

**MARK CARPENTER, Ph.D.****Education:**

Ph.D. Statistics	University of Louisiana-Lafayette, 1992
M.S. Statistics	University of Louisiana-Lafayette, 1991
M.S. Mathematics	University of South Alabama, 1989
B.S. Mathematics	University of South Alabama, 1987

**Professional Experience:**

2004-Present:	<b>Director of Statistics</b> , Department of Mathematics and Statistics, Auburn University.
2003-Present:	<b>Associate Professor of Statistics</b> , Department of Mathematics and Statistics, Auburn University.
2001-2003:	<b>Associate Professor and Associate Director</b> , Medical Statistics Section, School of Medicine and Senior Biostatistician, Biostatistics Unit, Comprehensive Cancer Center, University of Alabama at Birmingham.
1997-2001:	<b>Associate Professor/Assistant Professor of Statistics, University of South Alabama</b> , tenure and promotion effective Fall 2001.
1995-2003:	<b>Senior Statistical Consultant, Venturi Technology Partners</b> (Trilogy Consulting).
1994-1997:	<b>Research Statistician</b> , Texas Regional Institute for Environmental Studies (TRIES), Sam Houston State University (jointly held with the academic position below).
1992-1997:	<b>Assistant Professor of Statistics, Sam Houston State University.</b>

**Editorial Boards:** *American Journal of Mathematical and Management Sciences*, Statistical Sciences, 2005-present.

**Auburn Committees (2003-2005):**

- **New Member**, Institutional Animal Care and Use Committee (IACUC), Auburn University, 2005
- **Director of Statistics**, Department of Mathematics and Statistics, Auburn University
- **Chair**, Statistics Search Committee 2004-2005
- **Chair**, Local Organizing Committee, International Conference on Statistics, Combinatorics, Mathematics and Applications, to be held at Auburn, December 2005.
- **Chair**, Statistics Graduate Curriculum Committee, 2004-2005.
- **Chair**, Statistics Undergraduate Curriculum Committee, 2004-2005.
- Member of the Undergraduate Studies Committee, Department of Mathematics and Statistics, 2004-2005.
- **Chair**, Organizing Committee, Symposium on Frontiers in Mathematical Biology and Bioinformatics, College of Sciences and Mathematics, May 2004.
- Member, Search Committee Member, Open position in Statistics, 2003-2004
- Member, Merger Committee Member, Discrete and Statistical Sciences/Mathematics, 2003-2004
- Member, College of Sciences and Mathematics Faculty Research Committee, 2003-present.
- Actuarial Science Curriculum Committee Member, 2003-present

**Conference organization while at the Department of Mathematics and Statistics, Auburn University:****Chair, Local Organizing Committee, 12<sup>th</sup> Annual International Conference on Statistics, Combinatorics, Mathematics and Applications, December 2-4, 2005.**

Confirmed Invited Speaker List:

- David J. Hand, Professor of Statistics and Head of Statistics Section, Department of Mathematics, Imperial College, London, UK
- N. Balakrishnan, Professor of Statistics, Department of Mathematics and Statistics McMaster University, Hamilton, Ontario, CANADA
- Charlie Colbourn. Professor, Department of Computer Science and Engineering Arizona State University, USA
- Benjamin Kedem, Professor, Department of Mathematics, University of Maryland, USA  
Jean Doyen, Professor, Department of Mathematics, Universite' Libre de Bruxelles, BRUXELLES
- Jeff Wu, Coca-Cola Chair in Engineering Statistics and Professor, School of Industrial and Systems Engineering, Georgia Institute of Technology, USA. editor or associate editor for several prestigious statistical journals like *Annals of Statistics*, *Journal of American Statistical Association*, *Technometrics*, and *Statistica Sinica*.
- Pranab K. Sen, Professor and Cary C. Boshamer Professor of Biostatistics, University of North Carolina at Chapel Hill, USA
- John Stufken, Professor and Head of Statistics, Department of Statistics, University of Georgia, Athens, USA, Editor of *Journal for Statistical Planning and Inference*.
- Joao Tiago Mexia, Professor, Department of Statistics, New University of Lisbon, PORTUGAL
- Nitis Mukhopadhyay, Professor of Statistics, Department of Statistics, University of Connecticut. Editor-in-Chief, *Sequential Analysis*  
Michael Woodroffe, L.J. Savage Professor of Statistics, Department of Statistics, University of Michigan, Ann Arbor, USA, Editor, *Annals of Statistics*, 1992-1994
- Jiayang Sun, Professor of Statistics, Department of Statistics, Case Western Reserve University, USA
- David Scott, Noah Harding Professor of Statistics, Rice University, Houston, TX, USA and editor of the *Journal of Computational and Graphical Statistics*.
- H.F. Nijhout, Professor of Biology, Department of Biology, Duke University, Durham, NC, USA.
- Peter Westfall, Professor of Statistics, Department of Information Systems and Quantitative Sciences, Texas Tech University, Senior Editor-elect of *The American Statistician*, to serve from 2006-2008.

