Baselines in uses or desired

- Defect density (/ KSLOC function points, etc.)
- Productivity
- Requirements related to functionality
- Review: Time, documents size, # people, prep time, review time
- Time to market (missed others from David)
- Process steps (timing)

Modeling (defects /SLOC) as an example

- Complexity (Continuous)
- Defect types (Discrete)
- Defect severity (D)
- Language (D)
- Priority (at a specific point of time) … (D)
- Defect origin … & when detected/repaired (phases) (D, D or C (date for aging)))
- Defect type (D)
- Application domain (D)
- Test environment(s) (D)
- Programmer experience (D)
- Development processes (D)

Jim speaks re: correlation/association/segmentation & startification

Need for Baselines - Testing for improvement

Characterizing @ time 0

Moments of the distribution (VARIATION)

Segmenting / sampling

Plots (& other graphical representations) over time … e.g., SPC charts, Box plots

Measurement system evaluation

Consistency of human judgments over time & among reviewers, e.g., reliability/repeatability

Exploring relationships

$y = f(x1, x2, …)$

- Understanding covariation: What x variables affect y? You can train, improve processes, characterize monetarily.
- Choosing candidates for piloting: outcome impact, affordability, feasibility…

Jim shows the four-fold decision aide: re choosing appropriate descriptive bi- (& multi-) variate stats.

Note that one may want to categorize interval data: Often because of poorly (e.g., non normal) distributions.

Jim tells the Agri ANOVA story, plus multivariate, e.g., regressions

SPC: limits of variation ... a variant on hypothesis testing...

Confidence *versus* prediction intervals

How would you do it? E.g.:

Determine the effect of CMMI on their performance: E.g., ROI, DoE, modeling & simulation...

Use the stat models for prediction!

Use hypothesis tests to statistically show significant improvement.

All participants want more...