

January – June 2013

Business Knowledge Series

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THE POWER TO KNOW.



Business Knowledge Series

A unique collaborative initiative between SAS and a global network of industry experts who deliver the most current information on business practices, concepts, methodology and techniques to help you get the most value out of your SAS® investment.

WHAT WE OFFER

Classroom Training

Our instructors deliver real-world knowledge, cutting-edge techniques, and useful tips by combining expertly designed lectures and software demonstrations, question-and-answer sessions and hands-on computer workshops. Join us for an interactive learning experience delivered at a SAS training facility.

Live Web Classroom Training

Bring instructor-led training directly to your desktop while accommodating your busy schedule. Using a Web browser and your telephone, interact with our instructor who will guide your learning and answer your questions in real time.

On-Site Training

The same quality content and instruction as our classroom training delivered at your convenience at your location. Ask questions and generate discussion unique to your organization's needs in a private setting, and eliminate staff travel time and expenses.



Programming

Data Cleaning Techniques

Ron Cody, EdD, author and former professor at the Robert Wood Johnson Medical School; or Mark Jordan, Technical Training Consultant, Education Division, SAS



Learn techniques involving DATA step programming and other SAS procedures for finding errors in raw data or SAS data sets.

In addition to course materials provided, you will receive a copy of Cody's book.

Healthcare Data and the SAS® System

Craig Dickstein, co-author of *Health Care Data and the SAS® System*



Survey the origin, management and use of administrative health care data with an emphasis on the use of SAS software tools. Get acquainted with the providers, payers and users of the US health care system.

For a hands-on programming supplement, pair this course with Healthcare Data and the SAS® System: Hands-On Programming Workshop. The two courses are offered on contiguous days.

In addition to course materials provided, you will receive a copy of Dickstein's book.

Healthcare Data and the SAS® System: Hands-On Programming Workshop

Craig Dickstein, co-author of *Health Care Data and the SAS® System*

Explore programming methods and techniques that are useful in the health care industry in this one-day, hands-on workshop open to SAS programmers who have attended Healthcare Data and the SAS® System.

SAS® Functions by Example

Ron Cody, EdD, author and former professor at the Robert Wood Johnson Medical School; or Mark Jordan, Technical Consultant, Education Division, SAS



Uncover useful little-known functions that can solve everyday problems quickly and efficiently. This course is ideal for anyone who programs in Base SAS, especially DATA step programming.

In addition to course materials provided, you will receive a copy of Cody's book.



Statistical Analysis

Fitting Tobit and Other Limited Dependent Variable Models

Mike Patetta, Analytical Training Consultant, Education Division, SAS

Learn how to fit Tobit models, truncated models and sample selection models in the LIM procedure. Tobit models are censored regression models used when the dependent variable has a limited distribution because of censoring.

Imputation Techniques in SAS®

Patricia Berglund, Senior Research Associate, Survey Methodology Program, Institute for Social Research, University of Michigan

If you're relatively new to the use of multiple imputation tools in SAS, this is a great opportunity to get acquainted with MI and MIANALYZE procedures for multiple imputation and subsequent analyses with imputed data sets.

Multilevel Modeling of Hierarchical and Longitudinal Data Using SAS®

Catherine Truxillo, PhD, Manager, Analytical Education; or Chris Daman, Analytical Training Consultants, Education Division, SAS

Learn to identify complex and dynamic relations within multilevel data to inform a variety of decision-making needs. Gain a conceptual understanding of multilevel linear models (MLM), multilevel nonlinear models (MNLM) and their appropriate use in a variety of settings.



Statistical Analysis (cont'd)

Multiple Comparisons and Multiple Tests Using SAS®

Peter Westfall, PhD, Professor of Statistics, Texas Tech University

Learn how SAS is used for multiple comparisons in general applications, including studies with multiple outcome measures, studies with multiple group comparisons, and in combination.

Propensity Score Matching, Adjustment, and Randomized Experiments

Howard S. Friedman, PhD, Professor, Columbia University, and Partner, DataMed Solutions LLC; or Paul Thurman, Professor, Columbia University

Learn to determine through testing whether the results of a program can be attributed to a given cause. For example, was the increase in customer sales due to mailing of sales flyers? Was the health improvement due to the new medication? What conclusion can be drawn? Examine randomized controlled experiments and observational studies that require adjustment to reduce bias by using propensity score analysis through either propensity score matching or propensity score adjustment.

