

JAMES A. CALVIN

CONTACT INFORMATION

Department of Statistics
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EDUCATION

1985 Ph.D., Statistics, Colorado State University
1980 M.S., Statistics, Colorado State University
1976 B.S., Computer Science and Mathematics, University of Oregon

ACADEMIC APPOINTMENTS

2008–present Director, Institute for Applied Mathematics and Computational Science
2007–2008 Interim Vice President for Research
2004–2008 Executive Associate Vice President for Research
2004–present Professor, Department of Statistics, Texas A&M University with secondary appointments in Epidemiology & Biostatistics and Toxicology
2001–2003 Associate Vice President for Research
1998–2004 Professor and Head, Department of Statistics, Texas A&M University with secondary appointments in Epidemiology & Biostatistics and Toxicology
1998 Associate Professor and Head, Department of Statistics, Texas A&M University with secondary appointment in Veterinary Anatomy & Public Health
1993–1997 Associate Professor, Department of Statistics, Texas A&M University with secondary appointment in Veterinary Anatomy & Public Health
1991–1993 Assistant Professor, Department of Statistics, Texas A&M University with secondary appointment in Veterinary Anatomy & Public Health
1989–1990 Visiting Assistant Professor, Department of Statistics, Texas A&M University
1985–1991 Assistant Professor, Department of Statistics and Actuarial Science, University of Iowa with secondary appointment in Division of Biostatistics (1988–1991)

PROFESSIONAL ACTIVITIES

Service:

2008-present National Institute for Statistical Science, Community Relations & Development Committee
2008 Board of Directors, Texas Healthcare and Bioscience Institute
2007–2008 Board Member, Health Science/Life Science Advisory Council
2007–2008 Board of Trustee, Southeastern Universities Research Association

- 2007–2008 Board Member, Association of American Universities
- 2007–2008 Board Councilor, Oak Ridge Associated Universities
- 2007–2008 Ex-Officio Councilor, Texas A&M Research Foundation
- 2003–2007 National Research Council NIST Information Technology Assessment Panel
- 2003–2004 ASA Wilks Memorial Award Committee
- 2002–2007 National Institute of Environmental Health Sciences EHS Review Committee, Chair 2005-2007
- 2002 Chair, Academic Heads Meeting, Joint Statistical Meetings
- 2001 Program Committee, Board of Mathematical Sciences Chairs' Colloquium
- 2001 Program Committee, Inaugural Graybill Conference on Linear Models and its Applications
- 1999–2002 Editorial Board Member, ASA/SIAM Series on Statistics and Applied Probability
- 1997–2000 Executive Editor, *Biometrics*
- 1997 ASA Strategic Planning – Meetings and Member Support Task Force
- 1996–1999 Associate Editor, *Journal of the American Statistical Association*
- 1996 Organizing Editor, Special Issue in Honor of Robert V. Hogg, Central Regional Meeting of IMS/ASA, *Communications in Statistics*, (415 pages)
- 1993–1998 ASA Committee on Membership. Chair of Individual Membership Subcommittee (1995–1996), Chair of Committee on Membership (1997–1998)
- 1992–2001 Associate Editor, *Communications in Statistics*
- 1992–1994 Council of Chapters Representative, Southeast Texas Chapter of ASA
- 1988–1990 ASA Advisory Committee on Continuing Education.
- 1988–1989 Program Chair, Statistical Education, 1989 JSM, Washington, D.C.
- 1986–1988 Iowa Chapter of ASA; Secretary/Treasurer, 1986–1987; President, 1987–1988
- 1985– Referee for: National Science Foundation, National Institute of Environmental Health Sciences. Numerous journals, including *JASA*, *Annals of Statistics*, *Technometrics*, *Communications in Statistics*, *JSPI*, *Journal of Multivariate Analysis*, *Statistics & Probability Letters*, *Chemometrics and Intelligent Laboratory Systems*, *Statistics*, *IIE Transactions*.