**Chair, Frontiers in Mathematical Biology and Bioinformatics, May 2003, COSAM, AU:**

- Richard Simon, Chief, Biometric Research Branch, Head, Computational Biology and Systems Biology Branch, NIH/NCI
- Jim Keener, Professor of Mathematics and Bioengineering, UU, Salt Lake City
- J. Michael Cherry, Associate Professor, Dept. of Genetics, Stanford
- Lou Gross, Professor of Ecology and Evolutionary Biology and Mathematics, UT-Knoxville, Director, Institute of Environmental Modeling
- Pilar Francino, Research Scientist, Laboratory of Evolutionary Genomics and DOE Joint Genome Inst.
- John Quackenbush, Investigator, The Institute for Genomic Research (TIGR)

**Publications:** *For the convenience of the faculty reviewers, I have sub-divided my written research into the following categories: currently submitted or in-draft, refereed statistics publications, non-refereed proceedings publications, and technical reports.*

**Currently Submitted Statistical Publications:** *Currently I have 6 submitted manuscripts each of which I have strong confidence that they will be accepted. These I have included in the appropriate folders for review. I also am working on 2 more manuscripts that are almost ready for submission.*

1. **Carpenter**, M., Diawara, N. (2005), "A General Class of Positive Support Bivariate Reliability Mixture Models," in final preparations to be submitted.
2. **Carpenter**, M., Diawara, N. (2005), "A Multivariate Location/Scale Gamma Distribution for Multivariate Survival and Reliability Analysis," submitted.
3. **Carpenter**, M. and Han, Yi (2005), "A Locations/Scale Multivariate Weibull Survival Distribution," submitted.
4. **Carpenter**, M. and Li, Zhigang (2005), "Ultimate Ruin in a Classical Risk Model with Interest on Surplus," submitted.
5. **Carpenter**, M., Diawara, N. and Han, Yi (2005), "A New Class of Bivariate Weibull Survival Distributions," submitted.
6. Singh, P. and **Carpenter** (2005), "Step-up Procedure Comparing Several Population Scale Parameters," submitted.
7. Singh, P. and **Carpenter** (2005), "Step-up Procedure Comparing Several Population Location Parameters," submitted.
8. Carpenter, M., Sarkar, J and Li, Z. (2005), "Limiting Availability of Repairable Systems in A Random Environment," submitted.

**Refereed Statistical Publications (published/in-press/to-appear):** *This section represents peer-reviewed papers that appeared either in journals covering statistics theory or statistical computation, with one exception. I included my paper with Rowell and Lamartinaire, the first one listed below, because the focus was on new statistical methodology that I specifically developed for statistical proteomics. The statistical computation papers that appeared in SAS proceedings (SUGI and PharmaSUG) were peer-reviewed. A submitted paper is not automatically accepted for presentation or published. Admittedly, I was rejected by the reviewer on my first two attempts.*

1. Rowell, C., **Carpenter**, M. and Larmartiniere, C. (2005), "Proteomic Discovery of Genistein Action in the Rat Mammary Gland," *accepted/to appear, Journal of Nutrition.*
2. Rowell, C., **Carpenter**, M. and Lamartinaire, C. (2005), "Modeling Biological Variability in 2-D gel Proteomic Carcinogenesis Experiments," appeared on-line pr0501261 and *in-press, Journal of Proteome Research*, American Chemical Society Press. Developed new statistical method in statistical proteomics. We are in the process of getting patent for the algorithm and software concept.
3. Mattison, L.K, Ezzeldin, H., **Carpenter**, M, Modak, A., Johnson, M.R. and Diasio, R.B. (2004), "Rapid Identification of Dihydropyrimidine Dehydrogenase Deficiency using a Novel 2-<sup>13</sup>C- Uracil Breath Test," accepted, *Clinical Cancer Research*, 10 (8), pp. 2652-2658.
4. Saif, W., Eloubeidi, M.A., Russo, S., Steg, A., Thornton, J., Fiveash, J., **Carpenter**, M., Blanquicett, C., Johnson, M.R. and Diasio, R.B. (2005). "Up-regulation of Thymidine phosphorylase by Radiation administered prior to Capecitabine: A Phase I Study of Capecitabine with Concomitant Radiotherapy for Patients with Locally Advanced, Unresectable Pancreatic Cancer," *accepted.to-appear, Journal of Clinical Oncology.*
5. Buchsbaum, Khazaeli, Axworthy, Schultz, Chaudhuri, Zinn, **Carpenter**, and LoBuglio, (2005) "Intraperitoneal Pretarget Radioimmunotherapy with CC49 Fusion Protein," accepted, *Clinical Cancer Research.*
6. Rogers, B., **Carpenter**, M., Yokoyama, S., Brechbiel, M., LoBuglio, A., and Buchsbaum, D. (2005); "Intraperitoneal Radioimmunotherapy with a Humanized Anti-TAG-72 (CC49) Antibody with a Deleted CH2 Region," to appear, December 2005, Vol 20, No 6, *Cancer Biology and Radiopharmaceuticals.*
7. Saif, W., Sviglin, H. and **Carpenter**, M. (2005), "Impact of Race Outcome on Pancreatic Carcinoma," *Journal of the Pancreas*, 6(2), 246-254, Senior Contributing Author.
8. Blanquicett, C., Saif, W., Buchsbaum, D., Vickers, S., Grunda, J., Russo, S., Eloubeidi, M., Sellers, J., Diasio, R., Chhieng, D., **Carpenter**, M. and Johnson, M. (2005), "Antitumor Efficacy of Capecitabine and Celecoxib in Irradiated and Lead Shielded, Contralateral Human BxPC-3 Pancreatic Xenografts: Abscopal Effects in a Metastatic Model,"