Robust Regression Techniques in SAS/STAT®

Mike Patetta, Analytical Training Consultant, Education Division, SAS

Analysts, statisticians, modelers and other professionals experienced in regression analysis will learn available procedures in SAS/STAT® software for robust regression and nonparametric regression techniques.

NEW! Structural Equation Modeling Using SAS®

Catherine Truxillo, PhD, Manager, Analytical Education, Education Division, SAS

Experienced statistical analysts will get acquainted with structural equation modeling (SEM), a technique that combines elements of traditional multivariate models, such as regression analysis, factor analysis and simultaneous equation modeling, as well as the new PATH language in the CALIS procedure in SAS/STAT® software. The course also introduces the SAS Structural Equation Modeling for JMP® interface for performing analysis of structural equation models with an easy-to-use diagram-creating interface.



Business Statistics

Advanced Analytics for the Modern Business Analyst

Catherine Truxillo, PhD, Manager, Analytical Education; or Jeffrey Thompson, PhD; or Peter Christie, Analytical Training Consultants, Education Division, SAS

Gain the skills required to succeed in today's highly analytical and data-driven economy. Learn the basics of data management, decision trees, logistic regression, segmentation, design of experiments and forecasting. The course combines scheduled, instructor-led Live Web sessions with independent activities such as reading assignments and hands-on exercises for a highly engaging learning experience.

Applying Survival Analysis to Business Time-to-Event Problems

Gordon Linoff, co-founder and Principal Consultant, Data Miners Inc.

Get acquainted with survival analysis in the context of business data mining. The focus is on understanding customer behaviors that have a time-to-event component using SAS® Enterprise Guide®.

Getting the Most Out of Testing in Direct/Internet Marketing

Goutam Chakraborty, PhD, Professor of Marketing, Oklahoma State University

Gain important insights into one of the most important advantages that direct marketers have over traditional marketers: their ability to test and fine-tune almost any aspect of their marketing mix.



Econometrics and Forecasting

Advanced Topics in Applied Econometrics

Oral Capps Jr., PhD, Executive Professor and Co-Director of the Agribusiness Food and Consumer Economics Research Center and holder of the Southwest Dairy Marketing Endowed Chair in the Department of Agricultural Economics, Texas A&M University

Better understand the economic/business landscape and improve your ability to make sound forecasts. This sequel to Introduction to Applied Econometrics focuses on intermediate/advanced topics in working with econometric models. Through applications, gain knowledge of the practical elements of applied econometric analysis. The overall aims are to sharpen the quantitative, statistical and analytical skills in dealing with problems and issues related to business and economics as well as to improve communication skills in reporting findings to decision makers.

Electric Load Forecasting: Fundamentals and Best Practices

Tao Hong, PhD, Industry Consultant, Utilities Practice, SAS

Using hands-on exercises and examples from the power industry, learn the statistical and practical aspects of electric load forecasting. Prepare and sharpen your statistical and analytical skills in dealing with real-world load forecasting problems, and improve your ability to design, develop, document and report sound and defensible load forecasts.

NEW! Forecast Value Added Analysis

Michael Gilliland, Product Marketing Manager, SAS

Want to improve your forecasts while using fewer resources and less management time? Forecast value added (FVA) is the change in a forecasting performance metric that can be attributed to a particular step or participant in the forecasting process. Learn to conduct FVA analysis to identify and eliminate waste and inefficiencies in your forecasting process.

Introduction to Applied Econometrics

Oral Capps Jr., PhD, Executive Professor and Co-Director of the Agribusiness Food and Consumer Economics Research Center and holder of the Southwest Dairy Marketing Endowed Chair in the Department of Agricultural Economics, Texas A&M University

This course focuses on the development and use of single-equation econometric models that enable a better understanding of the economic/business landscape and improve the ability to make sound economic/business forecasts.

Modeling Trend, Cycles, and Seasonality in Time Series Data Using PROC UCM

Terry Woodfield, PhD, Analytical Training Consultant, Education Division, SAS

Learn to model, interpret and predict time series data using the unobserved components model (UCM). The UCM procedure analyzes and forecasts equally spaced univariate time series data.

