



The Inside Q

- [Certification Test Schedule](#)
- [Recertification Info](#)
- [Career Placement](#)
- [Education Offerings](#)
- [Lending Library](#)
- [ASK MIKE](#)

This newsletter is published each month. The office address is:

ASQ Section 0915
The 2425 Building Suite 402
2425 U.S. Highway 41 North
Evansville, IN 47711

Distribution of this newsletter is sent by email to all members of the local section as listed by the national office.

Newsletter Chair:
Brian Wilson
asq0915newslettereditor@gmail.com

Please contact me with information that you would like to include in the next newsletter.

The local section information is located at:

**Evansville/Owensboro
Section 0915 Web Site:**
<http://www.asq0915.com/>

ASQ National Web Site:
<http://www.asq.org>

January Newsletter

Dinner Meeting Agenda



DATE: Tuesday, January 12, 2016

TOPIC: Root Cause Mapping

PRESENTER: Rex Burdette

LOCATION: Schnitzelbank, Jasper, IN

TIMES: 5:30 pm Register & Network
6:00 pm Dinner
7:00 pm Presentation

COST: **\$20 per member**

RSVP: Please make reservations **by noon Friday, January 8th** by sending an email to Tom Watson at tom.watson@kimballelectronics.com.

Dinner accommodations cannot be guaranteed for reservations received after the 12-noon deadline date.

Please note:

If you make a reservation and do NOT show up, the section has to pay for your dinner!

Mission:

Promote Quality and provide value to our membership and local businesses by continual improvement of information and services, meeting content, and training/education.

In The Q- 2016

Website Updates!

Check out our Section 0915 website <http://www.asq0915.com/> for information about our section and upcoming section events, training and more.

We welcome our new members and hope to see you at a dinner meeting soon.

**David W. Brandon
David Elder
Ian Morrison**

Future Board Meetings

Location: The 2425 Building Board Room, 2425 U.S. Highway 41 North, Evansville, IN 47711
6 pm on the following dates: January 7, February 4, and March 3.

CERTIFICATION TEST SCHEDULE

Test Date: 3/5/2016 Application Date: 01/15/16
Biomedical Auditor, HACCP Auditor, Manager of Quality, Quality Inspector, Quality Technician,
Reliability Engineer, Six Sigma Blackbelt, Six Sigma Yellow Belt

Test Date: 6/4/2016 Application Date: 04/15/2016
Calibration Technician, Pharmaceutical GMP Professional, Quality Auditor, Quality Engineer,
Quality Improvement Associate, Quality Process Analyst, Six Sigma Greenbelt, Software Quality Engineer

The dates above are for the local certification exams. Late applications have an extra \$50.00 charge.
Exams are held at Ivy Tech Community College, Evansville, IN Room 259.

If you miss a test due to weather, notify the Examiner or National so that you can reschedule without losing the test fee.

For more information see <http://www.asq.org/certification/>

Please Note:

We have recently lost several board members. If you are a Senior or Fellow and would like to assist as the examining Chair, please contact David McGan. Here is the Examining Chair Section Position Description

EXAMINING CHAIR

General Description

Advises section members on the qualifications of advancement in membership grade and takes recommendations to the Society's Examining Committee Chair for advancement in to the membership grade of Fellow.

Term

One year. January 1 to December 31.

Specific Duties and Responsibilities

- Work with Section Leadership Committee (SLC) to set goals/metrics to support the section's management process as they relate to membership advancement and retention.
- Encourage section members with proper qualifications to advance in membership grade. Coordinate section communication of advancement qualifications to members. Possibly identify and contact potential Senior members and advise them of the qualifications and process to advance to this grade of membership in accordance with Society policy and procedures.
- Identify and contact potential candidates for advancement to the grade of ASQ Fellow. For those interested in advancement, sponsor the section member as a Fellow nominee and work with them to develop the nomination packet in accordance with Society policy and procedures.
- Submit all Fellow nominations and supporting documentation to the ASQ Society Examining Committee by July 1 of each calendar year. The Society Examining Committee will make final recommendations for approval to the Board of Directors to be voted on during the November meetings.
- Attend SLC and general membership committee meetings.
- Uphold Society Bylaws, Policies and Procedures, and Section Operating Agreement.

