Digital Quality Management
Spring Conference

RLA Learning & Conference Center
Cranberry Woods, PA

Pittsburgh Section

The Global Voice of Quality™

June 7, 2019

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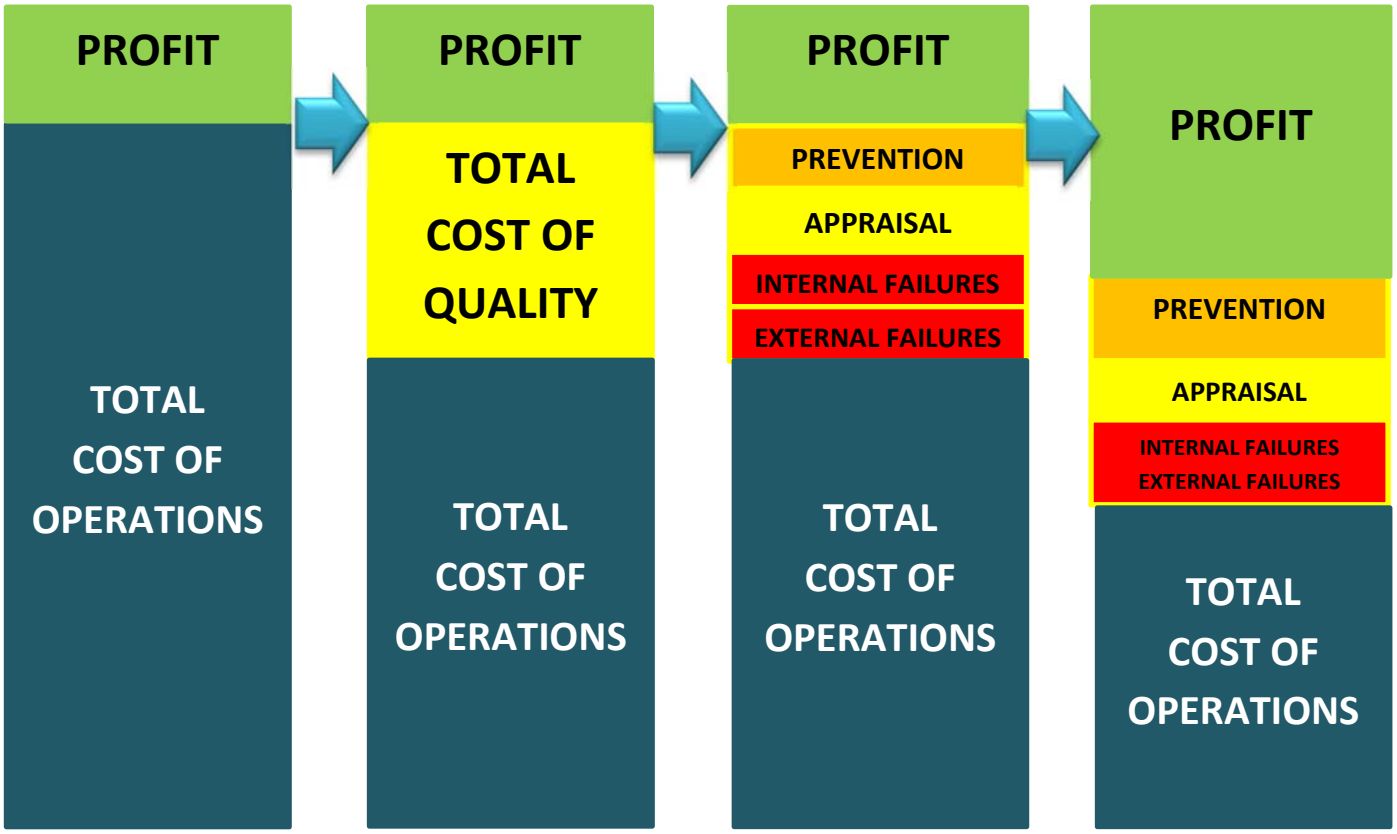
ABOUT THE CONFERENCE

The ASQ Pittsburgh Section Senior Leadership Committee would like to welcome you to the 2019 Quality Conference!

