Granite State Newsletter – February 2025

MESSAGE FROM THE CHAIR

This is the start of a new program year and an expectation of a great year for the section.

We plan to have six Membership Meetings this year. They have traditionally been held in Manchester, but this year we may try a meeting in Nashua or Portsmouth.

We are also planning to hold two educational events. Each will be an in-person one day event.

In addition, we will continue with our partnership with the Merrimack Valley section, the Worcester section, and the Vermont Section. We will announce their meetings and plan some joint events. Because Granite State and Merrimack Valley typically hold in-person events and Vermont and Worcester typically hold on-line events, Granite State members have a variety of options for learning and to receive Recertification Units, RUs.

We have moved our Membership Meetings to Tuesdays to avoid a conflict with Merrimack Valley's Wednesday meetings. The Worcester Section has also changed their meeting day to avoid conflicting with our meetings.

For Granite State we anticipate a member survey to help the Section Leadership Team, SLT, find topics and speakers. The results will augment the data we collected at the 2024 Membership Meetings.

For 2025, there is a new SLT Member, Bharat Arora, who is the Nominating Chair.

There are many opportunities to get involved. We need people to join the SLT, to speak at Membership Meetings, and to write Professional Development articles for this newsletter.

To become involved for 2025 please contact Dan O'Leary, the Section Chair, at doleary@memberleader.asq.org

Dan O'Leary CMDA, CQA, CQE, CRE, CSSBB

GRANITE STATE MEMBER MEETINGS

Tuesday March 18, 2025
Bharat Arora – A Quality Perspective on Drug Product and Medical Device Development
Puritan Restaurant – Back Room – Manchester, N.H.

Developing a drug product or device or a combination product presents similar opportunities and challenges yet different perspectives. Join me in this interactive session to:

- Understand the product lifecycle of drug product, medical device, and combination product development
- Understand Regulatory expectations and Quality Management Systems integration
- Barriers to seamless integration between drug product and device development teams for early and late stage development
- Synergies for collaboration and how Quality professionals can play pivotal role

Tuesday April 15, 2025
Dan O'Leary – Predictive Supplier Evaluation
Puritan Restaurant – Back Room – Manchester, N.H.

Tuesday May 20, 2025
Laura Halleck – Aerospace APQP and PPAP
Puritan Restaurant – Back Room – Manchester, N.H.

Tuesday September 23, 2025
Save the date

Tuesday October 21, 2025
Joint Meeting with NH chapter of the Society of Manufacturing Engineers
Puritan Restaurant – Back Room – Manchester, N.H.

Tuesday November 18, 2025
Save the date

GRANITE STATE EDUCATIONAL EVENTS

Tuesday May 20, 2025
Structured Problem Solving by Laura Halleck
Puritan Restaurant – Back Room – Manchester, N.H.
Details to come

Tuesday October 21, 2025
Save the date

NEARBY SECTION EVENTS

Merrimack Valley Section
Wednesday February 19, 2025 at 6:30 pm EST on-line
Topic: AI in Manufacturing: Continuous Workforce Transformation in Quality

Online: https://us06web.zoom.us/meeting/register/XwRHEm8RRualr1mVFdiHNw

By: Barry Price is an AI Success Advisor committed to helping organizations achieve transformative results through generative AI, efficiency, and innovation.

This session will showcase how generative AI and a values-driven approach can empower employees—from operators to quality engineers—to achieve faster, more accurate quality outcomes. By integrating well-known quality frameworks (*e.g.,* ISO 9001, Lean, Six Sigma) with generative AI tools, organizations can accelerate defect detection, predictive maintenance, and supply chain optimization. Emphasis will be placed on workforce skill development, ethical considerations, and change management, ensuring a smooth AI adoption that aligns with a culture of continuous improvement. Attendees will learn about an AI Performance Acceleration System and clear steps to initiate or scale AI projects for immediate impact on quality and operational excellence.

Vermont Section
Friday February 28, 2025 12 Noon - 1:30 pm (Eastern)
Topic: Using RCA Tools & Methods Effectively

To Register: Click on the link below
https://asq.webex.com/weblink/register/rc327bf28f776a803b2a60b7f29a25dc7

By: Tim King is the founding partner of the consulting and training firm, Quality Matters LLC, based in Williston, VT. Tim has a master's degree in Training Development, and a master's degree in Mechanical Engineering.

