

Sample Sizes for Decision Making in New Manufacturing Paradigms

September 12-13, 2011

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Workshop Chair

Thank You - Planning Committee

- Karthik B. Iyer, U.S. Food and Drug Administration, **Co-Chair**
- Fernando J. Muzzio, Ph.D., Rutgers University, **Co-Chair**
- Sonja S. Sekulic, Ph.D., Pfizer Inc., **Chair**
- Jim Bergum, Bristol Myers Squibb
- James Evans, Ph.D., Massachusetts Institute of Technology
- Sau (Larry) Lee, U.S. Food and Drug Administration
- Christine Moore, Pharm.D., U.S. Food and Drug Administration
- John Peterson, GlaxoSmithKline
- Zhigang Sun, Ph.D., U.S. Food and Drug Administration
- Gert Thurau, Ph.D., Merck & Co., Inc.
- Yi Tsong, Ph.D., U.S. Food and Drug Administration
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- Dave Christopher, Merck & Co., Inc.

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Special Thank You

Vicki Penn, PQRI

For helping organize everything

Workshop Purpose:

Technology enables us to gather a lot more data these days....

e.g. process analytics

...but we need to be able to intelligently and consistently deal with that data in our decision making processes.

Workshop Purpose:

- There is a need to:
 - Clarify the roles and expectations of USP/EP and Regulatory Agencies with respect to statistical differences between acceptance criteria and process controls
 - Share approaches used to date to deal with large sample sizes
 - Discuss how information gained from larger sample sizes can be used to make better decisions during development and release of pharmaceutical products, and
 - Identify technical gaps or other challenges that prevent further progress for routine implementation.

Day 1 - am:

Introduction/Background

- FDA Perspectives on Larger Sample Sizes - Role of Regulators vs. USP vs. ASTM
- The European Approach on Large Sample Sizes in the Context of a PAT Environment
- The Role of USP
- Designing and Optimizing Sample Plans - Dow Chemical
- Underlying Quality Considerations

Day 1 - pm:

Statistical Aspects

- PTIT Approach: Developing Tolerance Interval Approach for Quality Assessment with Large Sample Sizes
- Content Uniformity Acceptance Testing for Large Sample Sizes: Nonparametric Counting Test
- Demonstrating Capability to Comply with a Test Procedure: The Content Uniformity and Dissolution Acceptance Limits (CuDAL) Approach
- **Breakout 1:** How Should We Be Testing for Pharmaceutical Process Control and Batch Release? **Cabinet/Judiciary Room**
- **Breakout 2:** What are the Regulatory Risks and Benefits of Smaller vs. Larger Sample Size Acceptance Criteria? **Old Georgetown Room**
- **Panel Question and Answer Session**
- **6:00 pm - 7:30 pm Reception (Concours Terrace on Lobby Level)**

Day 2 - am

Current Landscape:

- Focus Area: Blend Uniformity
- Focus Area: Content Uniformity - Current Landscape
- In-Process Particle Characterization - Regulatory Perspective
- In-Process Particle Characterization - Industry Perspective
- Merck Case Study: Half a Decade of Real-Time Release Testing on a High Volume Product

Day 2 - pm

Future State

- Process Validation Guidance - What Does 'Statistical Confidence' Mean?
- Challenges of Statistical Analysis/Control in a Continuous Process
- Continuous Manufacturing - FDA Perspective on Submissions and Implementations
- **Breakout Session #3:** How Do We Integrate a Large Sample Size Approach into Pharmaceutical Quality Systems? **Cabinet/Judiciary Room**
- **Breakout Session # 4:** Are Pharmaceutical Companies and Regulatory Agencies Prepared for a Lifecycle Approach to Product Quality? **Old Georgetown Room**
- Breakout Reports
- General Question and Answer Session
- Closing Remarks

Thank You -Attendees

Job Function	#
Statistician	15
Analytical	7
Regulatory	17
Manager/Director	2
Chemist	1
Chemical Engineering	1
Quality	4
Operations Research analyst	1
Pharmacist	1
Senior Science Advisor	1
Sales/Applications	1
Manufacturing	1

Sector	#
Industry	29
Academia	3
Regulatory Agencies	23

Expectations

- Full Participation in the dialogue, especially during the breakout sessions.
- Maximize the opportunity to share and compare with the other attendees
- The intent is for the Organizing Committee to compile the sentiment of the dialogue from this workshop into a white paper for public dissemination.