

Session 111

Control Charts and Six Sigma: They're not just for CONTROL!

Rip Stauffer

Woodside Quality Solutions

Many Six Sigma DMAIC life cycles relegate SPC and control charts to the end: they are not discussed until you get to the CONTROL phase. However, because DMAIC is about process improvement, and DMAIC projects use process data, Control Charts are valuable tools in every stage of DMAIC. They can often be used in place of hypothesis tests when stratifying data and validating experimental results. In this presentation, we will discuss the use of these powerful process analysis tools in every phase of the DMAIC model.

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Session 112

Six Sigma tools for Exploring the Final Frontier (aka the unknown!)

By Larry Akre

ABSTRACT:

Examples of Six Sigma tools ranging from Pareto Charts, Xbar R charts, Process Capability, PFMEA and DOE (Minimum Run Array, etc) will be discussed and shown so that the Quality practitioner can reach out to and boldly go where no one has gone before in discovering where the unknown has been hiding. These are the simple tools that every practitioner of continuous improvement can use to help quality improvements. Sit back, relax and enjoy the ride!!!!

BIOGRAPHY:

Larry Akre

Larry Akre is an ASQ CQE and Six Sigma Black Belt. He has over 20 years experience in the Quality field including Military Electronics, Automotive and Medical devices. His responsibilities have been implementing European Directive Compliance(RoHS, Pressure Equipment and Hazard Location

Directives) for procured raw materials, Supplier Lean Initiatives that includes Supplier Certification, Design Reviews, Process Capability Analysis, DOE, DFMEA, and PFMEA for new and existing components regarding Investment Castings, Flanges, Printed Wiring Boards, Circuit Card Assemblies, Cables, Cable Assemblies and machined parts commodities.

He is a member of the following professional Organizations:

American Society for Quality (ASQ) Senior Member

Institute of Electrical and Electronic Engineers (IEEE) Senior Member

His professional involvement ranges from being the Chief Proctor for the ASQ administration of certified exams to current Vice Chair of the Twin Cities IEEE Section and current Chair of the Minnesota Reliability Consortium of IEEE.

Session 113

Lean Sigma Deployment at ADC

Shiv Venkataramani

ADC

ABSTRACT:

Following will be covered:

- Overview of ADC Telecommunications-Facts and Products
- Strategy Deployment Process (X-Matrix)
- Lean Sigma Transformation at ADC
- Lean Sigma Success Story
- Rewards and Recognition
- Video testimony by the ADC business leaders
- Lean Sigma Business Impact in FY 2009

Session 114

Customer-Chain Lean – Leveraging Lean Beyond the Plant Shipping Dock

Kirt Williams

Toro

Kirt Williams

Corporate Continuous Improvement Manager

The Toro Company

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Hear how Toro has used their Lean Enterprise focus and extended Value Stream Mapping to identify opportunities to dramatically reduce their finished goods inventories and share their Lean practices with their distribution channel and retail partners to reduce field inventories and improve product availability. Three different case studies of Lean collaboration with downstream delivery partners

will be shared as part of the presentation along with lessons learned along the way.

BIOGRAPHY:

Kirt Williams

Kirt Williams is the Corporate Continuous Improvement Manager and Lean Master for The Toro Company. His responsibilities include internal consulting, training, leadership coaching, and project leadership to facilitate enterprise-wide Lean implementation.

He has 20 years of Engineering, Operations and Business Management experience across a wide array of industries including power generation, aerospace, building products and industrial products. He has been implementing and teaching Lean for the past 14 years.

Kirt has completed Lean Transformations in 2 previous companies and is a Certified Six Sigma Black Belt. He also teaches Lean workshops for the Twin Cities Manufacturer's Alliance.

Kirt has a B.S. in Mech. Engineering and an M.S. in Industrial Engineering & Operations Research.

Session 121

Evolving Management Systems Integration: Big Q or Little q?

Dennis Arter

ABSTRACT:

Quality concepts are evolving as part of a larger trend toward risk management. Is Quality at the center of this coalescence (big Q) or being driven by changes as part of something else (little q)? This session will identify the current state of evolving management systems around the world.

Dennis Arter is an independent consultant and trainer. He instructs large and small firms in the fields of quality auditing and quality systems. Dennis has served clients in the fields of government, manufacturing, chemicals, energy, food, research, aerospace, finance, medical devices, pharmaceuticals, and health care. He has been auditing since 1975. He is the author of the classic text *Quality Audits for Improved Performance*, an ASQ Quality Press best-selling publication.