Stationarity Testing and Other Time Series Topics

Dave Dickey, PhD, Professor of Statistics, North Carolina State University

Explore a basic issue in time series modeling and forecasting: whether a time series is nonstationary. One of the most common unit root tests for addressing this issue, the Dickey-Fuller test, is discussed.



Data Miner

Advanced Analytics for Customer Intelligence Using SAS®

Bart Baesens, PhD; or Christophe Mues, PhD, Assistant Professors, School of Management, University of Southampton (United Kingdom)

Learn how to adopt state-of-the-art data mining techniques for complex customer intelligence applications. This advanced, highly interactive course offers a sound mix of both theoretical and technical insights as well as practical implementation details, illustrated by several real-life cases.

Analytics: Putting It All to Work

Bart Baesens, PhD, Assistant Professor, School of Management, University of Southampton (United Kingdom)

Learn how to put analytical tools and concepts to work in a practical business setting. Business applications covered include credit scoring and risk modeling, customer retention and response modeling, market basket analysis and cross-selling, customer lifetime value modeling, and Web intelligence and social network analytics.



Data Miner (cont'd)

Customer Segmentation Using SAS® Enterprise Miner™

Goutam Chakraborty, PhD, Professor of Marketing, Oklahoma State University

Gain both theoretical knowledge and practical skills in this hands-on course covering segmentation analysis in the context of business data mining. Topics include the theory of segmentation, as well as four main analytic tools for segmentation: hierarchical clustering, K-means clustering, the RFM cell method, and the SOM/Kohonen method.

Data Mining: Principles and Best Practices

John Elder IV, PhD, President; or Gerhard Pilcher, Senior Scientist; or Mike Thurber, Senior Data Miner, Elder Research Inc.



Tap into the power and potential of data mining by learning how to reveal useful patterns and trends from data. Gain valuable, practical guidance on how to properly set up experiments and interpret results with confidence. Learn from examples drawn from real-world experiences in areas such as credit scoring, fraud detection, biology, investments and cross-selling.

In addition to course materials provided, you will receive a copy of Elder's book.

Data Mining Techniques: Theory and Practice

Gordon Linoff, co-founder and Principal Consultant, Data Miners Inc.



Explore the inner workings of data mining techniques and how to make them work for you. Explore each step of a data mining project, beginning with problem definition and data selection and continuing through data exploration, data transformation, sampling, portioning, modeling and assessment.

In addition to course materials provided, you will receive a copy of Linoff's book.

Exploratory Analysis for Large and Complex Programs Using SAS® Enterprise Miner™

Jeff Zeanah, President, Z Solutions Inc.

Gain insights into virtually any type of exploratory data analysis problem. There is a focus on fraud detection, with the recognition that the core principles of modeling to solve fraud detection are the basis of all exploratory data analysis. Analytical methods used in the course include decision trees, logistic regression, neural networks, link analysis and social network analysis. Additionally, you'll receive practical advice on presenting complex findings to an audience.

Net Lift Models: Optimizing the Impact of Your Marketing Efforts

Kim Larsen, Vice President, Analytical Insights, Market Share Partners; or Terry Woodfield, PhD, Analytical Training Consultant, Education Division, SAS

Prepare to build net lift models that optimize the incremental impact of marketing campaigns. Learn to identify good net lift predictive variables, build net models with logistic regression, Naive Bayes models and KNN classifiers, and evaluate and deploy net models.

Survival Data Mining: Predictive Hazard Modeling for Customer History Data

Robert M. Lucas, PhD, Director, Analytical Education, SAS

Identify the benefits and pitfalls of using survival analysis for business intelligence. Review both theoretical justification of various survival data mining methods and their practical implementation using SAS software.

NEW! Text Analytics and Sentiment Mining Using SAS®

Goutam Chakraborty, PhD, Professor of Marketing, Oklahoma State University

Take a comprehensive look at how to organize, manage and analyze unstructured textual data, such as call center logs, e-mails, Web documents, blogs, tweets, and customer comments and reviews, for extracting insightful information from large collections of documents. Learn how to use such insights for improving business operations and performance.



JMP® Statistical Analysis

Custom Designs for Experiments

Mark Bailey, PhD, Analytical Training Consultant, Education Division, SAS

Discover a state-of-the-art approach to designing experiments that is based on the latest statistical theory and numerical methods. Advances in computer algorithms and hardware make this approach, once considered exotic and the domain of a few experts, available to everyone for all experiments.

