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### ASM Wabash Valley meeting schedule

#### Nov. 8, 2007, Thursday Wabash meeting

5:00 PM ASQ 0919 Executive Board meeting  
 6:00 PM Jac Padgett host for tour of Environmental Certification Laboratories, 11422 North U.S. Highway 41, Farmersburg, IN 47850-0569. The lab is located on the East side of US 41, and on the South side of Farmersburg, IN. EC Labs offers extensive capabilities for inorganic, organic and general chemistry analysis, as well as specialty analytical services. <http://www.eclabs.org>

7:15 PM Dinner at Oasis Restaurant & Lounge, 11514 North U.S. Highway 41, Farmersburg, IN 47850, which is located just North of the EC Labs. Meal cost is \$15 each and only \$6 each for students.

Reservations required by Monday, November 5, contact Roy Boissy arrangements (at) [asqwabashvalley.org](mailto:asqwabashvalley.org) or (812) 237-8329.

Joint ASM, ASQ, and SME meeting. Everyone welcome.

### Upcoming Dates

- Nov. 8 Wabash meeting
- Dec. 6 Wabash meeting
- Jan. 10 Wabash meeting
- Feb. 13 Wabash meeting
- Mar. 13 Wabash meeting
- Apr. 10 Wabash meeting
- May 8 Wabash meeting
- June TBD Wabash picnic and election of Officers

#### Dec. 6, 2007, Thursday Wabash meeting.

7:00 PM The Indiana State University Music Department and the Sycamore Singers will present the 60th Annual Yuletide Madrigal Feast at St. Stephen's Episcopal Church, 215 N. 7th Street in Terre Haute.

Reservations required by Thursday, November 29. Contact Roy Boissy arrangements (at) [asqwabashvalley.org](mailto:asqwabashvalley.org) or (812) 237-8329.

#### Jan. 10, 2008, Thursday Wabash meeting.

6:00 PM Tour of the Magnetic Resonance Imaging (MRI) facility at Union Hospital, hosted by Dr. Uwe Hansen. If the MRI facility is not available, Uwe Hansen will discuss Structural Vibration.  
 7:00 PM Dinner at Gerhard's Bierstube Restaurant, 1724 Lafayette Avenue, Terre Haute, IN. Meal cost is \$15 each and only \$6 each for students.

Reservations required by Monday, January 7, contact Roy Boissy arrangements (at) [asqwabashvalley.org](mailto:asqwabashvalley.org) or (812) 237-8329.

**Feb. 13, 2008, Wednesday** Wabash meeting. Note meeting day is Wednesday for this meeting.

5:00 PM ASQ 0919 Executive Board meeting  
6:00 PM Social  
6:30 PM Dinner  
7:15 PM Dr. Gordon Minty talk on Creative Problem Solving.  
Meal cost is \$15 each and only \$6 each for students.

Reservations required by Monday, February 11, contact Roy Boissy arrangements (at) [asqwabashvalley.org](http://asqwabashvalley.org) or (812) 237-8329.

**Mar. 13, 2008, Thursday** Wabash meeting.

5:00 PM CST Illinois time, ASQ Executive Board meeting  
6:00 PM CST Illinois time, Social  
6:30 PM CST Illinois time, Dinner  
7:15 PM CST Illinois time, Speaker Dick McKeever, ASQ Region 9 Director will give a talk, and bring an update from ASQ.

Joint meeting of ASQ 0919 and ASQ 2000. Location is Richard's Farm Restaurant, in Illinois, I-70 Exit 129, then South on Hwy 49. Go 1 mile, then turn left (East) on US 40. Go about 1/2 mile, then turn left at the first road, and continue to the barn. <http://www.richardsfarm.com> Meal cost is \$15 each and only \$6 each for students.

Reservations required by Monday, March 10, contact Roy Boissy arrangements (at) [asqwabashvalley.org](http://asqwabashvalley.org) or (812) 237-8329.

**Apr. 10, 2008, Thursday** Wabash meeting. Times TBA. Student Night at John Myers' Technology Building at Indiana State University. A tour of the Computer Integrated Manufacturing (CIM) lab hosted by Joe Ashby will follow a pizza dinner.

