

Third-Year Graduate Degree Program Review

Program: **Statistics (STC-MS)**
 Year Approved: **2006**

The Graduate School and the USF Tampa Graduate Council would like to ask you to complete this brief survey of your Graduate Program. This one-time survey, given to all recently approved graduate programs, will provide information about the program's standing and offers opportunities to showcase program's accomplishments in the first few years. Currently, no other mechanism is available to collect this type of information. The Graduate Council will prepare a brief report based on the survey, which will be circulated back to you and kept on file in the Graduate School. Thank you in advance for your assistance with this important project!

PART I: Program Metrics (pre-populated by Graduate School)
 (Optional comments regarding these numbers may be separately attached.)

Enrollment Statistics	Current Year (2012/2013)	2011/2012	2010/2011	2009/2010
Applied (SIF)	70	35	31	33
Admitted (SIF) STC + STT	23	21	19	17
Enrolled (SIF)	6	5	6	4
Degrees Awarded (SIF)*	11*	7+1=8☼	13+1=14☼	4+0=4☼
Time to Degree (if applicable) (info center mean)	*	1.11	1.25	1.00
Total program enrollment (SIF)	18	16	22	15
% students registered full time (SIF)	15	14	16	10
Graduate SCH (SIF)	149	135	165	111
Number of graduate faculty** (PROFESSOR, ASSOCIATE PROFESSOR, ASSISTANT PROFESSOR)	5	5	5	5
Student: Faculty Ratio (students per faculty)***		405.0 [□]	369.2 [□]	388.0 [□]

* Degrees not yet awarded for spring 2013

**Information not available on Info-center. Please provide a total number and then please attach a list of names, level (Full, Assoc., etc.), and research areas of these faculty

***Information not available on Info-center. Please provide.

☼ASSTC+ASSTT

□ Based on Students enrolled in STA course (S) per Statistics Faculty (F), see Table 1

Tsokos, Christos, Distinguished University Professor

Ladde, Gangaram, Professor

Ramachandran, Kandethody, Professor

Kim, Wonkuk, Assistant Professor

Wooten, Rebecca, Assistant Professor

Table 1: S/F by School Year

School Year	Students enrolled in STA	Faculty	S/F
2006-2007	1901	4	475.3
2007-2008	1769	6	294.8
2008-2009	1889	5	377.8
2009-2010	1940	5	388.0
2010-2011	1846	5	369.2
2011-2012	2025	5	405.0

Part II: Annual Student Success Metrics (populated by the Program)
 (Optional comments regarding these numbers may be separately attached.)

DR. TSOKOS	Current Year (2011/2012)	2010/2011	2009/2010	2008/2009
Professional Presentations by Students	22	16	10	11
Student Publications/Creative Works	12	10	3	1
Student Funding and Scholarships (including internal awards)				
Other				

DR. RAMACHRANDRAN	Current Year (2011/2012)	2010/2011	2009/2010	2008/2009
Professional Presentations by Students		2	1	
Student Publications/Creative Works	3	1	3	1
Student Funding and Scholarships (including internal awards)				
Other				

DR. LADDE	Current Year (2011/2012)	2010/2011	2009/2010	2008/2009
Professional Presentations by Students	8	6	12	12
Student Publications/Creative Works	12	5	3	2
Student Funding-US ARMY GRANT and Scholarships (including internal awards)	5	3	3	3
Other				

DR. WOOTEN	Current Year (2011/2012)	2010/2011	2009/2010	2008/2009
Professional Presentations by Students				NA
Student Publications/Creative Works				NA
Student Funding and Scholarships (including internal awards)				NA
Other				NA

Part III: Program Narrative

In a few sentences:

1. Note any programmatic changes since original approval or last review and why the changes were made (i.e. changes to degree requirements, courses, qualifying exams, theses etc).

No changes to report.

Special Courses offered: Survival Analysis, Stochastic Dynamic Systems, Extreme Value Theory and its applications

2. Discuss diversity in your program and you are actively involved in promoting this initiative.

Dr. Tsokos holds a Selected Topics course where students apply statistical methods to real world data resulting in several presentations. Dr. Ladde works in conjunction with Differential Equations and Dynamic Systems holding International Conferences and special sessions with such organizations as the American Mathematical Society. Dr. Tsokos, Dr. Ladde, Dr. Ramchandran and Dr. Wooten work with Morehouse College in Atlanta and the International Conference on Neural parallel and Scientific Computations

There have also been Workshop series Frontiers of Statistics with TECO, Oak Ridge Laboratory, the American Cancer Society, University of Georgia, Radford University, Kansas State University, University of Houston, University of Puerto-Rico, and Dynamic Systems, among others.

2008

Title: “*Challenges of Teaching Mathematics in a Multicultural Society*”, at Marshall University on Weekly Graduate Teaching Assistant’s Seminar, March 2008, by **Keshav Pokhrel**

Title: <No Title>, USF Statistics and Tampa Electric Company Workshop, by **Dimitris Vovoras**

Title: *Linear Stochastic Modeling and Applications*, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA: April 2008, by **Ling Wu**

Title: *A Study of Present Value Maximization of Monopolist Problem on Time Scale*, Marshall University, July 2008, by **Keshav Pokhrel**

Title: *Global Warming*, Fifth World Congress of IFNA, Orlando, FL, July 2-9, 2008, by **Bong-jin Choi**

Title: *Non-Stationary Parameters in Extreme Value Distributions*, Fifth World Congress of IFNA, Orlando, FL, July 2-9, 2008, by **Dimitris Vovoras**

Title: *Stochastic Modeling and Statistical Analysis*, Fifth World Congress of IFNA, Orlando, FL, July 2-9, 2008, by **Ling Wu**

Title: *A Study of Present Value Maximization of Monopolist: Continuous and Discrete Cases*, **Statistics Seminar**, September 5, 2008 at the University of South Florida, Tampa, Florida, by **Keshav Pokhrel**

Title: *Riemann Hypothesis*, *Mathematical Association of America, Capital University*, Tampa, FL, October 24-25, 2008, by **Olusegun Michael Otunuga**

Title: *Modeling Carbon Dioxide emissions by differential equation*, *Statistical Seminar*, University of South Florida, USF, Tampa, FL, November 14, 2008, by **Yong Xu**

Title: *Stochastic Differential Equations driven by Fractional Brownian Motion and applications*, *Mini Workshop on Stochastic and Statistical Modeling*, USF, Tampa FL, November 14, 2008, by **Jean-Claude Pedjeu**

Title: *Nonlinear Stochastic Modeling and Statistical Analysis*, *Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA*: November 2008, by **Ling Wu**

Title: *<No Title>*, *Department of Educational Measurement & Research, University of South Florida, Tampa, Florida, USA*: 2008, by **Arnut Paothong**

2009

Title: *Nonlinear Stochastic Modeling*, *Joint AMS Annual Meeting, Washington D.C.* January 4-5, 2009, by **Ling Wu**

Title: *Colorectal Cancer Data Analysis*, *Joint Workshop on Cancer Research with American Cancer Society and H. Lee Moffitt Cancer Center at USF, Tampa, FL*, January 14-15, 2009, by **Venkateswara Rao Mudunuru** and **Sampath Kalluri**

