

Workshop Abstract for CPSA – J. Tipton

This pre-conference workshop is designed to discuss and touch on both the big-picture and the nitty-gritty-details for standardization of process and workflows. The title: Actionable Sustainability - Getting Ahead of The Curve for Early Diagnosis of Preventable Diseases is designed to get us thinking about what we want to create - actionable procedures to reach certain goals for standardization of process or workflows. The pursuit of standardization can lead to increased sustainability in many fashions.

The workshop has been split into **3 Parts** with designed interactions with the attendees and real-time recording of thoughts on the chalkboard. For the **1st Part**, we will ask the questions - What is sustainability? Then we will ask the question – What is actionable sustainability? We will also touch on the questions - What are preventable diseases? What are diseases that early detection can help alleviate?

In a big picture way, as well as with analytical rigor in specific subfields, CPSA Metabolomics is a vehicle to reach actionable sustainability. For example, the “CPSA Four Corners Initiative” is a vehicle for standardization across industries, as well as for quality control in sequestered silos of expertise. We are the ones in the vehicle that will make decisions towards standardization. During Wednesday’s sessions, we will revisit the same ideas discussed in the pre-conference workshop to generate an “group action item list”. By the end of the meeting, we may have a list of “actionable items” to possibly peruse.

To provide further frame work, we can move to the next two parts of the workshop. However, before we moving to the second part of the workshop, I do have an advanced ice breaker planned. We will go through an exercise discussing some of the “silos-of-science”, then move into a fun ice breaker activity.

The 2nd Part of the workshop is rooted in process control across the different subfields needed to generate bed side tests. We look at the Breadth-of-the-Field and Depth-of-Quality-Control needed for standardizing our next round of diagnostic tests.

- With Regards to Breadth-of-the-Field, The Many faces of standardization
- How we perform sampling, population and/or individual
- to biomarker discovery or mechanism-of-action studies
- to validation process for “Bed Side Tests”

As part of this conversation, we also want to move past linguistic barriers that we may have, even within this small group. What “resolution” do you look at life and research?

- Sometimes we look at the behaviors of an organism.
- Sometimes we look at the phenotype of an organism.
- Sometimes we look at a hypothesis driven molecular system (like new born testing).
- Sometimes we like to have a molecular (biomolecular) view of a subpart of the organism.
- Sometimes we like to look at the process of validation of new diagnostic tests.

The 3rd Part of this workshop is designed to discuss the success in the “promise of OMICS to Diagnostics” with regard to success in personalize/precision medicine. During this part of the workshop, we will define

what success looks like. For example, an analytical success could be moving of a specific molecules type from the category of “at the limit-of-detection (LOD)” to defining the response cure with a “limit-of-quantitation (LOQ)” state. One we have a LOQ that fits the sampling requirements, we can validate a test.

The Base subcategories that we will start with for this art of the Chalk talk will be:

- Biomarker Discovery (BD) or helpful Mechanism-of-Action (MOA) Studies
- Technical Successes – Validation of a New Test or Molecule Group (Think LOD to LOQ success)
- Diagnostic Tests that are near final validation (Examples here already at the conference)
- Highly Successful Tests (Genetics Testing Very Powerful) or Variation of Previous Tests

The last question that we pose is - Do we have most of the tools that we need to develop these tests? As we move through the conference, we may see that we have many of the tools in place to achieve our goals.

We look forward to a fun and stimulating workshop this year. Please come ready to share your thoughts and ideas as we work thought these basic ideas!