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Quanterix Eyeing Big Returns from Newly Launched Simoa Accelerator
By Andrew Han

NEW YORK (GenomeWeb) – Molecular diagnostics firm Quanterix has officially launched a new laboratory to show off its digital ELISA technology, Simoa. The Simoa Accelerator gives researchers looking to detect proteins either mail-in or on-site access to the technology, a service which has already boosted revenues and is proving to be important to growing Quanterix's business.

The laboratory is intended to introduce scientists to Simoa, a single-molecule array immunoassay technology for detecting and quantifying antigens and proteins. Scientists looking to contract with Quanterix to translate existing ELISAs into Simoa assays, test small volume samples, or develop and validate custom assays can either ship samples to the firm's staff of scientists and technicians or bring them in person to gain hands-on experience alongside the staff. Projects can range from testing a single plate to large-scale clinical projects, according to the firm.

The lab boasts four Simoa HD-1 Analyzers, Quanterix's fully automated platform that analyzes assays built onto Simoa discs. Each disc contains 24 arrays, each with 216,000 microwells. Using the same reagents as a conventional ELISA, Simoa technology offers higher-resolution detection and can measure proteins in a variety of biological matrices, including sera, plasma, cerebrospinal fluid, urine, and cell extracts.

So far, services from the lab are already paying dividends for the Lexington, Mass.-based firm.

"We believe this is one of the fastest ways to help grow our business," said Quanterix Executive Chairman Kevin Hrusovsky. "It's not just a way to give customers early access to the technology; the research services have brought around \$500,000 in revenue in 2014, he estimates, and he expects that to double in 2015. But perhaps the biggest benefit comes from the accelerator's effect on sales of the \$150,000 Simoa HD-1 Analyzer. "Half to two-thirds of our projects [taken on by the accelerator] have resulted in customers buying the instrument," he said.

Assay development is a third source of revenue that the Accelerator is generating for Quanterix. "We have instruments used to build out off-the-shelf assay kits for specific biomarkers of interest to our customers," Hrusovsky said, adding, "We have 25 assays we have commercialized."

The Accelerator is helping Quanterix prove the value of what Hrusovsky believes is a "disruptive" technology.

"We're able to see in blood, or spinal fluid, or whatever, levels of antigen that get down to two femtomolars per milliliter. That's 1,000 times more sensitive than today's ELISA technology," he said.

That level of detection is allowing scientists to find new ways in which proteins are involved in diseases. For example, Tau proteins in the cerebrospinal fluid have been associated with traumatic brain injuries, but they had never been found in blood. They weren't even thought to be able to cross the blood-brain barrier, Hrusovsky said.

But using Simoa, researchers have found it at very low levels in blood, which opens up an avenue to test for concussions using blood samples. Quanterix has been awarded a [Head Health Challenge grant](#) from GE and the National Football League to research such a blood test. The Simoa technology is "revealing whole new opportunities," Hrusovsky said.

He also noted that there are already 20 scientific publications that have used Simoa technology, with more to come. "It's a wide-ranging technology that we think can affect, significantly, how medicine is practiced," he said. Research has been conducted on proteins and antigens in many therapeutic areas including neurology (amyloid beta-42, Tau) cardiology (troponin), metabolism (interleukin 7 and 8), and cancer (prostate specific antigen).

Though the Simoa Accelerator officially launched just last week, it has existed in some form for about two years now. The success Quanterix has had so far offering research services has spurred the firm to commit more resources, both money and people, to the laboratory in 2015 to increase the capacity of the Accelerator.

"Because of the impact it has strategically on our company we're continuing to grow this very aggressively," Hrusovsky said.