Title: *Statistical and survival analysis of breast cancer*, in the joint workshop on cancer research with American Cancer Society and H. Lee Moffitt Cancer Center at USF, Tampa, FL, January 14-15, 2009, by **Yong Xu**

Title: *Breast and Lung Cancer Analysis*, *Joint Workshop on Cancer Research with American Cancer Society and H. Lee Moffitt Cancer Center at USF, Tampa, FL*, January 14-15, 2009, by **Bong-jin Choi**

Title: *Survival model evaluation for uncensored survival data*, *Statistical Seminar, University of South Florida, Tampa, FL*, Feb 13, 2009, by **Yong Xu**

Title: *Survival model evaluation and validation for uncensored survival data (Breast Cancer)*, *Interdisciplinary Cancer Research Workshop with American Cancer Society*, Tampa, FL, Feb 20, 2009, by **Yong Xu**

Title: *Flexible Covariates for the Cox-PH Model*, **Interdisciplinary Cancer Research Workshop with American Cancer Society**, Tampa, FL, Feb 20, 2009, by **Dimitris Vovoras**

Title: *Statistical analysis for breast cancer tumor growth using differential equation systems*, Interdisciplinary Workshop “**The Frontiers of Theory and Application of Stochastic Dynamic-Hybrid Systems**”, Tampa, FL, April 10, 2009, by **Yong Xu**

Title: *On the Fundamental properties of Fractional Brownian Motion process and applications*, **Frontiers in Applied Statistics**, Tampa, Florida, April 24, 2009, by **Jean-Claude Pedjeu**

Title: *Dynamic Insurance Risk Models*, the **6th USF Interdisciplinary Workshop in Statistics on The Frontiers of Theories Applications of Stochastic Dynamic Hybrid Systems**, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida: April 2009, by **Daniel Siu**

Title: *<No Title>*, the **6th USF Interdisciplinary Workshop in Statistics on The Frontiers of Theories Applications of Stochastic Dynamic Hybrid Systems**, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida: April 2009, by **Divine Wanduku**

Title: *Hybrid Stochastic System and Stock Market Application*, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA: April 2009, by **Ling Wu**

Title: *Long-term survivor and two component exponential mixture models: sample size and power*, **Join Statistical Meeting (JSM)**, Convention Center, Washington DC, August 3, 2009, by **Yong Xu**

Title: *Statistical modeling of carbon dioxide in the atmosphere: continental united states*, Join Statistical Meeting (JSM), Convention Center, Washington DC, August 5, 2009, by **Yong Xu**

Title: *Long Term Survivor Models and Two Component Mixture Models*, JSM, Washington, DC, August 1-6, 2009, by **Bong-jin Choi**

Title: *Time Varying Coefficient Nonlinear Stochastic Models*, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA: October 2009, by **Ling Wu**

Title: *Power law process in cancer analysis*, 7th Interdisciplinary Workshop at USF, Tampa, FL, October 30, 2009, by **Yong Xu**

Title: *Breast Cancer Analysis*, 7th Interdisciplinary Workshop at USF, Tampa, FL, October 30, 2009, by **Bong-jin Choi**

Title: *Parametric Analysis of Brain Tumor*, USF Interdisciplinary Workshop on Cancer and Hybrid Dynamics System at University of South Florida, October 2009, by **Keshav Pokhrel**

Title: Graduate Student Challenge Grant Award: *Comparing the Effects of Distinctiveness and Emotion in Memory: Statistical modeling of Event Related Potentials (ERP's) to predict subsequent recall*. University of South Florida, December 2009, by **Dimitris Vovoras**

Title: <No Title>, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA: 2009, by **Arnut Paothong**

Title: <No Title>, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida, USA: 2009, by **Divine Wanduku**

2010

Title: *Survival analysis for breast cancer using power law process*, West Kentucky University, Department of Math and Computer Science, Bowling Green, KY, Feb 4, 2010, by **Yong Xu**

Title: *Recent advances in Stochastic Calculus: the case of fractional Brownian motion and Applications*, **Gulf Coast Conference on Probability and Statistics (GCCPS)-2010**, Tampa, Florida, February 27, 2010, by **Jean-Claude Pedjeu**

Title: *Piecewise-Diffusion Model and Its Applications*, **Gulf Coast Conference on Probability and Statistics (GCCPS)-2010**, Tampa, Florida, February 27, 2010, by **Daniel Siu**

Title: <No Title>, **Gulf Coast Conference on Probability and Statistics (GCCPS)-2010**, Tampa, Florida, February 27, 2010, by **Divine Wanduku**

Title: *Stochastic Models for Option Pricing*, **Gulf Coast Conference on Probability and Statistics (GCCPS)-2010**, Tampa, Florida, February 27, 2010, by **Ling Wu**

Title: *Application of Statistical software: R and SAS*, **University of South Florida**, March 26, 2010, by **Yong Xu**

Title: *Parametric and Nonparametric Survival Analysis of Cancer Data*, **JSM**, Vancouver, BC Canada, July 31- August 5, 2010, by **Bong-jin Choi**

Title: *Inverse Burr Distribution as Applied to Average Tumor Size of Brain Cancer Data*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Keshav Pokhrel**

Title: *Statistical analysis of carbon dioxide in the atmosphere with differential equations*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Yong Xu**

Title: *Statistical modeling of Stage I&II Ductal Breast Cancer using Power Law process*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Yong Xu**

Title: *Parametric and Nonparametric Survival Analysis of Lung Cancer Data*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Bong-jin Choi**

Title: *Modeling and Analyzing of Optimism and Breast Cancer*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Zahra Kottabi**

Title: *A Joinpoint Survival Model for Brain Cancer Patients*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Dimitris Vovoras**

Title: *<No Title>*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Arnut Paothong**

Title: *ARIMA Models and Applications*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Ling Wu**

Title: *Stochastic Fractional Differential Equations: Modeling, Method and Analysis*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Jean-Claude Pedjeu**

Title: *Stochastic Hybrid System with Non-Homogeneous and Boundary Jumps*, **Fourth International Conference on Neural parallel and Scientific Computations**, August 11-14, 2010 at Morehouse College, Atlanta, Georgia, by **Daniel Siu**

Title: *<No Title>*, **The Seventh International Conference**, University of South Florida, Tampa, Florida, USA: December 15-18, 2010, by **Divine Wanduku**

Title: *Differential Equations and Dynamic Systems*, **The Seventh International Conference**, University of South Florida, Tampa, Florida, USA: December 15-18, 2010, by **Arnut Paothong**

Title: *A Stochastic Dynamic Model for Photosynthesis*, **The Seventh International Conference**, University of South Florida, Tampa, Florida, USA: December 15-18, 2010, by **Zerihun Tadesse**

Title: *Stochastic Hybrid Systems and Its Applications*, **Joint Statistical Meetings**, Vancouver, Aug 2010, by **Daniel Siu**

Title: *Preliminary Lung Cancer and Inferential Statistics*, Cancer Research Seminar, University South Florida, Tampa, FL, by **Zahra Kottabi**

2011

Title: **The American Mathematical Society's Annual Meeting**, New Orleans, Louisiana: January 5-8, 2011, by **Arnut Paothong**