NEW! Quality by Design (QbD) Using JMP® Software

Heath Rushing, co-founder and Principal Consultant, Adsurgo

Learn a systematic approach to pharmaceutical development as defined by QbD principles and gain an understanding of the application of statistics for setting specifications, assessing measurement systems (assays), developing a control plan as part of a risk management strategy and ensuring process control/capability. Analyses in this course use the point-and-click interface of JMP.



SAS® Enterprise Business Intelligence

Promoting Business Analytics Across the Enterprise

Aiman Zeid, Principal Business Consultant and Lead Developer, SAS Global Business Analytics Centers of Excellence Program

Uncover the key drivers that will facilitate the promotion and deployment of business analytics across the enterprise and explore how they should be best aligned to support the organization's priorities. Gain a deeper understanding of the role and function of Business Analytics Centers of Excellence as well as their types and mandates. Learn guidelines for assessing your organization's maturity, and for establishing a roadmap for an Enterprise Business Analytics Center of Excellence at your organization.



Fraud

The Art and Science of Insurance Fraud Detection

Terry Woodfield, PhD, Analytical Training Consultant, Education Division, SAS

Learn to use text mining and predictive modeling to provide analytic solutions to insurance fraud, which costs the property and casualty insurance industry more than \$25 billion annually.



Online and Social Marketing

Web Analytics and Web Intelligence Using SAS®

Bart Baesens, PhD; or Christophe Mues, PhD, Assistant Professors, School of Management, University of Southampton (United Kingdom)

Gain an overview of state-of-the-art Web analytics, as well as advanced data mining techniques and applications for the Web, through a sound mix of theory and practice, illustrated by several real-life cases and hands-on exercises using SAS Web Analytics, SAS® Enterprise Miner™ and SAS/STAT® software.



Risk Management

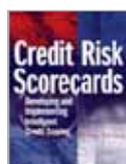
Credit Risk Modeling Using SAS®

Bart Baesens, PhD; or Christophe Mues, PhD, Assistant Professors, School of Management, University of Southampton (United Kingdom)

Learn how to develop credit risk models in the context of Basel II guidelines through a sound mix of both theoretical and technical insight as well as practical implementation details illustrated by real-life case studies and exercises.

Credit Scorecard Development and Implementation

Naeem Siddiqi, author of Credit Risk Scorecards and Principal Product Manager, Credit Scoring, Global Risk Practice, SAS



Gain the necessary knowledge to plan, develop, implement and maintain risk scorecards in-house through a high-level introduction to credit risk management and scorecard implementation strategies.

In addition to course materials provided, you will receive a copy of Siddiqi's book.

Business Knowledge Series

INSTRUCTORS



Bart Baesens, PhD, is an Assistant Professor at K. U. Leuven (Belgium) and a lecturer at the University of Southampton (United Kingdom). His extensive research on predictive analytics, data mining, customer relationship management, Web analytics, fraud detection and credit risk management has been published widely in international journals.



Mark Bailey, PhD, has been an instructor and curriculum developer in the SAS Education Division since 1998, and he has used JMP® software to solve design of experiments (DOE) problems for even longer. Bailey draws on plenty of real-world experience to teach DOE and scripting in the JMP curriculum.



Patricia Berglund is a Senior Research Associate in the Survey Methodology Program at the Institute for Social Research at the University of Michigan. She has extensive experience in the use of SAS and related computing systems for data analysis and data management. In addition to mental health research, Berglund is involved in developing, implementing and teaching analysis courses and SAS training programs at the Survey Research Center/ISR.



Oral Capps Jr., PhD, is a demand and price analyst with particular expertise in econometric modeling and forecasting methods. He is a nationally and internationally recognized leader in demand analysis, specializing in working with large databases. Capps is a full professor and holder of the Southwest Dairy Marketing Endowed Chair in the Department of Agricultural Economics at Texas A&M University as well as Co-Director of the Agribusiness, Food, and Consumer Economics Research Center. He also is founder and managing partner of Forecasting and Business Analytics LLC, an economic consulting firm.



