

# Keynote Presentation

## Malice in Numberland™



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# Keynote Description

Numbers can have a powerful effect in gaining support for a certain position. In this eye-opening presentation, Dr. Lon Roberts presents compelling evidence that the use of "creative statistics" is on the rise. Laced with examples—some humorous, some outrageous—his insights on how, why, and where this is happening will help you guard against being unwittingly manipulated by quantitative data and statistical razzle-dazzle. The intent is to sharpen skills at being cautious and curious without becoming critical and cynical.

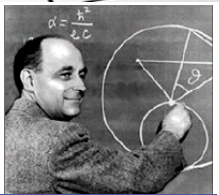
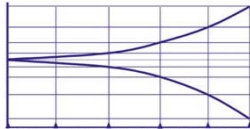
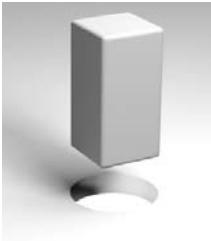
This engaging presentation is intended for individual contributors, managers, and executives ... anyone who works in an environment where "information overload" is a growing concern on the one hand and the ability to solve problems and make decisions requires rapid identification of facts versus irrelevant information on the other.

## ***Learn ...***

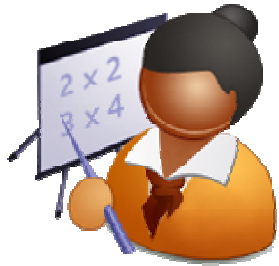
- How we are taken advantage of by those who are adept at lying with statistics
- The ways data are manipulated and misrepresented
- How to recognize and avoid misuses and abuses of data
- Simple techniques for distinguishing good information from bad information
- How to enhance your analytical thinking skills

## ***7 things we all could do a better job at ...***

1. Describing project data in user-friendly frames and formats
2. Ensuring their project data answer the Big-3 Questions
3. Using a blend of qualitative and quantitative analysis tools
4. Ensuring risk models are credible but not oversold
5. Improving the data-to-ink ratio of their project data charts
6. Providing requirements-definition guidance to clients
7. Performing OoM estimates and BotEC “sanity” checks



# Short List of Crimes & Misdemeanors



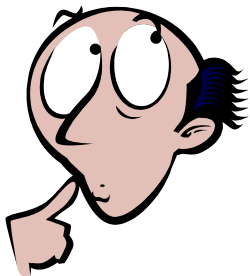
## Numbers and Statistics

- Index abuse
- Flaw of averages
- Relative percentages
- Faux precision



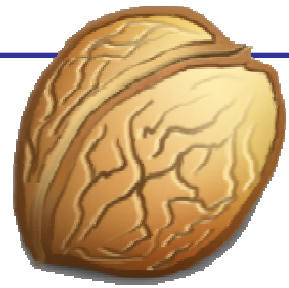
## Statistical Charts

- Scale manipulation
- Optical illusions



## Logical Errors

- The awe factor
- Logical leaps
- Misappropriation of manufacturing math
- Better-than-nothing error
- Lord Kelvin's fallacy
- Type III errors



# Logical Errors in a Nutshell

## The Awe Factor

Tendency to accept the validity of numbers at face value

## Logical Leaps

Overextending the use of statistics to justify an action or decision

## Misappropriation of Manufacturing Math

Applying the math that describes the variability of machines to humans and human supported processes – i.e., variance error

## Better-Than-Nothing Error

Claims asserting a greater than 100% improvement

## Lord Kelvin's Fallacy

Belief that data must be quantifiable to be of any value

## Type III Errors

Solving the wrong problem precisely; also mistaking means for ends

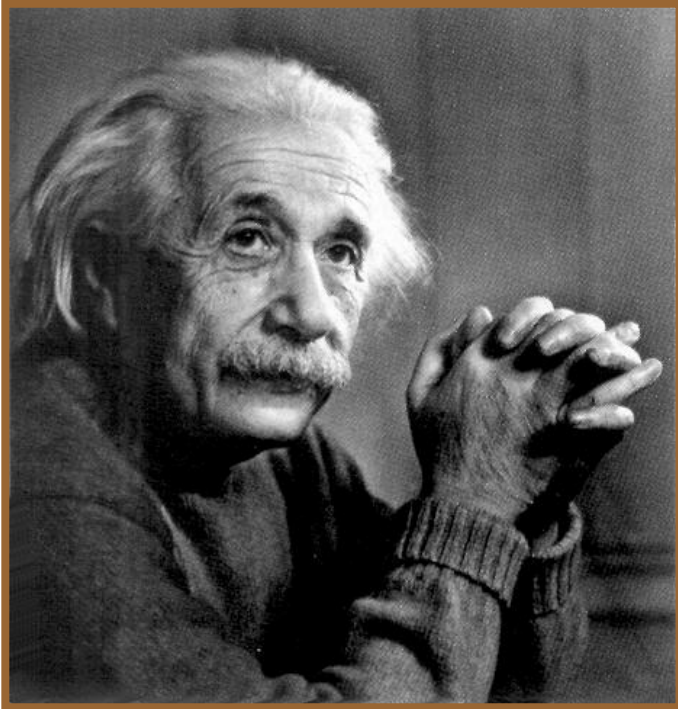
# Avoiding Type III Errors ... The Big 3 Questions

1. What question is this statistic or statistical chart trying to answer?
2. Does it answer the question?
3. And most important of all ...

?

## - Examples -

- A design specification expressed as a quantitative value
- Corrective action based on project performance data
- A vendor's fact-sheet filled with statistics and graphs
- (fill in the blank)\_\_\_\_\_



“As far as the laws of mathematics refer to reality, they are not certain, as far as they are certain, they do not refer to reality.”

— Albert Einstein

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- Leading Accelerated Projects™
- Project Management in the Twitter Era™
- The Art of Anticipation™
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