Title: *Stochastic Fractional Differential Equations: Modeling, Method and Analysis*, the **American Mathematical Society Joint Meeting**, New Orleans, Louisiana, January 6-9, 2011, by **Jean-Claude Pedjeu**

Title: *Option Pricing for Hybrid Nonlinear Stochastic Models*, **the American Mathematical Society Joint Meeting**, New Orleans, Louisiana, January 6-9, 2011, by **Ling Wu**

Title: *Stochastic Hybrid Dynamic Model for Risk Process*, **the American Mathematical Society Joint Meeting**, New Orleans, Louisiana, January 6-9, 2011, by **Daniel Siu**

Title: *<No Title>*, the **American Mathematical Society Joint Meeting**, New Orleans, Louisiana, January 6-9, 2011, by **Divine Wanduku**

Title: *Statistical analysis of an exponential long term survivor versus two component exponential mixture models*, Radford University, Virginia, January 24, 2011, by **Yong Xu**

Title: *Power law process for Evaluating Stage I & II Ductal Breast Cancer Treatment*, California State University at Northridge, Los Angeles, California, Feb 8, 2011, by **Yong Xu**

Title: *Statistical analysis of an exponential long term survivor against two component exponential mixture models with bootstrap method*, 2011 Florida Chapter of the American Statistical Association Annual Meeting, Tampa, Feb 5, 2011, by **Yong Xu**

Title: *Parametric Analysis of Prostate Cancer*, **Sixth International Conference on Dynamic Systems and Applications**, Atlanta, GA, May 2011, by **Yiu Ming Chan**

Title: *<No Title>*, **Sixth International Conference on Dynamic Systems and Applications**, Atlanta, GA, May 2011, by **Divine Wanduku**

Title: *Parametric Survival Analysis of Multiple Myeloma Patients*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA by **Taysseer Sharaf**

Title: *Theoretical Semi-Parametric Survival Analysis Model*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA by **Ram Kafle**

Title: *Forecasting Brain Cancer Mortality*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA, by **Keshav Pokhrel**

Title: *Estimating the Four Parameters Johnson-SB Probability Distribution: New R Package*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA by **Bong-jin Choi**

Title: *Mathematical Characterization of Prostate Cancer Tumor as a Function of Age*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA by **Nana Osei Bonsu**

Title: *Preliminary Pancreatic Cancer and Inferential Statistics*, **Sixth International Conference on Dynamic Systems and Applications**, May 25-28, 2011 at Morehouse College, Atlanta, GA by **Zahra Kottabi**

Title: *Forecasting Brain Cancer Mortality: A Functional Data Approach*, in **Joint Statistical Meeting: Section on Statistics on Epidemiology**, July 30-August 4, 2011 at Miami Beach, Florida, by **Keshav Pokhrel**

2012

Title: *Higher Order Stochastic Differential Equation*, the **American Mathematical Society Joint Meeting**, Boston, MA, January 4-8, 2012, by **Jean-Claude Pedjeu**

Title: *<No Title>*, the **American Mathematical Society Joint Meeting**, Boston, MA, January 4-8, 2012, by **Divine Wanduku**

Title: *Variation of Brain Tumor Sizes on Gender, Races and Age*, **American Statistical Associations' Florida Chapter meeting**, February 03-04, 2012 at the University of North Florida, Jacksonville, Florida, by **Keshav Pokhrel**

Title: *R workshop with application to regression model*, Radford University, Virginia, March 22, 2012, by **Yong Xu**

Title: *The American Mathematical Society's Spring Southeastern Section Meeting*, University of South Florida, Tampa, Florida, USA: March 10-11, 2012, by **Arnut Paothong**

Title: *Approximate solution process of multi-time scale stochastic differential equations*, **American Mathematical Society's Spring Southeastern Section Meeting**, University of South Florida, Tampa, Florida, USA: March 10-11, 2012, by **Jean-Claude Pedjeu**

Title: *The American Mathematical Society's Spring Southeastern Section Meeting*, University of South Florida, Tampa, Florida, USA: March 10-11, 2012, by **Olusegun Michael Otunuga**

Title: *Stochastic Hybrid Dynamic Models: Parameter Estimation*, **American Mathematical Society's Spring Southeastern Section Meeting**, University of South Florida, Tampa, Florida, USA: March 10-11, 2012, by **Daniel Siu**

Title: *Fundamental Solutions of Nonlinear Stochastic Differential*, the **American Mathematical Society's Spring Southeastern Section Meeting**, University of South Florida, Tampa, Florida, USA: March 10-11, 2012, by **Zerihun Tadesse**

Title: *Histological and Demographic Characteristics of Primary Brain and CNS Tumor Sizes*, **2012 Research One Graduate Student Symposium**, April 05, 2012 at University of South Florida, Tampa, by **Keshav Pokhrel**

Title: *A Statistical Model for Estimating Discrete Survival Time for Melanoma Patients*, July 27-August 2, 2012, San Diego, California by **Taysseer Sharaf**

Title: *Epidemiology of Brain Cancer: Longitudinal Studies for Contract Health Service Delivery Areas*, **Joint Statistical Meeting**, July 27-August 2, 2012, San Diego, California by **Keshav Pokhrel**

Title: *Bayesian Approach of the Joinpoint Regression Model for Brain Cancer Data*, **Joint Statistical Meeting**, July 27-August 2, 2012, San Diego, California by **Ram Kafle**

Title: *A Comparison of Prostate Cancer Survivorship by Race*, **Joint Statistical Meeting**, July 27-August 2, 2012, San Diego, California by **Yiu Ming Chan**

Title: *Statistical Analysis and Modeling of Breast and Pancreatic Cancers*, Doctoral Dissertation, 2012, University of South Florida, Tampa, by **Zahra Kottabi**

Title: *Small Learning and Communication Initiative*, Anchin Center, 2012, University of South Florida, Tampa, by **Zahra Kottabi**

Title: *Formatting list of publication of Faculty University South*, Anchin Center, 2012, University of South Florida, Tampa, by **Zahra Kottabi**

Title: *Teacher Initiative Fund, Federal Program Evaluation*, Anchin Center, 2012, University of South Florida, Tampa, by **Zahra Kottabi**

Dr. Tsokos is the President of the International Federation of Nonlinear Analyst and Dr. Wooten is the Vice President and Treasurer who hosted the Sixth World Congress of Nonlinear Analyst June 25-July 1, 2012 in Athens, Greece. Student Participants:

Bong-Jin Choi

Title: *Statistical Algorithm for Determining the Optimal Doses of Drugs using Matlab*, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Ram Kafle

Title: *Bayesian Estimates of Annual Percentage Change in Mortality Trend for Brain Cancer Data*, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Keshav Pokhrel

Title: *“Statistical Analysis and Modeling of Brain Cancer”*, in **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Title: *“Regional Trends in Incidence of Pediatric Brain and Central Nervous System Cancer in USA”*, in the **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Yiu Ming Chan

Title: *Parametric Analysis: A Comparison of Prostate Cancer Survivorship by Race*, in **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Nana Osei Bonsu

Title: *Statistical Evaluation of Different Prostate Cancer Treatments, 6th World Congress of Nonlinear Analysts* (Co Chair: Prostate Cancer Session), University of Athens/Athens Chamber of Commerce, Athens, Greece, June 25-July 1, 2012

Michael Kotarinos

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Sherlene Enriquez-Savery

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Dimitrios Vovoras

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Taysseer Sharaf

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Zahra Kottabi

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

Doo Young Kim

Title: <title>, **International Federation of Nonlinear Analyst (IFNA) World Congress 2012** in Athens, Greece.

