Sochastic Systems Biology, Newcastle, U.K., April 2007.

Optimal discovery procedure and Bayesian decision rules, CLAPEM (Latin American Congress of Probability and Mathematical Statistics), Lima, Peru, March 2007.

Bayesian Clustering with Regression, IISA Joint Statistical Meeting and International Conference on Statistics, Probability and Related Areas, Cochin, India, January 2007.

FDR and Bayesian decision rules, SAMSI, NC, July 2006.

Semiparametric Bayesian Inference for Gene Expression and Protein Profiles, Recent Advances in Stochastic Computation and Bioinformatics (IMS Mini-Meeting), Vancouver, Canada, August 2006.

FDR and Bayesian Decision Rules, Bayesian Statistics 8, Valencia, Spain, 2006.

Modeling Dependent Gene Expression, Workshop on Bayesian Inference in Complex Stochastic Systems, Warwick, UK, May 2006.

FDR and Bayesian Multiple Comparison Rules, Oberwolfach, Germany, October 2005.

Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays (in German), Österreichische Statistiktage, Klagenfurt, Austria, October 2005.

Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays, Workshop on Data fusion in Genomics, Imperial College, London, UK, September 2005.

FDR and Bayesian decision rules, Workshop on Data fusion in Genomics, Imperial College, London, UK, September 2005.

FDR and Bayesian decision rules, International Society for Bayesian Analysis (ISBA), Tokyo, Japan, September 2005.

Semiparametric Bayesian Inference for Multilevel Repeated Measurment Data, 25th European Meeting of Statisticians, Oslo, Norway, July 2005. Oslo

A Bayesian mixture model for protein biomarker discovery, JSM, Minneapolis, MN, August 2005.

Non-parametric Bayesian approaches to functional data analysis, WNAR, Faibanks, AK, June 2005.

FDR and Bayesian Decision Rules, OBayes5 – Fifth International Workshop on Objective Bayes, Branson, MO, June 2005.

Semiparametric Bayesian Inference for Multilevel Repeated Measurment Data, International Workshop/Conference on Bayesian Statistics and its Applications, Varanasi, India, January 2005.

Towards Automating RJ: a Hierarchical Mixture Model for Protein Spectra, MCMSki, 2nd IMS-ISBA Joint Meeting, Bormio, Italy, January 2005.

Semiparametric Bayesian Inference for Multilevel Repeated Measurment Data, Institut Henri Poincaré, Paris, 2004.

"A Bayesian Mixture Model for Protein Biomarker Discovery", 3rd Winter Workshop on Statistics & Computer Science, Ein-Gedi, Israel, December 2004.

"A Bayesian mixture model for differential gene expression", ISBA World Meeting, Viña del Mar, Chile, May 2004.

"A Bayesian mixture model for protein biomarker discovery," IV Workshop on Bayesian nonparametrics," Roma, Italy, June 2004.

"Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays," International Biometric Conference, Cairnes, Australia, July 2004.

"Non-parametric Bayesian Data Analysis: Inference for Differential Gene Expression," Joint Statistical Meeting, Toronto, August 2004.

"A Bayesian Mixture Model for Differential Gene Expression", ENAR, Pittsburgh, March 2004.

"Nonparametric Bayesian Data Analysis" (in portuguese), 7th Encontro Brasileiro de Estatistica Bayesiana (7th EBEB), São Carlos, Brasil.

"A Bayesian Mixture Model for Differential Gene Expression", 7th Encontro Brasileiro de Estatistica Bayesiana (7th EBEB), São Carlos, Brasil.

Invited Departmental Seminars (2004 – present)

Bayesian decision-theoretic dose finding, Harvard Clinical Research Institute, Boston, MA, May 2007.

A nonparametric Bayesian version of the optimal discovery procedure, University of Minnesota, November 2006.

A nonparametric Bayesian version of the optimal discovery procedure, University of Cincinnati, October 2006.

Bayesian clinical trial design, Novartis, Switzerland, October 2006.

FDR and Bayesian Decision Rules, Los Alamos National Labs, Los Alamos, NM, September

2006.

FDR and Bayesian Decision Rules, Ludwig Maximilian Universität, München, German, May 2006.

FDR and Bayesian Multiple Comparison Rules, Medical University of South Carolina (MUSC), Charleston, SC, March 2006.

Semi-parametric mixture models for high throughput gene expression data, ITAM, Mexico City, February 2006.

Simulation-Based Optimal Design, Department of Statistics, Universidad de Puerto Rico, Rio Piedras, PR, 2005.

A Bayesian Mixture Model for Differential Gene Expression, University of California San Diego, La Jolla, 2005.

Non-parametric Bayesian Data Analysis, Johns Hopkins University, Baltimore, 2005.

Nonparametric Bayesian Modeling for Multivariate Ordinal Data, Texas A&M, College Station, 2004.

