Jean Orelien, DrPH

Qualifications

Dr. Orelien is the CEO and President of SciMetrika, LLC; a company that he founded in 2001. The mission of SciMetrika is to provide scientific, technical and logistics solutions that lead to advancement in human health. He has grown SciMetrika to more than 120 employees and continues to build its reputation as a reliable solutions provider for projects related to human health. The company has received numerous awards for growth, including in 2010 the North Carolina Council for Entrepreneurial Development's Companies to Watch, as well as Inc. magazine's Top 500 Fastest Growing Companies in both 2010 and 2011. Dr. Orelien has been honored as one of Inc. magazine's Top 10 Black Entrepreneurs (2010 and 2011), top 50 African-American in science and technology by Black Money, and in 2011 received the James E. Grizzle Distinguished Alumni Award from the University of North Carolina at Chapel Hill's Department of Biostatistics.

During his career, Dr. Orelien has served as project manager or lead statistician on various public health research studies sponsored by government agencies. His management experience includes projects that involved data management, data analysis, software development, and survey research.

One of Dr. Orelien's areas of expertise is survey research. He has supported all phases, and his responsibilities have included survey design, sampling plan development, creation of the sampling frame, sample selection, computation of sampling weights, point estimation, variance estimation, and statistical modeling. Another area of expertise is the analysis of data from correlated observations. In particular, Dr. Orelien has developed methods for Linear Mixed Models and Generalized Estimating Equation.

Relevant Experience

CEO and President
SciMetrika, LLC, Durham, NC
2004–Present

As the CEO and President, Dr. Orelien is responsible for developing and implementing growth strategies for the company growth. A key focus is business development and ensuring the company is positioned to effectively enter new markets while retaining delighted customers. Dr. Orelien's vision for SciMetrika is to be a premier provider in the field of population health.

In the early days of the company, Dr. Orelien played an active role in project management or contributing to the technical direction of projects.

He continues to be involved on a limited basis on some projects. Examples of the projects that he has contributed to include:

- Dr. Orelien served as the project director for an umbrella contract worth $3.5 M with the Division of Environmental Health Hazards and Exposure (DEHHE) of the Centers for Disease Control and Prevention (CDC)
- Dr. Orelien oversaw a $20 M contract with the Division of Cancer Prevention and Control of the CDC
- Dr. Orelien served as the lead statistician on a project to analyze cancer registry data to ascertain issues of racial disparity in the stage of breast cancer at diagnosis.

- Dr. Orelien served as the project manager (PM) on a project to implement an algorithm for statistical disclosure limitation (SDL). The project officer was Dr. Lawrence Cox, associate director of the National Center for Health Statistics (NCHS), and a paper describing SciMetrika's proposed approach was published in a peer-reviewed journal.

- Dr. Orelien managed a contract for EPA to provide statistical analysis of data from an establishment survey of airlines and airports regarding their use deicing and anti-icing operations.

- Dr. Orelien contributed to several projects for the Department of Veteran Affairs' (VA) National Center for Health Promotion and Disease Prevention. One of these projects was the evaluation of a weight management program called MOVE! (Managing Obesity in Veterans Everywhere!). This project included a survey of patients and providers who were involved in the early phase of the program. Dr. Orelien oversaw the data collection, processing, and analysis. In that capacity, he developed plans for clerical editing, data entry, and data management (e.g., range and consistency checks). In addition to the MOVE! project, Dr. Orelien assisted the VA in the analysis of data from the Survey of Healthcare Experience of Patients (SHEP). A manuscript from the analysis was published in the American Journal of Prevention with Dr. Orelien as a co-author.

Manager, Statistical Computing
Constella Group, Durham, NC
2002-2004

Dr. Orelien handled all matters related to statistical computing in the Statistic and Public Health Research (SPHR) Division. He was also in charge of hiring, supervising and developing employees providing SAS programming and statistical computing. He co-managed a contract worth

more than $6M to provide statistical support to the National Institute of Environmental Health Sciences (NIEHS), and managed a $500k contract with the Centers for Disease Control and Prevention (CDC). Dr. Orelien was in charge of business development for the statistical group and served as member of the business development board for SPHR. He authored technical sections of several winning proposals, captured and authored several entire proposals, and personally pursued and acquired several sole source contracts.