Goutam Chakraborty, PhD, has been a professor of marketing at Oklahoma State University for more than 17 years. During that time he has taught data mining and CRM applications, database marketing, new product development, marketing research, digital business strategy, Web business strategy, electronic commerce, interactive marketing, and product and pricing management. Chakraborty founded the SAS and OSU Data Mining Certificate program.



Peter Christie joined the Statistical Training and Technical Services Department at SAS in 2008 as a course developer and instructor. His current areas of interest include data mining, business analytics, model management, statistical graphics and operational risk management. Prior to SAS, Christie worked in the retail, banking, chemical and pharmaceutical industries. He holds an MBA with a concentration in information technology from the University of North Carolina at Chapel Hill.



Ron Cody, EdD, is a retired professor from the Robert Wood Johnson Medical School who now works as a private consultant and a national instructor for SAS. A SAS user since 1977, Cody's extensive knowledge and innovative style have made him a popular presenter at local, regional and national SAS conferences. He has authored or co-authored numerous books as well as countless articles in medical and scientific journals.



Chris Daman has more than 20 years of teaching experience in the fields of programming, statistics and mathematics. After her graduate study at North Carolina State University and before joining SAS' Education Division, Daman worked for a pharmaceutical company, taught software classes and worked as a survey statistician. For SAS, she teaches courses on ANOVA, regression and generalized linear models, design and analysis of probability surveys, multilevel modeling of hierarchical data, longitudinal data analysis and general linear mixed models.



David Dickey, PhD, is a professor in the Department of Statistics at North Carolina State University. His research focuses on time series analysis (dealing with data taken over time). In addition to writing four books, Dickey has published numerous papers and given more than 50 presentations at a variety of professional events and for various organizations. He has also been recognized as a member of the Academy of Outstanding Teachers at North Carolina State University.



Craig Dickstein, an independent consultant, works with clients and select project teams to implement customized business solutions for the health care industry. He has significant experience managing and developing SAS applications and has been a SAS user since 1978. Dickstein has a long history of involvement with SAS users groups as both an organizer and invited speaker.



John F. Elder IV, PhD, is President of Elder Research Inc., a data mining consulting team that focuses on investment, commercial and security applications of advanced analytics. He has authored innovative data mining tools and co-written two books on data mining. His courses on analysis techniques—taught at dozens of universities, companies and government labs—are noted for their clarity and effectiveness.



Howard Friedman, PhD, works as a statistician and health economist for the United Nations, currently focused on the areas of maternal and newborn child health, health expenditures and fertility at UNFPA. A lead modeler on a number of key United Nations projects, Friedman has extensive management and teaching experience and has authored more than 35 scientific articles and book chapters in applied statistics and health economics.



Michael Gilliland is Product Marketing Manager for SAS forecasting software, and author of *The Business Forecasting Deal*. He has more than 20 years of forecasting experience in the food, apparel and consumer electronics industries. He wrote a quarterly column on business forecasting for *Supply Chain Forecasting Digest*, and has published articles in *Supply Chain Management Review* (where he introduced forecast value added analysis in 2002), *Foresight: The International Journal of Applied Forecasting*, *Journal of Business Forecasting*, *Analytics*, and *APICS* magazine.



Tao Hong, PhD, is an industry consultant at SAS, where he leads the forecasting vertical of the utilities business unit. He has applied various statistical and optimization techniques to the development of algorithms and tools for utility applications of analytics, such as energy forecasting, power system planning, renewable integration, reliability planning and risk management. The long-term spatial load forecasting methodology implemented in his master's thesis and the short-term forecasting methodology proposed in his PhD dissertation have been commercialized and deployed to many utilities worldwide. Hong serves as the Founding Chair of the IEEE Working Group on Energy Forecasting and teaches load forecasting and demand response related topics at North Carolina State University.



Mark Jordan began his computing career on mainframes in 1972, but took a 20-year hiatus to serve in the US Navy Submarine Service's nuclear power program. Upon returning to civilian life, he resumed programming as a SAS applications developer on mainframes, UNIX and Windows platforms. In 2003 Jordan came to work at SAS, first in Latin America in the Caribbean and Andean Region group, where he served as Director of Technical Services, and finally settling into his current role as a Technical Trainer for SAS Education, where he teaches and develops SAS Foundation programming classes.



