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SECTION

"After a year of use, automated sectioning isn't something new – it's simply part of our daily operations," says Joel Markanich, Director of Molecular and Anatomic Pathology Operations at Alverno Laboratories. Front row: Melinda Coffey, Histotechnician and AS-410M user, Melissa Zummak, AP Manager. Back row: Bradley Powers, IHC Supervisor and AS-410M superuser, Joel Markanich, and Dr. Elisabeth Shearon, Medical Director.

ALVERNO LABORATORIES:

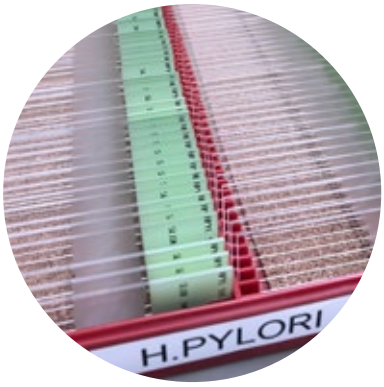
The first clinical lab to introduce automated sectioning in the US

24 hours. That is the target turnaround time Alverno Laboratories has set from tissue fixation to placement under the pathologist's microscope. In reality, staffing challenges and variability in daily workflow made this target difficult to maintain, without potentially using hundreds of overtime hours, constant schedule shuffling, and risk of employee burnout. Something else needed to be realised to maintain required production levels. A solution was needed that could integrate into routine clinical workflows, support the existing team, and create a more sustainable working environment – without compromising turnaround times or diagnostic reliability. One year later, automated sectioning with the AS-410M has delivered on that objective. Overtime has been eliminated, turnaround times are maintained, and section quality is consistent and reliable.

To Joel Markanich, Director of Molecular and Anatomic Pathology Operations at Alverno Laboratories, the objective was practical from the very start: "We weren't trying to change how histology works," Joel Markanich explains, "we wanted to see whether automated sectioning could meet our standards and become something the lab could rely on day in and day out."

Consistency enabled clinical adoption

An AS-410M was chosen as the automated sectioning system for the lab and introduced with close involvement from experienced histology staff and management. Section quality, reproducibility, and fitting the system into real clinical timelines were assigned as key focus areas.



Recently cut H. Pylori QC slides from the AS-410M. "Our histotechs love never running out of IHC QC slides. They also enjoy not having to cut so many manually. The quality is great, and the sections are always placed in the exact same spot on the slide," says Joel Markanich.

Bradley Powers, IHC Supervisor and AS-410M superuser, played a central role. "Once we saw the consistency of the sections, confidence followed," Bradley Powers says. "It reached a point where we were comfortable putting selected routine clinical work on the system and benefitting greatly from it."

Within a year, automated sectioning transitioned from trial technology to a reliable part of daily operations. In addition to running selected patient tissues, an average of 400 immuno-histochemical quality control slides (IHC QC) are now also cut daily on the AS-410M. The AS-410M sections each IHC control block into 100 slides. Each block is cut in one continuous flow. In addition, selected routine clinical samples are now processed on the system as part of daily production. "Section quality of clinical samples we cut on the AS-410 met our validation criteria and is comparable to manually cut tissues in most cases. We cut tissue samples like placenta, uterus, colon, and even breast tissue. We are also looking into validating other tissue types," says Joel Markanich.

Reliability during staffing pressure

Like many other pathology laboratories, Alverno has faced longer periods of staffing strain, at times resulting in excessive monthly overtime hours, some months equivalent to more than four full-time employees. The lab processes about 2,500 blocks daily but can easily reach 3,000 blocks. On top of the IHC QC slides between 250-300 clinical blocks are now sectioned daily on the AS-410M and has already made a measurable difference.

The AS-410M has enabled the lab to plan the workday better and more efficiently, while allowing greater flexibility for complex or specialised cases with dedicated histotechnicians. The lab has a 24/7 operation divided into three shifts, with 35% of cases scanned before 8:00 am, and the remaining 75% by 3:00 pm.

More importantly, the lab maintains its 24-hour turnaround target, even if faced with daily workflow fluctuations such as staffing changes or increased volume.

Value in workflow flexibility

"That was when its value became clear," Joel Markanovich notes. "The system helped us maintain throughput and quality during a period that otherwise would have been very challenging. The automation allowed flexibility in our daily work-flow by altering the ratio that was utilised for cutting patient tissue and generating IHC QC slides." Emilie Morphew, MD and Vice President of Medical Affairs adds, "Most of the time I can't tell the difference between manual and automated sections."

Rather than replacing expertise, automation served as a stabilising resource, helping the lab absorb variability without compromising standards. Melissa Zummak, Anatomic Pathology Manager, underscores the point: "Automation doesn't replace people, it supports them."

Leadership perspective and patient focus

Support from medical leadership was essential. Dr. Elisabeth Shearon, Medical Director, approached automated sectioning from a patient-first standpoint. "The question was always whether this supports reliable results for our patients," Dr. Shearon says. "Our experience has shown that it does."

Joel Markanich and team even visited Denmark to see the technology in full use at a clinical lab. These learnings, combined with support from the senior executive team, helped reinforce confidence that the system was ready for clinical application in the US. Although Alverno was the first clinical laboratory in the United States to adopt AS-410M automated sectioning, the focus was never on novelty. "Being first only matters if the technology performs reliably in clinical practice," Joel reflects. "What mattered was proving that high-quality tissue sections can be produced in an automated, reliable way – in a real clinical environment."

ALVERNO LABORATORIES

Alverno is an award-winning laboratory established in 1999. In 2016, it was named Laboratory of the Year by ADVANCE Healthcare Network's "For the Laboratory" magazine.

As of 2026, Alverno Laboratories serves more than 30 hospital laboratories in Illinois and Indiana.

Alverno Laboratories process 2,500 FPPE blocks daily.