In addition to his managerial duties, Dr. Orelien participated as the lead statistician on several government-sponsored studies. He was the statistical director on a survey to assess incidence and risk factors for blood exposure among paramedics. He assumed similar roles in other projects for CDC where he provided statistical support on surveillance systems for blood exposure and nosocomial infections. Dr. Orelien played a key technical role in analyzing data from the National Toxicology Program (NTP). He reviewed statistical methods and provided statistical consulting to NIEHS scientists.

Senior Research Statistician
Analytical Sciences, Inc., (formerly Constella), Durham, NC
1998–2002

For a project with CDC's National Center for Infectious Diseases, Dr. Orelien developed a methodology to estimate the number of needlesticks sustained annually by U.S. hospital-based health care workers, as well as the annual numbers of occupationally acquired hepatitis B, hepatitis C, and HIV infections in the same population. He developed and implemented statistical methodology to obtain surveillance-based estimates, addressing issues of probability sampling, estimation of (and adjustment for) underreporting of injuries, and selection of appropriate denominators for the expression of incidence. He used logistic regression to characterize underreporting in the context of several covariates of interest, and he used stratified sampling analysis methods to derive estimates of exposure and characterize the uncertainty associated with those estimates.

Dr. Orelien made an important contribution in the analysis of data from the NTP's reproductive studies. The NTP uses animal models to screen a wide variety of xenobiotic agents for reproductive effects. Dr. Orelien evaluated new statistical methodologies that take into consideration these studies' complex variance structure: these methods included generalized linear mixed models, generalized estimating equations, and resampling within clusters. As part of this work, Dr. Orelien developed a statistical method to perform multiple comparisons with a control in generalized estimating equation models.

Statistician

Research Triangle Institute, Research Triangle Park, NC
1997–1998

Dr. Orelien devoted significant effort to implementing small area estimation techniques for the National Household Survey on Drug Abuse (NHSDA), sponsored by the Substance Abuse and Mental Health Services Administration. This work involved constructing Bayesian confidence intervals to characterize specific drug use probabilities. Dr. Orelien wrote complex macros for exploratory analysis, variable selection, and state-level estimation of 16 outcome variables.

Dr. Orelien generated numeric goals for the 1998 NHSDA. He estimated response propensity and cost per interview using logistic and weighted least squares models with parameters estimated from historic NHSDA information. Goals were adjusted to reflect all sample design assumptions, as well as target goals set at the national level.

For the 1997 NHSDA, Dr. Orelien adjusted sample weights at various stages of selection to account for various complicated survey design enhancements (*e.g.*, supplementation and oversampling of particular geographic regions of interest) introduced after the initial sample was selected. He was involved in examining the cost and precision of several alternate NHSDA designs for future studies, and had primary responsibility for several key components of this task, including construction of a pseudo-sample frame that was used in formal cost-variance optimization models. For field tests of alternative survey instruments and modes of administration (pencil-and-paper interview and computer-assisted survey interview), Dr. Orelien selected the first- and second-stage samples with probability proportional to size. In addition, he computed several weight components that reflected the multistage sampling.

Education

Degrees Earned

Dr.P.H., Biostatistics, University of North Carolina, Chapel Hill, NC, 2007

M.Stat., Statistics, North Carolina State University, Raleigh, NC, 1997

B.A., Mathematics, Rutgers University, New Brunswick, NJ, 1994

Academic Honors and Awards

Dean’s List, Rutgers University, New Brunswick, NJ, 1994

Other Awards

- Top 50 African-American in Science and Technology by Black Money (2012)
- Triangle Business Journal fastest growing companies in the triangle in (# 2 in 2012)
- Inc Magazine 500 fastest growing companies (2011)
- Inc Magazine top 10 black entrepreneurs in the US (2011)
- Distinguished Alumnus award UNC School of Public Health (2011)
- Inc Magazine 500 fastest growing companies (2010)
- Inc Magazine top 10 black entrepreneurs in the US (#5 in 2010) NC Company to watch (2010)
- Triangle Business Journal fastest growing companies in the triangle (2010)

Languages

French: speaking, reading, and writing

Spanish: speaking, reading, and writing

Haitian Creole: speaking, reading, and writing

Professional Affiliations

American Statistical Association

American Public Health Association

Computer Skills

Software:

Statistical and Mathematical

Base SAS	SAS GRAPH
SAS STAT	MathSoft S-Plus
SAS IML	SUDAAN

Operating Systems:

Microsoft Windows 98, 2000, XP, VISTA, Unix
DEC VMS

Hardware:

Intel-based personal computers
DEC VAX mainframe

Papers and Presentations

Orelien, JG and Edwards, LJ (2008). Fixed-effect variable selection in the linear mixed model using R2 statistics. Computational Statistics &

Data Analysis: 52(4).