Kim Larsen is Vice President of Analytical Insights at Market Share Partners, a leading marketing science company based in Los Angeles. He has worked in the data mining and statistical modeling industry since 2001 and has programmed in SAS since 1995. Throughout his professional career, Larsen has worked on and managed a wide array of data mining and analytical problems. His main areas of research include additive nonlinear modeling and net lift, or incremental lift, models.



Gordon S. Linoff is a co-founder and Principal Consultant of Data Miners Inc., a specialist consulting company that focuses on data analysis and data mining and that provides public courses and on-site training. Linoff is a widely respected thought leader, practitioner and teacher in the area of data mining. He has a keen interest in understanding and analyzing large data sets and in applying the results to business problems.



Robert M. Lucas, PhD, Director of Analytical Education at SAS, has more than 32 years of experience as an applied statistician. During his tenure at SAS, Lucas has developed and taught advanced statistics, time series, data mining and mathematical optimization classes as well as provided customized training and consulting for many industries, including government, pharmaceuticals, banking, manufacturing and retail.



Gerhard Pilcher, Senior Scientist at Elder Research Inc., enjoys data mining, especially in the areas of fraud detection and risk management. He is a recognized expert in three-dimensional roadway modeling and automated machine guidance using global positioning satellite systems. As Chief Technology Officer and VP of Engineering for Pulse Communications, Pilcher directed the design of early digital subscriber line systems and helped define international standards for DSL implementation. Prior to that, he led hardware and software design and delivery for large-scale telephony switching and fiber optic systems with Bell Northern Research.



Christophe Mues, PhD, is an Assistant Professor at the School of Management of the University of Southampton (United Kingdom). One of his key research interests is in the business intelligence domain, where he has investigated the use of decision table and diagram techniques in a variety of problem contexts, most notably business rule modeling and validation. His other key research areas include knowledge discovery and data mining, with a strong interest in applying data mining techniques to financial risk management and, in particular, credit scoring.



Mike Patetta has been an instructor and course developer in the Education Division at SAS since 1994. His ability to relate course material to a customer's business problems makes him one of the division's most requested instructors. Also a prolific course developer, Patetta has served as the primary developer for some of the division's most popular courses in the SAS Analytics curriculum, including Categorical Data Analysis Using Logistic Regression, Longitudinal Data Analysis with Discrete and Continuous Responses, and Survival Analysis Using the Proportional Hazards Model.



Heath Rushing is co-founder and Principal Consultant of Adsurgo, an analytics consulting company. He has used JMP since 2001. Formerly a professor at the Air Force Academy, Rushing became a quality engineer and Six Sigma Black Belt in both biopharmaceutical manufacturing and R&D, where he designed and delivered training materials using JMP. In addition, he has been a symposium speaker at both national and international pharma and medical device conferences. Rushing is an American Society of Quality (ASQ) Certified Quality Engineer and teaches most courses in the JMP curriculum, including a new course on Quality by Design (QbD) that he developed.



Naeem Siddiqi has more than 15 years of experience in credit risk management, both as a consultant and as a risk manager at financial institutions. Siddiqi has played a key role in the development of SAS Credit Scoring, and he continues to provide worldwide support for this initiative. His responsibilities range from pre-sales support to consultancy for various projects.



Jeffrey R. Thompson, PhD, is an Analytical Training Consultant in the Education Division at SAS. He started his career in academia with the Department of Statistics at North Carolina State University in Raleigh, where he received an outstanding teacher award and achieved the rank of Associate Professor. Author of the teacher's edition of *David Moore's The Basic Practice of Statistics (4th Ed)* and numerous peer-reviewed journal articles, Thompson gives frequent research talks and seminars, including presentations at regional, national and international statistical conferences and universities.



Mike Thurber, Senior Data Miner at ERI, has a passion for extracting relevant and valuable intelligence from available data, including gleaning insights on how complex consumer choices affect sales; predicting profitability of prospective customers; showing how call center interactions affect customer retention; and forecasting recovery of losses due to default. Prior to ERI, he developed engineering modeling software, consulted on business intelligence applications, advised on many data warehousing projects and served in several analytic roles in manufacturing and finance.

SAS Education celebrates the
International Year of Statistics





Paul W. Thurman has extensive management consulting and line management experience helping a variety of Fortune 500 firms realize value from innovative and coordinated business, operations and technology strategies. In addition to faculty

appointments at Columbia's School of International and Public Affairs and at its Mailman School of Public Health, Thurman serves as a clinical professor and affiliated researcher at the National Cancer Institute's Center for Cancer Research at the National Institutes of Health.



