**JOHN V. TSIMIKAS**

**Office**

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**Education**

1994 Ph.D., Statistics, Department of Statistics, The University of Iowa

1990 M.S., Statistics, The University of Iowa

1985 B.S., Mathematics, Aristotle University of Thessaloniki, Greece

**Academic Appointments**

2006-Present: Associate Professor, Department of Statistics and Actuarial/Financial Mathematics, University of the Aegean

June 2005-2006: Assistant Professor, Department of Community Medicine and Health Care, The University of Connecticut Health Care Center.

August 1997—August 2005: Assistant Professor, Department of Mathematics and Statistics, The University of Massachusetts at Amherst

September 2003-August 2004: Visiting Assistant Professor, Zicklin Business School, Baruch College, City University of New York.

January 1997-June 1997: Lecturer, Department of Statistics, Harvard University and Research Associate in Biostatistics, Department of Health Care Policy, Harvard Medical School

1996-January 1997: Research Associate in Biostatistics, Department of Health Care Policy, Harvard Medical School

1994-1996: Postdoctoral Fellow in Statistics, Department of Health Care Policy, Harvard Medical School

**Major Research Interests**

Biostatistics, Censored Covariates, Time Series Analysis, State Space Models, Robust Estimation, Statistical Methods for Diagnostic Test Evaluation, Hierarchical Models, Estimating Equations.

**Teaching Experience**

Undergraduate Level Courses: Introduction to Business Statistics, Regression Analysis, Applied Statistical Methods, Introduction to Statistics.

Advanced Undergraduate Courses: Probability, Statistics for Engineers and the Sciences, Regression Analysis, Generalized Linear Models, Econometrics, Survival Analysis, Biostatistics.

Graduate courses: Probability and Statistics I and II, Linear Models I and II, Regression and Forecasting, Multivariate Analysis, Time Series Analysis, Survival Analysis, Nonlinear Regression, Biostatistics, Generalized Linear Mixed Models, Insurance Mathematics.

**Participation in Major Research Projects**

2005-2007: Co researcher and Senior Statistician of the project “Easy Breathing” at the Asthma Center (University of Connecticut Children’s Hospital). The project involved 6 hospitals and 20 private clinics.

2005-2007: Researcher in the University of Connecticut Medical School. I worked on projects pertaining to the Design and the Statistical Analysis of Clinical Trials Data.

1994-1997: Researcher and Senior Statistician, Radiology Diagnostic Oncology Group V, “Stereotactic Biopsy for Non-Palpable Breast Lesion Characterization”, funded by the National Cancer Institute. 15 U.S. Hospitals and Health Centers participated in the Study.

1994-1997: Researcher and Senior Statistician, Radiology Diagnostic Oncology Group ΙV, “Ovarian Cancer and Pediatric Solid Tumor”, funded by the National Cancer Institute. The project involved 30 U.S. Hospitals and Health Centers.

**Administrative Experience**

2009-May 2013: Chair, Department of Statistics and Actuarial/Financial Mathematics, University of the Aegean.

2007-2009: Associate Chair, Department of Statistics and Actuarial/Financial Mathematics, University of the Aegean.

2007-2011: Director of the Graduate Program, Department of Statistics and Actuarial/Financial Mathematics, University of the Aegean.

**Other Professional Experience**

2009-2013: Scientific Associate and Long Distance Education Instructor in the Quality Control Graduate Program, Greek Open University.

2001-2005: Statistician-Consultant for One Cell Systems, a company developing and marketing a family of single cell assays that rely on microencapsulation and flow cytometry, located in Cambridge, MA. I worked on methods to assess the diagnostic ability and the equivalence of assays used to detect and quantify EBV and HPV.

1996-1997: Statistician-Consultant, Brigham Women's Hospital Technology Assessment Program Advisory Board. This program was established to address critical issues in diagnostic imaging technology assessment.