Professional Affiliations:

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|---|-------------------------------------|
| American Statistical Association | International Statistical Institute |
| Institute of Mathematical Statistics | International Biometric Society |
| American Association of University Administrators | |

Awards and Honors:

- KAUST Global Research Partnership Award
- Fellow, American Statistical Association
- Elected Member, International Statistical Institute

Don Owen Award, American Statistical Association
 JASA–Applications and Case Studies Invited Paper, 2001 Joint Statistical Meeting
 Mu Sigma Rho (Statistics Honor Society)
 James L. Madison Award, Colorado State University

PUBLICATIONS AND TECHNICAL REPORTS

- [1] Calvin, J. A. (1986) A new class of variance balanced designs, *Journal of Statistical Planning and Inference*, 14, 251–254.
- [2] Calvin, J. A., Jeyaratnam, S. and Graybill, F. A. (1986) Approximate confidence intervals for the three factor mixed model, *Communications in Statistics*, B 15, 893–903.
- [3] Calvin, J. A. (1987) A review of Combinatorial Theory, 2nd edition, by Marshall Hall, *Journal of the American Statistical Association*, 82, 1197.
- [4] Calvin, J. A. and Sedransk, J. (1988) The Patterns of Care Studies: A study of the assumptions underlying Bayesian and frequentist predictive inference, *Technical Report #153, Department of Statistics, University of Iowa*.
- [5] Calvin, J. A. and Sinha, K. (1989) A method for constructing variance balanced designs, *Journal of Statistical Planning and Inference*, 23, 127–131.
- [6] Calvin, J. A. and Sedransk, J. (1991) Bayesian and frequentist predictive inference for the Patterns of Care Studies, *Journal of the American Statistical Association*, 86, 36–48.
- [7] Calvin, J. A. and Dykstra, R. L. (1991) Maximum likelihood estimation of a set of covariance matrices under Löwner order restrictions with applications to balanced multivariate variance components models, *The Annals of Statistics*, 19, 850–869.
- [8] Calvin, J. A. and Dykstra, R. L. (1991) Least squares estimation of covariance matrices in balanced multivariate variance components models, *Journal of the American Statistical Association*, 86, 388–395.
- [9] Talman, W. T., Andreasen, K., Calvin, J. A. and Eversmann–Johanns, S. (1991) Cholecystokinin in nucleus tractus solitarius modulates tonic and phasic gastric pressure, *American Journal of Physiology*, 261, R217–R222.
- [10] Calvin, J. A. and Dykstra, R. L. (1992) An algorithm for restricted maximum likelihood estimation in balanced multivariate variance components models, *Journal of Statistical Computation and Simulation*, 40, 233–246.
- [11] Calvin, J. A. and Dykstra, R. L. (1992) A note on maximizing a special concave function subject to Loewner order constraints, *Linear Algebra and Its Applications*, 176, 37–44.
- [12] Calvin, J. A. (1993) REML estimation in unbalanced multivariate variance components models using an EM algorithm, *Biometrics*, 49, 691–701.
- [13] Legare, M. E., Castiglioni, Jr., A. J., Rowles, T. K., Calvin, J. A., SynderArmstead, C. and Tiffany-Castiglioni, E. (1993) Morphological alterations of neurons and astrocytes in guinea pigs exposed to low levels of inorganic lead, *NeuroToxicology*, 14, 77–80.
- [14] Butler Howe, L. M., Boothe Jr., H. W., Boothe, D. M., Laine, G. A. and Calvin, J. A. (1993) Effects of vena caval banding in experimentally induced multiple portosystemic shunts in dogs, *American Journal of Veterinary Research*, 54, 1774–1783.
- [15] Calvin, J. A. (1994) A review of Hierarchical Linear Models: Applications and Data Analysis Methods by Anthony S. Bryk and Stephen W. Raudenbush, *Technometrics*, 36, 116–117.