Session 122

Stat-Ease

Optimal Verification Testing with Graphical Effects Analysis

Mark Anderson & Patrick Whitcomb

Stat-Ease

By way of a case study on a hydraulic assembly failure, this [short](#) presentation on design of experiments (DOE) provides insights into statistically-optimal test matrices involving many factors at multiple levels. The quality engineer must play detective to isolate from many suspect parts which is the real culprit. However, the [root](#) cause may very well be an antagonistic interaction in the mechanical workings. Thus, the choice of design will be the key to success. Upon collection of the data, an innovative new graphical approach to assessing effects reveals the answer at a glance – problem solved. It is well known that multi-factor DOEs are more efficient than traditional one-factor-at-a-time (OFAT) testing, which sometimes fail to reveal root causes. would never reveal an interaction such as the one causing the failure in this case. However, like any powerful tool, an experiment design must be carefully crafted for the situation at hand. Furthermore, the data collected must be cleverly sifted to uncover the true culprit.

Session 123

Is Risk Management Valuable for Me?

Perry Parendo

Perry Solutions

While certain industries such as medical device and defense require risk management processes, the value to the organization is often in question. It is also not clear that Risk Management has reduced risk to an acceptable level. An emphasis on Risk Management compliance can lack understanding and the ability to resolve the underlying unknowns. As is often the case, it is treated as a deliverable instead of a valued process. This talk will provide a framework for the basic types of risk, including project and product risk. More importantly, the key aspects necessary to ensure program and project success will be discussed. Content will be applicable to new product development activities in design and process areas.

BIOGRAPHY:

Perry Parendo

Perry began developing and seeing results from his Design Of Experiments (DOE) techniques at the GM Research Labs in 1986. His unique insight into how DOE is best used has saved time and money while solving complex problems. Risk

Management is a “related area”, as test methods like DOE are simply a method to reduce risk. Industry involvement with the risk management process during early stages of development has led to teaching and consulting for organizations, to take full advantage of the test strategies available and avoid “hitting the wall.”

Parendo founded Perry’s Solutions, LLC in 2006 to help organizations with critical (risky) product development activities. He has consulted in a wide range

of industries such as consumer products, biomedical products and heavy equipment. He has spoken to domestic and international audiences on the use of DOE techniques. He received his Mechanical Engineering degree from the University of Minnesota.

Session 124

Brett Favre's Performance: Minnesota versus Green Bay, Predicting with Attribute and Continuous Assessment

By Jim Nelson, SSBB CMQ/OE, [Clarosys, LLC](#), *Systems for Success*

This presentation will address the following questions:

- * Performance tracking over time with predictive assessments and estimates
- * Statistical difference assessments in conjunction with visual presentations
- * Transitioning from attribute to continuous data and its advantages

Session 131

Self-Defeating Habits of Otherwise Brilliant People

Anna Maravelas

ABSTRACT:

Learn how to protect your efforts and assets from “us versus them” mentalities – especially during rapid change. Master techniques that preempt blame and short-circuit destructive forms of disagreement, which include:

- Turn resentment into a shared responsibility for the future
- Prevent costly conflicts, instead of continuously resolving them
- Shift the focus off people and personalities to underlying sources of conflict

These powerful, proven strategies last a lifetime. CEOs, executives and front-line employees rave about these techniques in their professional and personal lives. Dozens of publications including The New York Times, Harvard Management Update, Oprah Magazine, and MSNBC have published strategies from this seminar.

BIOGRAPHY:

Anna Maravelas

Anna is a Licensed Psychologist< M.A. and is founder of Thera Rising, Inc. She is also author of How to Reduce Workplace Conflict and Stress published by Career press.

Session 132

LEAN Leadership - How come they are just talking about it now?

By Sara Braziller

Many stories were told and books written about LEAN for the past 30+ years...so why now, when efforts have failed many, are we hearing about LEAN leadership? What are the missing ingredient to make all these so-called LEAN tools work?

Implementing LEAN isn't just about the tools such as 5S, pull systems and Kaizen events. It's easy to apply or use tools and see some quick benefits. What really begins to make the difference for your organization is transitioning to a LEAN management system. A LEAN Management system is a whole new way of managing your organization. Based on the key fundamentals of LEAN, leader standard work is the foundation that is crucial to any LEAN journey. Learn how to implement the daily practices of management and leadership at all levels that are necessary to truly transform your organization during your LEAN journey.

