

WS 15: From Black Boxes to Built-In: Designing and Deploying LIMS and Case Management Systems in Forensic Toxicology

Audience Knowledge: Intermediate

Workshop Chairs

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Abstract

This workshop will explore how forensic toxicology operations benefit from Laboratory Information Management Systems (LIMS) built around the laboratory and developed in-house with a sustainable outlook. LIMS and case management platforms are central to modern forensic toxicology operations, yet many laboratories remain dependent on costly proprietary systems that can be rigid, difficult to adapt, and misaligned with real laboratory workflows. Advances in open-source technologies, widespread access to programming skills, and the ability to collaborate with software engineers have dramatically lowered the barriers to developing secure, in-house solutions. This workshop will explore how forensic toxicology laboratories can design and implement homegrown LIMS and case management systems using modern architectures and tools such as relational databases, Python-based backends, web-based user interfaces, and secure internal hosting environments. In addition to system architecture and development practices, the session will address practical considerations including funding strategies, building sustainable business models, project management, and obtaining institutional buy-in. Emphasis will be placed on the critical role of forensic toxicologists in leading system design so that laboratory workflows, quality assurance requirements, and interpretive decision points are properly embedded in software logic. Through practical examples and discussion,

attendees will gain insight into how laboratories can responsibly develop flexible, scalable systems that support evolving analytical, operational, and data needs in forensic toxicology.

Speakers

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Workshop Agenda

Time	Topic	Speaker
08:00 AM - 08:10 AM	Welcome & Workshop Overview	Rodda, Pasin
08:10 AM - 08:40 AM	Why Build Now? Strategy, Funding, and Institutional Buy-In for Homegrown LIMS	Rodda
08:40 AM - 09:15 AM	Open-Source Tools, Architecture, and Workforce Development	Pasin
09:15 AM - 09:50 AM	Case Study: A Homegrown Case Management Architecture	Devincenzi
09:50 AM - 10:50 AM	Designing Systems with Forensic Domain Knowledge	Beyer
10:00 AM - 10:30 AM	Break	
10:50 AM - 11:15 AM	Advanced Capabilities: Analytics, Automation, and AI Readiness	Swan
11:15 AM - 11:40 AM	Governance, Risk, and Accreditation Considerations	Pearring
11:40 AM - 12:00 PM	Panel Discussion and Audience Q&A	All speakers