

Jake Olivier

Assistant Professor of Biostatistics
Department of Preventive Medicine
University of Mississippi Medical Center
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Jackson, MS 39216-4505
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EDUCATION

Doctor of Philosophy

University of Mississippi
Advisor: Hanxiang Peng

May, 2003

Mathematics with Applied Statistics
Dissertation: Home Range Techniques Utilizing
Spatial Correlation

Master of Science

University of Mississippi

May, 1997

Mathematics (minor: Biology)

Bachelor of Science

Centenary College of Louisiana

May, 1995

Mathematics

PROFESSIONAL EXPERIENCE

Assistant Professor

Division of Biostatistics
Department of Preventive Medicine
University of Mississippi Medical Center

2003 – Present

Jackson, Mississippi

Director of Biostatistics Core and Assistant Professor

Laboratory of Behavioral Immunology Research
Division of Allergy and Immunology
Department of Medicine
University of Mississippi Medical Center

2007 – Present

Jackson, Mississippi

Math Instructor for Ole Miss Online

University of Mississippi

2002 – 2003

Oxford, Mississippi

Visiting Assistant Professor

Department of Mathematics
Millsaps College

2000 – 2001

Jackson, Mississippi

Graduate Assistant
Department of Mathematics
University of Mississippi

1995 – 2000, 2001 – 2002
Oxford, Mississippi

RESEARCH AND TEACHING STATEMENT

As a statistician at a university based medical center, my primary focus is in collaborative biomedical research. This entails assisting the faculty, residents and students from UMC in the design and analysis of animal studies, clinical trials, human observational studies and other quantitative medical investigations. A partial list of the departments I have been associated include Allergy and Immunology, Psychology, Surgery, Infectious Diseases, Neuropsychology, Pediatrics, and Epidemiology. The analysis of biomedical data requires the use of many diverse statistical techniques, which in the past have included multiple logistic regression, general linear models, ANOVA, factor analysis, multiple imputation, cluster analysis, bioavailability/pharmacokinetics, equivalence studies and quantitative epidemiological techniques. These ventures have resulted in published journal articles as well as journal submissions. Some projects have produced abstracts and/or meeting presentations.

Beyond collaborative research, I have varying biostatistical research interests. Occasionally, I am confronted with research projects that require either undeveloped or obscure statistical methodology. As such, biomedical research is often a strong motivator for innovative applications of statistical theory. This has led to publications or manuscripts regarding binomial parameter confidence interval estimation and measures of agreement using Bland-Altman or Tukey mean-difference plots.

At UMC, my teaching duties include an introductory biostatistics course for graduate students from outside the department. Statistical analysis is inherently linked to computing software. Classical statistics pedagogy relies heavily on archaic statistical/mathematical tables. Choosing one statistical package in lieu of these tables is unreasonable due to the expense and plethora of software options. This has led me to develop a textbook that utilizes the TI-84+ graphing calculator. This device has more than adequate statistical functions. Further, I find that more than half of my class, on average, already owns this calculator or equivalent. This course is offered yearly in the fall. I have also offered courses in mathematical statistics and generalized linear models to biostatistics students as well as serving on a doctoral thesis committee.

Prior to my position at UMC, I have many years of experience teaching undergraduate mathematics courses while at Ole Miss (main campus) and Millsaps College. As a Ph.D. candidate in statistics, I primarily taught a freshman statistics course. During my final year at Ole Miss, I was responsible for the creation and management of an online elementary statistics course. Online students learn through lesson plans posted to a Blackboard website. Class discussions are performed through email, an online discussion board and ‘physical’ meetings with students. The opportunity to interact with students in non-traditional methods was a very rewarding experience.