Description: Root cause analysis (RCA) is not always as easy as it seems. RCA is a key part of all problem-solving methods (7-Step; PDCA; DMAIC; A3s; Kepner Tregoe).

All sectors face issues that require proper CAPA. Customers expect RCAs to be well conducted, documented and verified to be assured of sustained prevention. The FDA is emphasizing the need for growers and manufacturers in the food sector to conduct proper RCA investigations and demonstrate the proper use of an RCA tool.

In this program, Tim King will cover these important reminders and refreshers regarding the RCA process:
- Terminology (such as: containment action vs. corrective action; and root cause vs. contributing factor)
- What the "PA" part is in CAPA
- Tips for four widely used RCA tools: 5-Why; Cause-Effect Ishikawa (aka fishbone); Process Flow Analysis, and Cause Mapping (aka Cause Logic Tree)
- Proper verification of corrective actions

- Resource guides and templates (will be shared with attendees)

September 15-17, 2025
Vermont Quality Conference
Details to come

Worcester Section
Feb 20, 2025 Meeting at 12 PM EST Via zoom:
Topic: Cyber security and Risk Management in the age of AI? Why Does it Matter?
By Virat Dhebar, Cybersecurity expert, auditor & trainer
Free Meeting & Certificate with 0.5 RUs
Zoom Link: https://us02web.zoom.us/j/7034877252
Meeting ID: 7034877252

March 20, 2025 Meeting at 12 PM EST Via Zoom:
Topic: The journey to ASQ Fellow, become a professional leader
By David Levy, ASQ Chair Elect
Free Meeting & Certificate with 0.5 RUs
Zoom Link: https://us02web.zoom.us/my/qpsinc
Meeting Id: 7906904984

April 17, 2025 Meeting at 12 PM EST Via zoom:
Topic: Advanced Problem solving to make breakthrough
By Carlos Da Silva, Director
Free Meeting & Certificate with 0.5 RUs
Zoom Link: https://us02web.zoom.us/my/qpsinc
Meeting ID: 7906904984

May 15, 2025 Meeting at 5:30 PM-8 PM
Topic: Panel discussion: Case Studies- Creativity & Innovation
By Raj Kasbekar, VP – Quality & Regulatory
Onsite Meeting at Marlborough, MA

June 19, 2025 Meeting at 5:30-8 PM
Topic: AI Management System & Your role as Quality Professional
By Jay Patel, CEO, Consultant & Trainer
Onsite Meeting at Marlborough, MA, 0.5 RUs

2025 SPRING CERTIFICATION COURSES
Every week, 8 weeks from 6:00 PM to 8:30 PM via zoom
Training Course & start dates:
CQT on Tuesday, April 22
CQA on Wednesday, April 23
CQE on Thursday, April 24

CSSGB on Thursday, April 22
By: Certified and experienced ASQ Worcester instructors
Registration is required, send an e-mail to Rob Conner for details: robconnor46@hotmail.com
$350 cost (Student is to purchase classroom books/materials/exam fee)

ASQ CERTIFICATION EXAM SCHEDULE

Certification: CQT, CQI, CRE, CFSQA, CMDA, CMQ/OE, CSSBB, CSSYB, CSQP
Application Deadline: April 14, 2025   Testing Window: May 1 - 31, 2025

Certification: CQA, CQE, CQIA, CSQE, CSSGB, CQPA, CCT, CPGP, CCQM
Application Deadline: March 10, 2025   Testing Window: April 1 – 30, 2025

Download the *ASQE Candidate Handbook and Application Process* from
https://p.widencdn.net/j5hi1o/Certification-Candidate-Handbook

THE FEBRUARY 2025 SLT MEETING

Granite State members are welcome to participate in SLT meetings and to join the SLT. Contact Dan O'Leary
doleary@memberleader.asq.org.
The Granite State SLT met on Feb 11, 2025.
- The section's account balance is $17,261.90
- We have the speakers lined up for the spring membership meetings
- We have plans for the spring all day workshop on Structured Problem Solving
- The membership held steady at 199 members

THE 2025 SLT

Bharat Arora: Nominating
Chris Carr: Newsletter, Membership
Charlie Killam: Treasurer
Sarah Matloff: Secretary
Dan O'Leary: Chair, Arrangements, Education, Program

CALL FOR SLT MEMBERS

Granite State has an **immediate** need for a person to manage the fall program. This involves finding speakers for the fall membership meetings, setting up the educational event, arranging for the venue, and setting up the registration. If you are interested in this interesting SLT role, please contact the Chair by e-mail at doleary@memberleader.asq.org. Volunteers can earn recertification units, RUs, for this role.