Industry leaders will share their knowledge, experiences, case studies, and practical advice on **how digital tools and systems reduce Cost of Poor Quality,** which allows for higher profit margins.

Postitive Impact of Digital Quality Management



What is INDUSTRY 4.0?

	18th century	19th century	Mid 20th century	Today
Enabling Technology	Steam power	Electricity	ICTs Electronics	Cyber physical systems, Internet of things (IoT), networks
Production Change	Mechanical production	Mass production and assembly lines	Automation and networked production	Intelligent, flexible, distributed production
Quality	**Quality 1.0:** Self-inspection	**Quality 2.0:** Inspection / control / assurance / military standards	**Quality 3.0:** Software for QMS, improvement and planning	**Quality 4.0:** Continuous quality with real-time data and IoT

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PAR 2014 Performance SILVER

Digital Quality Management
Spring Conference

	Topic	Speaker	Duration	Start	End
	REGISTRATION		35 minutes	**7:15**	**7:50**
Intro	Welcome Intro to ASQ Pittsburgh Section	Cassie Jodon	30 minutes	**8:00**	**8:30**
Speaker	Where Quality, Technology and Humans Meet	Jared Evans	60 minutes	**8:30**	**9:30**
	BREAK : Snacks & Refreshements		30 minutes	**9:30**	**10:00**
Speaker	The Use of Experimental Design (DOE) Methods to Develop Robust Products with Less Variation in Production	Kevin Gallagher	60 minutes	**10:00**	**11:00**
Speaker	Full-Spectrum Test Automation in DevOPS Implementation	Elliot Levenson	60 minutes	**11:00**	**12:00**
	LUNCH : Buffet		60 minutes	**12:00**	**1:00**
Speaker	Digitizing QA in Homebuilding: The Economic Case for Investing in Digital Technologies	Glenn Cottrell	60 minutes	**1:00**	**2:00**
Speaker	Strategic Project Management for WOW! Results	Anatoliy Belilovskiy	60 minutes	**2:00**	**3:00**
Speaker	Case Study: Effective use of Digital Tools in Product Development to Reduce CoNQ	Vaishali Hegde Raluca Coulson Jason Bologna	60 minutes	**3:00**	**4:00**
	NETWORKING		30 minutes	**4:00**	**4:30**

Morning Sessions

Pittsburgh Section

The Global Voice of Quality™

Jared Evans
Professional Instructor and Lean Process Coach
MasterControl

Where Quality, Technology and Humans Meet

Presentation Abstract:
The manufacturing industry continues to trend heavily toward automated and connected technology – including artificial intelligence (AI), data analytics and smart manufacturing – a movement called Industry 4.0, or digital transformation. While this and its quality counterpart, Quality 4.0, offer unprecedented advances in automation, data-driven intelligence and productivity, it has left the people involved in both manufacturing and quality functions feeling displaced and uncertain about their future.

Like the first, second and third industrial revolutions before it, Industry 4.0 represents major changes in the way products are manufactured, changes that can be seen as threats to the role of human personnel. However, it also signals an important opportunity to shift quality processes, systems and methods of collaboration from isolated to integrated. This shift has been difficult for quality teams to make in the past due to organizational barriers such as lack of support, minimal cross-functional ownership of quality, and fragmented core processes and systems.

Harmonizing and automating processes and systems can allow quality professionals to refocus from simply executing quality, to improving and innovating it. Like all true innovation, this is something that can only be achieved through human ingenuity.

As companies continue to implement Industry 4.0, the next industrial revolution, called Industry 5.0, is already upon us. Using the technology of Industry 4.0 as a foundation, Industry 5.0 reintroduces the human touch and human intelligence into the equation. Employees will no longer work in parallel to technology, but collaborate with it. On the cusp of this new movement, attempting to replace people with technology would be a critical misstep.

This session will examine how and why preserving the human element is critical to the manufacturing landscape of today – and tomorrow.

