

Introduction to Laboratory Automation

This course presents a broad introduction to laboratory automation in the R&D laboratory environment (i.e. non-clinical). A general understanding of a laboratory environment is helpful.

Who Should Attend?

Those with little or no experience with laboratory automation, seeking an introductory overview of the topic, including:

- Scientists
- Engineers
- Lab Managers
- Marketing or Sales Professionals
- Students

How You Will Benefit from This Course?

- Understand industry drivers, costs and benefits of lab automation
- Learn methods of planning and executing successful automation projects
- Appreciate the strategy and technical features that make up a successful automated system
- Become aware of up and downstream impacts of lab automation
- Develop an understanding of the issues, strategies and tools for managing data from automated systems
- Learn about current and future lab automation technologies

Course Topics:

- Succeeding With Laboratory Automation: Impacting Your Organization and Tactical Strategy
- Automated Systems: Architectures, Failures and Complexity; Metrics and monitoring; Interfaces; Automated ID and Vision Systems
- Programming Automation and Managing Data: Method Building; Graphical and Automatic Programming;
- Scheduling; Build vs. Buy Strategy; Data Analysis Systems; LIMS; Data Transfer and Archival
- Automation Technologies: Current Trends and Tools

Instructors:



Jonathan Wingfield, PhD.

AstraZeneca, Discovery Sciences, Screening Science & Sample Management, UK

Jon Wingfield received his PhD from University of Wales, School of Pure & Applied Biology in 1990. After working as a Post-Doctoral fellow at Children's Hospital, Cincinnati, OH he returned to the UK and took up a role with a Japanese Pharma working at their research centre in Oxford. Jon moved into automation when the research centre was re-tasked as an assay development function. Jon's lab received the first European installation of a Beckman/Sagian Core system.

Since joining **AZ** in 2000, Jon established the Lead Generation Automation Team. Their role was to build and implement automation systems to support screening within the Oncology function. This group evolved into a centralised biochemical screening capability in 2006. The team implemented a LIMS to improve efficiency, the value of this system was recognised when AZ was awarded the Microsoft Innovation in Pharma in 2008. Jon now supports the screening capability within AZ's Discovery Sciences, a global screening function. His role includes development, evaluation and deployment of new technologies.



Malcolm Crook, PhD.

Peak Analysis & Automation Ltd, Technical Director - Laboratory Automation, UK

Malcolm Crook received his PhD from University of Southampton, Department of Chemistry in 1990. After graduation, Malcolm moved to British Petroleum (BP), where he worked on a series of automation projects including automating an early fluorescence spectrometer, the first on-line NIR spectrometer on a process plant, developing a range of Cartesian robots, installing Zymark systems and writing graphical laboratory automation software control packages for GEM and Windows 3.31.

Malcolm, and a number of colleagues from BP started **Process Analysis & Automation Ltd** in 1992. Initially working on general factory automation systems, working with the HP ORCA robot before developing the Overlord range of laboratory automation control software for the Forensic Science Service (UK). That initial forensic system has grown to over 700 installations worldwide. **Process Analysis & Automation Ltd** merged with **Peak Robotics** (CO, USA) in late 2012 to form **Peak Analysis & Automation Ltd** to allow the new **PAA** to offer reliable laboratory robots, software and complete integrated automation systems worldwide.