2013

Title: *Forecasting Using Functional Data Analysis Models in Cancer Epidemiology, Joint Mathematical Meeting* Jan 9-12, 2013, San Diego, California by **Keshav Pokhrel**

Title: *Non-Linear Stochastic Energy Spot Prices Processes with Delayed, The Joint Mathematical Meeting* Jan 9-12, 2013, San Diego., by **Olusegun Michael Otunuga**

Title: <No Title>, **The Joint Mathematical Meeting** Jan 9-12, 2013, San Diego, by **Divine Wanduku**

Title: *Equations and Methods of Variational, The Joint Mathematical Meeting* Jan 9-12, 2013, San Diego, by **Zerihun Tadesse**

Title: *Survival Analysis of Cancer Data using the Random Forests, an Ensemble of Trees*, ENAR 2013, Orlando, FL, March 10-13, 2013, by **Bong-jin Choi**

Dr. Wooten has been working with students in other departments: Economics, Engineering and Mathematics; she is also working with students from various areas of student through the Graduate Certificate in Statistical Data Analysis for which she am the Program Advisor.

3. Discuss student "creative works" (publications per student, etc.) captured in Part II above.

Dr. Tsokos' collaborations with students have resulted in the following publications:

- **Bonsu N.O.** & Tsokos C.P. *Statistical Evaluation of Different Prostate Cancer Treatments*. Submitted
- **Bonsu N.O., Chan Y.M., & Tsokos C.P.** *Mathematical Characterization of Prostate Cancer Tumor as a Function of Age*. Submitted
- **Carlos MoBal**, *Bayesian Reliability approach to the Power Law Process with sensitivity analysis* (2013), *International Journal of Reliability, Quality and Safety Engineering*, Vol. 20, No. 1.
- **Chan, Y.M., Bonsu, N. O., and Tsokos, C. P.** (2012). *Parametric Analysis of Prostate Cancer*. *Proceedings of Dynamic Systems and Applications*, Vol. 6, pp. 85-90.
- **Chan, Y.M., Bonsu, N. O., and Tsokos, C.P.** (2013). *Parametric Survival Analysis: A Comparison of Prostate Cancer Survivorship by Race*. *International Federation of Nonlinear Analysts*, (accepted).
- **Choi, Bong-jin** and Tsokos, C. P., *Cancer Analysis using Random Forest with new Decision Tree Algorithm using R and My-SQL*. In progress
- **Choi, Bong-jin** and Tsokos, C. P., *Multiple Regression Modeling of Smoking and Lung Cancer Survival time with covariates*, submitted for publication.
- **Choi, Bong-jin** and Tsokos, C. P., *Parametric and Nonparametric Survival Analysis for Lung Cancer*, Submitted for publication.
- **Choi, Bong-jin** and Tsokos, C. P., *Statistical Algorithm for Determining the Optimal Doses of Drugs using Matlab*. In progress.
- **Choi, Bong-jin**, *Mathematical Statistics with Applications' Data Set*, Elsevier Science, 30 Corporate Drive Burlington, MA 01803.
- **Choi, Bong-jin, Molinares, C. A.** and Tsokos, C. P., *Estimating the Four Parameters Johnson-SB Probability Distribution: New R Package*", *Proceedings of Dynamic System and Applications*, Volume 6.
- **Dimitris Vovoras**, Chris P. Tsokos, Frank D. Vrionis: "A Join Point Survival Model for Brain Tumor Patients", accepted, *International Journal of Biomedical Sciences*
- **Dimitris Vovoras**, Chris P. Tsokos: "On the use of Flexible Covariate Modeling in Cancer Survival Data", accepted, *Problems of Nonlinear Analysis in Engineering Systems*, English/Russian, Nov 2010
- **Dimitris Vovoras**, Chris P. Tsokos: "Statistical Analysis and Modeling of Precipitation Data", *Nonlinear Analysis*, 71(2009) pp. e1169-e1177
- **Dimitris Vovoras**, Frank F. Vrionis, Chris P. Tsokos, **Keshav Pokhrel**, "A Join Point Survival Model for Brain Tumor Patients", *International Journal of Biomedical Sciences*, 7(2011), no.4, 249-254.
- **Keshav Pokhrel**, Chris P. Tsokos, "Forecasting Age-Specific Brain Cancer Mortality: Functional Data Approach", *Proceedings of Dynamic Systems and Applications* 6(2012) 341-345.
- **Keshav Pokhrel**, Chris P. Tsokos, Frank F. Vrionis "Parametric and Non-Parametric Analysis of Brain Cancer Data: According to Ethnicity and Gender", Fourth International conference on Neural, Parallel and Scientific
- **Keshav Pokhrel, Dimitrios Vovoras**, Chris P. Tsokos, "Epidemiology of Tumors of the Brain and Central Nervous System: Review of Incidence and Patterns among Histological Subtypes", submitted after incorporating reviewer's comments.
- **Keshav Pokhrel, Dimitris Vovoras**, Chris P. Tsokos, "Histological and Demographic Characteristics of the Distribution of Brain and Central Nervous System

Tumors' Sizes: Results from SEER Registries Using Statistical Methods",
International Journal of Biomedical Sciences, 7 (2012), 8(3);152-162.

- **Keshav Pokhrel**, Yilin Zhuang, Haiping Yin, Edward Dimarco "A System Dynamic Approach to Water and Energy Management in Hillsborough County", a research project with engineering and management graduate students as a part of graduate students research challenge grant 2011 provided by the USF graduate School. Unpublished
- **Keshav Pokhrel**, Dimitris Vovoras, Chris P. Tsokos, "*Histological and Demographic Characteristics of the Distribution of Brain and Central Nervous System Tumors' Sizes: Results from SEER Registries Using Statistical Methods*", International Journal of Biomedical Sciences, 7(2012), 8(3);152-162.
- **Ram C. Kafle**, Netra Khanal, Chris P. Tsokos, *Bayesian Joinpoint Regression Model for Childhood Brain Cancer Mortality*. Ready for submission
- **Ram C. Kafle**, Netra Khanal, Chris P. Tsokos, *Bayesian Joinpoint Regression Model using Generalized Hyper-g Priors*. In progress
- **Taysseer Sharaf** and Chris P. Tsokos. Predicting Survival Time of Localized Melanoma Patients Using Discrete Time Survival Method. Submitted on 1/25/2013 to *International Journal of Biological and Medical Sciences*.
- Tsokos, C. P. and **Xu, Y.**, *Modeling Carbon Dioxide Emission with a System of Differential Equations*, Nonlinear Analysis: Theory, Methods & Applications: Vol. 71, Issue 12, 1182-1197
- Tsokos, C. P. and **Xu, Y.**, *Statistical Modeling of Breast Cancer using Differential Equations*, Istanbul University Journal of The School of Business Administration, Vol:40, No:1, 60-71, 2011
- **Xu, Y.** and Tsokos, C. P., *Statistical models and analysis of Carbon Dioxide in the Atmosphere*, Problems of Nonlinear Analysis In Engineering Systems, English/Russian, 2(36), 2011
- **Xu, Y.**, Keper, J. and Tsokos, C. P., *Identify attributable variables and interactions in breast cancer*, Journal of applied sciences,11 (6): 1033-1038, 2011

