

## **Apollo 200™ Human Identity Testing System – the First Fully Integrated, Sample-to-Profile STR-Based System for Forensics**

Stevan Jovanovich, IntegenX Inc.

In the last 15 years, DNA-based human identity testing has developed as a method suitable for producing forensic evidence with the certainty and clarity required to support new convictions and overturn old ones. The ideal solution to the challenge of modern human identification requirements is an automated, DNA-based human identification system that processes samples quickly and at low cost, that itself costs much less than the specialized, multiple-instrument laboratories that are currently required, takes up little space, uses readily available off-the-shelf consumables, is extremely simple to operate, and produces data that are directly compatible with standard human identification information formats.

IntegenX™ Inc. will report on the successful field testing of the Apollo 200-Human Identity Testing System ("Apollo 200"), the first sample-to-profile rapid Human Identity Testing solution. The Apollo 200 produces CODIS STR profiles for DNA-based Human identification, integrating cell handling from buccal swabs and blood, automating cell lysis and DNA extraction, rapid PCR using the Promega® PowerPlex® System, capillary array electrophoresis and laser-based detection. The Apollo 200 Desktop system will be presented and shown to address the large market for DNA-based human identification that can be carried out by non-specialist personnel working in ordinary air-conditioned environments with access to plug-in electrical power rather than traditional laboratories. The system's operating characteristics will be reported and specific design choices discussed for sample throughput, size considerations, utilization of off-the-shelf reagents, ease of operation and compatibility with CODIS.

Data and statistics will be shown from the first external tests of the 4-channel breadboard systems. Working with funding and technology partners, IntegenX has combined the company's own proprietary technologies, in-licensed assets, non-proprietary technologies, and rapid in-house microfluidic chip prototyping, to design and build the Apollo 200 Desktop System. After the loading of pre-packaged disposable consumables, control DNA samples, and cheek swab samples from up to four (4) subjects, the operator simply presses the "Go" button and the system does the rest, producing high quality, reproducible CODIS-ready DNA profiles in less than two hours of unattended operation.

Finally, the Apollo 200 Portable system will be described to meet the need of field forward, intelligence operations, initial and other front-line emergency responders and at refugee camps. The system is envisioned as a self-contained, self-powered "suitcase" laboratory featuring a throughput capability of up to eight (8) samples simultaneously, with other specifications comparable to those of the Apollo 200 Desktop System.

\*\*Apollo 200 is a trademark of IntegenX Inc.