Brown D, **Orelien JG** et al. (2007). Mathematical Model Developed for Environmental Samples: Prediction of GC/MS Dioxin TEQ from XDS-CALUX Bioassay Data. Environmental Sciences & Technology 41 (12).

Straits-Tröster K, Kahwati LC, Kinsinger LS, **Orelien JG**, Burdick MB and Yevich SJ (2006). Racial/Ethnic differences in influenza vaccination prevalence in the VA healthcare system. American Journal of Preventive Medicine: 31 (5).

Cox LH, **Orelien JG** and Babubhai SV (2006). A Method for Preserving Statistical Distributions Subject to Controlled Tabular Adjustment. Published in "Privacy in Statistical Databases", Lecture Notes in Computer Science 4302 (2006).

Leiss JK, Tierney JA, **Orelien JG**, Baden S, Boal WL, Ratcliffe JR and Janine Jagger (2006). Blood exposure among paramedics: Incidence rates from the national study to prevent blood exposure in paramedics. Annals of Epidemiology: 16 (9).

Panlilio AL; **Orelien JG**, Cardo DM, Srivastava PU, Jagger J., Cohn R. (2004). Estimate of the annual number of percutaneous injuries in hospital-based healthcare personnel in the United States, 1997-1998. Infection Control and Hospital Epidemiology: 25 (7).

Beltrami EM, Cheingsong R, Heneine WM, Respess RA, **Orelien JG**, Mendelson MH, Stewart MA, Koll BS, Sulis CA, Cardo DM (2003). Antiretroviral Drug Resistance in HIV-Infected Source Patients for Occupational Exposures to Healthcare Workers. Infection Control and Hospital Epidemiology: 31 (10).

Orelien, J.G., Zhai J.; R. Morris, R. Cohn (2002). "An approach to performing multiple comparisons with a control in generalized linear models". Communications in Statistics-Theory and Methods. 31 (1): 87-105.

Orelien JG (2004). A review of goodness-of-fit statistics for the generalized linear mixed models. Presented at the American Public Health Association in Washington, DC.

Orelien JG (2004). Assessing adequacy of the covariance structure in the generalized linear mixed models. Presented at the Joint Statistical Meetings in Toronto, Canada.

Gabe C, Cameron B, Mcgowan K and **Orelien JG** (2004). Developing a system with SAS/IntrNet, accessing an Oracle database, some ODS and a whole lot of problems. Presented at the annual SAS User Group International conference in Montreal, Canada.

Orelien JG, Leiss J, Tierney J, Ratcliffe J and Baden S (2003). Factors Affecting Response Rate in a Survey of Paramedics: Report from the National Study to Prevent Blood Exposure in Paramedics. Presented at the Joint Statistical Meeting in San-Francisco.

Orelien, J.G. and Edward L. (2002). Performance of a statistic for assessing model adequacy in the linear mixed model. Presented at the Joint Statistical Meeting in Atlanta.

Orelien, J.G. and Edward L. (2002). Assessing model adequacy in the linear mixed model. Presented at the American Public Health Association Conference in Philadelphia.

Panlilio AL, **Orelien JG**, Chiarello L, Cardo D. Assessing Denominators For Expressing Percutaneous Injury Rates, National Surveillance System for Health-Care Workers (NaSH) 1997-99 (2002). Presented at the annual meeting of the Society for Healthcare Epidemiology of America (SHEA), Salt Lake City, Utah, April 6-9.

Orelien, J. G. (2001). Model Fitting in PROC GENMOD. Presented at the 26th Annual Conference of the SAS Users Group International, Long Beach, CA, Apr. 22-25.

Orelien, J.G., R. Morris, and C. Gotwalt. (2001). Multiple Comparisons with a control in the presence of correlated data. Paper presented at the 8th CDC biennial conference, Atlanta, GA, Jan. 22-24.

Orelien, J.G. (2000). Computations of p-values for multiple comparisons with a control in SAS System. Presented at 8th Annual conference of SouthEast SAS Users Group Conference, Charlotte, NC, 10/15-17.