9. **Carpenter**, M., Rowell, C., McCorkle, H. and Lamartiniere, C. (2004), "2D-gel Proteomics in Biomarker Discovery," *Statistics and Pharmacokinetics, PharmaSUG2004*. Refereed Proceedings.
10. Safavy A, Georg GI, Vander Velde D, Raisch KP, Safavy K, **Carpenter** M, Wang W, Bonner JA, Khazaeli MB, Buchsbaum DJ (2004), "Site-specifically traced drug release and biodistribution of a paclitaxel-antibody conjugate toward improvement of the linker structure," *Bioconjug Chem*. 2004 Nov-Dec;15(6):1264-74.
11. Fallon KB, Palmer CA, Roth KA, Nabors LB, Wang W, **Carpenter** M, Banerjee R, Forsyth P, Rich K, Perry A. (2004), "Prognostic value of 1p, 19q, 9p, 10q, and EGFR-FISH analyses in recurrent oligodendrogliomas," *J Neuropathol Exp Neurol*. 2004 Apr;63(4):314-22.
12. Neidhart J, Allen KO, Barlow DL, **Carpenter** M, Shaw DR, Triozzi PL, Conry RM. (2004), "Immunization of colorectal cancer patients with recombinant baculovirus-derived KSA (Ep-CAM) formulated with monophosphoryl lipid A in liposomal emulsion, with and without granulocyte-macrophage colony-stimulating factor," *Vaccine*. 2004 Jan 26;22(5-6):773-80.
13. **Carpenter**, M., Meleth, S., Zhang, S., and Grizzle (2003), "Statistical Processing and Analysis of Proteomic and Genomic Data," *Statistics and Pharmacokinetics, PharmaSUG2003*. Won Best Paper in Pharmacokinetics and Statistics. Referred Proceedings.
14. Forero, A., Meredith, R, Khazaeli, M.B., **Carpenter**, M., Shen, S., Thorton, J., Schlom, J., and LoBuglio, (2003), "A novel monoclonal antibody design for radioimmunotherapy," *Cancer Biotherapy and Radiopharmaceuticals*, V.18, No. 5.
15. **Carpenter**, M (2002), "Estimation of Location Extremes within General Families of Scale Mixtures," *Journal for Statistical Planning and Inference*. V. 100, p. 197-208.
16. **Carpenter** M, Buchsbaum DJ: Statistical growth curve modeling of tumors treated with ERBITUX™ (IMC-C225) anti-EGFR antibody, gemcitabine and radiation. *Proc Am Assoc Cancer Res* 43:1005-1006, 2002. *Refereed Proceedings*.
17. Posey JA, Ng TC, Yang B, Khazaeli MB, **Carpenter** M, Fox F, Needle M, Waksal H, LoBuglio AF. (2003), "A phase I study of anti-kinase insert domain-containing receptor antibody, IMC-1C11, in patients with liver metastases from colorectal carcinoma." *Clin Cancer Res*. 2003 Apr;9(4):1323-32.
18. Safavy A, Bonner JA, Waksal HW, Buchsbaum DJ, Gillespie GY, Khazaeli MB, Arani R, Chen DT, **Carpenter** M, Raisch KP. "Synthesis and biological evaluation of paclitaxel-C225 conjugate as a model for targeted drug delivery," *Bioconjug Chem*. 2003 Mar-Apr;14(2):302-10.
19. Kaliberov S, Buchsbaum DJ, Gillespie GY, Curiel DT, Arafat W, **Carpenter** M, Stackhouse MA: Adenovirus-mediated transfer of Bax driven by the vascular endothelial growth factor promoter induces apoptosis in lung cancer cells. *Molecular Therapy*, V. 6, No. 2, p. 190-198, August 2002.
20. Buchsbaum, Zhou, Grizzle, Oliver, Hammond, Zhang, **Carpenter** and LoBuglio (2003), "Antitumor Efficacy of TRA-8 Anti-DR5 Monoclonal Antibody Alone and in Combination with Chemotherapy and/or Radiation Therapy in a Human Breast Cancer Model," *Clinical Cancer Research*, September, Vol. 9, 3731-3741.
21. Forero, A., Meredith, R, Khazaeli, M.B., **Carpenter**, M., Shen, S., Thorton, J., Schlom, J., and LoBuglio, (2003), *Cancer Biotherapy and Radiopharmaceuticals*, V.18, No. 5.
22. Buchsbaum D, Rogers B, Khazaeli M, Carpenter M, Safavy A: Treatment of tumor xenografts with <sup>177</sup>Lu- and <sup>188</sup>Re-HuCC49 and HuCC49§CH2. *J Nucl Med* 43:268P, 2002.
23. Buchsbaum DJ, LoBuglio, AF, Oliver PG, **Carpenter** M, Zhou T: Treatment of human breast cancer xenografts with monoclonal antibody against DR5 with or without chemotherapy inhibits tumor growth in nude mice. *Proc Am Assoc Cancer Res* 43:1005-1006, 2002. *Refereed proceedings*.
24. Buchsbaum DJ, Bonner JA, Grizzle WE, Stackhouse MA, **Carpenter** M, Hicklin DJ, Bohlen PA, Waksal HW, Raisch KP: Treatment of pancreatic cancer xenografts with IMC C225 anti-EGFR antibody, gemcitabine, and radiation., *Int J Radiat Oncol Biol Phys.*, V.54, NO. 4, pp. 1180-1193, 2002.
25. **Carpenter** DM, Mishra SN (2001), "Fitting the Generalized Beta Distribution to Data," *American Journal for Mathematical and Management Science*, V. 21, p. 165-187.
26. **Carpenter** DM, Mishra SN (2001), "Bootstrap Bias Adjusted Estimators of Beta Distribution Parameters," *Calcutta Statistical Association Bulletin* V. 51, Nos. 201-202, p. 119-124.
27. **Carpenter** DM, Kulkarni P (2000), "Improved Confidence Interval on the Mean Response in Simple Linearizable Regression," Awarded Best Contributed Paper, Proceedings of the 25<sup>th</sup> SAS User Groups International (SUGI25) Conference, Indianapolis, Indiana, April. *Refereed Proceedings*.
28. **Carpenter** DM, Pal N (1998), "Sequential Estimation of the Guarantee Times for Systems of Several Exponential Components," *American Journal of Mathematical and Management Science* 18, 3-4.
29. **Carpenter** M, Hebert JL (1997), "Estimating Guaranteed Lifetimes of Systems in a Random Environment." *Communications in Statistics; Theory and Methods*, 26 (2), pp.309-316.