SECTION METRICS

The Section metrics help measure success against the plans for the 2025 program year. The results are in a Red/Yellow/Green format scorecard.

Membership Change – The number of members for 2024 and 2025. Calculate the slope of the linear regression line. The target is a slope greater than zero and the improvement direction is up.

Account Balance – The balance in the Granite State account. Calculate the slope of the linear regression line. The target is a slope greater than zero and the improvement direction is up.

Meetings Held – The ratio of the number of membership meetings held YTD to the number planned YTD (at least four) expressed as a percentage. The target is 100% and the improvement direction is up.

Educational Events – The ratio of the number of educational events held YTD to the number planned YTD (at least one) expressed as a percentage. The target is 100% and the improvement direction is up.

Newsletters Published – The ratio of the number of newsletters published YTD to the number planned YTD (at least four) expressed as a percentage. The target is 100% and the improvement direction is up.

Member Surveys Conducted – The ratio of the number of member surveys conducted YTD to the number planned YTD (at least one) expressed as a percentage. The target is 100% and the improvement direction is up.

The scorecard cells are white until the first scheduled activity.

Metric	Target	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Membership Change	Regression Slope ≥ 0	0.04	0.05										
Account Balance	Regression Slope ≥ 0	-3.30	-1.31										
Meetings Held	Percentage ≥ 100%												
Educational Events Held	Percentage ≥ 100%												
Newsletters Published	Percentage ≥ 100%												
Member Surveys Conducted	Percentage ≥ 100%												

Granite State Membership
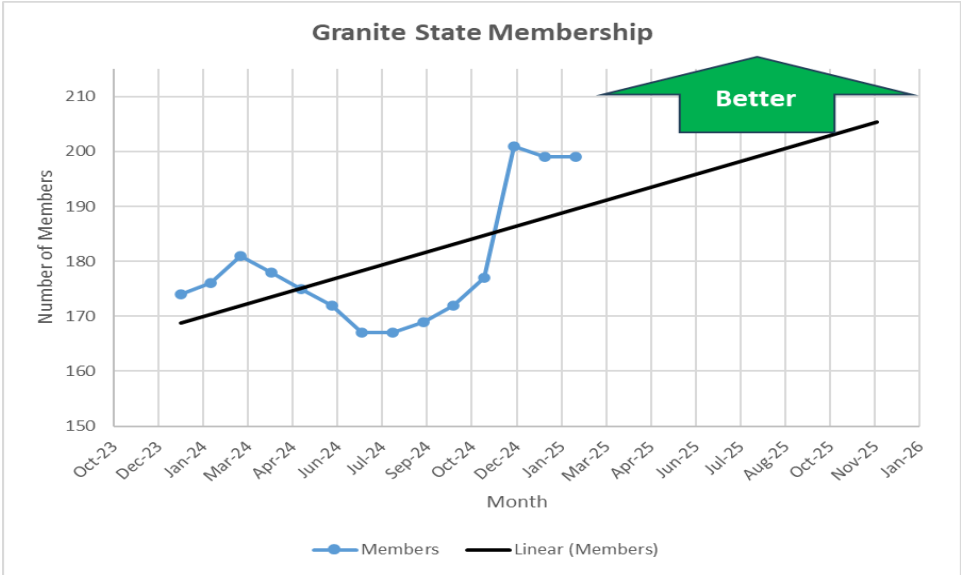
SECTION DEMOGRAPHICS

For February 2025, the section has 199 members with a wide geographical distribution and varied member types. For a map of member locations see the Granite State web site https://www.asq104.org/membership

State	Count	Percent
NH	171	85.9%
MA	18	9.0%
VT	3	1.5%
ME	2	1.0%
WI	2	1.0%
AZ	1	0.5%
FL	1	0.5%
VA	1	0.5%
CT	0	0.0%
Total	199	100.0%

Member Type	Count	Percent
Professional Membership	154	77%
Senior Membership	33	17%
Retired Senior Membership	10	5%
Student Membership	1	1%
Retired Professional Membership	1	1%
Total	199	100%

CALL FOR SPEAKERS

The section needs speakers who can make a presentation at an upcoming membership meeting. The presentations are about one hour following dinner. The topic should provide information about skills or knowledge useful in a quality professional's work. Contact doleary@memberleader.asq.org.

