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Consistency Improvement Task Force (CITF)

The March toward Improving Accreditation Consistency

Alfredo Sotomayor, CITF Chair

Assessment Forum – Washington, DC

August 10, 2010

What Is the CITF?

- ***A concerted effort to improve the consistency of TNI assessments and evaluations***
- Created by the TNI Board of Directors October 2009.
- Promotes systems and develops recommendations to improve consistency of assessments and evaluations.
- Chartered for a year, with option for renewal

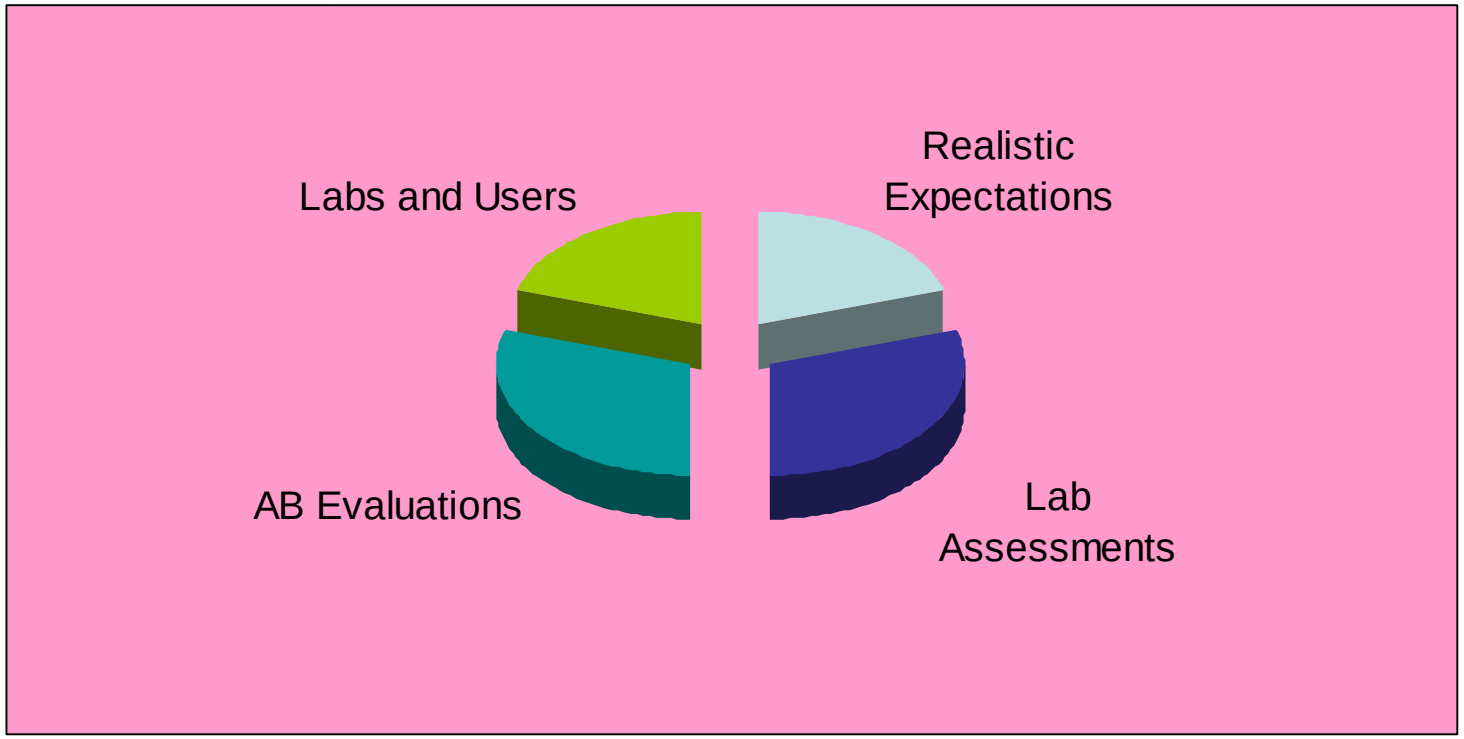
Who's in It?