- [16] Boothe, D. M., Cullen, J. M., Calvin, J. A., Jenkins, W. L., Brown, S. A., Green, R. A. and Corrier, D. E. (1994) Antipyrine and caffeine disposition in clinically normal dogs and dogs with progressive liver disease, *American Journal of Veterinary Research*, 55, 254–261.
- [17] Calvin, J. A. (1994) Onesided test of a covariance matrix with a known null value, *Communications in Statistics*, A 23, 3121–3140.
- [18] Thompson, J. A., Marsh, W. E., Calvin, J. A., Etherington, W. G., Momont, H. W., Kinsel, M. L. (1994) Pregnancy attrition associated with pregnancy testing by rectal palpation depends on herd, *Journal of Dairy Science*, 77, 3382–3387.
- [19] Calvin, J. A. and Dykstra, R. L. (1995) REML estimation of covariance matrices with restricted parameter spaces, *Journal of the American Statistical Association*, 90, 321–329.
- [20] Wlodarczyk, B., Bennett, G. D., Calvin, J. A., Craig, J. C. and Finnell, R. H. (1996) Arsenic induced alterations in embryonic transcription factor gene expression: Implication for abnormal neural development, *Developmental Genetics*, 18, 306–315.
- [21] Randles, R. H. and Calvin, J. A. (1996) The professional contributions of Robert V. Hogg, *Communications in Statistics*, 25, 2467–2481.
- [22] Wlodarczyk, B., Bennett, G. D., Calvin, J. A. and Finnell, R. H. (1996) Arsenic induced neural tube defects in mice: Alterations in cell cycle gene expression, *Reproductive Toxicology*, 10, 447–454.
- [23] Wlodarczyk, B., Craig, J. C., Bennett, G. D., Calvin, J. A. and Finnell, R. H. (1996) Valproic acid induced changes in gene expression during neurulation in a mouse model, *Teratology*, 54, 284–297.
- [24] Bennett, G. D., Lau, F., Calvin, J. A. and Finnell, R. H. (1996) Phenytoin induced teratogenesis: A molecular basis for the observed developmental delay during neurulation, *Epilepsia*, 38, 415–423.
- [25] Liaw, A., Calvin, J. A. and Hart, J. D. (1996) A diagnostic test of heteroscedasticity based on nonparametric smoothing, *Technical Report #262*, Texas A&M University.
- [26] Samuel, T., Pignatiello, Jr., J. J. and Calvin, J. A. (1997) Identifying the time of a step change with χ^2 control charts, *Quality Engineering*, 10, 521–527.
- [27] Samuel, T., Pignatiello, Jr., J. J. and Calvin, J. A. (1997) Identifying the time of a step change in a normal process variance, *Quality Engineering*, 10, 529–538.
- [28] Craig, J. C., Eberwine, J. H., Calvin, J. A., Wlodarczyk, B., Bennett, G. D. and Finnell, R. H. (1997) Developmental expression in morphoregulatory genes in the mouse embryo: An analytical approach using a novel technology, *Biochemistry and Molecular Medicine*, 60, 81–91.
- [29] Calvin, J.A. (1997) Discussion of “Statistical assessment of online analyzers”, *Chemometrics and Intelligent Laboratory Systems*, 37, 291–294.
- [30] Kambour, III, E. L. and Calvin, J. A. (1997) Detecting the time of a change in a production process. *Technical Report #283*, Department of Statistics, Texas A&M University.
- [31] Richardson, B. E., Hulka, B. A., David, J. L., Hughes, C. L., van den Berg, B. J., Christanson, R. E. and Calvin, J. A. (1998) Levels of maternal serum alphafetoprotein (AFP) in pregnant women and subsequent breast cancer risk, *American Journal of Epidemiology*, 148, 719–731 (with discussion).
- [32] Bennett, G. D., An, J., Craig, J. C., Gefrides, L. A., Calvin, J., A. and Finnell, R. H. (1998) Neurulation abnormalities secondary to altered gene expression in neural tube defect susceptible Splotch embryos, *Teratology*, 57, 17–29.