Dr. Ramachandran's collaborations with students have resulted in the following publications:

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- A.M. Mostafa and K.M. Ramachandran, "Rank Based Methods to Software Reliability Models", Neural, Parallel, and Scientific Computations, 19, 397-418, 2011.
 - D. Mendez, M. Labrador, K. Ramachandran, Data Interpolation for Participatory Sensing Systems, Pervasive and Mobile computing, Elsevier, 2012, doi:10.1016/j.pmcj.2012.11.001.
 - Florence George and K.M. Ramachandran, Analysis of Microarray Data for Gene Selection, in IFMBE Proceedings 24, 25th Southern Biomedical Engineering Conference, May 15-17, Springer Berlin Heidelberg, 2009, Miami, Florida, pp. 237-238, 2009.
 - Florence George and Kandethody M Ramachandran, "A Mixture Model approach for Gene selection using Johnson's system and Bayes formula", in Neural, Parallel, and Scientific Computations, Vol. 16, no. 1, pp. 45-57, 2008.
 - Florence George, K.M. Ramachandran, Estimation of Parameters of Johnson's System of Distribution, in Journal of Applied Statistical Methods (JMASM), 2012.
 - Florence George, Kandethody M Ramachandran, and Li Lihua, Gene Selection with Johnson's Distribution, in Journal of Statistical Research, Vol. 43, No. 1, pp. 117-125, 2009.
 - K. M. Ramachandran, O'Neil Lynch, and Wonkuk Kim, Modified p-value approach for detecting differentially expressed genes in Microarray data, the proceedings of Dynamic Systems and Applications, 6, 354-359, 2012.

- O’Neil Lynch , Kandethody M Ramachandran, and Wonkuk Kim, “Applications of Penalized Mixture Distributions to Microarray Data Analysis”, *Neural, Parallel & Scientific Computations*, Vol. 18, 2010, pp 371-384, 2010.

Dr. Ladde's collaborations with students have resulted in the following publications:

- Arnut Paothong, Adaptive Expectation for Network Goods, (with G. S. Ladde), *Economic Analysis and Policy*, in press (2013/2014).
- Arnut Paothong, Agent-based Modeling Simulation under Local Network Externality, (with G. S. Ladde), *Journal of Economic Interaction and Coordination*, (Submitted).
- Arnut Paothong, Generalized Network Externality Function, (with G. S. Ladde), *Economic Analysis and Policy*, Vol. 42(3) (2012), pp.363-387.
- Arnut Paothong, Multi-type Consumer Interactions under Local Network Externality, (with G. S. Ladde), *American Journal of Algorithms and Computing*, in press (2013/2014).
- Daniel Siu, A Multivariate Stochastic Hybrid Dynamic Model: Solution and Distribution (with G. S. Ladde), *Journal of Probability and Statistics*, Volume 2011 ID 720614, 20 pages, 2011.
- Daniel Siu, Stochastic Hybrid System with Non-Homogeneous and Boundary Jumps (with G. S. Ladde), *Nonlinear Analysis: Hybrid Systems*, 5 (2011), pp. 591—602.
- Daniel Siu, Student Solutions Manual for *Mathematical Statistics with Applications* by K. M. Ramachandran and C. P. Tsokos. Elsevier Academic Press, 2009. (Author of the solutions manual for the chapters on Probability, Bayesian Inference, Empirical Methods, and Statistical Applications)
- Divine Wanduku, A Scale-Structured Network Stochastic Epidemic dynamic model with varying Incubation Period (*Under preparation*)
- Divine Wanduku, A two-scale network dynamic model for human mobility process (with G. S. Ladde), *Math. Biosciences*, 2011, vol. 229, pp. 1-15.
- Divine Wanduku, Fundamental Properties of a Two-scale Network stochastic human epidemic Dynamic model (with G. S. Ladde), *Neural, Parallel, and Scientific Computations* 19 (2011), pp. 229-270.
- Divine Wanduku, Global Analysis of a stochastic two-scale Network Human Epidemic Dynamic Model With Varying Immunity Period (with G. S. Ladde), (*submitted*).
- Divine Wanduku, Global properties of a two-scale network stochastic delayed human epidemic dynamic model (with G. S. Ladde), *nonlinear Analysis: Real World Applications* 13(2012), pp. 794-816.
- Divine Wanduku, Global stability of a two-scale network SIR delayed epidemic dynamic model (with G.S. Ladde), *Proceedings of Dynamic Systems and Applications* 6 (2012) 437–441.
- Divine Wanduku, Global Stability of Two-Scale Network Human Epidemic Dynamic Model (with G. S. Ladde), *Neural, Parallel, and Scientific Computations* 19 (2011), pp. 65-90.
- Divine Wanduku, Special Two-Scale Stochastic Network Dynamic Human Epidemic Models (with G. S. Ladde), (in Preparation).
- Divine Wanduku, Stochastic Network dual distributed time delayed Epidemic dynamic model. (*Under preparation*)
- Divine Wanduku, Two-scale Stochastic Network Dynamic Epidemic Models (with G. S. Ladde), *Proceedings of Neural & Scientific Computations*, Atlanta, Georgia, Vol. 4, Dynamic Publishers Inc., USA 2010.
- Jean-Claude Pedjeu, *A Class of Higher Order Stochastic Differential Equations* (with G. S. Ladde), *Dynamic Systems and Applications* 21 (2012) pp. 607-630.
- Jean-Claude Pedjeu, *Numerical Algorithm for Stochastic Fractional Differential Equations* (with G. S. Ladde). To Appear in *Neural, Parallel, and Scientific Computations* 21 (2013).

- Jean-Claude Pedjeu, *Stochastic Fractional Differential Equations: Modeling, Method and Analysis (with G. S. Ladde)*, Chaos, Solitons and Fractals: the interdisciplinary journal of Nonlinear Science, and Nonequilibrium and Complex Phenomena 45 (2012) pp. 279-293.
- Ling Wu, *Development of Nonlinear Stochastic Models by Using Stock Price Data and Basic Statistics (G. S. Ladde)*, Neural, Parallel & Scientific Computations 18(2010) 269-282.
- Ling Wu, *Nonlinear Stochastic Differential Equations: Arima Models and Applications (G. S. Ladde)*, Proceedings of Neural, Parallel, and Scientific Computations, 4 (2010).
- Ling Wu, *Stochastic Modeling and Statistical Analysis on the Stock Price Processes (with G. S. Ladde)*, Nonlinear Analysis 71 (2009) e1203–e1208.
- Olusegun Michael Otunuga, *Stochastic Modeling of Energy Commodity's Spot Price Processes with Delay in Volatility (with G. S. Ladde)*, The Canadian Applied Quarterly Mathematics, (submitted).
- Olusegun Michael Otunuga, *Stochastic Modeling of Energy Commodity's Spot Price Processes with Delay in Volatility (with G. S. Ladde)*, The Canadian Applied Quarterly Mathematics, (in preparation).
- T. Zerihun and G.S. Ladde, *A Stochastic Dynamic Model for Photosynthesis (In progress)*.
- T. Zerihun and G.S. Ladde, *Energy Function Method and Qualitative Properties of Stochastic Differential equations*, Integral and Differential Equations. (in progress).
- T. Zerihun and G.S. Ladde, *Energy Function Method and Stochastic Variational Comparison Theorems and Properties of Stochastic Differential Equations*, (In progress).
- T. Zerihun and G.S. Ladde, *Fundamental Properties of Solutions of Nonlinear Stochastic Differential Equations and Method of Variation of Parameters*, Dynamical Systems and Applications, (in Press).