Qualifications

Recommended: ASQ Senior or Fellow member in good standing with strong organizational and communication skills.

Time Commitment

Approximately 10 hours per year depending on the size of the Section and the number of members requesting to upgrade their membership status.

SECTION 0915 PLACEMENT SERVICE

Job Seekers - if you would like to be placed on a confidential email distribution list to be notified of job opportunities made known to the ASQ Section 0915 Placement Chair, please contact Placement Chair:

David McGan, McGan Business Solutions,
53 Dorsey St., Corydon, KY 42406
dmcgan@mcgangroup.com
270-823-2831

For national job postings, see:
<http://www.asq.org/career/index.html>

Job Providers - if you have a job opening that you would like distributed to those on the ASQ Section 0915 Placement Distribution list, send a detailed description of the job, including location, and **appropriate contact information**, to:

dmcgan@mcgangroup.com
270-823-2831

Those interested in learning more about your opportunity may then contact you directly.

RE-CERTIFICATION:

Re-certifications may be sent to:

Michael Gross
2943 Meadowland Dr.,
Owensboro, KY 42303
Smoky1001@yahoo.com
FAX: 270 730 6730

Please submit at least three weeks prior to the recertification/test dates above.

If a recertification application was due on 7/31/2014, there is a six-month grace period. Send the information to Michael Gross **ASAP** in order to retain the certification without re-testing.

Please send the information to Michael Gross ASAP to allow him time to review it and send the information to National.

Any questions can be directed to the e-mail above.

MJM Associates
Michael J. Mazu, Principal Consultant

MJM Associates are consultants in process management. Michael J. Mazu has over forty six years experience with two Fortune 100 companies (BF Goodrich and Alcoa) in applying design of experiments, statistical process control, problem solving, six sigma and lean techniques, acceptance sampling concepts, gage and process capability, measurement assurance, process management, total quality management, quality improvement techniques and quality engineering in an industrial environment. His experience has involved over 150 manufacturing plants in the United States, Canada, Mexico, Brazil, Great Britain, France, Germany, Russia, Hungary, Australia and China.

The objectives of MJM Associates are:

- To provide concentrated consulting and training to help organizations manage their processes.
- To understand the needs of the client and custom design a consulting and training program to achieve their needs.

For more information, contact Michael Mazu at:
812-853-9443 (H) or 812-459-9303 (M)
pmazu@roadrunner.com
<http://sites.google.com/site/mjmassociatesinc/home>



Evansville-Owensboro ASQ Section 915 2015 FALL (Aug.-Dec.) Workshops and Classes



Shown below is the education offerings with a brief description for the Fall 2015 (August-December) session. These details can be viewed at <http://www.psci.net/asq915/education.htm> . Please take the time to review this opportunity and if possible attend one of these training opportunities. Please pass this information onto others in your organization that you think may have an interest in these courses. If you don't see a course or topic that you have an interest in, please contact me and I will see what I can do for you.

Michael J. Mazu, Education Chair at pmazu@roadrunner.com or **812-459-9303**.

Introduction To Process Management Starts TBA	16	\$200	<p>The course will begin by discussing the concepts of process management, responsibilities of management, and a general deployment model. The course will concentrate on the significant phases of deployment. The first phase is to identify the customer and business requirements, the key performance indicators, the goals and objectives of the organization and the key processes.</p> <p>The second phase we measure the current performance of the process. In the third phase we analyze the current performance of the process to determine current control and capability of the process. In the fourth phase we develop and deploy process control in order to manage the process on an on-going basis.</p> <p>In the fifth phase we focus on improving the performance of the process. In the sixth phase is where the organization institutionalizes the process control activities to sustain the process in control and capable.</p> <p>A case study will be presented throughout the course to illustrate the various concepts and activities of process management. This course should be considered basic to immediate. A training manual with over 170 pages is included.</p>
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Individual Self Paced Courses:

Course	Cost	Date and Time
Certified Quality Technician Review (all Modules)	\$75	At your convenience and all materials will be provided after paying the course fee.
Course Description	See the course description for the instructor led CQT course. Self paced courses provide the same materials but have no specific start and end dates – you do the work at a time convenient to you.	

