

WS 3: Fentanyl and Beyond: Detection, Interpretation, and Emerging Threats in the Evolving Synthetic Opioid Landscape

Audience Knowledge: Intermediate

Workshop Chairs

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Abstract

Fentanyl and its analogs continue to be at the forefront of the ongoing opioid epidemic in the United States. As these analytes undergo regional and international scheduling, the drug market continues to evolve presenting challenges for the forensic and public health organizations. This workshop will first give a brief overview of the footprint of fentanyl from its analgesic origins to its misuse and abuse in Western countries leading to it being a dominant driver in opioid-related deaths. Next, it will highlight the analytical progression for detection of these drugs from early gas chromatography (GC) to liquid chromatography (LC) to the more modern high-resolution mass spectrometry (HRMS) methods as well as the challenges associated with each. These technological developments have enabled improved sensitivity, broader compound screening, and the rapid identification of emerging substances. Concentration ranges in both postmortem (death investigation) and antemortem (i.e. DUI) toxicological contexts will be examined to better understand interpretive considerations and challenges. Due to the growing prevalence of cutting agents such as medetomidine and xylazine, found in the fentanyl supply, this session will explore the implications of these analytes and their toxicological impact. As many fentanyl analogs rise and fall, this workshop will address the re-emergence of several of these compounds such as fluorofentanyl, o-methylfentanyl, and carfentanil. Finally, the session

will provide an overview of emerging novel synthetic opioids (NSOs) and discuss the current and evolving landscape of opioid-related substances encountered in forensic community. The workshop will conclude with a question and answer discussion where attendees can discuss specific questions and inter laboratory communications.

Speakers

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Workshop Agenda

Time	Topic	Speaker
08:00 AM - 08:20 AM	Epidemic Road: A Journey Through Opioid Use in the United States	Palmquist-Orlando
08:20 AM - 08:40 AM	Advances in Analytical Method Development for the Detection of Fentanyl and Related Analogs	Gomonit
08:40 AM - 09:00 AM	Postmortem Fentanyl Concentrations: Ranges, Variability, and Interpretive Challenges	Patton
09:00 AM - 09:30 AM	Fentanyl in Human Performance Toxicology	Kahl
09:30 AM - 10:00 AM	Cutting Deeper: The Role of Xylazine and Other Cutting Agents in the Fentanyl Supply	Potoukian
10:00 AM - 10:30 AM	Break	N/A
10:30 AM - 11:00 AM	Fentanyl Analogues Persisting as Chemical Signatures	Papsun
11:00 AM - 11:20 AM	The Return of Carfentanil: Why You Shouldn't Sleep On Past NPS	Kurtz
11:20 AM - 11:40 AM	Beyond Fentanyl: The Emergence of Novel Synthetic Opioids	Neifeld
11:40 AM - 12:00 PM	Q&A	PANEL