Dr. Wooten's collaborations with students have resulted in the following publications:

Dr. Wooten was only assigned two Master's Thesis students and first Doctorial student spring 2013.

Dr. Wooten has only been Program Advisor for the Certificate Program the past year and have not worked with anyone directly as the 5-7 individuals currently enrolled at USF and working toward this certificate have not reached the stage where an independent study is required which will result in a paper and hopefully, eventual publication.

4. Discuss placement of your recent graduates (e.g., types of employment, admittance to other degree programs).

DR. TSOKOS

COMMITTEE MEMBER

Yong Xu	(2010) Radford University	Dr. Wooten
Chunling Cong	(2010) Senior Consultant at Travelers, Harford, CT	Dr. Wooten
Dimitrios Vovoras	(2011) USF Dept. of Math & Stat.	Dr. Wooten
Carlos Molinares	(2011) Universidad de Puerto Rico en Arecibo	Dr. Wooten
Keith Hackett	(2011) Director of Management and Operations at Peace Corps Benin	Dr. Wooten
Alfred Mbah		
Zahra Kottabi		

DR. RAMACHRANDRAN

Nabin K. Manandhar Shrestha (2010) Visiting Assistant Professor, Worcester Polytechnic Institute (WPI), Mathematical Sciences, 100 Institute Road, Worcester, MA 01609-2280, USA,

O'Neil Lynch (2009) Assistant Professor, Minnesota State University Moorhead, MSUM, Department of Mathematics, 1104 7th Ave South | Moorhead, MN 56563 USA.

Florence George (2007) Assistant Professor, Florida International University, Department of Mathematic and Statistics, Miami, Florida

Mostafa Abdelalah M (2006) Director, Stars Learning Academy, Tampa, Florida

DR. LADDE

Arnut Paothong University of South Florida, Tampa, Florida, Research Assistant, 2010-Present (Expected to Graduate in May 2013).

Jean-Claude Pedjeu Assistant Professor, Department of Mathematical Sciences, Tennessee State University, Nashville, Tennessee, January 2013-Present.

Olusegun Michael Otunuga Teaching Assistant, University of South Florida, Tampa, Florida: August 2009-present (Ph. D. Work in Progress).

Daniel Siu Actuarial Assistant at FCCI Insurance Group, December 2011 – Present

Divine Wanduku Instructor, Department of Mathematics, Keiser University, Lakeland, Florida: August 2012-Present.

Ling Wu Senior Analyst, Research and Development, Farmers
Insurance Company, Tampa, Florida: June 2011- Present.

Tadesse Zerihun Teaching Associate University of South Florida, Tampa,
Florida: August 2006 – Present (Ph. D. Work in Progress).

DR. WOOTEN

Kenneth Baah Work in Progress

5. Identify qualities/metrics of applicants who prove to be successful in your program (e.g., REU experience, experience specific to your discipline, GRE performance).

In order of importance, a student should prove themselves in terms of (1) Professional Experience, (2) GRE, and (3) Interdisciplinary course work related to Statistics.

Comment succinctly on the following (e.g., 200 words max).

Based on the data in Part I, discuss current enrollment trends, graduation rates, time to graduation, and retention. Provide details on how the program is addressing each of these areas and will correct any deficiencies (i.e. low number of applicants, loss of students etc.)

The 5000 & 6000 levels have maintained their enrollment and diversity, Figure 1. Note: these counts do not take into account Masters' Thesis students nor Doctorial students.

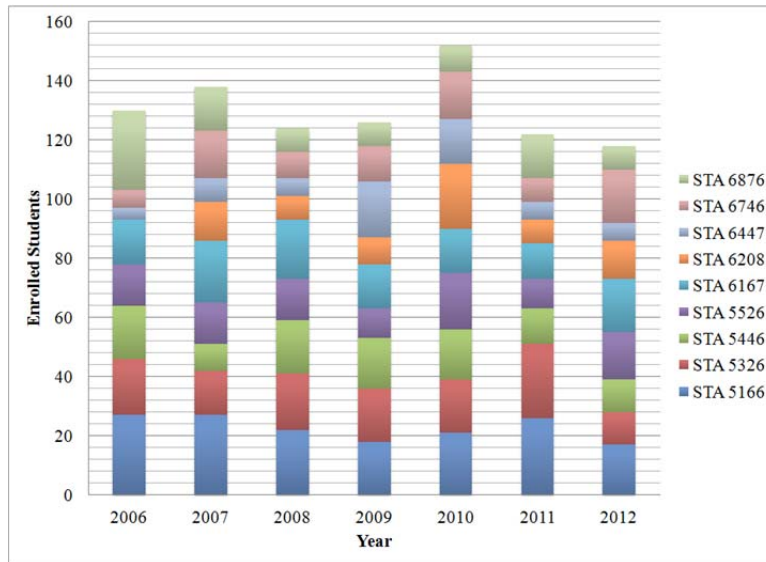


Figure 1: Upper level and Graduate course entitled STA

Enrollment in the Statistics Master (STC) and Doctorate (STT) Programs continues to grow, Figure 2; and students graduating with MAs have increased, Figure 3. No student drop voluntarily.

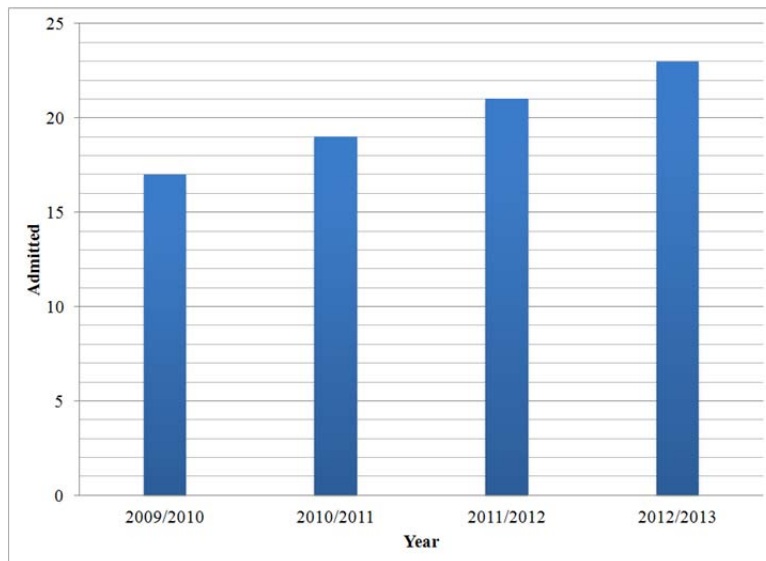


Figure 2: Admitted Students for Statistics Master (STC) and Doctorate (STT) Programs.

