Students seek to improve air quality with drones and “green roofs”

The winners of the Xignux Challenge 2020 seek to mitigate poor air quality in Mexico by implementing a system of drones that work as mobile environmental monitoring stations, as well as installing green roofs and solar panels on museums to begin with.

The teams: “**Monitoreo Ambiental Urbano**” (Urban Environmental Monitoring, MAMU), made up of students from the **Tec’s State of Mexico campus**, and “**Sol Verde**” (Green Sun) by students from the **Tec’s Monterrey campus, won first and second place respectively**.

These teams received seed capital funds for 500,000 and 250,000 pesos to develop their environmentally-friendly ideas as part of the **2020 Xignux Challenge**, which took place virtually in response to COVID-19 health recommendations**.**

width="900" loading="lazy">

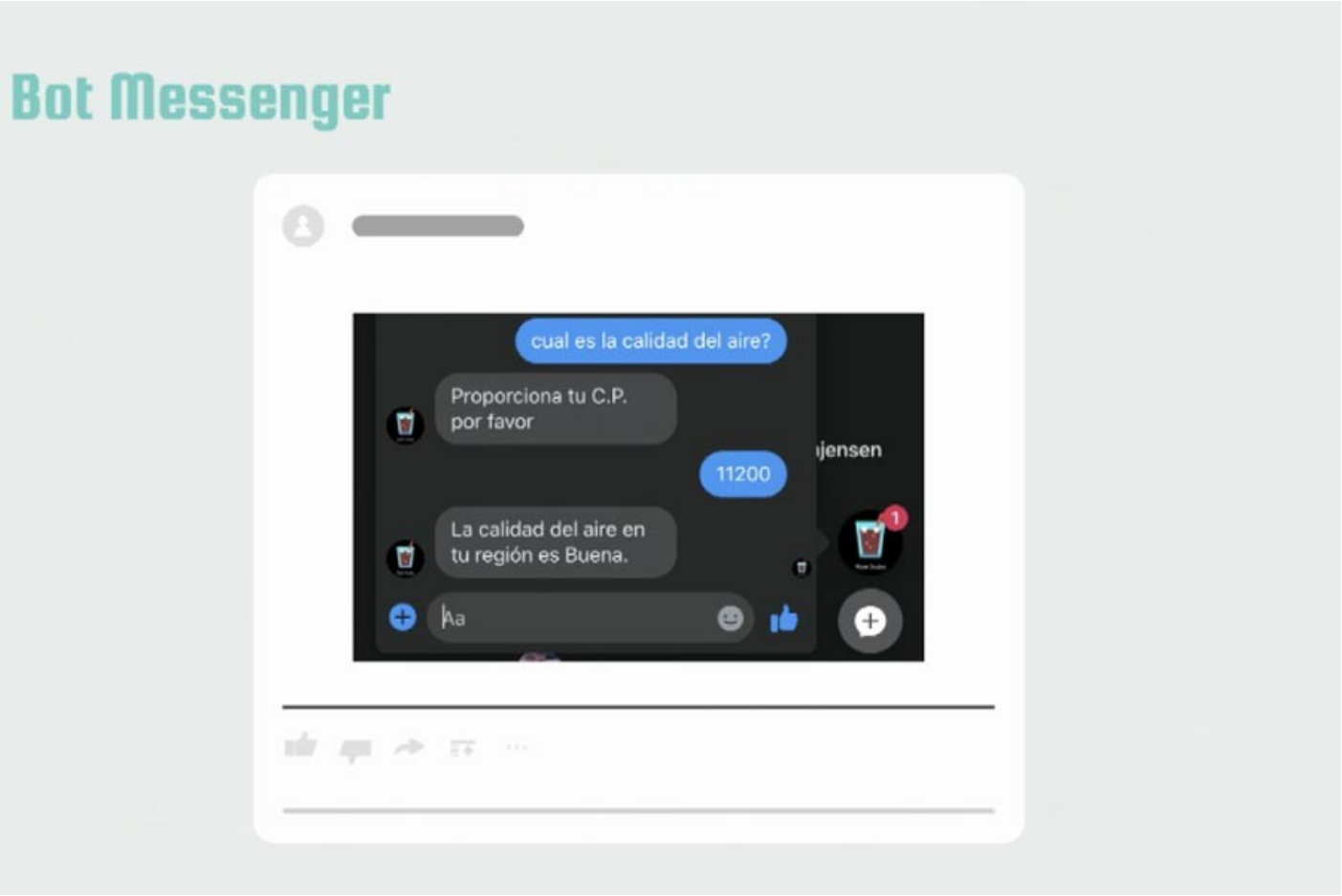
Lizbeth Chama Tlapa, Gerardo Ezequiel Magdaleno Hernández, and Santiago Enrique Magdaleno Hernández developed the "MAMU" project with the aim of improving the efficiency of environmental monitoring through the use of technology**.**

Their idea is to develop an intelligent system of drones equipped with internet-connected environmental sensors, which generate real-time information for predictive analysis**.**

In addition, there is a network of "bots" on social networks such as Twitter and Facebook which provide updated environmental reports every 5 minutes and which allow users to consult air quality data for their area**.**

"We produced an internet-connected smart drone, which enables real time predictive analysis and issues recommendations through both an app and social networks," said members of the **Xignux Challenge** winning team.