Reservations required by Monday, April 7, contact Roy Boissy arrangements (at) [asqwabashvalley.org](http://asqwabashvalley.org) or (812) 237-8329.

**May 8, 2008, Thursday** Wabash meeting. Tentative topic is Challenge X at Rose-Hulman Institute of Technology. Meal cost is \$15 each and only \$6 each for students.

Reservations required by Monday, May 5, contact Roy Boissy arrangements (at) [asqwabashvalley.org](http://asqwabashvalley.org) or (812) 237-8329.

**June TBD, 2008**, Picnic. Election of Officers and Executive Board members.

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### Notes from last month' meeting

17 people attended the October joint meeting of ASM Wabash Valley, ASQ Wabash Valley, and SME Wabash Valley. Colonel Scott S. Haraburda, PhD, PE, started his talk with an overview of the 464th Chemical Brigade, over which he is commander. Included in this command is the Newport Chemical Depot, which was briefly discussed. Dr. Haraburda then presented the main topic Baldrige Award Overview.

The Malcolm Baldrige National Quality Award was created by The Malcolm Baldrige National Quality Improvement Act of 1987, Public Law 100-107. The program is administered by NIST with cooperation of public sector organizations such as the American Society for Quality (ASQ). The Baldrige Criteria was summarized, including the seven categories of the Business/Nonprofit Criteria.

Examples from actual National Quality Award recipients were presented. Several questions asked by those in attendance, were answered. Dinner was at Logan's Ribeye Restaurant.

Photos from the meeting are on page 5.

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### Question of the Month

Who invented the internet, and when was it invented?

If you think you know the answer, send an e-mail to [asmwabash \(at\) yahoo.com](mailto:asmwabash@yahoo.com) The first person with the correct answer will have their name listed in next month's newsletter. The answer will be given in the November newsletter.

### Answer for October's question

Who said "There is no substitute for knowledge." This is a quote from Dr. W. Edwards Deming. See [http://en.wikiquote.org/wiki/W.\\_Edwards\\_Deming](http://en.wikiquote.org/wiki/W._Edwards_Deming)

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### ASM Wabash Valley Officers and Executive Committee 2007 to 2008

Dan Pulliam, Chair  
Patrick Ferro, Vice Chair  
Wesley Richardson, Secretary  
Jack Fenoglio, Treasurer  
Kevin Collenbaugh, Executive Board  
Uwe Hansen, Executive Board  
Boice McCain, Executive Board  
Jerry Reynolds, Executive Board  
Bill Wortman, Executive Board

You may send an e-mail to any of the above individuals by sending to [asmwabash \(at\) yahoo.com](mailto:asmwabash@yahoo.com) and including the name of the person you wish to contact. Place ASM Wabash Valley in the Subject line. Your e-mail will be forwarded to the indicated person.

Dr. Lawrence C. Wagner, ASM President  
Stanley Theobald, ASM Managing Director  
Candace Cunningham, Chapter Relations Manager  
Randall Barnes, ASM Society Activities Manager  
J.J. Letcavits, Chapter Council Chair  
Greg Petrus, Vice-Chair and Chapter Council Representative, District XI

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### Internet Information and Web Sites

ASM Wabash Valley

<http://chapters.sme.org/c275/asm.htm>

ASM International

<http://asmcommunity.asminternational.org/portal/site/asm/>

Note that ASM International has changed their home page to the above new web site. If you open the old web site, it should redirect you to the new site.

ASQ Wabash Valley, Section 0919

<http://www.asqwabashvalley.org/>

ASQ International

<http://www.asq.org>

SME Wabash Valley, Chapter 275

<http://chapters.sme.org/c275/>

SME Indiana State University, Chapter S089

<http://chapters.sme.org/s089/>

SME International

<http://www.sme.org>

If you have a web site that you would like to share, please send an e-mail to the editor.

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**The ASM Wabash Valley Newsletter** is a publication of ASM Wabash Valley, located in Terre Haute, Indiana. Articles, comments or other feedback may be sent to:

Newsletter Editor [asmwabash \(at\) yahoo.com](mailto:asmwabash@yahoo.com)  
[replace (at) with @ and remove spaces].