BIOGRAPHY:

Sara Braziller

Sara Braziller has 25+ years of successfully leading and managing projects, establishing high-performing organizations and problem solving in over 125 product/service companies. Braziller is an adjunct faculty member of the University of St. Thomas where she has designed and teaches graduate courses in Lean, Six Sigma and Enterprise Information Systems, as well as being lead faculty for Lean at the Center for Business Excellence. She also owns her own consulting practice where projects range from leading kaizen events to developing entire LEAN programs that include communication plans, change management, training, etc.

Previously, Sara was the VP/ CIO for Jenny Craig International in San Diego, California. Sara holds a BA in Production Operations Management with a minor in Information Systems from North Texas State University. Through APICS, she is certified in Resource Management (CIRM) and is also a Certified Practitioner in Inventory Management (CPIM).

Session 133

Marketing Yourself in a Competitive Environment

Barbara McGraw,
SVP, General Manager - MN for LHH

Trying to get ahead? Trying to get your idea across? Moving into a more strategic role in your organization? How do you get yourself in front of the right people and get heard? This presentation used the four P's of marketing to provide a guideline for you as you manage your career. Product: you as the product, Promotion: promoting yourself, Place: placing your message, Price: pricing your product.

Session 134

Tactful Self-Promotion: Getting the Recognition You Deserve

Nancy Burke & Richard Dodson
LHH Group

ABSTRACT:

This session offers strategies for tooting your own horn without being seen as a blowhard. In today's world of work, being a stellar performer is essential, but not sufficient, if you want to keep your career on track. People get ahead only if the right people see their value so it's important to figure out who those people are and how to gain visibility with them. It's up to each of us to make sure our talents and contributions are recognized. But most of us feel awkward or obnoxious when we try to promote ourselves. This doesn't have to be the case. This session will cover strategies and tactics you can use to promote your personal brand in a tactful way. Topics include:

- Building the foundation: ensuring you're worthy of a great reputation.
- Getting crystal clear about what you want to be known for.
- Nearly invisible ways to build visibility with key constituents.
- Becoming a recognized expert without being a show person.
- Increasing your Google Quotient (GQ) and leveraging networking groups

BIOGRAPHY:

Nancy Burke
Richard Dodson

Nancy Burke provides individual and organizational consulting services in leadership development, executive coaching, career management, and change and resilience, and assures the delivery of the highest quality of service to clients. Nancy understands well the issues confronting organizations, human resources professionals and individual employees in today's fast-paced environment.

Richard Dodson has worked for Lee Hecht Harrison for 10 years and throughout his career, he has focused on the design and delivery of programs and services to help people manage change and take responsibility for their careers. He is the author of *Tactful Self-Promotion: Getting the Recognition You Deserve* and is a popular speaker on current work issues, organizational change, career strategies and building resilience during turbulent times.

Workshop ONE

Integrated Systems: The Future of Auditing

Dennis Arter: The Auditguy of Columbia Audit Resources

Organizations can no longer afford to maintain separate quality, environment, safety and security groups. They all offer ways to reduce risks and increase value. Auditing can also support this movement. Through a series of lectures and group workshops, you will define an integrated management system. Then you will use contemporary process study tools to develop truly useful audit checklists. By discovering patterns in audit data, you will learn how to present reports that address business performance. The day will conclude with an examination of the future - of everything, not just auditing. We will explore accelerating technology change and the increasing intelligence of machines. How can auditors continue to add value in this environment?

You already know how to audit. You know about flowcharts and checklists and interviews and reports. It is time for new challenges. You will mix and mingle with other auditors and managers, from different business sectors, under the guidance of a leader in the profession. This is a master class, so come prepared to **think** and **learn** and **contribute**.

Dennis Arter is an independent consultant and trainer. He instructs large and small firms in the fields of quality auditing and quality systems. Dennis has served clients in the fields of government, manufacturing, chemicals, energy, food, research, aerospace, finance, medical devices, pharmaceuticals, and health care. He has been auditing since 1975. He is the author of the classic text *Quality Audits for Improved Performance*, an ASQ Quality Press best-selling publication.