Biography:
Jared Evans has over two decades of experience in quality engineering, training and internal auditing in the high-volume semiconductor industry, and in retail sales and management. Evans has served as a consultant for Fortune 500 companies such as Intel, Micron, Target and Macy's. He has conducted thousands of training sessions and over 550 internal audits – many involving ISO 14000 and ISO 9001 – and safety audits. Evans also has extensive experience as an auditee in factory audits evaluating safety, performance, and equipment processes covering manufacturing metrics and benchmarking. Throughout his career, Evans has successfully facilitated innovation and change in technology-intensive environments using quality management, lean manufacturing and project management principles. Evans holds an associate degree in information systems and a bachelor's degree in technology management. He is a member of ASQ, the Society of Manufacturing Engineers (SME), the Institute of Industrial and System Engineers (IISE), and the Association for Talent Development (ATD).

Kevin Gallagher
Scientist
PPG Industries, Corporate Science & Technology

The Use of Experimental Design (DOE) Methods to Develop Robust Products with Less Variation in Production

Presentation Abstract:
During the early days of Six Sigma deployment, many companies realized that there were often limits to how much variation can be removed from an existing process. To get beyond those limits would require that products and processes be designed to be more robust and thus inherently less variable. In this presentation, the concept of product robustness will be explained. The majority of the presentation will focus on demonstrating how to use Design of Experiment (DOE) techniques to find product or process settings that would enable the product to exhibit less variation in critical-to-quality characteristics. There will be discussion on what types of experimental strategies are most suitable when seeking to develop robust products, how to build empirical models from the resulting data and how to identify the factor settings that will produce the most robust products. Monte Carlo simulations will be used to predict the capability of the product based on the optimized factor settings. JMP statistical software will be used to illustrate the design and analysis of the experiments and the evaluation of the predicted capability.

Biography:
Kevin Gallagher has been actively involved in Six Sigma training at PPG Industries for more than 20 years. Kevin is a scientist with a Ph.D. in Polymer Science from Penn State University. Since a first class in Strategy of Experimentation over 26 years ago, Kevin has had a passion for the application of statistically designed experiments (DOE).

In 1999, Kevin completed Black Belt training with Six Sigma Associates and a few years later was a member of a team that internalized Six Sigma training at PPG (known internally at PPG as Sigma Logic). PPG Industries is a world leader in paints and coatings with over $15 billion in annual sales to a wide variety of markets. At the Coatings Innovation Center in Allison Park, PA where Kevin works, there is a strong focus on the development of innovative new products. Product robustness is a key competitive advantage.

Elliott Levenson
Test Automation Architect
Duquesne Funds LLC

Full-Spectrum Test Automation in DevOPS Implementation

Presentation Abstract:
A structured, sequenced well-vetted plan which accounts for budget, schedule and training is the key to implementation of DevOPS with Full-Spectrum Test Automation. The plan must be based on accepted Software Engineering and Quality Assurance principles. Application Lifecycle Management and Test Tool selection criteria must be established with an eye towards ease of implementation, support of Continuous Integration and Continuous Delivery, cost and maintainability.

Full spectrum test automation includes:

1. Unit Testing.
2. Performance Testing (Web Test, Load Test and Monitoring)
3. Data Quality Testing.
4. UI Application Testing.
5. Web Services Testing.
6. Mobile Device Testing.

Tests may be executed on the Cloud or on a local ring to VMs, Machines and Mobile Devices. A sample of various testing tools may be demoed including Automated UI Testing with Selenium and Protractor; Unit Testing with Jasmine and Karma and Performance Testing with JMeter.

Biography:
Elliott Levenson has 23 Years of experience in Quality Assurance and Software Testing in diverse domains and in a variety of Roles ranging from Director of Web Services to Agile Product Owner for Test Automation. He is currently a Test Automation Architect. He is a member of ASQ and IEEE. Elliott has a background in DevOPS Implementation, Software Test Automation, Performance Testing, Device Testing, Agile and Quality Assurance on projects large and small. He has more than a decade of experience in the research environment.