30. **Carpenter DM**, Pal N (1995), "Estimation of the Smaller and Larger of Two Exponential Location Parameters with Common Unknown Scale Parameter." *Calcutta Statistical Association Bulletin* 45, No.s 177-178, p. 61-71, 1995.
31. **Carpenter DM**, Hebert JL (1995), "Estimating the Minimum and Maximum of Two Exponential Location Parameters in an I-G mixture." *Communications in Statistics: Theory & Methods* 24(5):1227-1233, 1995.
32. **Carpenter DM**, Hebert JL (1994), "Estimating the Minimum and Maximum of Two Exponential Location Parameters in a Gamma-Exponential Mixture." *Communications in Statistics: Theory & Methods* 23(8):2367-2377.
33. Hallum C, **Carpenter DM** (1994), "Accelerating Maximum Likelihood Classification: An Approach with SAS/IML Software." Proceedings of SAS Users Group International Conf. Dallas, Texas. *Refereed proceedings*.
34. **Carpenter DM**, Hallum C (1993), "Sample Size versus Detection Probabilities of Off-Aim Drifts in Support of Quality Improvement," Proceedings of SAS Users Group International Conf., N.Y. *Refereed proceedings*.
35. **Carpenter DM**, Pal N, Kushary D (1992), "Estimation of the Smaller and Larger of Two Exponential Location Parameters." *Communications in Statistics; Theory and Methods* 21(4): 881-895.
36. Ostrand KG, Thies ML, Hall DD, **Carpenter DM**: "Gar Ichthyotoxin: Its Effect on Natural Predators and the Toxin's Evolutionary Function," *The S.W. Naturalist* 41(4):375-377, 1996.

**Proceedings (not referred):** *Although the following are not refereed and should not be treated with the same weight as refereed publications, I do feel it appropriate to report them since they do reflect significant effort and a willingness to publish work that may contribute to the body of statistical knowledge.*

1. Han and **Carpenter**, Diawara (2005), "Bivariate Weibull Reliability/Survival Models," Joint Statistical Meetings in Minneapolis, Minnesota, August 2005, to appear.
2. Diawara, Han and **Carpenter** (2005), "A General class of Linearly Structured Bivariate Lifetime Distributions," Joint Statistical Meetings in Minneapolis, Minnesota, August 2005, to appear.
3. Han, Yi and **Carpenter**, M. (2004), "Estimation for the Three-Parameter Weibull Distribution," *Proceedings of the Joint Statistical Meetings/ASA, Toronto*.
4. **Carpenter**, Mark, Xie, J., and Hebert, J.L. "Estimating the Mixing Parameters in Systems of Two Components in a Common Environment", Proceedings. of the Amer. Stat. Assoc. 156<sup>th</sup> Annual Joint Statistical Meetings, Section on Physical and Engineering Sciences, Chicago 1996.
5. Cornils P, **Carpenter DM** (1997), "Optimal Cluster Number Identification in Unsupervised Classification of Satellite Imagery," Proceedings. of the Amer. Stat. Assoc. 157<sup>th</sup> Annual Joint Statistical Meetings, Section on Statistics and the Environment, Anaheim/Orange County.
6. Hebert, J.L., Quan, R. and **Carpenter**, Mark (1996), "Comparing Estimators of the Guaranteed Lifetimes of Systems Using Pitman's Closeness Criteria", Proceedings. of the Amer. Stat. Assoc. 156<sup>th</sup> Annual Joint Statistical Meetings, Section on Physical and Engineering Sciences, Chicago.
7. **Carpenter DM**, Plank P, Hebert JL (1996), "Using Cluster and Classification Analysis to Detect the Impact of Military Training on the Environment: A Case Study", Proc. of the Amer. Stat. Assoc. 156<sup>th</sup> Annual Joint Statistical Meetings, Section on Statistics and the Environment, Chicago.

**Technical Reports (referred by two statisticians and one senior technical consultant):**

1. Carpenter, Mark (2002), "Comparison of Broiler Performance When Fed Diets Containing Insect-Protected Traits MON863 x MON810, Non-transgenic Control, or Commercial Corn," Statistical Report, CQR Project No. MN-02-01, Monsanto Study No. 02-01-39-13.
2. "Comparison of Broiler Performance When Fed Diets Containing Corn Grain from a MON810 x NK603 Hybrid, a Non-transgenic Control Hybrid, or Reference Hybrids", Statistical Report CQR Project No. MN-01-1 Monsanto Study No. 2001-01-50-02.
3. Carpenter, Mark (2001), "Comparison of Broiler Performance When Fed Diets Containing Corn Grain from a MON810 x NK603 Hybrid, a Non-transgenic Control Hybrid, or Reference Hybrids", Statistical Report CQR Project No. MN-01-1 Monsanto Study No. 2001-01-50-02.
4. Carpenter, Mark (2000), "Comparison of Broiler Performance When Fed Diets Containing Events NK603 Parental Lines or Commercial Corn," Statistical Report CQR Project No. MN-00-3 Monsanto Study No. 2000-01-39-02

5. Carpenter, Mark (2000), "Comparison of Broiler Performance When Fed Diets Containing Events MON853 Parental Lines or Commercial Corn," Statistical Report CQR Project No. MN-00-3 Monsanto Study No. 2000-01-39-03.
6. Carpenter, Mark (2000), "Parecoxib 20 mg/vial and 40 mg/vial for Injection Statistical Evaluation of Primary ICH Stability Data to Support Expiry at the Intended Storage Condition of 25° C," Searle, Pre-Clinical Statistics, Project Number: MW446.
7. Carpenter, Mark (2000), "The Effects of pH Level on Discrimination between Over-compacted, Over-lubricated, Over-lubricated Capsules During in-vitro testing," Searle, Pre-Clinical Statistics, Project Number : MW457
8. Carpenter, Mark (1997). "Spatial Statistics and Canonical Correlation Applied to Remotely Sensed Imagery." TRIES Technical Repot, #97-01, February 1997.
9. Carpenter, Mark (1996). "Global and Local Principal Component Analyses for Landsat 5 Digitized Data: A Case Study," TRIES Technical Report, #96-01.
10. Carpenter, Mark and Hebert, J.L. (1995). "Statistical Aspects of Remote Sensing in Support of Classification and Land-Use Detection." TRIES Technical Report, # 95-03, October 1995.