(Workshop W2 AM)

Stat-Ease

A Planning Process for Designing Successful Factorial Experiments

This is a half-day computer-intensive* workshop by Shari L. Kraber and Wayne F. Adams

Level: Beginner/Intermediate

**(Attendees must be encouraged to bring their own laptops, for which the instructors will provide DOE software to use in class. A limited number of computers will be available for those who do not own and cannot borrow one to use for the case-study exercises.)*

Newcomers to factorial **designs often** find it difficult to choose appropriate designs with adequate power. In this workshop, we provide a clear process to determine the best design **approach** that fits the **nature of the** problem. By working through real-world case studies, workshop participants will learn the value of assessing statistical power, which requires that the experimenter determines the size of the desired effect (the “signal”) relative to anticipated process/test variations (the “noise”). We will also discuss how to choose the

ranges for the input factors, the importance of evaluating aliases, and checking runs for safety. Attendees will take away a clear strategy for determining which factorial design is appropriate for process trouble-shooting and product quality issues. They will also learn how to analyze the results from experiments and quickly zero in on key findings.

(Workshop W2 PM)

How to Validate Successful Experiments or Salvage Ambiguous Ones

This is a half-day computer-intensive* workshop by Patrick J. Whitcomb and Wayne F. Adams

Level: Intermediate

**(Attendees must be encouraged to bring their own laptops, for which the instructors will provide DOE software to use in class. A limited number of computers will be available for those who do not own and cannot borrow one to use for the case-study exercises.)*

In this workshop, we will detail diagnostics for models generated from designed experiments. What are they? Why use them? What good do they do? These questions are answered while examining the diagnostics for a series of case studies. It will **also** deal with a very thorny issue that confronts every experimenter—how to handle individual results that do not appear to fit with the rest of the data.

BIOGRAPHIES FOR WORKSHOP TWO – ALL

Wayne Adams is a consultant with Stat-Ease, Inc. His prior work experience included actuarial forecasting for a small life insurance plan as well as the application of statistical techniques while working as a finance specialist for the Army Finance Corp. Wayne also taught business statistics at Western Michigan University, where he earned the highest student rating of all instructors. Wayne is now putting his statistical skills and cheerful personality to use in a variety of areas at Stat-Ease.

Education:

- Bachelor of Science in Statistics, Western Michigan University, 1991
- Master of Science in Applied Statistics, Western Michigan University, 2005

Shari Kraber is a consultant with Stat-Ease, Inc. She worked for many years "in the trenches" of manufacturing as a process engineer and engineering supervisor for 3M and Frigidaire. As a process engineer, Shari mastered the statistical tools of design of experiments (DOE). Her industry experience ranges from appliance manufacturing to tape making to warehouse and distribution

services. Shari has performed DOEs on ultrasonic welding, foam insulation, cabinet assembly, winders, slitters, and packaging equipment. She now devotes her considerable energy, experience and leadership skills to workshops on DOE, teaching others how to make breakthroughs.

Education:

- Bachelor of Science in Industrial Engineering, Iowa State University, 1989
- Masters of Science in Applied Statistics, Rochester Institute of Technology (RIT), 2003

Pat Whitcomb is the founding principal and president of Stat-Ease, Inc. Before starting his own business, he worked as a chemical engineer, quality assurance manager, and plant manager. Pat co-authored Design-Ease[®] software, an easy-to-use program for design of two-level and general factorial experiments and Design-Expert[®] software, an advanced user's program for response surface, mixture, and combined designs. He's provided consulting on the application of design of experiments (DOE) and other statistical methods for several decades. In addition, Pat is co-author of the books, "DOE Simplified: Practical Tools for Effective Experimentation" and "RSM Simplified: Optimizing Processes Using Response Surface Methods for Design of Experiments," and has published many articles on design of experiments (DOE).

Education:

- Bachelor/Master of Chemical Engineering, University of Minnesota, 1973, 1977

Workshop THREE

Implementing Software Reliability to Decrease Risk and Improve Customer Satisfaction

Richard Fries
IsoRel

ABSTRACT:

Software design and implementation is a multi-staged process in which system and software requirements are translated into a functional program that addresses each defined requirement.

Software reliability must be incorporated into every phase of this software development in order to achieve high reliability of the product. Activity begins at the initial definition of the program and continues through development, coding, testing, and finally analysis of field data. This workshop will cover the most important aspects of the software reliability process.