He has formal training on Project Management and CMM. Elliott has a B.S. in Computer Science and an MSIS in the Data Analytics Concentration. Elliott served many years in the National Guard and Army Reserve with Tours of Duty in Bosnia with the 35th Infantry Division and in Iraq with the U.S. 1st Cavalry Division.

Afternoon Sessions

Pittsburgh Section

The Global Voice of Quality™

Glenn Cottrell
Managing Director
Builder Solutions IBACOS

Digitizing QA in Homebuilding: The Economic Case For Investing in Digital Technologies

Presentation Abstract:
Roughly 1 million new homes are built each year at an average selling price of nearly $400k. Yet, quality in homebuilding is not commonly defined nor is it easily quantified. That is, until you reserve **more than 5% of the sales price** of each home to pay for anticipated future failures; in effect, establishing a base cost on poor construction quality.

Unfortunately, failure costs in homebuilding are not limited to post-sale losses such as warranty claims and liability payouts. Cost of Poor Quality in homebuilding also reveals itself 'inside' a builder's operations as prolonged cycle times, increased cost variances, higher employee turnover, and reduced customer satisfaction to name a few – the financial impacts of each can be, and ought to be, measured by each builder.

What if homebuilders could reduce these overall quality dollars by leveraging technology – spend more on doing things right the first time *(Prevention)* and less on anticipated losses *(Failure)*, all while building a better home for their customers? What might that true economic opportunity be?

With current homebuilder margins hovering between 5-6%, looking for added margin by eliminating operational 'waste' makes a lot of sense. Answering questions such as "What is the bottom-line impact of a single day 'saved' on the construction site?" and "How much might increased customer satisfaction contribute to the bottom-line?" become important in determining where to focus and what to invest.

Biography:
Glenn is directly responsible for all aspects of IBACOS' work with homebuilders, which includes 10 of the Top 25 national homebuilding companies. This work consists of the development and delivery of construction Best Practices® knowledge, tools and insights. Through PERFORM®,Glenn and his team equip builders with proven construction standards and training, tools to validate performance in the field, and insight into the quality practices of builders' operations – mitigating risk and protecting margin.

Glenn helped lead the ground-up development and expansion of BuildIQ®, the building industry's first online education system for production homebuilders and has spoken at many industry conferences. In 2014, he began a journey into quantifying the true cost builders pay for quality—both investments made to ensure good quality as well as the price paid due to poor quality. His unique insight and perspective have contributed to IBACOS' development of deep, long-term relationships with many of the nation's largest production homebuilders.

Anatoliy Belilovskiy
Director
International Institute for Customer-Centered Leadership (IICCL)

Strategic Project Management for WOW! Results

Presentation Abstract:
Transformation leaders, project managers and initiative champions have achieved eye-popping, repeatable, and sustainable results others can only dream about. Their secrets include adoption of a new paradigm and tools for process improvement and innovation projects where the problems are visible but the solution is unknown. The insightful leader needs to be highly effective at:

- Selecting the critical few issues for focus, from too many choices
- Defining the process problem so well it is half-solved
- Avoiding scope creep and team dysfunction
- Incorporating the voice of the customer priorities into process work
- Using new tools, going beyond tired past practices of the last century
- Assuring the remedy is compelling, unimpeachable and executed fast

This session shows you exactly how to do that, providing a new paradigm, roadmap and tools. Success requires a transformation system as well as a systems approach to transformation. You'll get both. See how insightful leaders achieved "impossible" outcomes, excited customers, engaged employees and set new measures of success at high speed others can only dream about. If you are an executive, change agent, innovation leader or Lean Six Sigma MBB impatient for transformative results, this jargon-free session is for you. Take-aways you can immediately apply include:

- The **8 Dimensions of Excellence** framework that aligns your project with strategic, operations, and customer priorities
- New **Process Selection Criteria** that enables you to determine which process(es) to improve or innovate for high ROI and satisfaction
- An elegantly simple **Process Mapping** approach that cuts >50% of your mapping/measuring effort and reduces 80% of total process cycle time
- **A Project Charter** for successful completion of a process improvement project, reducing confusion, chaos, conflict, and scope creep

Biography:
Tony Belilovskiy joined the C3 Excellence team following a very successful career in healthcare and business. His diverse expertise includes engineering in metallurgy, ballistics, licensed clinician, healthcare administration, project management, auditor, healthcare consulting, and entrepreneurial business ownership.