Course	Cost	Date and Time
Certified Quality Engineer Review (all Modules)	\$150	At your convenience and all materials will be provided after paying the course fee.
Course	See the course description for the instructor led CQE course. Self paced courses provide the	

Description	same materials but have no specific start and end dates – you do the work at a time convenient to you.
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Course	Cost	Date and Time
Statistics Review For ASQ Certification Exams	\$100	At your convenience and all materials will be provided after paying the course fee.

Course Description	See the course description for the instructor led Statistics Review For ASQ Certification Exams course. Self paced courses provide the same materials but have no specific start and end dates – you do the work at a time convenient to you.
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Course	Cost	Date and Time
Practical Problem Solving	\$50	At your convenience and all materials will be provided after paying the course fee.

Course Description	See the course description for the instructor led Practical problem Solving course. Self paced courses provide the same materials but have no specific start and end dates – you do the work at a time convenient to you.
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Course	Cost	Date and Time
Statistical Process Control	\$75	At your convenience and all materials will be provided after paying the course fee.

Course Description	See the course description for the instructor led SPC course. Self-paced courses provide the same materials but have no specific start and end dates – you do the work at a time convenient to you.
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Course	Cost	Date and Time
Introduction To Process Management NEW	\$75	At your convenience and all materials will be provided after paying the course fee.

Course Description	See the course description for the instructor led Introduction To Process Management course. Self-paced courses provide the same materials but have no specific start and end dates – you do the work at a time convenient to you.
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Note:

- (1) These courses are also available for on-site training (days or evenings). Our instructors will come to your company to train a group of 5 or more. We will customize the course to meet your needs and it will save you travel time. The courses will be provided at the above costs plus travel expenses for the instructor. Please contact M. J. Mazu for more details.
- (2) **The minimum number of individuals per Instructor Led course is 5.**
- (3) For the courses that have modules, you may sign up for all modules or you may sign up for 1 or more modules.

Questions about the upcoming courses or on-site training, please contact M. J. Mazu at pmazu@roadrunner.com or 812-459-9303.

Registration

Please check the course(s) for which you are registering (Course descriptions can be viewed at <http://www.psci.net/asq915/education.htm>).

For the courses that have modules, you may sign up for **all modules** or you may sign up for **1 or more modules**.

Please check the Individual Self Paced course(s) for which you are registering.

<input type="checkbox"/>	Certified Quality Technician (CQT) Review (all Modules), \$75 (with all materials)
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<input type="checkbox"/>	Certified Quality Engineer Review (CQE) (all Modules), \$150 (with all materials)
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<input type="checkbox"/>	Statistics Review For ASQ Certification Exams Review (all Modules), \$100 (with all materials)
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<input type="checkbox"/>	Practical Problem Solving (all Modules), \$50 (with all materials)
<input type="checkbox"/>	Statistical Process Control (SPC), \$75 (with all materials)
<input type="checkbox"/>	Introduction To Process Management, \$75 (with all materials)

Name: _____ ASQ Member # (if a member): _____
 Company: _____ Home Phone: _____
 Mailing Address: _____ Business Phone: _____
 City/State/Zip: _____ Email: _____
 Do you have any special requirements of which we should be aware? _____

Make Checks Payable to Evansville-Owensboro ASQ Section 915
 Send the completed registration form and payment to M. J. Mazu, 5311 Woodridge Dr, Newburgh, IN 47630

- Course Cancellation Policy:
1. Substitutions can be made at any time.
 2. Cancellations can be made up to the published registration deadline with no penalty. Registrants who fail to attend will be liable for the entire course fee.
 3. The Evansville-Owensboro section reserves the right to cancel any course prior to the start of the course for any reason with full refund.
 4. The minimum number is five (5) registrants for an advertised course. **The cutoff date for registration is one (1) week prior to the course start date.** Registrants will be notified prior to the first class if the minimum attendee requirement has not been reached.

All courses will meet at (unless noted differently): 2425 Building (Room 500 Conference Room) Corner of Hwy 41N and Diamond Ave Evansville, IN	All Courses available to ASQ members and non-members Questions about the courses please contact M. J. Mazu at pmazu@roadrunner.com or 812-459-9303
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ASK MIKE

The purpose of this column is to help local ASQ members better understand the Society, the local section, the philosophy of total quality management and the tools of quality by allowing section members to send or give questions to Mike. You can contact Mike by calling (812)-459-9303 or writing to 5311 Woodridge Dr., Newburgh, IN 47630 or Email to pmazu@roadrunner.com.