The workshop begins with the introduction of software reliability, typical software failures, and the importance of reliability to the success of any business. Once we understand the basics, we will focus on defining the software product and the

associated documentation. The next step is to choose the proper metrics for tracking reliability during the entire development process. Metrics may be static or dynamic depending where they are collected. The advantages of each type will be discussed as well as examples taken from actual software development.

Risk management is then discussed as a means of determining the risk to the company of failure of the software. Risk management includes listing potential failures and what may cause them, developing mitigations for the potential failures, and estimating the potential risk of each failure. It is very important to include failures caused by human error in the risk analysis, as this is the biggest source of failures. Fault tree analysis will also be discussed as a means of developing the design and proving mitigations actually resolve potential failures.

Metric collection during code reviews and testing, including module, integration, and system testing will be discussed as well as methods of tracking these metrics to estimate reliability. Software reliability models will be discussed and the proper place to implement them. Finally, analysis of field data will be discussed as a means of not only checking the reliability of the software product, but the efficiency of the software reliability program as well. This data can serve to improve not only the product, but the development process as well. Topics included in this discussion will be analysis of warranty and service data and graphical analysis of the data.

BIOGRAPHY:

Richard C. Fries

Richard C. Fries holds degrees in Biology from Loyola University in Chicago and in Electrical/Biomedical Engineering from Marquette University in Milwaukee. He is a licensed Professional Engineer in the state of Wisconsin, certified as a Software Quality Engineer and a Reliability Engineer by the American Society for Quality, a certified Six-Sigma Green Belt, and a certified ISO 9001 TickIT Lead Auditor. He is a trained Six-Sigma Black Belt, and a Certified HIPAA Professional. He is co-inventor of United States Patent number 5,682,876.

He is a member of ASQ, IEEE, and the Biomedical Engineering Society, a past co-chair of the AAMI Medical Device Software Task Force and past chair of the HIMA Software Task Force. He was a member of Working Group 1 to ISO TC210, and is currently a member of the IEEE Software Engineering Standards Subcommittee. He is also an ABET evaluator for the Biomedical Engineering curriculum. He is the author of several books and numerous articles in professional journals on hardware and software reliability engineering, medical device design, software quality, standards, and regulations.

Workshop W4













Lean Transformational Thinking – Training for Lean Teams

Tom Humphreys

This one-day course biography:prepares each team member to start a Kaizen event. This course takes the learner through the process of “Lean Thinking” to prepare them for Kaizen events that transform business as usual to exceptional work places.

Description

Topics covered:

-  Fundamentals of Lean
-  The Seven Wastes
-  The 14 Disciplines - Video
-  Value Stream Mapping
-  5S Workplace Organization - Video
-  Visual Factory
-  Set-up Reduction
-  Cellular Manufacturing
-  Takt Time – Work Balancing
-  Kanban
-  Kaizen
-  Team Dynamics









A Lean Systems Simulation is conducted in this class where the participants will apply what they have learned and realize the value of Lean Thinking. Also included are team exercises that are challenging and engaging.

Audience

Anyone interested in learning how to apply Lean principles in their workplace.
This is required training for all Kaizen event team members.

Learning Objectives

Upon completion of this training, you will be able to:

-  Understand and identify and eliminate Waste in your organization
-  Have a more organized and synchronous flow workplace.
-  See progress in the workplace and communicate it.
-  Realize shorter set-up times.
-  Understand what Cellular Manufacturing is, when and how to employ it.
-  Keep your finger on the “heartbeat” of the production system.
-  Set-up Kanban supply systems.
-  Conduct Kaizen Events to realize quick continuous improvements through team efforts.

Biography:

Tom Humphreys

Tom Humphreys has over 30 years of experience in the quality field. He has worked in the development of advanced laser machining systems, aerospace, medical, semi-conductor, and automotive quality systems and has designed and managed quality systems compliant to MIL-SPEC, ISO, and QS standards. Tom teaches classes in Lean Manufacturing, Lean Administration and Lean Transformative Thinking, Six Sigma, SPC, FMEA, APQP, MSA, PPAP, 8-D problem solving and quality practices in various industries. Tom also consults organizations in Environmental Management Systems compliant to ISO 14001. He has developed business processes for high tech manufacturing companies, telecommunication industries, printing industries, architectural firms, mortgage companies, woodworking companies, healthcare facilities and distribution service organizations. He was the Director of Quality at Quadion Corporation and the Quality Assurance Manager at QMR Plastics, River Falls WI, an ISO/TS 16949 registered injection-molding company specializing in high performance materials and assemblies that is a major power-train supplier to the auto industry. He is an instructor at the University of St. Thomas; Center for Business Excellence and the School of Engineering, Hennepin Technical College, Century College and a staff member at Normandale Community College in the Twin Cities. Tom is a Senior Member of the American Society for Quality (ASQ) and holds these certificates: Certified Mechanical Inspector (CMI) and Certified Quality Auditor (CQA).