- [33] Calvin, J. A. (1998) A review of Regression Models for Categorical and Limited Dependent Variables, by J. Scott Long, *Technometrics*, 40, 80.
- [34] Thompson, J. A., Brimacombe, M., Calvin, J. A., Tomaszewski, M. A., Davidson, T. J. and Magee, D. D. (1998) Effects of environmental management on seasonal decrease in milk production in Holsteins, *Journal of the American Veterinary Medical Association*.
- [35] Edwards, J. C., Maldonado, F. G. and Calvin, J. A. (1999) The effects of differently weighting interview scores on the admission of underrepresented minority medical students, *Academic Medicine*, 74, 59–61.
- [36] Bennett, G. D., Wlodarczyk, B., Calvin, J. A., Craig, J. C. and Finnell, R. H. (2000) Valproic acid induced alterations in growth and neurotrophic factor, *Reproductive Toxicology*, 14, 1–11.
- [37] Nedumaran, G., Pignatiello, J. J., Jr. and Calvin, J. A. (2000). Estimating the time of a step change with χ^2 control charts, *Quality Engineering*, 13, 153–159.
- [38] McDougal, A., Wormke, M., Calvin, J., and Safe, S. (2001) Tamoxifen induced antitumorigenic/antiestrogenic action synergized by a selective Aryl hydrocarbon receptor modulator, *Cancer Research*, 61, 3902–3907.
- [39] Reese, C. S., Calvin, J. A., George, J. C., Tarpley, R. J. (2001) Estimation of fetal growth and gestation in Bowhead whales, *Journal of the American Statistical Association*, 96, 915–938 (with discussion).
- [40] Shalat, S. L., Donnelly, K. C., Freeman, N. C. G., Calvin, J. A., Ramesh, S., Jimenez, M., Black, K., Coutinho, C., Needham, L. L., Barr, D. B. and Ramirez, J. (2003) Nondietary ingestion of pesticides by children in an agricultural community on the US/Mexico border: preliminary results, *Journal of Exposure Analysis and Environmental Epidemiology*, 13(1), 42–50.
- [41] Sherman, M., Guan, Y., and Calvin, J. A. (2003) Assessing spatial isotropy, *Recent Advances and Trends in Nonparametric Statistics*, M. Akritas and D. Politis (Eds.), Elsevier (North Holland) 467–475.
- [42] Guan, Y., Sherman, M. and Calvin, J. A. (2004) A nonparametric test for spatial isotropy using subsampling, *Journal of the American Statistical Association*, 99, 810–821.
- [43] Carrillo Zuniga, G., Coutinho, C., Shalat, S. L., Freeman, N. C. G., Black, K., Jimenez, W., Calvin, J., Ramirez, J., Marchenko, Y., Cizmas, L. and Donnelly, K. C. (2004) Potential sources of childhood exposure to pesticides in an agricultural community, *Journal of Children's Health*, 2, 1-11.
- [44] Donnelly, K., Huebner, H., Claxton, L., Calvin, J., Vos, G., Cizmas, L. and He, L. (2005) Biodegradation of simple chemical mixtures in soil, *Environmental Toxicology and Chemistry*, 24, 2839-2845.
- [45] Guan, Y., Sherman, M. and Calvin, J. A. (2006) A test for isotropy for spatial point processes, *Biometric*, 62, 119-125.
- [46] Guan, Y., Sherman, M. and Calvin, J. A. (2007) On asymptotic properties of the mark variogram estimator of a marked point process, *Journal of Statistical Planning and Inference*, 173, 148-161.

PAPERS

- 1984 Variance balanced designs, invited paper, Colorado-Wyoming Chapter ASA, Boulder.

- A new class of variance balanced designs, contributed paper, Joint Statistical meetings, Philadelphia.
- 1987 Constructing variance balanced designs, contributed paper, Joint Statistical Meetings, San Francisco.
- 1988 Approximate confidence intervals for fixed factors in mixed models, contributed paper, Joint Statistical Meetings, New Orleans.
- 1989 The Patterns of Care Studies: An evaluation of the quality of care of cancer patients in the United States, contributed paper, Biometrics Society Regional Meetings (ENAR), Lexington.
- Restricted covariance matrix estimation with applications to growth curve models, invited paper, Joint Statistical Meetings, Washington, D. C.
- 1991 REML estimation in multivariate mixed models, contributed paper, Biometrics Society Regional Meetings (ENAR), Houston.
- REML estimation of pattern covariance matrices, contributed paper, Joint Statistical Meetings, Atlanta.
- 1992 Order restricted techniques applied to multivariate variance components, invited paper, Second Eugene Lukacs Symposium, Bowling Green State University.
- Estimation of multivariate variance components using ordered covariance matrices, invited paper, Joint Statistical Meetings, Boston.
- 1995 Hypothesis testing using ordered covariance matrices, contributed paper, Joint Statistical Meetings, Orlando.
- 1999 Invited speaker, Panel Discussion on “Young Researchers and the Publication Process”, ENAR, Seattle.
- 2001 Issues in Distance Learning, SRCOS, St. Augustine.
- Estimation of fetal growth and gestation in Bowhead whales, *JASA Applications Invited Paper*, Joint Statistical Meetings, Atlanta.
- 2003 Modeling choices in the estimation of fetal growth and gestation in Bowhead whales, Justus Seely Memorial Conference, Oregon State University.

