

## **SUMMARY OF TOPICS**

### **Areas covered in PAACB Spore Analyst Level I exams.**

Topics not covered under this outline may be covered on the PAACB exams if determined to be appropriate by the PAACB Scientific Committee; this is not necessarily a comprehensive or detailed list of topics with which an analyst should be familiar.

### **Guidance Document #1: Basic Background Knowledge**

#### I. Basic mycology

##### A. Basic taxonomy

- 1.-3. Basic taxonomy; Familiarity with major groups producing airborne fungi (Oomycetes, Zygomycetes, Ascomycetes, Basidiomycetes, Deuteromycetes);
4. Understand the concept of Latin binomials.

##### B. Mechanisms of spore production and release.

1. Understand how spore production relates to morphology among the major fungal groups.
2. Relate spore release with weather parameters

##### C. Spore morphology

#### II. Basic knowledge of bioaerosols

##### B. Basic understanding of particle settling, impaction, and filtration.

##### C. Know how to calculate concentrations from raw particle counts.

##### D. Basic understanding of the characteristics and patterns of spore prevalence (e.g, seasonality, frequency of recovery)

#### V. Air sampling methods

##### A.1.-3. Have a working knowledge of the various samplers designed for direct microscopic examination.

### **Guidance Document #2: Bioaerosol Sampling**

#### II. Sampler descriptions

##### A. Basic knowledge of samplers designed for direct microscopic examination.

#### III. Microscopy

##### A. Familiarity with the microscope

##### B. Familiarity with Köhler (or "even") illumination.

##### C.-D. Know how to measure the field of view and calibrate an eyepiece micrometer.

#### IV. Data

##### A. Calculations

1. Be able to determine particles per sample (if only a fraction is counted)
2. Be able to calculate airborne concentrations (particles/m<sup>3</sup>) from raw counts.

### **Guidance Document #3: Specific Protocols**

#### I. Acceptable samples

A. Know how a slide should be labeled.

B. Know how to best analyze a broken or damaged sample.

#### II. Know how to prepare a sample for direct microscopic examination.

#### IV. Approaches to sample analysis

A. Basic knowledge of particle deposition variability and approaches to counting a representative portion of a sample.

B. Understand approaches to dealing with overloaded samples.