

Customizing automation for a University Hospital *WASPLab® at University Medical Center Groningen, Netherlands*



Martijn Geutjes,
lab manager



Steffie Lai,
*technician and the
key user of WASPLab®*



Elisa Salomon,
*technician and the key
user of WASPLab®*

In this chapter of The Journey campaign, we had the opportunity to interview Martijn Geutjes, Steffie Lai, and Elisa Salomon, members of the Clinical Microbiology lab at University Medical Center Groningen (UMCG). UMCG is one of the biggest university hospitals in the Netherlands, with around 1200 beds and over 15000 employees. Let's discover how the implementation of WASP® and WASPLab® can enhance the operations of a laboratory that integrates routine diagnostics, research, and training.

Hello Martijn, Steffie, and Elisa. Let's start the interview with some info about your lab at UMCG.

We are situated in Groningen, one of the biggest cities in the northern part of the Netherlands. UMCG functions as a regional HUB for specialized healthcare, and as a university hospital, it involves several educational and research activities. We are part of the clinical microbiology lab, which consists of 45 people in total – including 32 technicians – and is responsible for processing approximately 400 samples every day.

Which Copan automation is the lab equipped with?

We have been happy automation users since May 2012, when we implemented a stand-alone WASP® in the lab. Last year, more than ten years after the first installation, we expanded the system, replacing the old WASP® with two new ones, a WASPLab® with three incubators, Radian®, a collaborative station, and PhenoMATRIX®. An extensive system!

How long did it take to implement all this?

It took about six weeks to have a running system. However, due to the complexity of procedures and the variety of samples, we are still completing part of the validation on specific tasks and samples. For example, we validated urine, broth, and swab samples, while others – like sputum – are still under validation. To date, 51% of our samples are automatically processed, and 26% read with WASPLab®.



Radian® at UMCG

Is the implementation going smoothly?

Of course, we had a lot of challenges, but considering the size of the system, everything is going smoothly. The integration with the hospital LIMS is the trickiest part, especially because we implemented custom protocols developed in collaboration with Copan.

Great! Could you tell us the reasons that made you consider lab automation?

We had plans to automate the lab for a long time, even before the first WASP® installation in 2012. During the years, we visited some European laboratories, including Prof. Schrenzel's lab at the University Hospital of Geneva. We liked how the system worked and how automation was integrated into these labs, so we decided to get automated as well.

And why did you choose Copan?

Visiting the other laboratories, we knew two companies met our specifications. However, being a university hospital, we had to conduct a European tender. We had to make an honest and comprehensive list of demands, and Copan proved to offer the best solution for our needs, emerging as the best overall with many essential features for UMCG.

Very briefly, could you discuss some benefits you experienced from automation?

The most obvious is the standardized streaking, which provides better quality to our data. Also, we are delighted with the WASPLab® incubation: the fact that the plates remained in the incubators during image acquisition caused a 10% increase in the microorganisms detected on positive plates. The images taken with WASPLab® can also be used for educational purposes, to train new technicians or microbiology students, and in research papers. Also, we believe that soon, it will be necessary to have photos from your plates accessible in a database for ISO accreditation, and having it done automatically is a great benefit.

You mentioned before the customization of the system. Was Copan able to adapt the automation to your lab's needs?

We wanted this system to fit perfectly in our lab, so we had a lot of tailor-made items and customized protocols. The collaboration between us and Copan was crucial to designing them and finding the best solution in any case. For example, together with Copan and its distributor, MLS, we developed a custom-made streaking pattern for the inoculation of fungi-specific media for sputum and BAL. This streaking pattern can put about five times as much sample material on the plate compared to a normal pattern, which was crucial to meet the specificity of the fungi culture. Of course, these plates cannot be cultured in the WASPLab® incubators due to the risk of fungal contamination of the incubators.



UMCG is one of the first labs to be equipped with a Collaborative Station.

Is there something you can now do just thanks to the customization?

One thing is subculture preparation, which wasn't possible to do on WASPLab® the way we proposed, and now can be done. Also, initially, we couldn't make a blood culture slide thin enough for our needs. Since blood cultures are a major part of our samples, we performed many experiments and customization with the pipettor module to obtain a protocol able to make a slide that met our specifications.

How has your relationship with Copan support been through these years?

Sonia (Copan LAS following the UMSG project) helped promptly to satisfy all our needs. She and the whole Copan team always suggested new ways to fix different issues with great patience, and they still do it for the validation protocols. During the installation, she even gave automation training to the entire Lab team: it was great to hear new information from a specialist with a high knowledge of the topic.