Member	Affiliation
Alfredo Sotomayor, Chair	Wisconsin DNR
Jerry Parr, Ex Officio	TNI
Carol Batterton, Staff	TNI
James Broderick	New York City DEP
Jack Farrell	Analytical Excellence, Inc.
Kathryn Gumpper	ChemVal Consulting
Ed Hartzog	DoD EDQW
Kevin Kubik	USEPA Region 2
Tom McAninch	Laboratory Consulting Services
Verl Preston	TestAmerica, Inc.
Stephen Stubbs	Texas Commission Env. Quality
Robert Wyeth	Pace Analytical Services

FOUR:
Goals; Subgroups; Works in Progress

- Expectations about consistency (realistic)
  - Mr. Sotomayor
  - White Paper
- On-site assessments (laboratories)
  - Dr. McAninch
  - Blueprint for laboratory assessments
- Evaluations (accreditation bodies)
  - Ms. Gumpper
  - Consistency Plans
- Laboratories and users of laboratory services
  - Ms. Preston
  - Laboratory Bill of Rights

Consistency Pie – Four Slices



The White Paper

- Discuss consistency exploring realistic expectations
  - Attributes of consistent systems
  - How to determine the consistency of operations of laboratories and ABs
  - Opportunities for improving consistency of operations

The Whiter Shade of Pale Paper

- Acknowledge current perceptions.
- “Normalize” consistency discussions in the environmental sector.
- Consider how operations of TNI and the environmental sector affect consistency.
- Introduce ideas or tools with potential for long term solutions.

The White Rabbit Paper

- Big picture – conceptual
- Challenge to make us think differently
- Discuss fiscal implications of consistency
- Explore metrics of consistency
- Introduce “risk” to manage consistency efforts

What is Consistency?

- *We don't know what it is, but we know it when we see it*.
- We know it:
  - Involves harmony, uniformity, agreement.
  - Is connected to reproducibility and reliability.
  - Results in coherence.
  - Is lacking in contradiction.

What Might Consistency Be?

- Additionally, explore how these can be tied to consistency:
  - Fairness
  - “Leveling the playing field”
  - Economic efficiency

What Consistency Is Not

- For TNI, it is not:
  - One size fits all

    Not creating widgets
  - Treating all in identical fashion
  - Rigid
  - Purposeless

    Consistency for consistency's sake is fine, but ultimately what justifies consistency is a measurable improvement in quality.

Task I: Make a Consistent Chicken Marsala

- Start with a good recipe
- Get the right ingredients
- Have the right equipment
- Know the fundamentals of cooking
- Practice
- Cook
- Taste and correct for flavor

This is Your Chicken Marsala

Task II: Make a Consistent Chicken Marsala at "Trattoria Teenei"

- Need all the previous ingredients and competencies….
  - However all in bigger scale: rewrite the recipe, ensure all ingredients are fresh, hire trained cooks….
- Now need to consider:
  - Health and hygiene
  - Timing for the orders
  - How much to charge

And What If?

- A customer has allergies to mushrooms?
- Guests want to take leftovers home?
- The dish is offered when you cater?
- Different portions are served for dinner and lunch?
- You are sick of making the same dish?

Is your Chicken Marsala still Marsala?

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This is the Trattoria's Chicken Marsala

Are They Still Marsala…

- If they are made from different recipes?
- If one omits mushrooms?
- If someone says, this is not Marsala?

  Mmmmmm…
- Can we all agree on the essence of Chicken Marsala?
  - Some elements are essential, others are preferences
- Even if we agree they are both Marsala, could we all agree they are consistent?

What's the Point?