1995-1997: Statistician-Consultant, State of Massachusetts Division of Medical Assistance. I was responsible for the statistical analysis of the data from the Primary Care Clinician Detailing Project. The overall goal of this project was to improve care for Medicaid patients with asthma.

1990-1992: Consultant, Statistical Consulting Center, University of Iowa. Duties included assisting faculty members and doctoral students from various departments within the University.

1991-1993: Tutor for “New Dimensions”, a University of Iowa tutoring service serving minority, handicapped and economically disadvantaged students.

1992: Consultant, Department of Journalism, University of Iowa

**Committees and Refereeing:**

Referee in Journals

Journal of Time Series Analysis, IEEE Transactions on Reliability, Annals of Statistics, Journal of Studies on Alcohol, Biometrics, Computational Statistics and Data Analysis, Scandinavian Journal of Statistics, Communications in Statistics.

Reviewer for Textbooks

1. An introductory text for Business Statistics (McGraw Hill).

2. A Linear Regression text (Thompson).

Committees

1. Chair of the 21st Pan-Hellenic Statistical Conference (Samos, Greece May 2008)

2. Chair at the "Bioinformatics session" of the International Conference on Current Advances and

Trends in Nonparametric Statistics (Crete, Greece July 2002).

3. Participation in the Committee for research grants proposals evaluation at the General Clinic Research Center, The University of Connecticut Health Center (2006).

4. Member of the Evaluation Committee for the Biostatistics program of the University of Athens (2001).

**PUBLICATIONS**

**Original Published Reports:**

1. Lenth R. V., Markatou M., **Tsimikas J.**, Robust Tests Based on the Sample

Characteristic Function, The Australian Journal of Statistics, 37, No. 1, pp. 45-60, 1995.

2. **Tsimikas J.**, Ledolter J., REML and Best Linear Unbiased Prediction in State-Space Models, Communications in Statistics, Theory and Methods, 23(8), pp. 2253-2268, 1994.

3. **Tsimikas J.**, Ledolter J., Mixed Model Representation of State Space Models and their Application to REML estimation, Statistica Sinica, 7, No. 4, pp. 973-991, 1997.

4. **Tsimikas J.**, Ledolter J., Analysis of Multi--Unit Variance Components Models with State Space Profiles, Annals of the Institute of Statistical Mathematics, 50, No. 1, 147-164, 1998.

5. Pisano E. D., Fajardo L. L., **Tsimikas J. V.**, et. al., Rate of Insufficient Samples for Fine Needle Aspiration for Non-palpable Breast Lesions, Cancer; 82:679-688, 1998.

6. Kurtz A. B., **Tsimikas J. V.** et. al., Diagnosis and Staging of Ovarian Cancer: Comparative Values of Doppler and Conventional US, CT and MR Imaging Correlated with Surgery and Histopathologic Analysis-Report of the Radiology Diagnostic Oncology Group, Radiology, 212(1), pp. 19-27, 1999.

7. **J. V. Tsimikas**, R. J. Bosch, B. A. Coull, H. El Barmi,Profile-likelihood inference for highly accurate diagnostic tests, Biometrics Vol. 58, No. 4, pp. 946-956, 2002.

8. H. El Barmi, S. Kochar and **J. V. Tsimikas**, Likelihood Ratio Tests For and Against Ordering of the Cumulative Incidence Functions in Multiple Competing Risks and Discrete Mark Variable Models, Journal of Statistical Planning and Inference Vol. 136, Issue 5, pp. 1588-1607, 2006.

9. Garibotti G., **Tsimikas J. V.**, Horowitz J., Likelihood-Look-Ahead Inference on the Equilibrium Distribution of Markov Chains, Statistics and Probability Letters Vol. 76, Issue 10, pp. 991-1000, 2006.

