

# Center of Excellence

## Implementation of Emerging Technologies (Automation)

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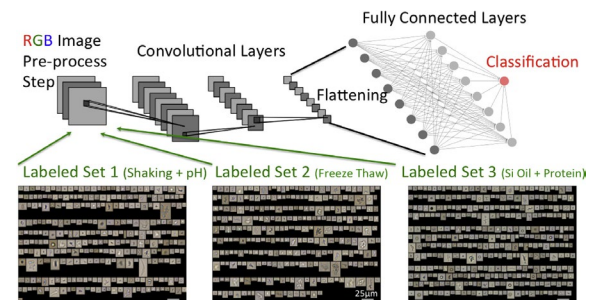
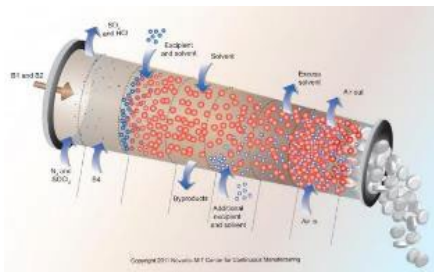
Office of Compounding Quality and Compliance

CoE Annual Conference

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# What are Emerging Technologies?

- Novel **manufacturing methods** to improve process robustness and efficiency
- Novel characterization methods for complex **dosage forms** or delivery systems to improve drug delivery and targeting
- Novel **analytical tools** to improve product quality testing, process monitoring and/or control



Calderon C *et. al.* J. Pharm Sci 2018 (107)

## Current State of AP

- Level of Involvement of People
  - Laminar Flow Hoods
    - Manual Fill
  - Barriers
  - Isolators

# Innovations

- Robotics inside Gloveless Isolators
  - Interior Decontaminated
  - HEPA Filtered Air
  - No Human Intervention
- Closed Vial Fillings

# Speedbumps?

- Cost
- Proprietary
- Filling Speed
- Regulatory Requirements

**Let's discuss...**