CALL FOR AUTHORS

Granite State members are invited to write a Professional Development article for our newsletter. Submit your draft article to doleary@memberleader.asq.org.

In addition to recognition by other section members, writing an article can refine your skills and may support your ASQ certification. Become a recognized subject matter expert and showcase your knowledge.

CALL FOR COURSES

The section would like to hold at least one educational event in 2025. The events are one day in-person activities. If you have expertise or skills that can provide knowledge or professional development to our members please contact doleary@memberleader.asq.org.

PROFESSIONAL DEVELOPMENT
Descriptive Statistics – Central Tendency and Dispersion
Dan O'Leary CMDA, CQA, CQE, CRE, CSSBB

CQE BoK:
VI. Quantitative Methods and Tools
    A. Collecting and Summarizing Data
        6. Descriptive statistics
        Describe, calculate, and interpret measures of central tendency and dispersion …

CSSBB BoK:
V. Measure
    D. Basic Statistics
        3. Descriptive statistics
        Calculate and interpret measures of dispersion and central tendency.

The measures of central tendency and dispersion are especially important in descriptive statistics. This article provides the mathematical formulas for the measures and illustrates them using a data set and the Excel functions. For the data set you have taken a sample and measured the following values associated with a process and need to provide the descriptive statistics for a report. {56, 78, 45, 49, 55, 62, 49, 51, 53, 48, 52}.

Central Tendency
The most common measures of central tendency are the mean, the median, and the mode. Measures of central tendency look for the "middle" of the data.

Arithmetic Mean
The mean comes in a variety of types. The most common, also called the average, is the arithmetic mean. This is the most common method which sums the numbers and divides by the number of numbers.

$$\bar{x} = \frac{1}{n} \sum_{i=1}^{n} x_i$$

The Excel worksheet function is AVERAGE which uses the list of values. In our example, rounded to one decimal place, the result is 54.4.

Geometric Mean
The geometric mean of positive numbers uses the product of their values unlike the arithmetic mean which uses their sum. The geometric mean is the nth root of the product.

Use the geometric mean for data involving multiplicative relationships such as percentage changes, growth rates, or investment returns over multiple periods.

$$\left(\prod_{i=1}^{n} x_i\right)^{\frac{1}{n}} = \sqrt[n]{x_1 x_2 \dots x_n}$$

The Excel worksheet function is GEOMEAN which uses the list of values. In our example, rounded to one decimal place, the result is 53.8.

Harmonic Mean
The harmonic mean is the reciprocal of the arithmetic mean of the reciprocals of the numbers.

Use the harmonic mean to calculate the average of rates or ratios.

$$\frac{n}{\sum_{i=1}^{n} \frac{1}{x_i}} = \frac{n}{\frac{1}{x_1} + \frac{1}{x_2} + \dots + \frac{1}{x_n}}$$

The Excel worksheet function is HARMEAN which uses the list of values. In our example, rounded to one decimal place, the result is 53.3.

Trimmed Mean
The trimmed mean, sometimes called the truncated mean, calculates the mean after removing parts of the sample typically discarding an equal amount of both ends of the data set.

In Excel, the number of points to be discarded is given as a percentage of the total number of points. For example, 20% means to remove the top 10% and the bottom 20% of the values.

The Excel worksheet function is TRIMMEAN which uses the list of value and the percentage of the data to remove. In our example removing 10% of the data, the result, rounded to one decimal place, is 54.6.

Median
The median of a data set is the value that separates the upper half from the lower half. Unlike the arithmetic mean, the median is not influenced by extreme values.

Use the median to avoid the influence of extreme values such as a skewed distribution.

After sorting the data set, when it has an odd number of values the median is the middle value and for an even number of values it is the arithmetic mean of the two middle values.

The Excel worksheet function is MEDIAN which uses the list of values. In our example, which has 11 values, the result is 52.

Mode
The mode is the value that appears most often in a data set. If each value appears equally often, then there is no mode. If two (or more) values occur equally often the data set is bimodal (multimodal).

The Excel worksheet function is MODE.SNGL which uses the list of values and returns one mode. Excel also has the MODE.MULT worksheet function. It is an array function and returns an array of the modes.

In our example, using MODE.SNGL the result is 49. Examination shows it has two occurrences.

Dispersion
Dispersion measures provide information about the spread of the data. When reporting the measures of a data set good practice includes both a measure of central tendency and of dispersion. There are pairs of measures that commonly go together.