Deadline for submitting information for the December newsletter is November 23, 2007.

## **Deming, Drucker, and Juran by Frank Bensley**

Dr. W. Edwards Deming, in his writing, seminars, and training sessions, stated that top management does not know what business they are in.

As I was getting rid of some of the books in my library I found an overlooked book by Peter Drucker, so I scanned through some of it. I was surprised to find that Peter Drucker in his book "Management Tasks Responsibilities Practices" basically says the same. He puts three questions to the manager before making strategic plans. They are: "What is the business," "What will it be," and "What should it be." The Thought is that most managers do not know the answer to the first question let alone the answer to the other two.

On one of Deming's tapes from the 1970's, he tells that the reason that railroads had trouble making enough money is that the top managers did not know that their business was moving goods and people from one place to another. They thought that their business was to run trains. They ran trains and most ran into bankruptcy.

Drucker explains that every organization has only three kinds of work for managers. The first is operations, the work of managing what is already in existence and known. To build on it, exploit its potential, and take care of its problems. The second is top management tasks which are multidimensional, recurrent, and difficult. They include setting objectives, standards, and policy; and providing human resources, capital, and organizational structure. The third is innovative work. Many would call this research and development, however, that fails to explain what innovation really is. Only after a new product or a new business is in place and working is there an innovation.

Dr. Joseph Juran has made essentially the same statements. And, we thought that we had it all figured out when we were in mid-management aspiring to make the move to the top.

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## **Cooked Well Done by Frank Bensley**

Several years ago we went out to a restaurant that was trying to become known as one of the best in East Central Illinois. One of our sons was with us. He ordered a steak well done. When it came, it was some somewhere between raw and rare. He asked the waitress to return the steak to the cooks and have it cooked to well done. She told him that if she did that the cook would throw a fit and when it came back he would not want to eat it. She told him that she had a skillet and a hot plate. She would finish cooking his steak. When she returned the steak it was well done. She got a good tip and we never returned to that restaurant.

Soon after our experience, the restaurant was closed. I don't know where the waitress ended up, but I hope she is running her own four star restaurant somewhere. She knew that customer satisfaction was the requirement for a successful restaurant business.

It pays to know what business you are in, and what you should do in that business. If the cook is preparing food as taught at the Culinary Institute of America, yet not pleasing the customers, he is not in the restaurant business.

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## **Magic Numbers Explanation by Frank Bensley**

In the October newsletter there was a way to guess a person's birthday. The following is an explanation of how it works.

1. Let the birthday be represented by MD, where M is the number of the month and D is the day of the month.
  2. Multiply the month by 5 = 5 M
  3. Add 6 to the result = 5 M + 6
  4. Multiply the sum by 4 = 20 M + 24
  5. Add 9 = 20 M + 33
  6. Multiply by 5 = 100 M + 165
  6. Add the day of the month = 100 M + D + 165
  7. Subtract 165 = 100 M + D
  8. The last two digits are the day
  9. The remaining number is the month.
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**October meeting attendees**



**Colonel Scott S. Haraburda presented Baldrige Award Overview**

## **NIST/SEMATECH e-Handbook of Statistical Methods**

The NIST/SEMATECH e-Handbook of Statistical Methods is found on the internet at: <http://www.itl.nist.gov/div898/handbook/>

The NIST/SEMATECH Engineering Statistics Handbook (ESH) is a great reference source for many statistical methods, and it is free. The e-Handbook can be downloaded in Adobe Acrobat PDF format, or used on the internet where the hyperlinks are active. Information contained in the ESH is in the public domain. The Search Handbook allows a person to quickly locate material on a topic of interest.