### Presentations:

1. Han and Carpenter, Diawara, "Bivariate Weibull Reliability/Survival Models," Joint Statistical Meetings in Minneapolis, Minnesota, August 2005.
2. Diawara, Han and Carpenter, "A General class of Linearly Structured Bivariate Lifetime Distributions," Joint Statistical Meetings in Minneapolis, Minnesota, August 2005.
3. Carpenter, "Generalized Models and Design Issues in Genomic and Proteomic Experiments," *Joint Statistical Meetings/ASA*, August 2004, Toronto, Canada.
4. Carpenter, "Estimation for the Three-Parameter Weibull Distribution," *Joint Statistical Meeting/ASA*, August 2004, Toronto, Canada.
5. Carpenter, M., Rowell, C., McCorkle, H. and Lamartiniere, C. (2004), "2D-gel Proteomics in Biomarker Discovery," *Statistics and Pharmacokinetics, PharmaSUG2004*.
6. Carpenter, M., "Quantitative Genomic and Proteomic Data Analysis: A Statistical Approach," Department of Animal Sciences, Auburn University, January 2004.
7. Carpenter, M., "From Rocket Science to Brain Surgery," Department of Mathematics and Statistics Graduate Seminar Series, October, 2004.
8. Carpenter, "Statistical Processing and Analysis of Proteomic and Genomic Data," *Statistics and Pharmacokinetics, PharmaSUG2003*. Won Best Paper in Pharmacokinetics and Statistics.
9. Carpenter, M., "Estimation of the Minimum Guaranteed Lifetimes of Series and Parallel Systems within General Families of Scale Mixtures," College of System and Computer Engineering, Auburn University, October 2003.
10. Carpenter, M., "Statistical Proteomics in Cancer Related Research," Medical School and Cancer Center, Vanderbilt University, February 2003.
11. Carpenter, M., "Statistical Processing and Analysis of SELDI-TOF-MS Proteomic Data," National Center for Toxicological Research (NCTR), Food and Drug Administration (FDA), Arkansas, 2003.
12. "Statistical Considerations of Therapeutic Studies for West Nile Virus Infections," *Workshop on Therapeutics for West Nile Virus Infections*, NIH, November 20-21, 2002.
13. "Development of Improved Microarray Gene Expression Indexes Using the Probe-Level Intensities," *Joint Statistical Meeting/ASA*, August 2002, New York.
14. "Implications of Proteinchip Surface-Enhance Laser Desorption/Ionization (SELDI) Technology on Statistical Techniques Used in Proteomics," Joint Statistical Meeting/ASA, August 2002, New York.
15. "Statistical Growth Curve Modeling of Tumors Treated with ERBITUX™ (IMC-C225) Anti-EGFR Antibody, Gemcitabine and Radiation," 93th Annual Meeting, American Association for Cancer Research (AACR)," San Francisco, CA, April 2002.
16. "Statistical Design and Analysis of DNA Microarray Experiments," March 18, 2002, Division of Hematology/Oncology Research Seminar Series, UAB.
17. "Improved Confidence Interval on the Mean Response in Simple Linearizable Regression," Awarded Best Contributed Paper Presentation, 25<sup>th</sup> SAS User Groups International (SUGI25) Conference, Indianapolis, Indiana, April, 2000.
18. "Modeling Counts of Extreme Events Using Poisson Regression," 159<sup>th</sup> Annual Joint Statistical Meetings, American Statistical Association, Baltimore, MD.