10. Wagner J., **Tsimikas J.**, Abbott G., De Groot M., Heapy A., Racial and Ethnic Differences in Diabetic Patient-Reported Depression Symptoms, Diagnosis, and Treatment, Diabetes Research and Clinical Practice, Volume 75, Issue 1, pp 119-22, 2007.

11. Taylor J. A., Zhu Q., Irwin B., Maghaydah Y., **Tsimikas J.**, Pilbeam C., Leng L., Bucala R., Kuchel G.A., Null Mutation in Macrophage Migration Inhibitory Factor (MIF) Prevents Muscle Cell Loss and Fibrosis in Partial Bladder Outlet Obstruction, American Journal of Physiology, 291: F1343-1353, 2007.

12. Taylor J.A., Kuchel G.A., Hegde P., Voznesensky O.S., Claffey K., **Tsimikas J.**, Leng L., Bucala R and Pilbeam C., Null mutation for macrophage migration inhibitory factor (MIF) is associated with less aggressive bladder cancer in mice. BMC Cancer 7:135, doi: 10.1186/1471-2407-7-135, 2007.

13. Michelle M. Cloutier, Dorothy B. Wakefield, **John Tsimikas**, Charles B. Hall, Howard Tennen, Kevin Brazil, Organizational Attributes of Practices Successful at a Disease Management Program, The Journal of Pediatrics, Feb;154(2):290-5, 2009.

14. **John V. Tsimikas**, [Leonidas E. Bantis](http://www.informatik.uni-trier.de/~ley/pers/hd/b/Bantis:Leonidas_E=.html), [Stelios D. Georgiou](http://www.informatik.uni-trier.de/~ley/pers/hd/g/Georgiou:Stelios_D=.html): Inference in generalized linear regression models with a censored covariate. [Computational Statistics & Data Analysis 56](http://www.informatik.uni-trier.de/~ley/db/journals/csda/csda56.html#TsimikasBG12)(6): pp. 1854-1868, 2012.

15. Lurie A, Tosoni GM, **Tsimikas J**, Walker F. Recursive hierarchic segmentation analysis of bone mineral density changes on digital panoramic images. Oral Surg Oral Med Oral Pathol Oral Radiol. Apr; 113(4): pp. 549-558.e1., 2012

16. [Bantis LE](http://www.ncbi.nlm.nih.gov/pubmed?term=Bantis%20LE%5BAuthor%5D&cauthor=true&cauthor_uid=22399231), [**Tsimikas JV**](http://www.ncbi.nlm.nih.gov/pubmed?term=Tsimikas%20JV%5BAuthor%5D&cauthor=true&cauthor_uid=22399231), [Georgiou SD](http://www.ncbi.nlm.nih.gov/pubmed?term=Georgiou%20SD%5BAuthor%5D&cauthor=true&cauthor_uid=22399231)., Survival estimation through the cumulative hazard function with monotone natural cubic splines, [Lifetime Data Analysis.](http://www.ncbi.nlm.nih.gov/pubmed/22399231) Jul;18(3): pp 364-96, 2012.

17. D. Tsolakis, G. Ε. Tsekouras, and **J. Tsimikas**, "Fuzzy vector quantization for image compression using competitive agglomeration and a novel codeword migration strategy", Engineering Applications of Artificial Intelligence, Vol. 25, pp. 1212–1225, 2012.

18. G.E. Tsekouras and **J. Tsimikas**,"On Training RBF Neural Networks Using Input-Output Fuzzy Clustering and Particle Swarm Optimization", Fuzzy Sets and Systems, Volume 221, pp 65– 89, 2013.

19. [Bantis LE](http://www.ncbi.nlm.nih.gov/pubmed?term=Bantis%20LE%5BAuthor%5D&cauthor=true&cauthor_uid=22399231), [**Tsimikas JV**](http://www.ncbi.nlm.nih.gov/pubmed?term=Tsimikas%20JV%5BAuthor%5D&cauthor=true&cauthor_uid=22399231), [Georgiou SD](http://www.ncbi.nlm.nih.gov/pubmed?term=Georgiou%20SD%5BAuthor%5D&cauthor=true&cauthor_uid=22399231), “Smooth ROC Curves and Surfaces for Markers Subject to a Limit of Detection Using Monotone Natural Cubic Splines”, Biometrical Journal , 55(5), 719-740, 2013.

