



54th Annual Fall Technical Conference
ASQ
P.O. Box 3005
Milwaukee, WI 53201-3005

54th Annual Fall Technical Conference

Quality & Statistics - The Engines of Success



October 6-9, 2010

The Wynfrey Hotel
Birmingham, AL

<http://cba.ua.edu/ftc2010>

Co-sponsored by:



ASA
AMERICAN STATISTICAL
ASSOCIATION

SECTION ON PHYSICAL AND
ENGINEERING SCIENCES
QUALITY AND PRODUCTIVITY SECTION



Chemical & Process
Industries Division



Statistics
Division

You are invited to attend the 54th Annual Fall Technical Conference held this year in Birmingham, Alabama. This conference is the premier forum to discuss topics at the interface of statistics and quality. The theme of this year's conference is "Quality and Statistics: The Engines of Success." The goal is to engage researchers and practitioners in a dialogue that leads to more effective use of statistics to improve quality. The conference will serve to bring innovations in statistical methodologies and quality tools to the forefront. You will have the opportunity to meet informally and exchange views with speakers and colleagues during breaks and in the hospitality suite.

Council Meetings

Three of the sponsoring organizations (Chemical & Process Industries & Statistics Divisions of ASQ and the Quality & Productivity Section of ASA) will also hold council meetings during the conference (days and times TBA). The council meetings are an opportunity for those who wish to become involved in the activities of the societies to become better informed. Please check the conference website (<http://cba.ua.edu/ftc2010>) for more information on dates, times, room locations, and other meetings of interest.

Hospitality Suite

The Annual Fall Technical Conference and the officers of the sponsoring organizations host a hospitality suite each year. This plays a vital role in the strategic operations of the divisions. We welcome new faces and new perspectives on division operations as well as share technical insights with colleagues in a friendly, informal atmosphere. Check at the registration desk for hospitality suite location and hours of operation. Please come to meet us in Birmingham.

Accommodations

A block of rooms is available at The Wynfrey Hotel at Riverchase Galleria through September 11, 2010. Conference room rates are \$135/night (single/double rate), plus taxes. Triple and quad rates are \$145/night and \$155/night, respectively. A link for registration is available on the conference website (<http://cba.ua.edu/ftc2010>). REGISTER EARLY!

Travel Arrangements

Travel arrangements from the airport to the hotel are the responsibility of the attendee. More information on options is available on the conference website.

Cancellations and Refunds

A complete refund will be given if you cancel prior to September 23, 2010. Cancellations received on or after September 23, 2010 will incur a \$125 cancellation fee.

Short Courses will be offered on Wednesday, October 6 and on Saturday, October 9 from 8:30 a.m. to 5:30 p.m. The fee for each course includes coffee breaks and lunch. Registration is limited.



Data Mining for Process Understanding
by Julia O'Neill and Matthew Wiener
Sponsored by ASQ-CPID
Wednesday, October 6, 2010 | \$250

Modern manufacturing processes (e.g. for semiconductors and vaccines) are highly complex and intensively monitored. Relationships between product quality and the many process variables can be difficult to quantify.

The course will consist of two sections: first, we will draw on our experience using Six Sigma methodology in multiple investigations to share recommendations for structuring team explorations of process data. The second part of the course will shift to the challenges of extracting information from large amounts of data. Particular attention has been devoted recently to finding meaningful relationships in data sets with many more variables than cases. While many of these methods were developed for gene expression and other "omics" data, they are equally applicable to manufacturing data.

In this course, we will describe powerful data mining methods including partial least squares regression (PLS) and random forests. We will explain the ideas behind the methods, and demonstrate how to perform them in readily available software. These methods will be illustrated using examples in which applying these techniques has yielded important insights into manufacturing processes.



Introduction to Acceptance Sampling
by Dean Neubauer
Sponsored by ASQ-STAT
Wednesday, October 6, 2010 | \$250

This course provides an introduction to the basic principles of acceptance sampling including: concepts and terminology, how to specify a plan and derive it mathematically or graphically, and use of published plans for both attributes and variables sampling. Familiarity with the normal, binomial, Poisson and hypergeometric distributions is assumed. Participants are encouraged to bring their own laptop.



Logistic Regression
by Richard Lynch
Sponsored by ASA-SPES
Saturday, October 10, 2009 | \$250

This training covers Binary, Nominal and Ordinal Logistic Regression. Students will learn to identify the context in which Logistic Regression applies. Students will fit Logistic Regression models using Minitab. Students will learn to evaluate goodness of fit, and interpret the models. Data formatting requirements will be explained. The role of link functions will be shown. There will be coverage of input variables that are continuous and categorical. Students will practice effective methods of reporting the findings from their modeling effort. In order to practice model fitting, each student should bring a laptop computer. A 30 day trial version of Minitab Version 15 will be made available to those students that do not already have Minitab installed.