19. "Remotely Sensed Image Classification in Support of Watershed Modeling," *Recent Advances in Signal Processing and Remote Sensing, 6<sup>th</sup> International Conference on Statistics, Combinatorics and Related Areas, Forum for Interdisc. Math.*, Mobile, Alabama, December 18-20, 1999.
20. "Statistical Image Analysis and Environmental Change Detection," *6<sup>th</sup> International Conference on Statistics, Statistical Applications and Consulting, Combinatorics and Related Areas, Forum for Interdisc. Math.*, Mobile, Alabama, December 18-20, 1999.
21. "Modeling the Occurrence and Abundance of Gray Triggerfish Larvae using Generalized Linear Models," *Count Data Analysis, 6<sup>th</sup> International Conference on Statistics, Combinatorics and Related Areas, Forum for Interdisc. Math.*, Mobile, Alabama, December 18-20, 1999..
22. "Goodness-of-fit Tests for Extreme Events Count Models," *Count Data Analysis, 6<sup>th</sup> International Conference on Statistics, Combinatorics and Related Areas, Forum for Interdisc. Math.*, Mobile, Alabama, December 18-20, 1999.
23. "Fixed-Width Estimation of the Mean of Logistic Tolerance Distribution," *Recent Advances in Sequential Analysis, 6<sup>th</sup> International Conference on Statistics, Combinatorics and Related Areas, Forum for Interdisc. Math.*, Mobile, Alabama
24. "Recommendation for the Creation of a Center for Meteorological Modeling and Remote Sensing at the University of South Alabama in Support of NASA's Earth Science Mission," Space Science and Technology Alliance Board Meeting, NASA, Huntsville, December 16, 1999.
25. "Those Darned Statisticians," *American Society for Quality*, Mobile, Alabama, November 18, 1999.
26. "Availability of Repairable Systems in a Random Environment," *Louisiana Chapter of the American Statistical Association*, April 1999.
27. "The Limiting Availability of Repairable Systems in A Random Environment," the *International Indian Statistical Association's International Conference*, Hamilton, Ontario, Canada, October 10-11, 1998.
28. "Parameter Estimation for Fitting Beta Distributions to Data," *International Conference on Statistical Inference and Combinatorics*, Varanasi, India, December, 1997.
29. "Estimation of Location Extremes Within General Families of Scale Mixtures," *3<sup>rd</sup> International Conference on Combinatorics, Information Theory & Statistics*, Portland, Maine, July 1997.
30. "Reverse Order Canonical Correlation Applied to Remotely Sensed Imagery," *157<sup>th</sup> Annual Joint Statistical Meetings*, Anaheim/Orange County.
31. "Optimal Cluster Number Identification in Unsupervised Classification of Satellite Imagery," poster presentation by Paul Cornils and Mark Carpenter, *157<sup>th</sup> Annual Joint Statistical Meetings*, Anaheim/Orange County.
32. "Using Cluster and Classification Analysis to Detect the Impact of Military Training on the Environment: A Case Study", poster presented by student Paul Plank, *156<sup>th</sup> Annual Joint Statistical Meetings*, Chicago, 1996.
33. "Comparing Estimators of the Guaranteed Lifetimes of Systems Using Pitman's Closeness Criteria", *156<sup>th</sup> Annual Joint Statistical Meetings*, Chicago, 1996.
34. "Estimating the Mixing Parameters in Systems of Two Components in a Common Environment", presented by J. Xie, graduate student, *156<sup>th</sup> Annual Joint Statistical Meetings*, Chicago, 1996.
35. "Parameter Estimation within Families of Mixture Distributions", The Conference of Texas Statisticians. San Antonio, Tx, April 1995.
36. "Estimating Minimum Lifetimes of Systems in a Random Environment," Department of Mathematics and Statistics, Mississippi State University. April 1995.
37. "Detection of Environmental Change/Impact Areas Using Remotely Sensed Multivariate Data," *155<sup>th</sup> Annual Joint Statistical Meetings*, Orlando, August 1995.
38. "Sequential Point Estimation of the Smallest and Largest of Several Exponential Location Parameters," *154<sup>th</sup> Annual Joint Statistical Meetings*, Toronto, August 1994.
39. "Statistical Modeling and Sensitivity Analyses in Support of Regenerative Life Support Systems Development," Regenerative Life Support Systems, NASA/JSC, July 29, 1994.
40. "Estimation of the Smallest and Largest of Several Exponential Locations," *153<sup>th</sup> Annual Joint Statistical Meetings*, San Francisco, August 1993.
41. "Sample Size Versus Detection Probabilities of Off-Aim Drifts in Support of Quality Improvement," *SAS Users Group International Conf.*, New York, May 1993.
42. "Statistical Tools in Support of Total Quality Management," 3 hour presentation at The Piney Woods TQM Program (sponsor: Small Business Development Center), 1993.
43. "A SAS/GRAPH Application in Support of Quality Improvement," *The South-Central Regional SAS Conference*, September 1993.

- **Miscellaneous Presentations:**

1. "USA Support for NASA through Remote Sensing Analysis and Meteorological Modeling," Dean's Research Roundtable, University of South Alabama., November 1999.
2. "Introduction to the Generalized Linear Model," Colloquium, Department of Mathematics and Statistics, University of South Alabama, February 1999.
3. "Analysis of Multivariate Satellite Data" Local presentation given for MA/ST 290, Spring 1998 and Fall 1998.
4. "Outside Looking in: Exploring our World Using Satellite Imagery," Math Awareness Week, April 26 - May 2, 1998.
5. "Careers in Statistics," Local presentation as part of the Dept. of Math/Stat Teacher/Student Workshop, Spring 1998.
6. "Scale Mixtures of Location-Scale Families of Lifetime Distributions," Colloquium, Department of Mathematics and Statistics, University of South Alabama, October 1997.
7. "Smoothing Splines, Kernels, and Wavelets." Presented at the Wavelets and Statistics Seminar Series, Sam Houston State University. September, 1994
8. "Wavelet Shrinkage Estimators: Parts I and II." Presented at the Wavelets and Statistics Seminar Series, Sam Houston State University. October, 1994.
9. "Findings and Recommendations Related to the Statistical Experiment Design, Quantitative Monitoring and Reliability Assessment in Support of the Environmental Human Test." NASA/JSC, December 9, 1994.
10. "Combining Statistics and Writing." presented to a multi-disciplinary group of professors at the Across-The-University Writing Workshop, Sam Houston State University, 1994.

- **Grants and Grant Related Activities:**

1. "Design and Analysis of Microarray Gene Expression Studies in Plants: Towards Sound Statistical Procedures," Carpenter serves as a co-investigator on this project," PI: D. Allison, UAB, NSF 01-158 Allison, 10/1/02-9/30/06, Carpenter has been attached as Co-PI as of 1/1/04.
2. "Center for Gene-Nutrient Interaction (CNGI), P50 AT00477 Barnes (PI), 8/14/03-5/31/08, NIH/NCI," Carpenter serves as a statistical consultant for this project.
3. "Center for the Study of Environment and Mammary Gland Development," J. Russo, Fox Chase Cancer Center, Director; Lamartiniere, Co-PI. Carpenter serves as a statistical consultant on this project. 1U01 ES012771-01, NIH/NIEHS, 9/29/03 - 7-31-/10.
4. "Genetic Polymorphism of DPD Deficiency," R01 CA 62164 (PI: Diasio, UAB), Dr. Carpenter will provide statistical consulting in Pharmacokinetic modeling of DPD Deficiency breath test.
5. "Development of Statistical Models and Software in Support of 2D-Gel Proteomics." Dean's Research Initiative (DRI), College of Sciences and Mathematics, Auburn University, Carpenter is the sole investigator on this grant.
6. Awarded all Expenses Paid for the Biomedical Research Institutions Information Technology Exchange (BRIITE), Semi-annual meetings, May 19-21, 2004, Memphis, TN.
7. "Zonisamide for Treatment of Canine Epilepsy," Morris Animal Foundation, PI: Dawn Boothe, Department of Anatomy, Physiology and Pharmacology, College of Veterinary Medicine, Auburn University. Carpenter is listed as a consultant.
8. "Study of increased risks to lung in felines in heartworm endemic areas," \$357,337. Pfizer, Pi-Investigator is R. Dillon, School of Veterinary Medicine, Auburn University. Carpenter is listed as a consultant. No salaries requested.
9. "Treatment of canine hyperadrenocorticism with trilostane" PI: Ellen N. Behrend, Department of Clinical Sciences Department, College of Veterinary Medicine, Auburn University. Carpenter listed as consultant.
10. "Evaluation of multiple low-doses of synthetic adrenocorticotrophic hormone (ACTH) on cortisol and ACTH concentrations in clinically normal dogs," Washington State University College of Veterinary Medicine Intramural Research Grant. Principal investigator: Linda Martin; co-investigator Ellen N. Behrend; 7/1/04-7/1/05. Carpenter serves as the statistical consultant.
11. Brain SPORE, "Specialized Program of Research Excellence (SPORE) in Brain Cancer," Co-investigator of Biostatistics Core.
12. Ovarian SPORE, "Specialized Program of Research Excellence (SPORE) in Ovarian Cancer," statistical consultant for design and analysis of pre-clinical (*in vivo* and *in vitro*) experiments and clinical trials, Biostatistics Core.