<u>Variance</u>
The variance is a measure of how far the members of the data set deviate from the arithmetic mean.

There are two measures of variance, one for a population, with the symbol σ^2, and one for a sample with the symbol s^2.

$$s^2 = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2$$

The Excel worksheet function for a population is VAR.P and for a sample is VAR.S both of which use the list of values.

In our example, using VAR.S because we have sample data, the result, rounded to one decimal place is 82.5.

<u>Standard Deviation</u>
Variance is the correct measure for some statistical calculations but the unit of measure is not the same as the values in the data set. For example, if the values are inches, the variance is square inches.

The standard deviation is the square root of the variance and returns the unit of measure that is the same as the data set. There is a population standard deviation, with the symbol σ, and a sample standard deviation with the symbol s.

The best practice is to report the arithmetic mean and standard deviation together; they are both in the same unit of measure.

$$s = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2}$$

The Excel worksheet function for a population is STDEV.P and for a sample is STDEV.S both of which use the list of values.

In our example, using STDEV.S because we have sample data, the result, rounded to one decimal place, is 9.1.

Interquartile Range, IQR

The interquartile range (IQR) is the difference between the 75th and 25th percentiles of the data set. To calculate the IQR, divide the data set into quartiles denoted as Q1 (the lower quartile or 25th percentile), Q2 (the median or 50th percentile), and Q3 (the upper quartile or 75th percentile).

$$IQR = Q3 - Q1$$

Use the IQR and the median together when the data set is skewed.

Unfortunately, Excel doesn't have a worksheet function for IQR, so calculate Q3 and Q1 and do the subtraction.

There are two different ways to calculate quartiles. Some use "greater than" (termed exclusive) while others use "greater than or equal to" (termed inclusive). Excel has a variant for each case, QUARTILE.EXC and QUARTILE.INC respectively. For our example we use QUARTILE.INC.

The function needs the data set and a code to tell which quartile to calculate: 0 returns the minimum value, 1 returns Q1, 2 returns Q2 (the median), 3 returns Q3, and 4 returns Q4 (the maximum value).

In our example, using QUARTILE.INC and rounding to one decimal place, Q3 is 55.5, Q1 is 49.0, and the IQR is 6.5.

QUALITY QUESTION

This area of the newsletter responds to quality questions from Granite State members. The question could be about best practices, implementing a method, using a statistical technique, *etc*. Submit your quality question to Dan O'Leary, doleary@memberleader.asq.org.

Question: We are having a discussion in my company about when to audit suppliers. Some people want to audit suppliers every year, others want to audit only a few every year, and others don't want to routinely do supplier audits. What is the best practice?

Response: Neither ISO 9001:2015 nor ISO 13485:2016 require supplier audits, so the approach is what fits your company the best.

Generally, you may ask your supplier to implement a specific Quality Management System, QMS, although this is not a requirement of either standard. If you do require a QMS, this raises the question of how you assure the QMS is implemented and effective.

Some companies use a supplier classification system to distinguish the most significant suppliers. There may be two or three levels. Then the company puts in a supplier audit program. Perhaps the highest tiers receive an annual audit, the next tier receives an audit every two years, *etc*.

While this approach is common, it is not a best practice. Quality audits fall into three categories:

First party audits are when a supplier audits itself
Second party audits are when a customer audits a supplier
Third party audits are when an organization independent of the customer and supplier conducts the audit

The question is the balance between second party and third party audits.

The best practice is, when specifying a QMS, to also require a third party audit by an accredited organization. The accreditation typically depends on the supplier's geographic region or the markets served.

The third party will conduct an audit and issue a certificate and a report. Then it will conduct annual surveillance audits, issue audit reports, and as part of the cycle, update the certificate.

Your supplier requirement is to receive a copy of the current certificate, each update, and, importantly, a copy of the annual report.

The supplier has spent a lot of money to maintain its third party certification. The primary purpose is to provide objective evidence of a conforming QMS for its customers. If the customer conducts additional second party audits that defeats the purpose. Moreover, the customer has to spend resources to conduct a non-value added audit; non-value because the supplier has contracted for third party audits for this purpose.

The only audits a customer should conduct is a process audit focused on the process that produces the customer's process. These should be conducted only when a supplier doesn't provide an adequate response to a Supplier Corrective Action Request, SCAR. These should be rare and only used as part of a significant problem investigation.

In summary, don't waste resources conducting second party audits and duplicating the third party audits the supplier contracted to have performed.