

Tec laboratory looking for COVID in wastewater wins LATAM prize



[Tec de Monterrey's Wastewater Monitoring Project \(MARTEC\)](#) has won in the **Latin American Water Projects** category at the [Aquatech LATAM Awards 2021](#).

The award was presented on September 7 in **Mexico City** at the [Aqua Tech Mexico](#) conference, which is a platform for companies working in the water technology industry.

*"The **MARTEC** family is proud to be recognized for the effort we're making to tackle the pandemic, which is to provide **peace of mind to the Tec community**,"* said Dr. Roberto Parra, leader of the MARTEC project.

*"It's an honor to receive this type of award, which is given to **institutions that work with water in Latin America, and which have had an international impact**,"* said Dr. Eduardo Sosa, co-founder of the project.

MARTEC is part of the Tec's [Conscious Return](#) strategy. It focuses on detecting **COVID-19** outbreaks early, through **wastewater** sampling which looks for **genetic material** from the **SARS-CoV-2** virus.



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Wastewater reveals population's health

Using the **Reverse Transcription-Polymerase Chain Reaction (RT-PCR)** technique, **MARTEC** monitors for the presence of the **ribonucleic acid (RNA)** of the virus that causes COVID in water samples taken at **Tec facilities**.

*"We let everyone know when we **detect viral particles** in a building's wastewater. All the people who were in that facility can then be contacted,"* said laboratory coordinator **Dr. Mariel Oyervidez**.

The researcher explained the importance of using **wastewater** to get this information and how the laboratory has applied this **technology** as a result of the situations caused by the **pandemic**.

*"It's important to monitor the water because we can **learn a lot about the state of a city or an entire population without being invasive**, which is one of the issues with nasal samples, for example.*

*"The technology allows us to analyze the biological status of a whole city, an entire **urban metabolism**, to **prevent pandemics**. We can **monitor diseases**, pathogens, other viruses, other bacteria and even drug use,"* she said.

"Every time we take samples, we can see how much progress we're making in this pandemic" - Dr. Eduardo Sosa

El proyecto MARTEC también cuenta con un sistema de semaforización con 5 niveles de alerta según el
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Providing prompt information for decision making

Since the beginning, the project has evolved and is even capable of [detecting new variants of the virus](#) using **faster processes and with lower costs**, explained Dr. Oyervidez.

Dr. Sosa pointed out that the laboratory has provided **prompt information**, even about **new variants**.

*"We've seen that development of the infection can be as fast as 4 days with the new variants, but I think we've been quite successful in **using even that time to be able to provide information to decision-makers**,"* shared Dr. Sosa.

The laboratory is supported by the **Tec** and the [FEMSA Foundation](#), as well as other organizations such as **Monterrey Water and Drainage Services**. It has also collaborated with [Arizona State University \(ASU\)](#).

Today, the **MARTEC laboratory serves all Tec campuses** and other institutional facilities **at a total of 37 locations**, as well as the Monterrey metropolitan area where it **monitors more than 5.5 million people**.

*"Every time we take samples, **we can see how much progress we're making in this pandemic**,"* said Dr. Sosa.



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Dr. Oyervidez said that as more people return to Tec campuses and the population that has to be covered grows, the challenge of **maintaining traceability increases**.

*“As the number of people increases, it’s more difficult to know who’s infected and who could cause a **future outbreak**. Breaking the chain of infection depends on our work and follow-up by [TecSalud](#) medical services,” she said.*

“The project has great potential because it’s helped a lot with preventing outbreaks on campuses and monitoring the pandemic.” - Dra. Mariel Oyervidez

Extending to detect other diseases

In addition to the **SARS-CoV-2 virus and its different variants**, Dr. Sosa said that the **MARTEC laboratory** is opening lines of research to be able to **detect other pathogens in wastewater**.

*“There’s an option to continue evaluating endemic viruses such as **Zika, Chikungunya, and Dengue**. We’d also like to include **Chagas**, another **Latin American disease** that is moving north as a result of climate change,” said Dr. Sosa.*

He also said that **MARTEC** recently began to working with the [UNAM](#), the **National Polytechnic Institute (IPN)**, and the **Mexico City Water System (SACMEX)**, to start monitoring in Mexico City

as it does in Monterrey and its surrounding area.

*“We’re also working hard to make a MARTEC **spin-off**, to advance as a **technology-based company** using our knowledge and technology to be able to apply our technology to other institutions,” he added.*

“Knowing that our project was selected as the Latin America winner and receiving this award as part of the Tec community fills us with great pride.” - Dr. Mariel Oyervidez



width="900" loading="lazy"> **The Aquatech LATAM Awards**

The annual **Aquatech LATAM Awards** recognizes the institutions and organizations that use and innovate with **water technology** in Latin America.

In this, its **third year**, it handed out awards in two categories: **Projects** and **Innovation in Services, Solutions and/or Products**.

The criteria evaluated include **originality**, **practicality** (technical, economic, and feasible), and **sustainability**, as well as **how many people it benefits**.

“Knowing that our project was selected as the Latin America winner and receiving this award as part of the Tec community fills us with great pride,” said Dr. Mariel Oyervidez.

*“This project has great potential because it’s helped a lot with **preventing outbreaks on campuses** and monitoring the pandemic,”* added Dr. Parra.

The **Aquatech Mexico 2021** conference, where the award was presented, took place in Mexico City from **September 7 to 9**.

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