13. Breast Cancer SPORE, "Specialized Program of Research Excellence (SPORE) in Breast Cancer," statistical consultant for design and analysis of pre-clinical experiments and clinical trials, Biostatistics Core.
14. NIH/NIAID, Clinical Studies of Therapies for Virus Infections, assist in the design and analysis of Phase I, II, and III clinical trials, oversee the day-to-day data entry and database management of 5 clinical trials, and generate interim and DSMB statistical reports to NIH and FDA.
15. Indicators of Ecosystem Health and Sustainability in Gulf of Mexico Estuaries: VIII. Remote Sensing, PI: Mark Carpenter, Co-PI: W. Schroeder, UA, R. Miller, NASA-Stennis, G. Carter, NASA-Stennis, J. Cruise, UAH. Funding agency: NASA/EPA, Amount: \$595,026, pending.
16. "Remotely Sensed Data Acquisition for Mobile Bay Land-use/Land-change Study," EPA/Alabama Center for Estuarine Studies (ACES), funded \$29,000, July 2000, PI: Mark Carpenter, Co-PI: Madhuri Mulekar.
17. "Land Cover Classifications in Baldwin and Mobile Counties," \$17,601, Contractual work conducted for the Southeast Regional Assessment Program, GHCC, NASA.
18. Director of the Center for Meteorological Modeling and Remote Sensing (MMARS), NASA Funding of approximately \$1.5 million is pending attachment to NASA budget, 2000.
19. "Study of Environmental Impact in the Theodore Ship Channel/Industrial Park Using Remotely Sensed Data," USARC proposal, 1999, Co-PI's: Mulekar and Carpenter, \$4,250.
20. "Regional/International Change Assessment Strategies; Research & Technologies," funded \$20,000 for summer 1998, NASA/GHCC, PI: M. Carpenter.
21. "A Cooperative Agreement between the Global Hydrology and Climate Center and the University of South Alabama," \$972,030, PI: Carpenter, Co-PI's: Kent Clark, Roy Ryder, and Doug Haywick, this agreement was officially sanctioned via signatures from USA and NASA officials in 1998.
22. "Land-Use/Land-Cover Change Classification Map of Mobile Bay," \$268,493, submitted to *The Alabama Center for Estuarine Studies, University of South Alabama*, January 1999, PI: M. Carpenter, Co-PI's: Roy Ryder, Steve Thomas.
23. "Impact of Land Use Change on the Frequency of Synoptically Defined Flood Events in the Southeastern United States," NASA Proposal, 98-OES-10, \$450,000, PI: Jim Cruise, UAH/GHCC and CO-PI's: M. Carpenter, USA, and Barry Keim, UNH.
24. "Center of Excellence in Global and Regional Change Assessment at the University of South Alabama," \$2,350,000, preproposal submitted to, *The Alabama Centers of Excellence, EPSCoR, NSF*, PI: Mark Carpenter.
25. Remotely Sensed Image Classification in Support of Monitoring and Inventorying the Ecosystem of Mobile Bay," \$309,169.00, submitted to *The Alabama Center for Estuarine Studies, University of South Alabama*, 1998, PI's Carpenter, M., Clark, K., Kulkarni, P., Mulekar, M., and Ryder, R.
26. "Establishment of a State-of-the-Art GIS/Remote Sensing Undergraduate Research laboratory on the Alabama Gulf coast,' Instrumentation and Laboratory Improvement (ILI)/NSF, \$41,962.00. Co-Pi's: Roy Ryder, Douglas Haywick, David Allison.
27. "The Establishment of the Alabama Institute for Remote Sensing Sciences (AIRSS) at the University of South Alabama," an unsolicited proposal, U.S. Agency for International Development (USAID), \$2,000,000.
28. "Centers of Excellence in Applications of Remote Sensing to Regional and Global Integrated Environmental Assessments," submitted to NASA's Mission to Planet Earth, \$319,686, towards the establishment of centers at Sam Houston State University (SHSU) and the University of South Alabama (USA). Co-Principal Investigators: Pat Van Fleet, M. Carpenter, and L. Graham.
29. "Enhancement of Image Assessment Capabilities for Natural Resource Characterization." Strategic Environmental Research and Development Program (SERDP) jointly run by DOD, DOE, and EPA. Funded \$740,000 for 1996-97, CoPIs: J. Carrol, C. Hallum, H. Konen, P. Van Fleet, Hallum, W. So.
30. "Time Series Modeling in Support of Adapting Quality Control Techniques for Automating Energy Data Screening." \$28,491 for 1996-1997. CoPI: Jaimie Hebert.
31. "Quality Control Techniques for Automating Energy Data Screening" The Texas Engineering Experimental Station, College Station. \$25,000 for 1995-1996, CI's: J.L. Hebert and D. Ruch.
32. "Statistical Modeling and Sensitivity Analyses in Support of Regenerative Life Support Systems," Funded by NASA for 1994-1995. Funded \$35,000. Co-investigator: Cecil Hallum
33. "Estimating Lifetimes of Biological and Manufactured Systems." SHSU Summer Enhancement Grant. Amount \$7280. Funding for Summer 1994.
34. "Wavelet Techniques and Statistical Analysis for Energy Savings Analysis, O&M Diagnostics, and Data Verification." The Texas Engineering Experimental Station, College Station. \$20,000 for 1994-1995. Co-investigators: Pat Van Fleet and David Ruch.

