

WS11: Data Analysis: Collection, Preparation and Visualization

Date: Tuesday, October 28

Time: 8:00 AM – 12:00 PM

Audience Knowledge: Basic - suitable for individuals new to the field, requires little prior knowledge to the subject matter

Rates:

Membership	Early Bird (June 25 - Sep 10)	Late (Begins Sept 11)	Onsite (Begins Oct 9)
Member	\$150	\$175	\$200
Student	\$150	\$175	\$200
Non-Member	\$200	\$225	\$250

Workshop Chairs:

Brigitte Desharnais, PhD

brigitte.desharnais@mssp.gouv.qc.ca

Laboratoire de sciences judiciaires et de médecine légale

Scientific Coordinator – Development and Quality Assurance

Sue Pearing, M.S.

sue.pearing@sfgov.org

San Francisco Office of the Chief Medical Examiner

Forensic Quality Manager

Abstract

Preparation of data for scientific publications, presentations, or internal reports (e.g., quality control monitoring) is a common task in forensic toxicology. Indeed, data stands at the heart of scientific operations, from research projects to laboratory management decisions. Often unbeknownst to us, several decisions made during the data analysis process can have an impact on the conclusions drawn by both the preparer and the reader. In this workshop, we use two datasets typical to forensic toxicology and go through the whole data analysis process, giving practical advice and sharing pitfalls to avoid. The “epidemiological” dataset (age, location, date of death, substances found and concentration, etc.) and the “instrumental” dataset (standard or quality control retention time, peak area, measured concentration, etc.) will be shared with the participants in advance. The complete analysis will be performed in Excel. While this workshop is not a software tutorial, some key steps will be demonstrated in Excel, and other data analysis tools will be introduced. Best practices and relevant examples in data collection, data preparation (wrangling/cleanup) and data visualization will then be covered, using the two sample data sets. Participants will have an opportunity to submit their own graphs for feedback from the speakers and the class. Why not put forward one from the next paper you are working on? Or one for your next conference poster or presentation? Benefit from the advice of all to present better data visuals than ever.

Learning Objectives

1. Devise effective research questions and data collection plans.
2. Apply data wrangling and cleaning procedures to adequately prepare datasets for analysis.
3. Create effective data visualizations that convey the intended message to the stakeholders.

Speakers

Brigitte Desharnais, Ph.D.
Scientific Coordinator – Development and Quality Assurance
Laboratoire de sciences judiciaires et de médecine légale

Sue Pearing, M.S.
Forensic Quality Manager
San Francisco Office of the Chief Medical Examiner

Tyler DeVincenzi, BS
Forensic Toxicologist
San Francisco Office of the Chief Medical Examiner

Aria McCall, BS, D-ABFT-FT
Forensic Toxicologist
Tarrant County Medical Examiner's Office

Workshop Agenda

Time	Topic	Speaker
8:00-8:30 AM	Data 101 – infrastructure, collection, organization	Sue Pearing
8:30-9:00 AM	Data analysis tools	Brigitte Desharnais
9:00-10:00 AM	Data Preparation	Tyler DeVincenzi
10:00-10:30 AM	Break	
10:30-11:15 AM	Data visualization and insights gained	Brigitte Desharnais
11:15 AM -12:00 PM	Collective graph-smithing (masterclass)	All