- Consistency is contextual
  - Efforts to maintain it are commensurate with the complexity of operations
  - Requires different actions in different settings
  - Evaluating it should focus on different measures tailored to circumstances
- Consistency requires a common understanding of fundamentals

Perspective

- Some activities demand a high degree of consistency:
  - Manufacturing “O” rings for the space shuttle
  - Making sterile catheters
  - Creating highway signage
  - Being an Elvis impersonator

On the Other Hand

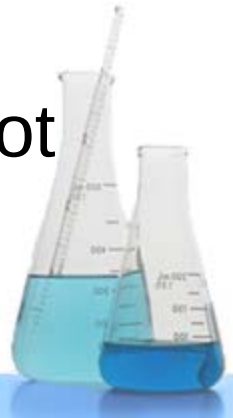
- Some activities tolerate inconsistency well, that is,
- A certain degree of inconsistency is tolerable in many situations:
  - Cooking
  - The speed limit
  - The theater
  - Behavior of relatives and loved ones

In Our Case…

- High Consistency
  - TCLP
  - Ethics
  - Use of SDWA methods
  - ATP criteria
- Tolerable Variation
  - Format of Quality Manuals
  - Topics for assessment opening conference
  - AB's filing system for laboratory records
  - Cleanups for an organic extract
  - Treating customers

At Times….

- Insisting on excessive consistency can lead to:
  - Rote thinking
  - Missing the forest for the trees
  - Stifling creativity
  - Lack of reform
  - Believing everything is right when it is not
  - Believing everything is wrong when it is not



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So…How Do We Decide When to Be Rigid?

…or Flexible…Somewhat?

Now…

Introducing

R

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S

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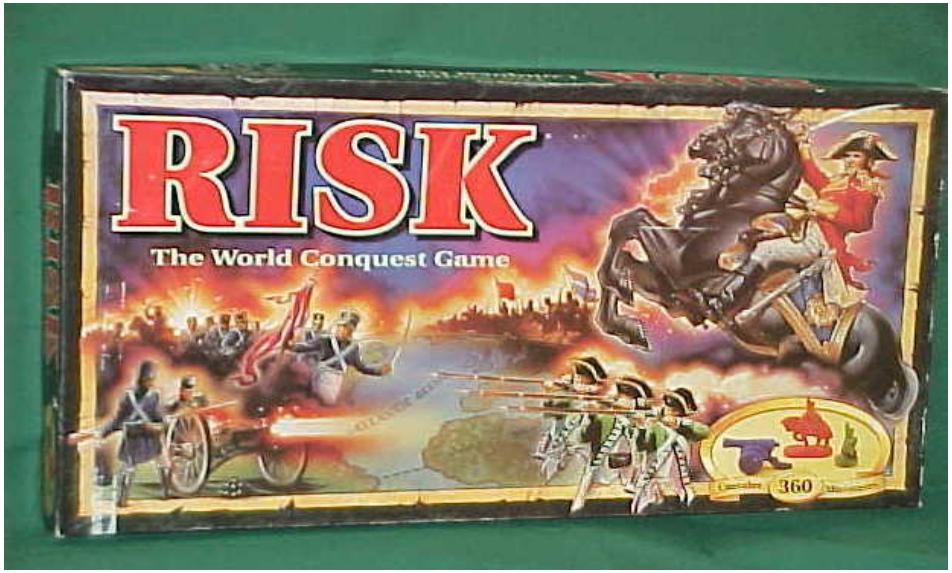
RISK
The World Conquest Game



Well…not that kind of risk

Other Kinds of Risk

- Many definitions in different fields
  - Financial: size of loss and loss probability
  - Statistics: probability of an undesirable event
  - OSHA: probability of a hazard to cause harm
- ISO 31000:

  "Risk management – Principles and guidelines on implementation"

Our Kind of Risk

- For now and for us, let's say that risk is
  - *The probability that a nonconformance will diminish the quality of a product or service.*
- We can start to think of risk in quality systems.