Q. I am relatively new to the quality field and spend most of my spare time reading text books and articles especially on the topic of statistical process control, I see an increasing number of authors discussing statistical intervals. Some use the term confidence interval and others use tolerance interval. What are statistical intervals and what is the difference between confidence intervals and tolerance intervals?

Statistical intervals are staples of the quality practitioner's statistical tool box. Statistical intervals can manifest as plus-or-minus limits on test data, represent a margin of error in a scientific poll, or indicate the level of confidence associated with a predicted value. The two most common statistical intervals are: the confidence interval, and the tolerance interval.

Confidence intervals are the best known and most often used of the statistical intervals. Confidence intervals are used to express the uncertainty associated with a population parameter such as the population mean, μ , or the population standard deviation, σ . Usually when a number of samples are collected to represent a population, the data are averaged to yield an estimate of the true population mean. However, because the number of observations used to calculate the sample average is usually much smaller than the population itself; the sample average can only be considered an estimate of the true population mean. The uncertainty of knowing the loca-

tion of the true population mean can be expressed numerically by calculating a confidence interval about the sample mean. Confidence intervals for population means are relatively straight forward to calculate. A two-sided confidence interval for a population mean is defined as:

$$\bar{x} \pm t_{1-\alpha/2, n-1} \frac{s}{\sqrt{n}}$$

where \bar{x} is the sample average, s is the sample standard deviation, n is the sample size, $1-\alpha$ is the desired confidence level, and $t_{1-\alpha/2, n-1}$ is the 100(1- α /2) percentile of the t distribution with $n-1$ degrees of freedom.

Just as important as knowing how to calculate a confidence interval is correctly interpreting the interval once it has been calculated. Confidence intervals are commonly interpreted to mean that there is an 100(1- α)% probability that the true population mean is located within the interval. **This interpretation** however, is not quite correct. The correct interpretation is that in independent sample sets, 100(1- α)% of the calculated intervals will cover the true parameter value.

A **tolerance interval** is a statistical interval within which, with some confidence level, a specified proportion of a sampled population falls. "More specifically, a tolerance interval provides limits within which at least a certain proportion of the population falls with a given level of confidence. The tolerance interval is closely related to measures of process capability.

In traditional statistical process control, a significant number of data points are required in order to get a reasonably accurate estimate of process capability. This is because capability is usually calculated to cover a fixed multiple of sample standard deviations (usually ± 3 representing 99.73% of the data population). But this percentage only holds true for larger sample sizes; that is, greater than 50. As the sample size decreases, there is greater uncertainty in knowing the true location of the mean and the true magnitude of the population variance; therefore, the estimate of the range of values encompassing a given percentage of the population must necessarily increase to compensate. Therefore, In order to maintain a reasonably accurate estimate of the capability of a process for smaller sample sizes, we need to adjust the number of multiple sample standard deviations used to define the region covering the desired proportion of the population distribution with a given confidence. A tolerance interval can be used for this purpose.

Two-sided tolerance intervals are calculated as:

$$\bar{x} \pm k_2 s$$

Where \bar{x} is the sample mean; s is the sample standard deviation; and k_2 is a factor for a two-sided tolerance interval defining the number of sample standard deviations required to cover the desired proportion of the population. Exact values of k_2 are tabularized in any good SPC book. The k_2 values were calculated iteratively using a numerical integration process which can be very complex for some. However, a reasonable approximation of k_2 can be obtained by using this formula:

$$k_2 = z_{(1-p)/2} \sqrt{\frac{(n-1)(1+\frac{1}{n})}{X_{\gamma, n-1}^2} \left(1 + \frac{(n-3) - X_{\gamma, n-1}^2}{2(n+1)^2}\right)}$$

Where: n is the sample size; $Z_{1-p/2}$ is the standard normal variate corresponding to one minus the proportion of the population to be covered divided by two and $X_{\gamma, n-1}^2$ is the critical value of the chi-square distribution with $n-1$ degrees of freedom with probability γ , the statistical confidence.

A tolerance interval is a range that is likely to contain a specified proportion (p) of the population with a specified confidence (γ). To generate tolerance intervals, you must specify both the proportion of the population and a confidence level. The confidence level is the likelihood that the interval actually covers the proportion.

