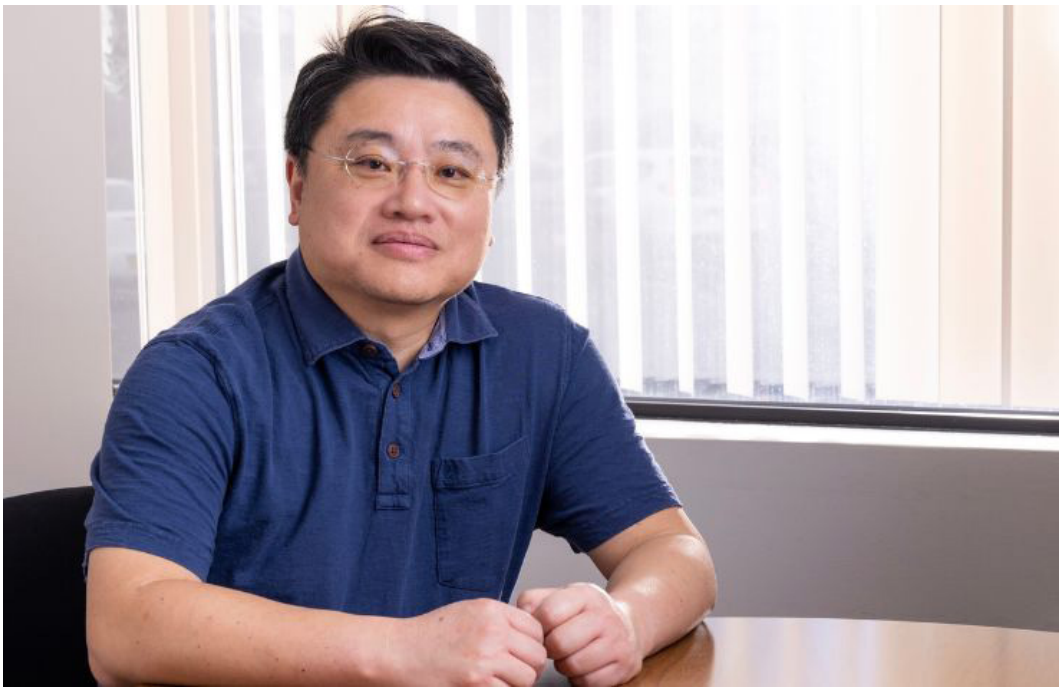

Yun Zhao, MD, is the CEO of Admera Health.
Photo by Jayme Thornton

Admera Health uses the NovaSeq X Plus to expand capabilities

A streamlined workflow and better results mean greater output for the US lab

NEW JERSEY–BASED Admera Health is making big moves that will impact their customers worldwide. In just the last few months, they have expanded their whole-genome sequencing (WGS) capabilities, acquired a well-established company to enhance their RNA sequencing, and tested new software upgrades from Illumina.

Admera Health, a CLIA-certified and CAP-accredited laboratory, serves customers in academia, biotech, and biopharma, and works with 15 of the top 40 pharmaceutical companies in the world. Admera Health helps scientists accelerate their programs in drug discovery, therapeutic development, companion diagnostics, and biomarker discovery and detection. Admera's expert personnel perform the sequencing and informatics on verified equipment, offering researchers the ability to take advantage of specific components, such as a tailor-made extraction protocol or library prep optimization. Admera can also provide high-quality sequencing and data for clients with exacting standards.

Offering whole-genome sequencing

Admera Health recently launched a WGS service on the Illumina NovaSeq X Plus. They had offered WGS on the NovaSeq 6000 since 2016, but the innovations of the NovaSeq X helps them reduce bottlenecks, create cost efficiencies in the workflow, and expand their output.

"The NovaSeq X Plus with 25B flow cell definitely changes the possibilities," says Yun Zhao, MD, CEO of Admera Health. This has been a selling point as they partner with companies conducting large research projects. The projects support newborn screening initiatives, clinical trials, and other activities, ranging from agrigenomics studies to zero-gravity mouse embryo development.

Enhancing RNAseq studies

Admera (a portmanteau of "advanced molecular era") recently acquired Germany-based BioEcho Life Sciences,[1] a move that will significantly strengthen their in-house next-generation sequencing services. Researchers often come to Admera after encountering issues with ultra-low-input RNA samples. BioEcho's proprietary nucleic acid extraction technology, called EchoLUTION, enables higher purity and a more diverse population of nucleic acids, improving results.

1. bioecho.com

Combining Admera Health's high-quality services and BioEcho's cutting-edge extraction technology, Admera will elevate data quality with more comprehensive gene detection.

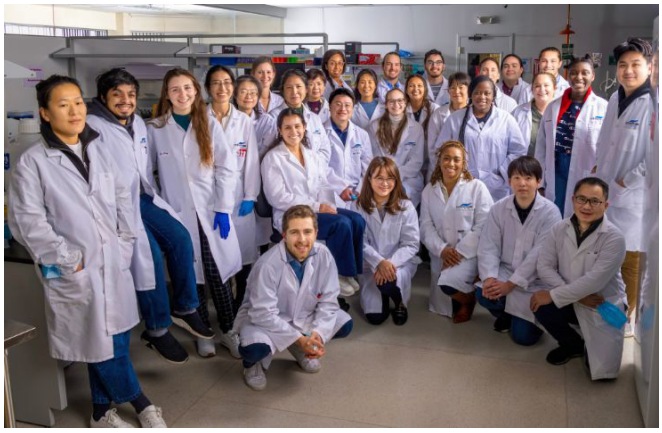

PHOTO BY JAYME THORNTON

The laboratory staff in the New Jersey offices.

Testing new software

In September 2024, Admera received early access to the Illumina NovaSeq X Plus software version 1.3 (now available).[2] They tested not only the standard Illumina and in-house samples, but also custom-made samples varying in type, such as low-diversity amplicon libraries, single-cell libraries, whole-genome libraries, and enriched libraries. Across all these sample types, they consistently saw improved performance.

"The new software upgrade improved performance a lot," Zhao says. They found the percentage of clusters passing quality filter improved around 10%. For single-cell sequencing, they usually achieve 85% to 87% of the Q30 score. "Now we can easily achieve 90% to 91%, or even 92%. It's a significant change; every percentage point is a lot."

With version 1.3 software, the overall yield increased approximately 15%, and they are now generating data up to 35 billion reads per run. "That's a lot of data," Zhao says. "Everything we see is very positive and very promising. The most recent version definitely changes the game."

A new direction

In the last year, Admera has begun to focus increasingly on emerging and evolving cutting-edge technologies. Zhao predicts that this research will change a lot in the near future: In addition to the increased use of WGS for oncology studies, more than half the bulk RNAseq work will likely be replaced by single-cell analysis, and the price of single-cell analysis will also decrease. He expects that the field of spatial transcriptomics will gain momentum soon after.

The software upgrade enables Admera Health to deliver higher-throughput, better-quality data, which improves research support and accelerates drug discovery programs and therapeutic developments.

In the meantime, Zhao is happy that Admera, now celebrating its tenth year, has the stamp of approval from industry leaders and partners as well as their clients' trust. "We have worked with Illumina for many years and I am proud to partner with them," he says. "I also feel so lucky to have so many good people working with us at Admera—people who are tremendously knowledgeable in science and technology, customers who have a scientific mindset and who, like me, have their heart in the lab." ◆

2. illumina.com/science/genomics-research/articles/novaseq-x-software-update-1-3.html