INVITED TALKS

- 1987 College of Business, University of Oregon
- 1989 Department of Statistics, Texas A&M University
- Department of Biostatistics, School of Public Health, University of Texas Houston
- Department of Statistical Science, Southern Methodist University
- Department of Mathematics, University of Texas–Austin
- 1990 Department of Biostatistics, School of Public Health, Harvard University
- 1991 Department of Statistics, Iowa State University
- Department of Statistics and Actuarial Science, University of Iowa
- 1992 Department of Statistics, Pennsylvania State University
- 1993 Department of Mathematics and Statistics, University of Pittsburgh
- 1993 Department of Statistics, Rice University

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| 1994 | College of Business, University of Texas-Austin |
| 1996 | Department of Statistics, University of Southwestern Louisiana |
| 1997 | Department of Biostatistics, University of Virginia Faculty of Toxicology, Texas A&M University |
| 1999 | Department of Statistics, University of Missouri |
| 2002 | San Antonio Chapter of the ASA Department of Statistics, Colorado State University |
| 2008 | Institute for Applied Mathematics and Computational Science, KAUST |

GRANTS

| | |
|-----------|---|
| 1986 | Old Gold Fellowship, University of Iowa (Principal Investigator) |
| 1988 | Old Gold Fellowship, University of Iowa (Principal Investigator) |
| 1991–1993 | National Science Foundation (Co-Principal Investigator) |
| 1993–1997 | National Institute of Environmental Health Sciences (Co-Investigator) |
| 1994–1997 | United States Department of Agriculture (Collaborator) |
| 1994–1997 | National Institutes of Health (Co-Investigator) |
| 1994–1998 | National Institutes of Health (Co-Investigator) |
| 1995–1997 | Texas Department of Health– <i>South Texas Hypertension Study</i> (Principal Investigator) |
| 1996–1998 | Texas Higher Education Coordinating Board Advanced Research Program– <i>Statistical Quality Monitoring for Multiple Characteristics</i> (Co-Principal Investigator) |
| 1997–1998 | National Institute of Environmental Health Sciences (Co-Investigator) |
| 1998–2005 | National Institute of Environmental Health Sciences Center for Environmental Rural Health (Director, Biostatistical & Computational Facility Core) |
| 1999–2004 | National Institutes of Health (Co-Investigator) |
| 1999–2002 | Environmental Protection Agency (Co-Investigator) |
| 2000–2005 | National Institute of Environmental Health Sciences, Superfund Basic Research Program (Collaborator) |
| 2002–2007 | National Science Foundation–MRI <i>Beowulf Cluster</i> (Principal Investigator) |
| 2008–2013 | King Abdullah University of Science and Technology (KAUST) Global Research Partnership Center Award (Principal Investigator) |

GRADUATE STUDENTS ADVISED

| | |
|------|---|
| 1993 | Diana Urbauer, M.S. |
| 1994 | Chien Feng Chen, M.S. |
| 1996 | John Polzer, M.S. |
| 1997 | Andy Liaw, Ph.D., An Application of Fourier Series Smoothing To A Diagnostic Test Of Heteroscedasticity (joint with J. D. Hart) |

- Chii Dean Lin, Ph.D., *Best Linear Unbiased Estimation And Prediction In Spatial Models With Measurement Error*
- 1998 Edward Kambour, Ph.D., *Bayesian Methods in Statistical Process Control*
- 1999 C. Shane Reese, Ph.D., *Statistical Methodology for Environmental Applications*
- 2000 Xionghua Wu, M.S.
- 2001 Kendra Brown Mhoon, M.S.
- 2003 Di An, M.S.
- 2003 Yong Tao Guan, Ph.D., *Nonparametric Methods For Assessing Spatial Isotropy*
(joint with M. Sherman)
- 2004 Yulia Marchenko, M.S.
- 2005 Ilsung Chang, Ph.D., *Bayesian Inference on Mixture Models and their Applications* (joint with B. Mallick)
- 2006 Catherine Wilson, M.S.

COURSES TAUGHT

Texas A&M University:

- | | |
|---------------------------------------|--|
| STAT 302 Statistical Methods (Honors) | STAT 408 Introduction to Linear Models |
| STAT 606 Design of Experiments | STAT 610 Theory of Statistics I |
| STAT 612 Theory of Linear Models | STAT 636 Methods in Multivariate Analysis |
| STAT 651 Statistics in Research I | |
| STAT 652 Statistics in Research II | VAPH 689 Epidemiology Methods II |

University of Iowa:

- | | |
|--|---|
| 22S:008 Quantitative Methods II | 22S:039 Engineering Statistics |
| 22S:127 Statistics for the Biological Sciences | 22S:152 Regression Analysis |
| 22S:153 Introduction to Probability and Statistics | 22S:158 Analysis and Design of Experiments |
| 22S:173 Consulting | |
| 22S:173 Data Analysis | 22S:255 Linear Models |