The ESH e-Handbook is divided into the following Chapters:

1. Explore
2. Measure
3. Characterize
4. Model
5. Improve
6. Monitor
7. Compare
8. Reliability

The detailed Chapter listing is:

1. Exploratory Data Analysis
2. Measurement Process Characterization
3. Production Process Characterization
4. Process Modeling
5. Process Improvement
6. Process or Product Monitoring and Control
7. Product and Process Comparisons
8. Assessing Product Reliability

Exploratory Data Analysis (EDA) is an approach/philosophy for data analysis that employs a variety of techniques (mostly graphical) to:

1. maximize insight into a data set;
2. uncover underlying structure;
3. extract important variables;
4. detect outliers and anomalies;
5. test underlying assumptions;
6. develop parsimonious models; and
7. determine optimal factor settings.

The EDA approach is precisely that--an approach--not a set of techniques, but an attitude/philosophy about how a data analysis should be carried out.

Most EDA techniques are graphical in nature with a few quantitative techniques. The reason for the heavy reliance on graphics is that by its very nature the main role of EDA is to open-mindedly explore, and graphics gives the analysts unparalleled power to do so, enticing the data to reveal its structural secrets, and being always ready to gain some new, often unsuspected, insight into the data. In combination with the natural pattern-recognition capabilities that we all possess, graphics provides, of course, unparalleled power to carry this out.

The particular graphical techniques employed in EDA are often quite simple, consisting of various techniques of:

- Plotting the raw data (such as data traces, histograms, bihistograms, probability plots, lag plots, block plots, and Youden plots.
- Plotting simple statistics such as mean plots, standard deviation plots, box plots, and main effects plots of the raw data.
- Positioning such plots so as to maximize our natural pattern-recognition abilities, such as using multiple plots per page.

For classical data analysis, the sequence is:

Problem => Data => Model => Analysis => Conclusions

For EDA, the sequence is:

Problem => Data => Analysis => Model => Conclusions

For Bayesian, the sequence is:

Problem => Data => Model => Prior Distribution => Analysis => Conclusions

EDA techniques are generally graphical. They include scatter plots, character plots, box plots, histograms, bihistograms, probability plots, residual plots, and mean plots.

Many EDA techniques make little or no assumptions – they present and show the data – all of the data – as is, with fewer encumbering assumptions.

An EDA/Graphics example is provided for an X–Y data set, which shows how data can be analyzed.

It is convenient to classify EDA problems into the following types: Univariate, such as a single column of numbers, which are analyzed using probability plots. Control, such as single column of numbers, which are analyzed using control charts.

Comparative, where there is a single response variable and multiple independent variables. These are analyzed using a block plot, scatter plot, or box plot. Screening, where there is a single response variable and multiple independent variables. These are analyzed using a block plot, probability plot, or bihistogram. Optimization, where there is a single response variable and multiple independent variables. These are analyzed using a block plot, least squares fitting, or contour plot. Regression, where there is a single response variable and multiple independent variables. These are analyzed using a least squares fitting, scatter plot, or a 6-plot.

Time series, where there is a series of time dependent numbers. These are analyzed using an autocorrelation plot, spectrum, complex demodulation amplitude plot, complex demodulation phase plot, or ARIMA models.

Multivariate, where there are k factor variables, and the task is to identify the underlying correlation structure in the data. Analysis methods include a star plot, scatter plot matrix, conditioning plot, profile plot, principal components clustering, and discrimination / classification.

The ESH provides a gallery of some useful graphical techniques including the following:

- Autocorrelation plot
- Bihistogram
- Block plot
- Bootstrap plot
- Box-Cox linearity plot
- Box-Cox normality plot
- Box plot
- Complex demodulation amplitude plot
- Complex demodulation phase plot
- Contour plot
- DEX scatter plot
- DEX mean plot
- DEX standard deviation plot
- Histogram
- Lag plot
- Linear correlation plot
- Linear intercept plot
- Linear slope plot
- Linear residual standard deviation plot
- Mean plot
- Normal probability plot
- Probability plot
- Probability plot correlation coefficient plot
- Quantile-quantile plot
- Run sequence plot
- Scatter plot
- Spectrum
- Standard deviation plot
- Star plot
- Weibull plot
- Youden plot
- 4-Plot
- 6-Plot

If you have an interest or need for information on statistical methods, you are encouraged to visit the NIST web site:

<http://www.itl.nist.gov/div898/handbook/>

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