Tony holds both Bachelors in Cardiopulmonary Sciences and Masters in Healthcare Management and Administration from Northeastern University in Boston, MA; Associates Degree in Metallurgy from Odessa Polytechnic Institute in Odessa, Ukraine. In addition to all of the above, Tony is also an accomplished classical pianist. He resides in Sarasota, FL with his wife of over 20 years and 3 daughters.

Philips Respironics Team

Vaishali Hegde
Head of Design Quality Engineering

Raluca Coulson
Quality Engineer

Jason Bologna
Sr Quality Business Analyst

Case Study: Effective use of Digital Tools in Product Development to Reduce CoNQ

Presentation Abstract:
The presentation focuses on the use of digital tools to reduce CoNQ of a medical device from cradle to grave. Participants will get an overview of the product development process used by Philips Respironics to design and build safe and effective CPAP medical devices used to treat sleep apnea. Tools for requirements tracking, trace matrix generation, defect management, automation in manufacturing, post market failure tracking, data analytics, and error proofing will be covered. All material covered in the presentation is applicable to non-medical industries as well.

Biography:

Vaishali Hegde is the Head of Quality and Compliance at Philips Respironics. She manages a global team of 150 engineers who are responsible for risk, reliability, standards compliance, V&V, design quality, and post market data analytics of medical and consumer products. She has 25 years of engineering and management experience in defense, aerospace, chip manufacturing, and medical industries. She has published several articles and papers and contributed a chapter to a book. She is a senior member of ASQ and is on the board of the ASQ Pittsburgh Chapter. She is also an ASQ-certified Reliability Engineer.

Raluca Coulson is a senior Manufacturing Quality Engineer at one of Philips Respironics Sleep and Respiratory Care manufacturing facilities near Pittsburgh PA. She is responsible for managing compliance to QMS processes on several Ventilation and Diagnostic product lines. She is an ASQ Certified Quality Engineer (2008), ASQ Certified Quality Auditor (2013), and a Manufacturing Engineer by education (B.S. in Manufacturing Engineering and M.S. in Engineering Management from Robert Morris University, Pittsburgh PA). She is currently serving as the SWE Pittsburgh Treasurer (since 2017).

Jason Bologna is a Senior Quality Business Analyst for Philips. He plays a lead role in generating and running Monthly/Quarterly Business Review Meetings to measure and communicate product quality and field performance. Data Trends, KPI's, Control Charts and other process metrics are used in implementing Analytics for Continuous Improvement and New Product Development. Jason led multiple projects to automate and streamline product quality data analytics to ensure real time analysis.

Recertification Receipt
Professional Development Hours Receipt

Pittsburgh Section
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American Society for Quality
600 North Plankinton Avenue
Milwaukee, WI 53203 USA

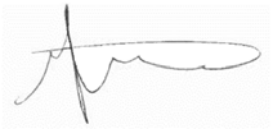
ASQ Pittsburgh Section 0802
2019 Spring Quality Conference: "Digital Quality Management"

Name: _____ **Certification Number:** _____

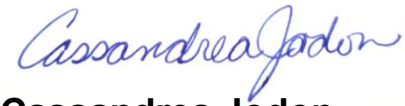
ASQ Membership No. _____ **Attendee Signature:**_____

Recertification Units: 0.8 **Attendance Hours:** 8 **Date:** June 7, 2019

Location: RLA Learning & Conference Center
850 Cranberry Woods Drive
Cranberry Township PA 16066



Greg Stuver
Section Chair
ASQ Pittsburgh Section 0802



Cassandrea Jodon
Conference Chair
ASQ Pittsburgh Section 0802