PEER-REVIEWED JOURNAL ARTICLES

- [1] Neglén P, Egger J, **Olivier J**, and Raju S. (2004) "Hemodynamic and Clinical Impact of Ultra-Sound Derived Venous Reflux Parameters." *Journal of Vascular Surgery*, 40(2): 303-310.
- [2] Adah F, Benghuzzi H, Tucci M, Russell G, Tsao A, **Olivier J** and England B. (2005) "Evaluation of the Male Reproductive Organs After Treatment with Continuous Sustained Delivery of Statin for Fracture Healing." *Biomedical Sciences Instrumentation*, 41: 54-61.
- [3] Leis AA, Stokic DS and **Olivier J**. (2005) "Statins and Peripheral Neuropathy: Setting the Record Straight." *Muscle and Nerve*, 32(4): 428-430.
- [4] **Olivier J** and May W. (2006) "Weighted Confidence Interval Construction for Binomial Parameters." *Statistical Methods in Medical Research*, 15(1): 37-46.
- [5] Stokic DS, Yablon SA, Hayes A, Vesovic-Potic V and **Olivier J**. (2006) "Dose-Response Relationship Between H-reflex and Continuous Intrathecal Baclofen Administration for Management of Spasticity." *Clinical Neurophysiology*, 117(6): 1283-1289.
- [6] Boyd KB, **Olivier J** and Saleme J. (2006) "Surgical Residents' Perception of Simulation Training," *The American Surgeon*, 72(6): 521-524.
- [7] Sherer M, Stouter J, Hart T, Nakase-Richardson R, **Olivier J**, Manning E and Yablon SA. (2006) "Computed Tomography Findings and Early Cognitive Outcome After Traumatic Brain Injury," *Brain Injury*, 20(10): 997-1005.
- [8] Sample RC, Bryan L, Long S, Majji S, Hoskins G, Sinning A, **Olivier J** and Chinchar VG. (2007) "Inhibition of Iridovirus Protein Synthesis and Virus Replication by Antisense Morpholino Oligonucleotides Targeted to the Major Capsid Protein, the 18 kDa Immediate-Early protein, and a Viral Homolog of RNA Polymerase II," *Virology*, 358(2): 311-320.
- [9] Adcock KG, Kyle PB, Deaton JS, **Olivier J** and Hogan SM. (2007) "Pharmacokinetics of Intranasal and Intratracheal Pentoxifylline in Rabbits," *Pharmacotherapy*, 27(2): 200-206.
- [10] Adcock KG, Ostrenga J, Hogan SM and **Olivier J**. (2007) "Evaluating Comprehension by Children of Clinical Research Assent Documents," *ACRP Monitor*, 21(2): 61-64.
- [11] Roy SR, Sigmon JR, **Olivier J**, Moffitt JE, Brown DA and Marshall GD. (2007) "Increased Frequency of Large Local Reactions Among Systemic Reactors During

Subcutaneous Allergen Immunotherapy,” *Annals of Allergy, Asthma & Immunology*, 99(1): 82-86.

[12] Payne JA, Snyder DC, **Olivier J** and Salameh JR. (2007) "Total Abdominal Colectomy: Patient Satisfaction and Outcomes," *The American Surgeon*, 73(7): 709-711.

[13] Neglén P, Hollis KC, **Olivier J** and Raju S. "Stenting of the Venous Outflow in Chronic Venous Disease: Long-term Stent-related Outcome, Clinical and Hemodynamic Result," *Journal of Vascular Surgery*, in press.

[14] Brar H, **Olivier J**, Gabbard W, Lebrun C and Schmidt D. "Predictors of Mortality in a Cohort of ICU Patients with Acute Renal Failure Receiving Continuous Renal Replacement Therapy," *The American Journal of the Medical Sciences*, in press.

PROCEEDINGS AND OTHER JOURNAL ARTICLES

[15] Faruque F, Carithers T, Wilson K, Williams W, Li H, May W and **Olivier J**. (2005) "Evaluation of a Method of Estimating Agricultural Chemical Use." *WIT Transactions on Ecology and Environment*, 85: 409-418.

[16] **Olivier J** and Johnson WD. (2005) "Logistic Regression Analysis Using Maple." *Maple Conference 2005 Proceedings*, 63-69.

[17] **Olivier J** and May WL. (2007) "A Discussion of Binomial Interval Estimators on the Boundary," *Journal of the Mississippi Academy of Sciences*, in press.

UNPUBLISHED MANUSCRIPTS

Olivier J, Johnson WD and Marshall GD. "The Geometric Mean: Statistical Analysis and Interpretation," submitted.

Burton MJ, Swiatlo E, **Olivier J**, Henderson H and Mena L. "Human Immunodeficiency Virus and Hepatitis C Virus Coinfection in a Population with Low Incidence of Injection Drug Use," submitted.

