B96 Eliminating Sources of Pipetting Error in the Forensics Laboratory

David Epstein and Shannon Boyd, NFSTC National Forensic Science Technology Center, 7881 114th Avenue North, Largo, FL 33773*

After attending this presentation, attendees will understand the role of training in the accurate dispensing of liquids using an air displacement pipette.

This presentation will provide a broader understanding of the topic that will improve the quality of analysis.

Hypothesis: Pipettes are complex precision instruments that are subject to error due to mechanical failure and improper operator technique. Improved performance may be obtained by following essential quality control guidelines and by providing basic pipetting technique training.

Content: This poster discusses the nature of pipette performance including how pipettes work and why pipettes fail. Suggestions are offered for mitigating sources of error via straightforward quality control and operator training guidelines. Data is presented showing the beneficial impact of pipetting technique training. Specific pipetting technique training tips are provided.

Conclusion: Today's air displacement pipettes are precision instruments that should not be taken for granted. Pipettes tend to fail silently and randomly, impacting sample and reagent delivery. Periodic calibration and preventive maintenance are essential to ensure the integrity of laboratory results. Operator technique training, especially if it offers the opportunity to obtain immediate feedback, is easy to do and has a significant beneficial effect on performance.

Pipette, Accuracy, Training

 ** Presenting Author*