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## Services and support



## How an FAS helped a lab take on a SARS-CoV-2 research project

When Thermo Fisher Scientific field application scientist (FAS) Marco Laredo, PhD, returned to the Center for Research and Advanced Studies of the National Polytechnic Institute (Cinvestav), a prominent nongovernmental research institution located in Mexico City, Mexico, which had been under a coronavirus lockdown for most of the year 2020, he found the Department of Genetics and Molecular Biology's new Applied Biosystems™ SeqStudio™ Genetic Analyzer covered with a layer of dust.

"The instrument was acquired at the very beginning of the virus crisis," Laredo explains. "Just after the installation was done, the laboratory locked down, the facility was closed, and the instrument was basically abandoned in the lab. It was kind of an emergency evacuation, so the researchers had to leave the lab exactly as it was at that very moment."

An FAS with Thermo Fisher for over five years, specializing in capillary electrophoresis (CE) and next-generation sequencing (NGS), Laredo was aware that the lab's SeqStudio instrument had originally been intended primarily for research focused on the use of nucleic acids as therapeutic agents. However, with the lab's work on hold and only the six researchers involved in the new SARS-CoV-2 project allowed to return, he would now be training them to help with this urgent new project.

"I was worried about the situation," Laredo says. "The instrument had been installed and then just sat there for months. I had to clean it and make sure that it was working properly. I also had to check that the lab had all the reagents and consumables needed to perform the training." Fortunately, the instrument was ready



**Marco Laredo, PhD**  
Field Application Scientist,  
Thermo Fisher Scientific

to go; Laredo was able to provide the three-day sequencing training and follow-up support, building a relationship with the lab's SARS-CoV-2 project team that ultimately resulted in their purchase of a service contract for the instrument.

For his excellent work in helping Cinvestav contribute to the global effort to understand how to address the coronavirus crisis, Thermo Fisher is honoring Marco Laredo as a Guardian of Your Science—an award given to members of the Services and Support team who provide above-and-beyond customer support.

To learn more about Laredo's efforts for the customer that earned him this honor, we spoke with Dulce Ávila, PhD, a research assistant in Cinvestav's Department of Genetics and Molecular Biology and a key member of the team that received the grant to conduct the SARS-CoV-2 project.

### Can you tell us about yourself and the project?

I'm a research assistant in Dr. Luis Álvarez' lab. I joined the Department of Genetics and Molecular Biology two years ago, in February 2020, but the virus crisis closed down the lab in March. The majority of the personnel was sent home for lockdown. So, we were unable to work here. It wasn't until September, six months after the forced closure began, that we were able to return to the lab.

During that time the lab was closed, Dr. Álvarez submitted a SARS-CoV-2 project proposal. The goal of that research project was to isolate DNA protein complexes and use them as biosensors that would potentially be capable of detecting spike proteins in human saliva for the diagnosis of SARS-CoV-2.

### Were you aware that the lab had acquired a new SeqStudio Genetic Analyzer?

Yes. I joined the department in February 2020 and the SeqStudio instrument was installed that same month in the nucleic acid unit, and it was going to be used by the whole department. Here in the lab, we were going to get training on the instrument, but we were not going to be charged with managing that equipment.

### How soon were you able to start on the project and receive the training?

We had most of the consumables, but they were in storage, and some were close to expiring. In April 2021, just over one year after the start of the lockdown, we were able to get everything we needed and begin the training—which was right on time because we had returned to the lab and started working on the production of recombinant SARS-CoV-2 proteins, and we needed to use the sequencing equipment.

### Can you tell us about the training?

Marco Laredo actually came to the lab a few days before the training to be sure that we had everything in place to provide a successful course. He was very supportive with us from the start. He was always open to answering our questions.

He trained us in three days. I was very surprised about that because after just three days of training, we were able to use the instrument.



“He walked us through all the processes, and we were able to conduct our own experiments on the instrument. He was always with us.”

Dulce Ávila  
Research Assistant,  
Cinvestav

Our sample for the training was SARS-CoV-2 spike DNA. We were cloning that protein, and we were sequencing it to continue with future experiments. He walked us through all the processes, and we were able to conduct our own experiments on the instrument. He was always with us.

In the training, we learned to insert the cartridge, change the buffer, and set our run in the equipment. Then, after obtaining the sequence, we learned to analyze the data on the app. We learned what a good run looks like, and we also looked at a bad run, so if we ever faced that result, we would be able to better identify the problem.

“When I had any trouble or issues, I was able to ask him about them, and he was able to provide specific answers.”

### **What was the effect of the virus crisis on the training itself?**

The lab's SARS-CoV-2 project was the reason we were able to work and to be here in the department—because in other labs, where they didn't have that kind of project, they were unable to even enter the institute. Five students and I were here. So, that's why it was possible to come to the lab, to enter the center, and get the training.

### **Were there safety protocols in place for working during the virus crisis?**

Yes, we always wear face masks. Even now it's mandatory for working in the lab. And we are in an ideal space: a big room with open windows and doors, so we had enough space to practice social distancing during the course. So, the coronavirus situation was manageable for us, and we all remained safe.

### **We hear that after the training, your lab added a Thermo Fisher service package: a plan for instrument maintenance. Does that mean you're still in touch with Marco?**

Yes, we do have a service plan. A few months ago, we needed engineers to come on-site and help with an issue and check the equipment. Of course, my first contact was Marco: I sent him an email and he put us in touch with the correct department.

### **Can you tell us what it was like working with Marco?**

In the beginning, I was a rookie in sequencing, so I wasn't asking good questions. But when I had any trouble or issues, I was able to ask him about them, and he was able to provide specific answers. He has been very helpful in solving problems and connecting us with the right people at Thermo Fisher. When it comes to asking him anything, I feel very comfortable.

Marco is very professional. He knows sequencing, and he's very kind and respectful, a very good person. I would recommend him to colleagues, and I would tell them that they are in good hands.

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