Grothe KB, Bodenlos JS, Whitehead D, **Olivier J** and Brantley PJ. "The Psychosocial Vulnerability Model of Hostility as a Predictor of Coronary Heart Disease in Low-Income African American Medical Patients," submitted.

Hunt YM, Rash CJ, **Olivier J**, Burke RS, Walker NR, Grothe KB, Dubbert PM, and the PATHS Workgroup. "Associations between Tobacco Use and Alcohol Outcomes in Heavy, Non-Dependent Drinkers," submitted.

Cleary JD, Pearson M, **Olivier J** and Chapman SW. "Association between *Histoplasma* exposure and cerebral vascular disease," submitted.

Sumrall A, **Olivier J** and Rose E. "Is Multiple Sclerosis A Paraneoplastic Disorder?," submitted.

GRANTS

Principal Investigator – Central Mississippi Trauma Region, "2Fast2Risky: Planning Phase Reducing MVC-Related Trauma and Injury Among Mississippi's Young Drivers." Funding Amount: \$10,730. Funding start date: August, 2003.

Co-principal Investigator – Bristol Myers Squibb, "Genital Ulcer Disease: A risk factor for Hepatitis C Virus and Human Immunodeficiency Virus Infection." Principal Investigator: Mary Jane Burton. Funding start date: October, 2005.

ABSTRACTS

Mahdaviani S, Crowder KW, **Olivier J** and Chen CJ. (2006) "Surgical and Visual Outcome Following Exchange of Opacified Intraocular Lens Implant." Investigative Ophthalmology and Visual Science, 48: E-Abstract 5478.

Newsome B, Zhou X, Hamilton J, **Olivier J** and McDaniel O. (2007) "Examining Trauma-induced Clinical Complications in the Context of Social and Health Disparities," Journal of the Mississippi Academy of Sciences **52**: 102.

Burton MJ, **Olivier J** and Mena L. (2006) "Risk Factors for Hepatitis C Virus and Human Immunodeficiency Virus Coinfection in a Population with Lower Rates of Injection Drug Use." Infectious Diseases Society of America Annual Meeting.

Duchesne JC, Timberlake G, Schmiege R, Simeone A, Islam S, **Olivier J** and Toevs C. (2006) "Historical Perspective of Splenic Artery Embolization of Patients Outcomes." American Association for the Surgery of Trauma Annual Meeting.

Duchesne JC, Timberlake G, Schmiege R, Simeone A, Islam S, **Olivier J** and Toevs C. (2006) "Selective Non-operative Management of Low Grade Blunt Pancreatic Injury: Are We There Yet?" American Association for the Surgery of Trauma Annual Meeting.

Burton M, Mena L, **Olivier J**, Henderson H and Swiatlo E. (2006) "Human Immunodeficiency Virus and Hepatitis C Virus CoInfection in a Region with Low Injection Drug Use." University of Mississippi Medical Center Department of Medicine's Research Day.

Sherer M, Stouter J, Nakase-Richardson R, Hart T, **Olivier J** and Yablon SA. (2005)

“Initial CT and Early Cognitive Outcome after TBI.” The 2nd Federal Interagency Conference on Traumatic Brain Injury.

Laney CA, **Olivier J**, Kemp S, Inamdar SR. (2005) “Allergic Rhinitis (AR) Benefits Cardiovascular Mortality: A Pilot Study of Adult VA patients.” *Annals of Allergy, Asthma, and Immunology*, **95(1)**: 204.

Hutchins J, Watson S, Olson J, Rockhold R, Brown J, **Olivier J** and Schimmel C. (2004) “Learning Styles in the First-year Medical Class at the University of Mississippi Medical Center.” *Journal of the Mississippi Academy of Sciences* **50**: 111.

Adcock KG, Kyle PB, Deaton JS and **Olivier J**. (2004) “Pentoxifylline Pharmacokinetics Following Two Novel Delivery Techniques.” American College Clinical College Annual Meeting.

Olivier J and Bowman D. (2001) “Bootstrap Estimates of Home Range Size Using Minimum Convex Polygons.” *Journal of the Mississippi Academy of Sciences* **46**: 64.

Olivier J and Bowman D. (2000) “Analysis of Home Range Data Using Generalized Estimating Equations.” *Journal of the Mississippi Academy of Sciences* **45**: 80.