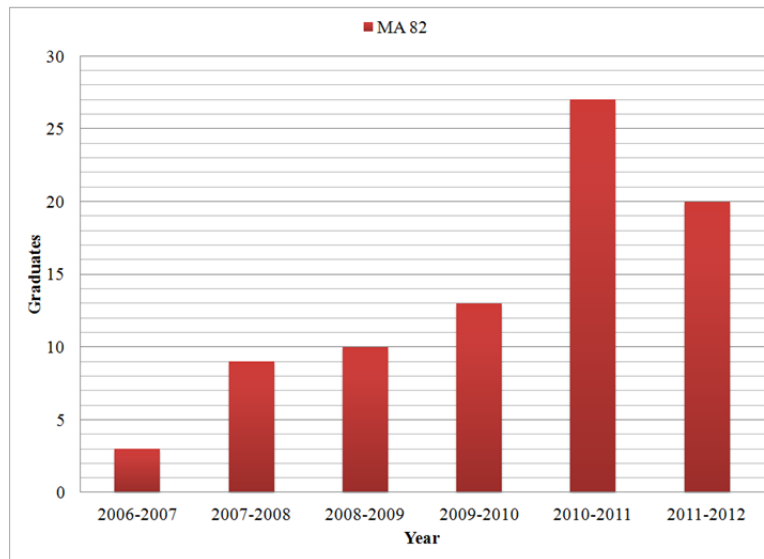


Figure 3: Graduate Degrees earned: MA

Identify three programs that are considered to be peers.

1. **Mathematics**
2. **Engineering**
3. **Physics**

Describe how the Program aligns with the strategic goals of USF.

Mathematics is the language Statisticians use to analyze and interpret the Physical and in general a conceptual world around the globe. In this aspect, Statistics is the interdisciplinary link between Mathematics and any other disciplines that need to have quantitative answers to make the reasonable decisions that affects the leaving beings. This is feasible by developing statistical experimental design, collecting the real world data and applying the statistical tools to draw inferences.

What are three program goals to be accomplished in the next 5 years?

1. **Educate and prepare our graduate to face the problems our global society faces using the Frontiers of Statistics and continue to fulfill the interdisciplinary mission of assisting and solving the world's problems.**
2. **Increase our cooperative efforts to work with the US Army Research, US Energy, EPA, among others including private industry, state and federal government, to create interdisciplinary relationship and to expand our current educational and research efforts. The current interdisciplinary activities and accomplishment of our graduates and faculty are consistent with the strategic plan of USF.**
3. **In working with several countries: Russia, China, India, EU, on our joint research efforts and to enhance our ability of recruiting the high quality graduates.**

Anything else you'd like to share?

In order to accomplish our proposed graduate program goals and to increase our productivity in Statistics, we are in significant need of new full-time graduate faculty.

STATISTICS STUDENTS

1. **Alber, Oliver**
2. **Assonken Tonfack, Patrick Armand**
3. **Bashar, A.K.M**
4. **Baah, Kenneth**
5. **Bonsu, Nana Osei**
6. **Chan, Yiu Ming**
7. **Choi, Bong-jin**
8. **Devamitta-Perera, Muditha V.**
9. **Enriquez-Savery, Sherlene**
10. **Forrest, Tiffany**
11. **Frett (Allison), Malena K.**
12. **Frenzel, Kevin**
13. **Galbava, Ingrid**
14. **Gong, Gaojie**
15. **Grille, Diego**
16. **He, Yin**
17. **Howard-Kirby, Courtney**
18. **Kuczynski, Stephanie**
19. **Kafle, Ram**
20. **Kim, Doo Young**
21. **Kotarinos, Michael**
22. **Kottabi, Zahra**
23. **Luo, Xin**
24. **Miller, Elizabeth C.**
25. **Mudunuru, Venkateswara Rao**
26. **Namelikonda, Savitha**
27. **Otunuga, Olusegun Michael**
28. **Ozcan, Deniz**
29. **Paothong, Arnut**
30. **Pedjeu, Jean-Claude**
31. **Pokhrel, Keshav**
32. **Rodrigo, Pulahinge Hansa S.**
33. **Sharaf, Taysseer**
34. **Siu, Daniel**
35. **Tadesse, Zerihun**
36. **Teodorescu, Iuliana**
37. **Tharu, Bhikhari**
38. **Thurman, Ryan**
39. **Tipps, Katya**
40. **Vovorras, Dimitris**
41. **Wanduku, Divine**
42. **Wei, Gang**
43. **White, Brian**
44. **Wu, Ling**
45. **Xu, Yong**
46. **Yang, Ching-Chi**
47. **Zhao, Dan**

Program offers BAs, MAs and PhDs.

MA Degrees in Interdisciplinary Statistics

- **Regular Statistics**
- **Engineering Statistics**
- **Health Statistics (Biological)**
- **Environmental Statistics**
- **Actuarial Sciences**

PhD Programs in Interdisciplinary Statistics

- **Regular PhD in Statistics**
- **Interdisciplinary Statistics (60/40)**

Special Students

- **Two students have had internships with the American Cancer Society**
- **Two students have had internships with Moffit Cancer Research Center**
- **Two students have had internships with Dr. Cox working with Breast Cancer**
- **One student have had an internship with Travelers Insurance**
- **One student have had an internship with Nelson's Rating Service**
- **Keith Hackett – PhD in Interdisciplinary Statistics (2011) was appointed Director of Management and Operations at *Peace Corps* Benin, South Africa**
- **Carlos Molinares is a faculty member at the University of Porto-Rico and was sponsored by his university for his PhD in Statistics (2012).**
- **Sherlene Enriquez-Savery is in the faculty at the University of Belize, who is sponsoring her to obtain her PhD in Statistics (2013).**

New Students

- **One recent student has a PhD in Physics from North Eastern University**
- **One incoming student has a PhD from George Mason University**

STUDENT COMMUNITY OUTREACH

Students also participate in two organizations, **Urban Scholars Outreach Program (USOP)** and the **Dr. A.N.V. Rao Gurukulam Program (RGP)**, which provide a service to the community in that we offer free educational assistance to disadvantaged youth in the community, providing free educational assistance to students preparing for the PSAT/SAT, ACT, FCAT, etc. The Saturday program (**USOP**) targets African-American and Hispanic students in grades K-12 and the Sunday program (**RGP**) is the sister program. The goal of these programs is to provide a 1-to-1 ratio; that is, for each student registered with the program, one volunteer to work with this student. Over the past two years, these ratios have been 1-to-1 or 1-to-2 for the Sunday program and 1-to-3 to 1-to-5 for the Saturday program thanks to the support of our statistics students. **USOP** has won the AOL DeBartolo "*Spirit of Humanity Award*" and the *Barbara Miller Educational Award*, USF Community Civil Association.

