

## Outline draft:

### Cannabis formulations, fill/finish arm:

#### Proposed Title: Elevating Cannabis Product Safety

#### Abstract:

As the cannabis industry evolves, an expanding variety of products are emerging. While vape products are a significant portion of end product formulations, many other formats should include safety considerations prior to market release. This expert panel delves into critical aspects of cannabis product safety, encompassing formulation considerations, hardware analysis, and analytical testing.

1. Importance
  - a. Reduce adverse events, protect consumer health
  - b. Avoid over-regulation, support sensible regulations
  - c. Understand products based on real-world use conditions
2. Formulation safety
  - a. Lab testing for contaminants and ingredients
    - i. Test early, screen individual ingredients, test for homogeneity
      1. Metals analysis, test for more than big 4
    - ii. Challenges with non-targeted analysis for cannabinoid extract formulations
    - iii. Difficulty with analyzing different products
  - b. Ingredient safety
    - i. Tox studies
    - ii. Stability studies
    - iii. Proper handling, minimize oxidation and over-heating
3. Hardware for vapes
  - a. Stability studies
    - i. Metal leaching
    - ii. Component analysis
      1. Highlight different parts and what to test for relevant to each part.
  - b. Aerosol studies
    - i. What can be analyzed with/ aerosol studies
      1. Metals, terpenes, cannabinoids, carbonyls
    - ii. Briefly discuss challenges
  - c. Battery
    - i. Battery safety
    - ii. All-in-one versus 510
4. Packaging
  - a. Labeling
    - i. Lot numbers
    - ii. Cannabinoid content
    - iii. Terpene analysis
  - b. What materials to avoid

## **Analytical Arm:**

### **Proposed title: The Complex Landscape of Cannabis Aerosol Testing**

#### **Abstract:**

Cannabis vapor is technically an aerosol, a mixture of liquid droplets and gaseous molecules. Understanding aerosol chemistry and particle character is crucial for optimizing the consumer/patient experience, ensuring product safety, and evaluating potential health impacts. Join us for an in-depth discussion from industry experts on the state of cannabis vape aerosol research and testing.

1. Importance
  - a. Testing based on real-world use, the aerosol is what the consumer is being exposed to
  - b. Consistency across labs
2. State of Science, in its infancy
  - a. Differences from nicotine aerosol testing
  - b. Current regulations
  - c. Publications
3. Testing an aerosol
  - a. First, you must identify what you are testing for.
    - i. Sensory or effects
    - ii. Contaminants
    - iii. Formulations component transfer
    - iv. Degradation
  - b. Human Sensory Panel
    - i. Sensory or effect
  - c. Puffing Machine
    - i. Everything else
4. Puffing Machine parameters
  - a. Solvent impingers, filters, gas adsorption
    - i. When to use each method.
  - b. Puff topography
    - i. What is considered real-world use for cannabis? Not the same as nicotine.
  - c. Protecting the machine
5. Aerosol Characterization
  - a. Mass Transfer/recovery validation
  - b. Overcoming LOD/LOQs
  - c. Targeted vs. Non-targeted analysis
  - d. Instrumentation options, GC/MC, HPLC, etc
  - e. Particle size and distribution
  - f. Reporting results in applicable units for usability.
6. Drawbacks
  - a. Time-consuming
  - b. Expensive
  - c. No standard methodology
  - d. Not many labs are validated to perform this work.