MEETINGS AND PRESENTATIONS

Olivier J. (2006) “Relationship Between Histoplasmosis and Stroke: A Consulting Project,” presented to Department of Internal Medicine, School of Medicine, Yale University, New Haven, Connecticut, March, 2006.

Walker N, Hunt Y, Grothe K, Parker J, Burke R, **Olivier J** and Dubbert P. (2005) “Associations between tobacco use and alcohol moderation over time: Implications for clinical practice.” Poster presented at the 39th Annual Convention of the Association for Advancement of Behavior Therapy, November, 2005, Washington, DC.

Cleary JD, Pearson MM, **Olivier J** and Chapman SW. (2005) “Epidemiologic Correlation Between Histoplasmosis Exposure & Stroke” presented at Interscience Conference on Antimicrobial Agents and Chemotherapy Annual Meeting in New Orleans, Louisiana, September, 2005.

Parham JJ, Mena LA, **Olivier JH**, McGloster NL and Barnes TM. (2005) “Screening for Asymptomatic Infection with Chlamydia and Gonorrhea in College Students” poster presented at International Society for Sexually Transmitted Diseases Research Annual Meeting in Amsterdam, The Netherlands, July, 2005.

Olivier J and Johnson WD. (2005) “Logistic Regression Analysis Using Maple” presented at the Maple Conference in Waterloo, Canada, July, 2005.

Bokka S, **Olivier J** and Peng H (2004) “Weighted Covariance Universal Kriging” presented at the Joint Statistical Meeting in Toronto, Canada, August, 2004.

Olivier, J (2001). “Bootstrap Estimates of Home Range Size Using Minimum Convex Polygons” presented at Mississippi Academy of Sciences, February 2001.

Olivier, J (2000). “Topics in Home Range Analysis” presented to the Department of Mathematics and Statistics, Georgia State University, Atlanta, Georgia, March 2000.

Olivier, J (2000) “Analysis of Home Range Data Using Generalized Estimating Equations” presented at Mississippi Academy of Sciences, February 2000.

CONSULTING

Analogic; Peabody, MA

Created statistical report for FDA 510(k) review entitled “Clinical Comparison of the C3-ICG Patient Monitor with the CardioDynamics BioZ Monitor.”

STUDENT COMMITTEES

Betsy Herrington, MD

Scientific Oversight Committee Member

Pediatric Hematology/Oncology

UMC

Program Completed: June, 2007

Gloria Areghan

PhD Candidate

Dissertation Committee Member

Preventive Medicine

UMC

JOURNAL REVIEWER

Medical Science Monitor, ad-hoc reviewer (2007-)

PROFESSIONAL ASSOCIATIONS AND ACHIEVEMENTS

Member of the American Statistical Association
Member of the American Mathematical Society
Member of the Mathematical Association of America
Member of the Mississippi Academy of Sciences
Recipient of the University of Mississippi Dissertation Fellowship
Recipient of the John A. Hardin Math Award
Recipient of the Paul and Myrtle Bender Math and Physical Science Scholarship

STATISTICS COURSES TAKEN

Mathematical Statistics
Biometry
Linear Models (Adv. Math Stats)
Generalized Linear Models (Adv. Math Stats)
Experimental Design and Analysis
Time Series Analysis (Special Problems)
Survival Analysis (Special Problems)
Applied Probability
Applied Stochastic Processes (Special Problems)
SAS (Special Problems)
Non-parametric Statistics (Special Problems)
* Transcript course titles are given in parentheses.

COURSES TAUGHT

Mathematical Statistics
Elementary Statistics
Biostatistics
Modern Algebra
Differential Calculus
Integral Calculus
Business Calculus
College Algebra
Quantitative Reasoning

SERVICE AND EXTRA-CURRICULAR ACTIVITIES

Mississippi Science and Engineering Fair – Region II Judge
UMC, Department of Preventive Medicine Property Officer
UMC, Department of Preventive Medicine Webmaster
UMC Intramurals
Millsaps College Intramurals
Ole Miss Student Orientation
Oxford Park Commission soccer coach
Ole Miss Soccer Club (captain)
Centenary Math Club (president)
Centenary College Varsity Soccer
United States Soccer Federation referee
Centenary Soccer Camp coach
KSCL (Centenary) disc jockey

Last updated: August 1, 2007