20. Bantis LE, Yan Q, **Tsimikas JV**, Feng Z. Estimation of smooth ROC curves for biomarkers with limits of detection. Statistics in Medicine. 36, 14, 3830-3843, 2017.

21. George E Tsekouras, **John Tsimikas**, Christos Kalloniatis, Stefanos Gritzalis. Interpretability constraints for fuzzy modeling implemented by constrained particle swarm optimization. IEEE Transactions on Fuzzy Systems, Vol. 26, Issue 4, 2348-2361, 2017.

22. George E. Tsekouras, Vasilis Trygonis, Andreas Maniatopoulos, Anastasios Rigos, Antonios Chatzipavlis, **John Tsimikas**, Nikolaos Mitianoudis, Adonis F. Velegrakis. A Hermite Neural Network Incorporating Artificial Bee Colony Optimization to Model Shoreline Realignment at a Reef-Fronted Beach, Neurocomputing, Vol. 28, 32-45, 2018.

23. Antonios Chatzipavlis, George E Tsekouras, Vasilis Trygonis, Adonis F Velegrakis, **John Tsimikas**, Anastasios Rigos, Thomas Hasiotis, Constantinos Salmas. Modeling beach realignment using a neuro-fuzzy network optimized by a novel backtracking search algorithm, Neural Computing and Applications, Vol. 31, Issue 6, 1747-1763, 2019.

# 24. Ioannis A Troumbis, George E Tsekouras, John Tsimikas, Christos Kalloniatis, Dias Haralambopoulos. A Chebyshev polynomial feedforward neural network trained by differential evolution and its application in environmental case studies, Environmental Modelling & Software, Vol. 126, 104663, 2020.

25. Leonidas E Bantis, **John V Tsimikas**, Stelios D Georgiou. Survival Estimation through the cumulative hazard with monotone natural cubic splines using convex optimization-the HCNS approach, Computer Methods and Programs in Biomedicine, Vol. 190, 105357, 2020.

26. Bantis LE*,* **Tsimikas JV***,* Chambers GR, Capello M, Hanash S.,Feng Z*.* The length of the receiver operating characteristic curve and the two cutoff Youden index within a robust framework for discovery, evaluation, and cutoff estimation in biomarker studies involving improper receiver operating characteristic curves.Statistics in Medicine*.* 40, 7, 1767-1789, 2021*.*

**Proceedings of Meetings:**

1. **Tsimikas J.**, Ledolter J., New Smoothing Results for State Space Models, American Statistical Association, Proceedings of the Business and Economic Statistics Section, pp. 172-177, 1994.

2. **Tsimikas J.**, Ledolter J., A State Space Approach to the Analysis of Repeated Measures, American Statistical Association, Proceedings of the Biometrics Section, pp. 136-141, 1995.

3. **Tsimikas J**. V., Cloutier M.M., The effects of personal attributes and organizational culture on clinician performance: a hierarchical generalized linear model approach, Proceedings of the 10th Toulon-Verona Conference on Quality of Services in Higher Education, Health Care, Local Government, Tourism and Logistics, pg. 509-519, 2007.

4. Bantis L., **Tsimikas J**., Georgiou S., The Accuracy of a Time Dependent Binary Marker, Proceedings of the Greek Statistical Institute, 21st Greek Statistical Conference, pp.231-240, Samos, 2008.

5. Bantis L., **Tsimikas J.**, Georgiou S., General Linear Models with a Censored Covariate, Proceedings of the Greek Statistical Institute, 23rd Greek Statistical Conference, pp.192-199, Veria, 2010.