Experiences and Pitfalls in Reliability Data Analysis and Test Planning
By William Q. Meeker
Sponsored by ASA-Q&P
Saturday, October 9, 2010 | \$250

This course will present and discuss the analyses of many different life data analysis applications in the area of product reliability and materials evaluation. The analyses illustrate the use of a mix of proven traditional techniques, enhanced and brought up to date with modern computer-based methodology. Methods used in the analyses include nonparametric estimation, probability plotting, maximum likelihood estimation of parametric models, analysis of data with multiple failure modes, acceleration models, Bayesian methods, degradation analysis, and the analysis of recurrence data from repairable systems. Using a series of real examples from reliability applications, this course will focus on graphical presentation of reliability data, statistical modeling, and interpretation of results. The prerequisite is a course in applied statistics covering material through simple linear regression.

54th Annual Fall Technical Conference Registration
 ASQ Customer Care
 PO Box 3005
 Milwaukee, WI 53201-3005

Complete this form and mail to the address above (you may wish to keep a copy for your records) or fax to 414-272-1734. Attn: ASQ Customer Care. Your registration will be confirmed by mail within 2 weeks of receipt. To register online, please visit <http://cba.ua.edu/ftc2010>. Contact ASQ Customer Care at asc@asq.org, with any questions or changes related to registration.

PERSONAL INFORMATION

Member Numbers: ASQ ASA

First Name for Badge* _____

Title: Mr. Mrs. Ms. Dr.

First Name* _____

Last Name* _____

Job Title _____

Preferred Mailing Address: Home Business

Business/Company: _____

Address* _____

City/State* _____

Zip/Postal Code* _____

Country* _____

Telephone Number* _____

Fax Number _____

E-mail Address* _____

Yes, you may release my e-mail address to conference sponsors and exhibitors.

SPECIAL NEEDS

Please list any special needs, disabilities, and/or dietary restrictions that we may address to make your participation more enjoyable:

CONFERENCE REGISTRATION

2 day 1 Day 1 Day Student

THR FRI

Early Registration on/before Sept. 11, 2010: \$285 \$240 \$240 \$100

Regular Registration after Sept. 11, 2010: \$310 \$265 \$265 \$125

* Conference ID badges will be required for all events.

* Hotel arrangement, travel, and short courses are NOT included in the conference fees.

SHORT COURSES

Pre-Conference - Wednesday, October 6, 2010

* Data Mining for Process Understanding _____ \$250

* Intro to Acceptance Sampling _____ \$250

Post-Conference - Saturday, October 9, 2010

* Logistic Regression _____ \$250

* Experiences and Pitfalls in Reliability Data Analysis and Test Planning _____ \$250

PAYMENT

Total Payment* \$ _____

Payment Type: * Check (sent by mail and made payable to ASQ)

MasterCard Visa American Express

Credit Card Number _____

Expiration Date _____

Cardholder Name _____

Cardholder Signature _____

HOTEL REGISTRATION

Reservations for The Wynfrey Hotel may be made on the conference website (<http://cba.ua.edu/ftc2010>) or by calling the hotel at (800) 996-3739.

*denotes required information

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Thursday, October 7, 2010

7:00	REGISTRATION DESK OPENS		
8:00 - 9:00	WELCOME / PLENARY SESSION Speaker: William H. Woodall Distinguished Professor of Statistics Virginia Tech University		
Session 1 9:15 - 10:00	A Special Applications for Robust Parameter Design Analysis of Shape-Response Experiments: Factor Significance and Robust Parameter Design Hussam Alshraideh Enrique del Castillo Pennsylvania State University	B Decision Making Based on Reliability Selecting a Usage Strategy Based on Reliability Christine M. Anderson-Cook, Lu Lu Los Alamos National Laboratory Alyson G. Wilson Iowa State University	C DOE for Arrays Experimental Design for the High-Throughput Laboratory James Cawse Cawse and Effect, LLC
	Moderators: Shari Kraber Stat-Ease, Inc.	Moderators: Flor Castillo Dow Chemical	Moderators: Julia O'Neill Merck
10:00 - 10:30	B R E A K		
Session 2 10:30 - 12:00	A DOE Analysis Tips for Analyzing Nonregular Fractional Factorial Experiments Robert Mee University of Tennessee	B Reliability Applications Sensor-Driven Prognostic Models for Equipment Replacement and Spare Parts Inventory Nagi Gebrael Georgia Institute of Technology	C Soren Bisgaard Memorial Session Design of Control Charts for Location and Spread Ronald Does University of Amsterdam
	Moderators: Brenda Bishop Unisys	Moderators: Trevor Craney Shell	Moderators: Geoff Vining Virginia Tech
12:15 - 1:45	L U N C H E O N Speaker: Phil Ratliff Vulcan Park and Museum		
Session 3 2:00 - 3:30	A STAT Invited Session Statistics to Facilitate Innovation: A Panel Discussion Necip Doganaksoy GE Global Research Sundar Dorai-Raj Google Bill Rodebaugh Menasha Packaging Inc	B Case Studies in Reliability Stent Reliability: Integrating Probabilistic and Physics-of-Failure Models Elias Keedy Qianmei Feng University of Houston	C Q&P Invited Session All Aboard? Turning Passengers into Engineers: A Panel Discussion on Effective Training of Process Improvement Tools and Methods Frederick W. Faltin The Faltin Group Willis A. Jensen W.L. Gore & Associates
	Moderators: Christine Anderson-Cook Los Alamos	Moderators: Trevor Craney Shell	Moderators: Dana C. Krueger Kansas State University
4:00 - 5:00	Presentation of WILLIAM G. HUNTER AWARD W. J. YODEN MEMORIAL ADDRESS Speaker: Dennis Lin Distinguished Professor of Statistics and Supply Chain Management Penn State University		