Catherine Truxillo, PhD, is manager of Analytical Education at SAS and has been teaching for SAS since 2000. She has written or co-written many SAS training courses for advanced statistical methods. Truxillo also teaches SAS courses using SAS/IML® (the interactive matrix language),

SAS® Enterprise Guide® and JMP® software. Previous experience with teaching, statistical consulting and software design led her to her job teaching statistics for SAS.



Peter Westfall, PhD, is the Paul Whitfield Horn Professor of Statistics and the James Niver Professor of Information Systems and Quantitative Sciences at Texas Tech University. He has consulted with various companies and government agencies for 20 years and has published more than

100 articles as well as three books on statistical theory and practice. Westfall is a Fellow of the American Statistical Association and a Fellow of the American Association for the Advancement of Science.



Terry Woodfield, PhD, is an Analytical Training Consultant in the Education Division at SAS. He has more than 28 years of SAS programming experience and has provided mentoring services in the areas of statistical forecasting, predictive modeling, and data mining. At SAS,

Woodfield has developed courses in statistical forecasting, Web mining and text mining. He is also active in the statistics profession, presenting papers at numerous statistical conferences and professional meetings.



Werner Wothke, PhD, is an applied statistician with extensive experience in software development, software publishing and training with both small companies and Fortune 500® companies. Principal Statistician at the American Institutes for Research in Washington, DC, Wothke has

taught scores of structural equation modeling workshops throughout the US, Europe and Japan.



Jeff Zeanah is the President of Z Solutions Inc., a firm focused on the support of organizations through predictive analytics and exploratory data mining. His primary interests and research concern the problems organizations face in improving their business decisions through data analysis, including predictive analytics and the selling of the results.

Zeanah has consulted with industry leaders in manufacturing, retail, public health, science, finance, nutrition and utilities.



Aiman Zeid has more than 23 years of experience in information management, technical implementation of business intelligence and performance management solutions, and management consulting. Lead developer of the SAS Global Business Analytics Centers of Excellence Program, Zeid also contributed to the development

of the Information Evolution Model assessment methodology and services.

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Business Knowledge Series
course with us!

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Business Knowledge Series

2013 January-June Course Schedule

Programming

Data Cleaning Techniques	\$1,650
Austin	Jan. 31-Feb. 1
New York	Mar. 14-15
Seattle	Jun. 24-25

Healthcare Data and the SAS® System	\$1,650
Rockville	Feb. 4-5
Boston	Apr. 29-30
Irvine	Jun. 24-25

Healthcare Data and the SAS® System: Hands-On Programming Workshop	\$825
Rockville	Feb. 6
Boston	May 1
Irvine	Jun. 26

SAS® Functions by Example	\$1,650
Rockville	Feb. 21-22
Chicago	Apr. 11-12

SAS Global Forum

San Francisco	May 2-3
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Statistical Analysis

Fitting Tobit and Other Limited Dependent Variable Models	\$415
Live Web	May 23 (one half-day session)

Imputation Techniques in SAS®	\$825
Live Web	Feb. 21-22 (two half-day sessions)

Multilevel Modeling of Hierarchical and Longitudinal Data Using SAS®	\$2,475
Live Web	Jan. 16-18, 23-25 (six half-day sessions)
Chicago	Mar. 6-8
Live Web	Apr. 9-11, 16-18 (six half-day sessions)
Rockville	May 15-17

Multiple Comparisons and Multiple Tests Using SAS®	\$415
Live Web	Feb. 1 (one half-day session)

Propensity Score Matching, Adjustment, and Randomized Experiments	\$1,650
New York	Jan. 31-Feb. 1
Rockville	Mar. 14-15
Irvine	May 16-17

Robust Regression Techniques in SAS/STAT®	\$415
Live Web	May 21 (one half-day session)

Structural Equation Modeling Using SAS®	\$1,650
Live Web	Jan. 29-Feb. 1 (four half-day sessions)

SAS Global Forum

San Francisco	May 2-3
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Business Statistics

Advanced Analytics for the Modern Business Analyst	\$4,125
Live Web	Feb. 11, 13, 15, 19, 21, 25, 27, Mar. 1, 5, 7 (10 half-day sessions)
Live Web	May 6, 8, 10, 14, 16, 20, 22, 24, 28, 30 (10 half-day sessions)