6. Bantis L., **Tsimikas J.**, Georgiou S., Survival Function Estimation Using Monotone Cubic Splines, Proceedings of the Greek Statistical Institute, 24th Greek Statistical Conference, pp 229-238, Patra, 2011.

7. Bantis L, Georgiou S., **Tsimikas J**., A MATLAB Routine for Estimating Survival via the Cumulative Hazard Using Monotone Cubic Splines, Proceedings of the Greek Statistical Institute, 25th Greek Statistical Conference (to appear), Volos, 2012.

8. Bantis L., **Tsimikas J.**, Georgiou S., Smooth ROC Curves and Surfaces for Diagnostic Markers in the Presence of a Limit of Detection, Proceedings of the Greek Statistical Institute, 25th Greek Statistical Conference (to appear), Volos, 2012.

9. **Tsimikas J.**,Bantis L., Generalized Linear Models with a Censored Covariate for Repeated Measurements, Proceedings of the Greek Statistical Institute, 26th Greek Statistical Conference (to appear), Piraeus, 2013.

**Technical Reports:**

Wang L., Sebastiani P., **Tsimikas J.**, Mandl K. D., Models for Automated Surveillance of Influenza Epidemics and Pandemics, 2003.

**Presentations:**

1. August 1994: New Smoothing Results for State Space Models, Joint ASA & IMS Meetings, Toronto Canada

2. November 1994: Kalman Filter Techniques in the Laird and Ware Model, Longitudinal Data Analysis Working Seminar, Biostatistics Department, Harvard School of Public Health

3. August 1995: A State Space Approach to Repeated Measures, Joint ASA & IMS Meetings, Orlando Florida

4. November 1995: The Accuracy of Diagnostic Tests, Statistical Methods in Health Services Research Seminar Series, Dept. of Health Care Policy, Harvard Medical School

5. July 1996: Analysis of Multi-Unit Variance Components Models with Semi-parametric Regression Response Profiles, Annual Conference of the International Federation of Non-linear Analysts, Athens Greece

6. October 1996: State Space Analysis of Multi-Unit Variance Components Models, Statistics Colloquium, Boston University

7. May 1998: Applications of the Kalman Filter Methodology, Statistics Colloquium, University of Connecticut at Storrs

8. August 1998: Likelihood-Based Inference for ROC Curves, Joint ASA & IMS Meetings, Dallas Texas

9. August 1999: Estimation of Exposure Distribution Parameters via Nonparametric Hierarchical Models, Joint ASA & IMS Meetings, Baltimore

10. August 1999: Estimation of Soil Ingestion via Semi-parametric Bayes Methods, SESS -TIES International Conference, Athens, Greece- Theme: Environmetrics and Statistics in the Earth and Space Sciences

11. October 2001: Likelihood inference for ROC data, Center for Statistical Sciences, Brown University

12. July 2002: Profile-likelihood inference for highly accurate diagnostic tests, International Conference on current Advances and Trends in Nonparametric Statistics*,* Crete, Greece

13. April 2003: Parameter Estimation in GI/G/1 Queues, Department of Statistics and CIS, Baruch College, CUNY.

14. October 2003: Statistical Inference for the Lindley Process, Department of Mathematics and Statistics, UMASS Amherst

15. May 2011: Inference in GLM's with a censored covariate, 6th EMR-International Biometric Society (IBS) conference, Crete.

16. May 2013: Flexible Parametric and Semi-parametric Inference for Longitudinal Data with a Censored Covariate, 7th International Workshop on Simulation, Rimini Italy.

17. May 2013: Spline Based Roc Curves and Surfaces for Biomarkers with an Upper or a Lower Limit of Detection, 7th International Workshop on Simulation, Rimini Italy.

**Proficiency in Computing:**

Languages: SAS, SPSS, Minitab, R, Matlab, FORTRAN.

Environments: Linux, Unix, Windows PC.