Workshop FIVE

AM

Test Strategy Tips to Manage Risk for Start up and New Organizations

Perry Parendo

Perry Solutions

When a new company is getting started, resources are limited. Any decision to spend money is carefully considered. Fees for IP protection, building of the “proof of concept” prototype and “turning on the lights” are expected. While each situation is unique, a test strategy (set up, collection and collection of data) is important to develop. This can include:

- a) Marketing studies (focus groups)
- b) Feasibility testing
- c) Process capability testing
- d) Reliability testing

Some of the above tests create an understanding of what is happening. Others just confirm a level of performance or existing understanding. In the former type

of testing, Design of Experiments is a very efficient method to gather and understand new areas.

How is the best test strategy determined? It is risk-based (not risk as “safety” but risk as “uncertainty”). It is balanced with other costs associated with market development, operations set up, and business infrastructure.

The objective of this presentation is to understand the technical risk impact on the business outcomes and tips to address them.

Note: The same situations exist with a larger organization, but can be less obvious due to the size and resource availability. Also – M&A situations should consider these same risks. New venture success takes much more than “the technology basically performs” and is even more important in these tighter financial times.

BIOGRAPHY:

Perry Parendo

Perry began developing and seeing results from his Design Of Experiments (DOE) techniques at the GM Research Labs in 1986. His unique insight into how DOE is best used has saved time and money while solving complex problems. Risk management is a “related area”, as test methods like DOE are simply a method to reduce risk. Industry involvement with the risk management process during early stages of development has led to teaching and consulting for organizations, to take full advantage of the test strategies available and avoid “hitting the wall.”

Parendo founded Perry's Solutions, LLC in 2006 to help organizations with critical (risky) product development activities. He has consulted in a wide range of industries such as consumer products, biomedical products and heavy equipment. He has spoken to domestic and international audiences on the use of DOE techniques. He received his Mechanical Engineering degree from the University of Minnesota.

Workshop FIVE

PM

Evaluating and Measuring Risk

By Jim McLinn CRE, Fellow ASQ

The concept of risk is important to a number of markets and industries. In order to be successful with a product, software or service, a multi-step process should be followed. Some of the steps include Assess risk, Measure risk, Control Risk and Manage Risk. A variety of steps and proactive activities are needed in order

to deliver a product service or software that operates not only failure free, but also in a safe mode. This workshop will cover the steps needed to successfully handle risk as part of the product development process and post-market release. This workshop will be an exciting and interactive event that covers all aspects of risk. Don't miss it if you want to prevent costly risk situations, make better risk decisions and be better able to convey risk to you management!

BIOGRAPHY:

James A. McLinn – CRE, Fellow ASQ

Graduated from the University of Minnesota in 1974 with a MS in Solid State Physics and worked at Control Data Corporation for 5 years working with supplier improvement. He continued his work at Cardiac Pacemakers, helping to pioneer the reliable use of large scale CMOS devices in pacemakers. Next, he worked as a quality manager in a small company that supplied micro-miniature hybrid components for the hearing aid industry. After that Jim served as an engineering manager at Litton Microwave Cooking Products working with qualifying suppliers.

Mr. McLinn works as an improvement consultant with Rel-Tech Group for 20 years. This firm is engaged in helping companies become more competitive by providing a framework for an overall improvement process. Companies he has helped include manufacturing, design and service providers. He spent four years at Teradyne ensuring the reliability of high speed digital test equipment.

James holds a CRE, CQE and CMQ/OE. He was named a Fellow of ASQ in 1994 and a distinguished Engineer in 2000 by the Minnesota Federation of Engineering Societies. Jim served as chair of the Reliability Division of ASQ in 1993-1995 and 2006-2008. He now publishes the Reliability Review for the 2400 member Reliability Division of ASQ.