Applying Survival Analysis to Business Time-to-Event Problems	\$1,650
New York	Apr. 11-12
Rockville	May 13-14

Econometrics and Forecasting

Advanced Topics in Applied Econometrics	\$2,475
San Francisco	Jan. 23-25
New York	Mar. 20-22
Chicago	May 15-17

Electric Load Forecasting: Fundamentals and Best Practices	\$1,650
Rockville	Apr. 8-9
Irvine	Apr. 25-26
Chicago	Jun. 3-4

Introduction to Applied Econometrics	\$2,475
Austin	Feb. 27-Mar. 1
Philadelphia	Apr. 17-19
Seattle	May 29-31

Stationarity Testing and Other Time Series Topics	\$415
Live Web	Apr. 5 (one half-day session)


Data Mining

**Advanced Analytics for Customer Intelligence
Using SAS®**\$2,550
New York Feb. 11-13

Analytics: Putting It All to Work..... \$850
Rockville Feb. 4
Chicago Jun. 3

**Customer Segmentation Using
SAS® Enterprise Miner™** \$2,475
Chicago Feb. 20-22
Boston Mar. 13-15

Data Mining: Principles and Best Practices \$2,475
New York Jan. 28-30
Chicago Apr. 8-10

Data Mining Techniques: Theory and Practice..... \$2,475
Rockville Mar. 6-8
San Francisco Jun. 26-28

**Exploratory Analysis for Large and Complex
Problems Using SAS® Enterprise Miner™**\$1,650
Live Web Feb. 26-Mar. 1 (four half-day sessions)
Minneapolis May 2-3
Live Web Jun. 11-14 (four half-day sessions)

**Net Lift Models: Optimizing the Impact
of Your Marketing Efforts**.....\$1,650
San Francisco Feb. 7-8
Chicago Apr. 22-23
Irvine May 13-14
New York Jun. 24-25

**Survival Data Mining: Predictive Hazard Modeling
for Customer History Data** \$2,475
Rockville Feb. 27-Mar. 1
Atlanta May 1-3

Text Analytics and Sentiment Mining Using SAS®\$1,650
San Francisco Feb. 28-Mar. 1


JMP® Statistical Analysis

Custom Designs for Experiments\$415
Live Web May 13 (one half-day session)

Quality by Design (QbD) Using JMP® Software\$2475
San Francisco Mar. 5-7
Boston Jun. 12-14


SAS® Enterprise Business Intelligence

**Promoting Business Analytics Across
the Enterprise** \$825
Austin Mar. 8
Cary May 3


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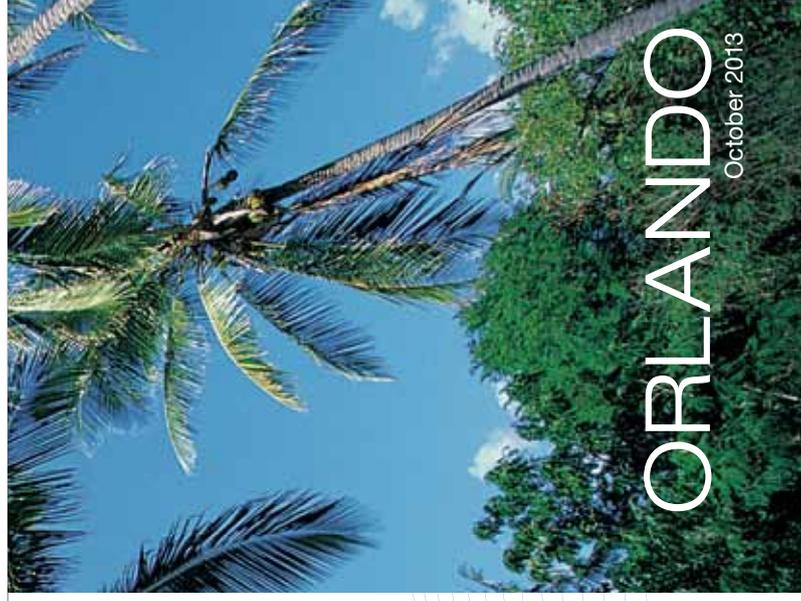
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