**Private Consulting Experience (selected projects):**

8/25/2005

- 2003-Present: Torch Technologies, Huntsville, Alabama. Mathematical Statistics; Theory and Applications
- 2000-Present: Allermed Laboratories, Inc., On-going statistical consulting support in bioequivalence studys for various Allermed products and contract work with the Department of Defense
- 2000-Present: Environmental Resource Management, On-going statistical consulting support for issues such as the development of chemical concentration standards and EPA variance applications.
- 1999-Present: Pharmacia/Monsanto, Statistical Technology Center, Agriculture Regulatory Support, Saint Louis, MO.
- 1999-Present: Pharmacia/Searle: Research and Development Division, 4901 Searle Parkway, Skokie, IL 60077. Provide pre-clinical statistical support. Project Summaries: Dissolution Profile Analyses, In-vitro/In-vivo Prediction Modeling, toxicological protocol design and analysis and Expiration Dating and Stability Analyses.
- 1999-2000: Ovation Research Group, 600 Central Avenue, Highland Park, Illinois 60035. Project Summary: survival analysis of long-term care of geriatric patients.
- 1999-Present: Misubishi Polysilicon, 7800 Mitsubishi Lane, Theodore, AL 36582. Statistical Quality Control Issues related to the manufacturing of silicon chip material.
- 1999-Present: ChemFirst Company (First Chemical Corporation), 1001 Industrial Road, Pascagoula, MS, 39581. Effluent chemical concentration environmental study. Report provided to and evaluated by the Environmental Protection Agency (EPA).
- 1998-1999: Market Strategies, 20255 Victor Parkway Suite 400, Livonia, MI 48152. Lead statistician in the creation of a market research statistical software application and provided statistical modeling support (Regression and Partial Least Squares Regression).
- 1996-1997: DOW CHEMICAL: Market Segmentation Study, discriminant analysis, cluster analysis, principal component and factor analysis.
- 1996-Present: Trilogy Consulting Corporation, Senior Statistical Consultant. SEARS: Sales Potential Prediction Modeling of First Year Annual Sales, SEARS: Chainsaw Sales Prediction Modeling, DOW CHEMICAL: Market Segmentation Study, AMOCO: Automotive Emissions Study, Chiron Vision: Sampling Plans for Two Manufacturing Processes
- 1997-1998: NBC News, Contact: Patrick Weiland. Louisiana interstate traffic study related to a DATELINE NBC broadcast in December 1996.
- 1996-1998: Law Office of Glen D. Vamvoras: Expert Witness: data collection and analysis. See article in *The Advocate*, Baton Rouge, 2/2/97.
- 1996-1998: Sanders, Crochet & Chism: Expert Witness: data collection and analysis. See article in *The Advocate*, Baton Rouge, 2/2/97.
- 1995-1996: Blistex Inc, Oak Brook, Illinois. Statistical Consultant/Clinical Study Reviewer.
- 1994-1995: Aaron Oil Company, Mobile, Alabama. Statistical Quality Control.
- 1992-1997: Center for Statistical Research and Applications, Sam Houston State University.
- 1991-1992: Law Office of Timothy Meche, New Orleans. Data Collection, SAS report writing, testified as expert witness in federal court.
- 1991-1992: Law Office of Stewart M. Thomas, Jenkins, LA. Data Collection, SAS report writing, testified as expert witness in federal court.
- 1989-1992: University of Southwestern Louisiana. Team Leader in the Statistical Consulting Lab, which serves as a resource for all departments.

#### Professional Activities:

- Reviewer for *Technometrics* Journal (3 books)
- *Communications in Statistics* (20 papers)
- *Statistics and Decisions* (3 papers)
- *American Journal of Management and Mathematical Sciences* (10 papers)

#### Professional Membership/Associations:

- American Society for Quality, both National and Local membership.
- American Statistical Association (ASA) and ASA sections:
  - Biopharmaceutical
  - Physical and Engineering Sciences
  - Quality and Productivity

- Statistical Consulting
- Alabama Chapter of ASA (Treasurer, 2000)
- SAS Users Group International and Southeast SAS User's Group.

**Research Interests:**

- Statistical methods in Microarray and Proteomics
- Multivariate Analysis—Generalized Principal Components, Clustering.
- Remote Sensing—Image Classification and Clustering
- Biological Modeling
- Estimation After Selection—Ranking and Selection
- Decision Theory—Particularly Related to Reliability and Life-testing.
- Generalized Linear Models

**Honors:**

- Most Influential Professor Letter, Sam Houston State University, 1994, 1995.
- Pi Mu Epsilon Society, 1993. Conferred as reward for scholarly achievement.
- Phi Kappa Phi, Honor Society, 1992
- Who's Who in American Colleges & Universities, 1991
- PhD Honoree, Spring Honors Convocation, 1990, 1991 and 1992.
- Best Contributed paper, SAS users group International (SUGI 25), 2000.
- Best Paper, Pharmaceutical SAS Users Group, 2003.