General Conference Chair
 Marcus Perry, *The University of Alabama.*

Short Course Chair
 Bob Brill, *ICL Performance Products*

Program Committee
 ASA-Q&P: Dana C. Krueger, *Kansas State University*
 ASA-SPES: Scott D. Grimshaw, *Brigham Young University*

Local Conference Chair
 Keri Williams, *Axcan Pharma*

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Friday, October 8, 2010

7:30	REGISTRATION DESK OPENS		
Session 4 8:00 - 9:30	A SPES Invited Session Introduction to Bayesian Reliability Alyson G. Wilson Iowa State University	B Analysis of Special Distributions A Framework to Detect Shape and Variation Changes in Nonlinear Profiles Shing I Chang, Shih-Hsiung Chou Kansas State University	C DOE Algorithms Strip-Plot Designs for Multi-Stage Experiments Peter Goos, Heidi Arnouts Universiteit Antwerpen Bradley Jones SAS Institute Inc.
	Moderators: Scott Grimshaw Brigham Young University	Moderators: Paula Reardon Eli Lilly/Elanco	Moderators: Shari Kraber Stat-Ease, Inc.
9:30 - 10:00	B R E A K		
Session 5 10:00 - 11:30	A CPID Invited Session A Retrospective View of Mixture Experiments with Discussants John A. Cornell Formerly of Univ. of Florida	B Technometrics Invited Session Modeling and Evaluating Repeatability and Reproducibility of Ordinal Classifications Jeroen de Mast Institute for Business and Industrial Statistics of the University of Amsterdam (IBIS UvA)	C Robust Design Robust Design: Past, Present, and Future Andy Sleeper Successful Statistics LLC
	Moderators: Douglas C. Montgomery Arizona State University Geoff Vining Virginia Tech.	Moderators: Wessel van Wieringen VUmc University Medical Center and VU University Amsterdam	Moderators: Chris Marley Dave Woods University of Southampton Dennis Lin Pennsylvania State University
11:45 - 1:15	L U N C H E O N Speaker: Sastry Pantula ASA President		
Session 6 1:30 - 3:00	A JQT Invited Session Moment-Ratio Diagrams for Univariate Distributions Erik Vargo William & Mary Raghu Pasupathy Virginia Tech Lawrence Loemis William & Mary	B Special Applications Beyond Gauge R&R: An Improved Measurement System Capability Statistic J. Eric Whichard JE Whichard & Associates	C Multivariate Applications Diagnosing Multivariate Processes with Fault Specific Fusion Sensors Dorin Scheianu Wood Group Light Industrial Turbines Phillip A. Farrington University of Alabama in Huntsville
	Moderators: Dan Apley Northwestern University	Moderators: Dana C. Krueger Kansas State University	Moderators: Marcus B. Perry The University of Alabama
4:00 - 5:00	Comparing Computer Experiments for Fitting High-Order Polynomial Metamodels Rachel T. Johnson Naval Postgraduate School Douglas C. Montgomery Arizona State University Bradley Jones SAS Institute, Inc Peter Parker NASA	Improving Quality and Customer Satisfaction Using Binary Logistic Regression Scott C. Sterbenz, P.E. Ford Motor Company	A Nonparametric Method of Establishing an In-Control Reference Sample for Multivariate Quality Control Monitoring Richard Bell Nedret Billor L. Allison Jones-Farmer Saeed Maghsoodloo Auburn University

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