STUDENT FUNDING AND SCHOLARSHIP

The **Dr. A.N.V. Rao Endowment Memorial Scholarship**, a scholarship for upper-level undergraduate students majoring in statistics.

The **M.V. Johns Jr. Scholarship** for Graduate Study in Statistics, a scholarship is for statistics graduate students.

Dr. Ladde's Research Grants: W91NF-071-0283 and W911NF-12-1-0090 with the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC supported/supporting several of his graduate students during the THREE Month Summers/Spring of 2008-Present.

- ◆ **Paothong, Arnut**
 1. Graduate Research Assistantship, US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC. Spring 2013.
 2. Graduate Research Assistantship, US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC. Summer 2012.
 3. Tharp Endowed Scholarship Award, University of South Florida, Tampa, Florida,
- ◆ **Pedjeu, Jean-Claude**
 1. Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC: Grant Number W911NF-07-1-0283: Summers of 2008-2010.
 2. Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC: Grant Number W911NF-12-1-0090: Summer 2011.
 3. Fred L. & Helen M. Tharp Endowment Scholarship, University of South Florida, Tampa, Florida 2012.
 4. Fred L. & Helen M. Tharp Endowed Award, University of South Florida, Tampa, Florida: 2010 – 2011.
 5. A.N.V. RAO Endowment Scholarship, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida: 2010.
- ◆ **Otunuga, Olusegun Michael**
 1. Graduate Research Assistantship, US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC. Summer 2012-Present.
 2. Research Assistantship, the US Army Summer Grant Award, 2012-Present.
 3. Conference Presentation Grant Program, University of South Florida, 2012

4. Tharp Endowed Award College of Arts and Sciences, University of South Florida, 2012
 5. Tharp Endowed Award College of Arts and Sciences, University of South Florida, 2011
 6. Lamina Faye Maynard Queen Memorial Graduate Research Scholarship, 2009,
(http://www.marshall.edu/UComm/Newsletters/2009/June12_09.pdf)
 7. International Student Award (Marshall University) (2009)
 8. Pi Mu Epsilon Best student of the month 2007
 9. Best graduating Mathematical Student, 2006. (University of Agriculture, Nigeria)
- ♦ **Siu, Daniel**
 1. Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC: Grant Number W911NF-07-1-0283: Summers of 2008 – 2010.
 2. Tharp Endowed Award, University of South Florida, Tampa, Florida: 2008 – 2011.
 3. A.N.V. RAO Endowment Scholarship, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida: 2009 – 2010.
 4. University of South Florida, Tampa, Florida, Graduate Student Challenge Grants: Building Research Partnerships Across Disciplines: 2008 – 2009
 5. University of South Florida, Tampa, Florida: Diversity Summer Program Fellowship: 2008 – 2009
 - ♦ **Wanduku, Divine**
 - 1 Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC: Grant Number W911NF-07-1-0283: Summer of 2010.
 - 2 Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC: Grant Number W911NF-12-1-0090: Summer 2011.
 - 3 Tharp Endowed Award, University of South Florida, Tampa, Florida: 2009 – 2012.
 - 4 A.N.V. RAO Endowment Scholarship, Department of Mathematics and Statistics, University of South Florida, Tampa, Florida: 2011.
 - 5 The American Mathematical Society-2011 Graduate Student Travel Grant to the Joint AMS Annual Meetings, New Orleans, Louisiana.
 - ♦ **Wu, Ling**
 1. The US ARM Research Office, Summer Support 2009
 2. Spring 2009, Tharp Endowed Award from University of South Florida.
 3. Spring 2006, Tharp Endowed Award from University of South Florida.
 - ♦ **Zerihum, Tadesse**
 1. Travel Grant at the AMS/MAA-Joint Mathematics Meeting, San Diego, California. Spring 2013.
 2. Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC. Summer 2012.
 3. Tharp Endowed Scholarship Award, University of South Florida, Tampa, Florida. August 2006-Present
 4. UNESCO-IAEA Scholarships, International Centre for Theoretical Physics, Trieste, Italy. August 2005-August 2006.
 - ♦ **R, Ryan**
 1. Graduate Research Assistantship, the US Army Research Office, Mathematical Sciences Division, Research Triangle Park, NC, Spring 2013.

A BRIEF DESCRIPTION OF RESEARCH

PAOTHONG, ARNUT:

“My work introduces the concepts the network externality process and develops a dynamic mathematical model. The solution process of this model provides a systematic way of constructing the network externality function for the network goods. This development leads the development of various types of dynamic expectation process that provides to investigate various types of equilibrium states of market shares of market goods. In fact, this developed material provides a suitable frame-work to introduce the idea of consumer decision process and its dynamic model. This model induces the agent-based simulation model. The developed dynamic approached is suitable for studying, planning, policy and performance of market goods in the current trends in the global economy.”

PEDJEU, JEAN-CLAUDE:

"Introducing a concept of dynamic process operating under multi-scales in sciences and engineering, a mathematical model described by a system of multi-time scale stochastic differential equation is formulated. The scope of the ideas illustrated by presenting stochastic models in ecological and epidemiological processes in population dynamic are outlined. Moreover, numerical scheme is also developed and analyzed."

OTUNUGA, OLSUENUG MICHAEL:

"Presently, I am working on stochastic modeling, analysis and its applications. In particular, we develop stochastic dynamic models for energy's commodity's spot price process. Here, we treat the diffusion coefficient parameter in the non-seasonal spot price dynamic system under an influence of the past-history."

SIU, DANIEL P:

“My doctoral research focuses on the study of a class of stochastic hybrid dynamic systems that has random jumps driven by a non-homogeneous Poisson process and deterministic jumps triggered by hitting the boundary. Existing results of piecewise deterministic models are extended to obtain the infinitesimal generator of the stochastic hybrid dynamic systems through a martingale approach. Furthermore, the closed form solution and its probability distribution are obtained for a class of multidimensional stochastic hybrid dynamic systems.”

WANDUKU DIVINE:

"The recent high technological changes and scientific developments have let to many/variant structure types inter-patch connection interactions in the global human population. This leads to a multi-scale network human mobility process. By developing mathematical model of human mobility process, we investigated two-scale (without loss in generality) stochastic network with and without delayed human epidemic dynamic models in a systematic and unified way."

WU, LING:

“My main research interests are stochastic modeling and statistical analysis, particularly those arising in financial derivatives pricing for financial risk management. I explore the different methods of data partitioning schemes and build various linear and nonlinear stochastic models, and develop an algorithm to find the optimal stochastic models given different data partitioning schemes. I also construct ARIMA models from the time varying coefficient nonlinear stochastic differential equations and use them to address forecasting problems. Based on the models I proposed, I derive a closed form formula of options pricing.”

ZERIHUN, TADESSE S:

“My research interest is centered on studying stochastic systems of non-linear differential equations. My contributions are in the areas of fundamental properties of solutions nonlinear stochastic systems of unperturbed differential equations and the development of method of variation of parameters for nonlinear stochastic perturbed systems of differential equations and the energy function method and generalized variation of comparison theorems. Moreover, these basic non-linear methods are applied to investigate the qualitative and quantitative properties of solutions of non-linear stochastic differential equations, and its applications to photosynthesis.”