Application of Risk

- Use risk to focus:
  - What to look at to determine consistency.
  - What actions to take to correct nonconformance.
  - What to measure to decide what is consistent.
- Risk could be used to:
  - Select data to review during assessments.
  - Select files to review during evaluations.
  - Decide on areas for internal audits.

We Say…We…

- Assess every technology, method, and analyte.
- Review all laboratory SOPs.
- Require all assessors to take technical training in each discipline they assess.
- Review every DOC and MDL study.
- Want world peace.

Come on…Really….

- Complete coverage is virtually impossible.
- Absolute coverage may be unnecessary to make a determination.
- We all deliver different levels of scrutiny.
  - This fosters real and perceived inconsistency.
  - It would be nice if we could agree on some benchmarks to guide us.

Realistic Expectations

- We have set the bar so high, that no wonder…
  - We fail.
  - We cannot detect progress.
- One of our goals:
  - Promote mature, commonly acceptable understanding of achievable consistency of assessments and evaluations.

Sample Size – Numeric Model

- Related to risk assessment and management
- In accounting, a Statement on Auditing Standards (SAS) defines audit risk quantitatively
  - Audit risk helps select the number of accounts to audit, that is the sample size for each audit.

Audit Risk

AR = IR x CR x DR

Where:

AR = Audit Risk

IR = Inherent Risk (proneness to error)

CR = Control Risk (control misses error)

DR = Detection Risk (audit misses error)

How It Might Work

- In accounting, the auditor determines the desired level of AR, and then assesses IR, CR to determine detection risk (DR) and the corresponding extent of testing to be performed.
- In assessments, an assessor could….
- In evaluations, an evaluator could…
- In internal audits, a QAO could…

Assessment Risk

AR = PR x QR x EDR

Where:

AR = Assessment Risk

PR = Procedure Risk (proneness to error)

QR = Quality Control Risk (control misses error)

EDR = External Detection Risk (assessment misses error)

Non-Numerical Risk Assessment

- Risk can also be assessed qualitatively.
- In one practice used in accounting, the combined assessment of IR and CR is given four levels:
  - Maximum
  - Slightly below maximum
  - Moderate
  - Low

And What about Cost?

- Combine risk and cost to determine where to focus consistency efforts.
  - Two genes: Rr x Cc
  - Rc, High Risk and low cost, where to start
  - RC, High Risk and High Cost, is a challenge

x	c	C
R	Rc	RC
r	rc	rC

Other Areas for Exploring

- In psychology: the consistency bias and other cognitive biases
  - Remembering one's past attitudes and behavior as more similar to one's present attitudes.
  - We think we are more consistent than what others perceive us as.
- In education: inter-rater reliability studies
  - Consensus, consistency, and measurement approaches
- In human resources: testing and assessment instruments

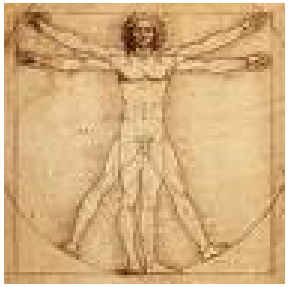
What's Next

- Request for renewal of CITF
- Draft of White Paper in Fall 2010
- Review of White Paper by CITF in Fall 2010
- Release of White Paper January 2011
- Discussion at TNI Forum January 2011

Take Home

- From a distance, the Earth looks like a consistently smooth sphere.
- Through a microscope, all smooth surfaces have edges.
- Reducing the knowledge barrier promotes consistency.
- A foolish consistency is one that serves no benefit for the end user. Rank making things useful above making them consistent.
- Correctives should be focused on improving the consistency of practices that have the biggest effect on quality.
- We need to promote mature, commonly acceptable notions of consistency.

Last Words



"Consistency is found in that work whose whole and detail are suitable to the occasion. It arises from circumstance, custom, and nature."

Vitruvius

Contact us! We welcome your input.