Let's say that we established a tolerance limit with $p = 0.05$ and $\gamma = 0.025$ then we can make a statement for a particular sample size (n) that with 97.5% confidence that at least 99.73% of the proportion of the population falls between the interval $\bar{x} - k_2s$ and $\bar{x} + k_2s$.

Therefore, you can see that there is a difference between confidence intervals and tolerance intervals. A tolerance interval is an interval that is meant to contain a specified percentage of the individual population measurements with some degree of confidence. By contrast, a confidence interval for the population mean is an interval that is meant to contain one thing - the population mean and the confidence level associated with the confidence interval expresses how sure we are that this interval contains the population mean.

Advertise in the News On Quality

- ✓ Support Section 0915
- ✓ Reach hundreds of Quality Professionals each month

Size	Approx. Size	Cost per Year	Cost per Issue
Full Page	7.5" x 10"	\$320	\$45
Half Page	7.5" x 5"	\$210	\$35
Quarter Page	3.5" x 5"	\$110	\$25
Eighth Page	3.5" x 2.5"	\$60	\$15

The ad will also appear on Section 0915 web page

NOT GETTING THE EMAIL MEETING NOTICES?

Have you moved, changed jobs, or changed your email address? Help us keep you informed of Section events and information by updating your contact information at www.asq.org. Log in and click on Change Address to update your membership record

TO CHANGE YOUR ASQ EMAIL ADDRESS:

Sign on to <http://www.asq.org>

At the top of the page, click Log-In

Type in your membership number and ID. If you don't have an account setup, fill in your membership number in both the account number and password fields.

Click on My Account and then Email Preferences. Make sure the third line

ASQ Section Communication

has the first radio button lit up. If not, select the first button.



ASQ
 Evansville-Owensboro Section 0915
 The 2425 Building
 2425 U.S. Highway 41 North - Suite 402
 Evansville, IN 47711



Position	Name	Organization	Phone	Email
Executive Committee 2016				
Section Chair	David McGan	MBS-McGan Business Solutions	(270) 823-2831	dmcgan@mcgangroup.com
Vice Chair	vacant			
Secretary	Brian Wilson	First Call Quality	(812) 618-5234	asq0915newslettereditor@gmail.com
Treasurer	Willy Zech			
Committee Chairs 2016				
Arrangements	Tom Watson	Kimball Electronics	(812) 630-5321	tom.watson@kimballelectronics.com
Auditing	Vicki Snodgrass	Alcoa		Vickie.Snodgrass@alcoa.com
Certification	vacant			
Education	vacant			
Examining	vacant			
Historian	Jim Bakke	Allstate Tower, Inc.	(270)748-1425	Jimbakke1@gmail.com
Nominating Chair	Brian Wilson	First Call Quality	(812) 618-5234	bwilson@fcqs.com
Internet Liaison	Roger Stanley	Kimball Electronics	(812)309-3830	roger.stanley@kimballelectronics.com
Membership	Jim Bakke	Allstate Tower, Inc.	(270) 748-1425	jimbakke1@gmail.com
Newsletter	Brian Wilson	First Call Quality	(812) 618-5234	asq0915newslettereditor@gmail.com
Placement	David McGan	MBS-McGan Business Solutions	(270) 823-2831	dmcgan@mcgangroup.com
Publicity	Don Hoke	Hansen Corporation	(812) 385-1414	dhoke@hansen-motor.com
Recertification	Mike Gross	DSSA	(270) 274 2600	Smoky1001@yahoo.com
Scholarship	David McGan	MBS-McGan Business Solutions	(270) 823-2831	dmcgan@mcgangroup.com
Region 9 Representatives				
Director	Bud Newton	Alcoa	(812)-708-0077.	Bud.Newton@alcoa.com
Deputy Director	Michael Beyer	Siemens PLM Software	(513) 576-7665	michaelbeyer@siemens.com
Deputy Director	Michael Merry	AGC	(270) 792-3124	michaelemerry@att.net
Deputy Director	Mollie Brown		(812) 523-5547	molliemc2001@hotmail.com
Deputy Director	Dick McKeever		(513) 984-0047	d2quality@earthlink.net
Deputy Director	Kelly Roggenkamp	Humana	(502) 931-2797	Kelly.roggenkamp@gmail.com