Nonparametric Bayesian Modeling for Multivariate Ordinal Data, University of Missouri, Columbia, 2004

Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays, Ohio State University, Columbus, 2004.

Massively Multiple Comparisons: Optimal Sample Size and FDRs, Texas A&M, College Station, 2004.

Nonparametric Bayesian Data Analysis, University of Washington, Seattle, 2004.

Optimal Sample Size for Multiple Testing: the Case of Gene Expression Microarrays, Fred Hutchinson Cancer Research Center, Seattle, 2004.

Contributed Talks and Posters at Conferences and Workshops (2001 – present)

Semiparametric Bayesian Inference for Multilevel Repeated Measurment Data, Congreso Bayesiano de América Latina COBAL2, Los Cabos, Mexico, February 2005.

Borrowing Strength: Incorporating Information from Early Phase Cancer Clinical Studies into the Analysis of Large, Phase III Cancer Clinical Trials. Case Studies in Bayesian Stats Workshop VI, Pittsburgh, 2001.

EDITORIAL SERVICE

Associate editor for *Journal of the American Statistical Association* (2002-2005), *Biometrics* (2001-2004), *Statistical Science* (2005 – current).
Guest editor for *Statistical Modeling: International Journal*
Frequent referee for other statistics journals.

OTHER EXTRAMURAL SERVICE

Treasurer, ISBA (International Society for Bayesian Analysis), 2002-2004. Program vice-chair, 2007-2008.

Program Chair, ASA/SBSS (American Statistical Association, Section on Bayesian Statistical Science), 2004.

Board of directors, ISBA, 2005-2007.

Service on NIH and NSF review panels: regular member NIH/BMRD; ad-hoc member in various study groups.

National Research Council, Committee on Human Health Risks of Trichlorethylene, 2005.

GRADUATE STUDENTS

1991–present: Committee member on 4 M.Sc. committees and 20 Ph.D. committees. Advisor to three M.Sc. students and seven Ph.D. students.

Ph.D. students supervised:

Luis Gonzalo Leon Novelo, Ph.D. student, "Random probability measures under order constraints." current.

Rossell, D., Ph.D. student, "Optimal sequential design," 2006.

Zhang, Q., Ph.D., "Bayesian joint modeling of longitudinal and survival data," 2005.

Yang, Y., Ph.D., "Repeated fractional data models," 2004.

Zhou, X., Ph.D. student, "Longitudinal ordinal data," 2005 (expected).

M. Liechty, Ph.D., "Modeling variance-covariance matrices," 2003.

M. Liu, M.Sc., "Option Pricing with Neural Networks," 1995.

S. Liu, M.Sc., "Variable selection in a logistic regression model", May 1998.

H. Wang, M.Sc., "Bayesian Neural Networks in Sociology", August 1999.

H. Lopes, Ph.D., "Bayesian Analysis in Latent Factor and Longitudinal Models," joint advisor with M. West, June 2000.

External reader/committee member for Ph.D. students:

Sharmita Kar, Benares Hindu University, 2003.

Roberto Casarin, University of Venice, 2004.

Billy Amzal, Université Paris-Dauphine, 2005.

Manuela Buzoianu, Carnegie Mellon University, 2005.

Stefanos Giakoumatos, Athens University of Economics and Business, 2004.

Postdoctoral fellows mentored:

Donatello Telesca, starting in 2007.

Michele Guindani, 2005-2007, now at University of New Mexico.

Song Zhang, 2005-2007, now at UT Southwest Medical Center.

Roberto Carta, 2002-2004, now at University of Central Florida, Orlando, FL.

Feng Tang, 2002-2004, now at Medtronic, Minneapolis, MN.

Raquel Montes, visiting postdoc summer 2002, now at URJC, Madrid.

COURSES TAUGHT

Introductory courses in probability and statistics at undergraduate level: for social science majors; for mathematics majors; for engineering majors.

Advanced mathematical statistics for graduate students (Textbook – Gelman, Carlin, Stern and Rubin).

Applied probability models and uses in statistical analysis.

Nonparametric Bayesian Inference

Experimental design for non-statistics graduate students (Textbook – Montgomery).

Scientific computing (Textbooks – Thisted, Tanner).

Special topics courses: Markov Chain Monte Carlo Simulation; Model mixtures and mixture models; Model comparisons and default methods (independent study); Bayesian optimal design (independent study); Bayesian econometrics (independent study); Time series (independent study, undergraduate); Simulation in statistics (in German), at the University of Basel; Markov chain Monte Carlo simulation, at CNR-IAMI, Milano.

Short courses: Bayesian clinical trial design (Joint Statistical Meeting, 2005); Markov chain Monte Carlo simulation (Foro Nacional, 2005); Non-parametric Bayesian data analysis (Universidad Simon Bolivar, 2001).