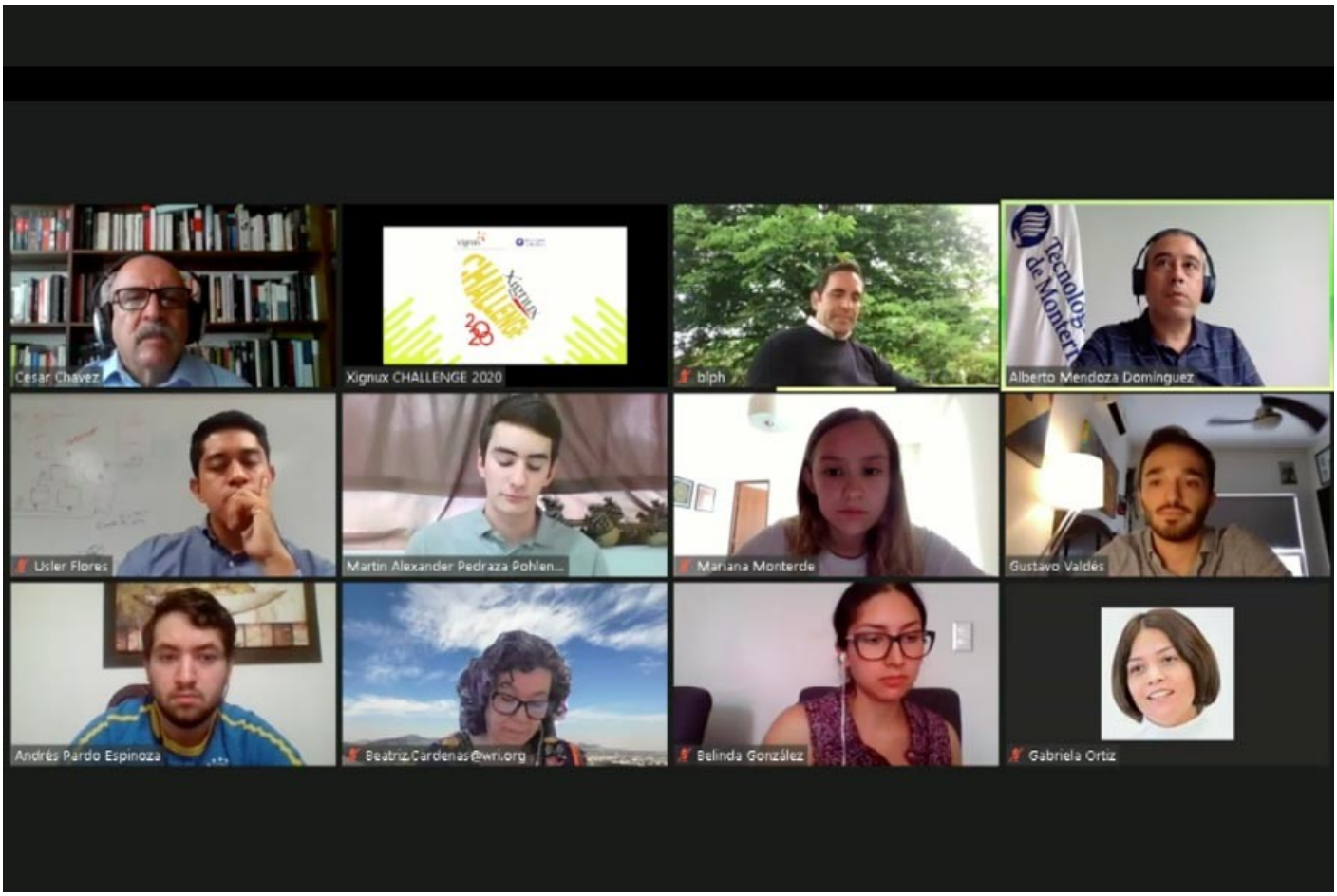
The students from **the Tec's State of Mexico campus** said that **this idea will help governments to cover more monitoring sectors and segment environmental alerts by municipality or neighborhood**. It is also an attractive project for the private sector, as it provides a more detailed monitoring system.



width="900" loading="lazy">

Secondly, **the “Sol Verde” project, developed by Mariana Monterde Gamba, Gustavo Valdés Mireles, Andrés Pardo Espinoza, and Alexander Pedraza Pohlenz, aims to create a system of green roofs and solar panels** complemented by an environmental education program**.**

The students from the **Tec’s Monterrey campus** explained that **the solar panels enable sustainable and low-cost electricity to be generated, while green roofs capture both suspended particles and carbon dioxide.**



width="900" loading="lazy">

It also thermally and acoustically insulates roofs, reducing the costs of air conditioning while increasing the value of buildings. **The project developers announced that a pilot would be carried out at a museum in Monterrey.**

"We want everyone who works with us to be committed to the environment, meaning that they not only understand the problem, but also have the tools to be able to combat it," said Sol Verde members.

The President of the **Xignux Foundation, Marcela Garza**, stressed **that this challenge was an opportunity for participating students to be enriched by the knowledge of different speakers, teachers and members of the jury**.

"They have shown us that there is nothing that can stop young people from transforming the world."

"We are surprised not only by your ideas and proposals, but also by your effort and dedication. I invite you to turn these ideas into a reality that transforms Mexico and helps us to live in a better world," said **Marcela Garza**.

For the **2020 Xignux Challenge, a total of 466 students were registered, divided into 139 teams some of which went to the final stage of the 24-hour virtual challenge.**

67 students in 19 teams represented 7 different Tec campuses: State of Mexico, Monterrey, Santa Fe, Guadalajara, Mexico City, Cuernavaca, and Querétaro, reported **Gabriela Ortiz Martínez**, coordinator of the **Xignux Challenge** program at the **Tec**.

Members of the 2020 Xignux Challenge judging panel:

- *Alberto Mendoza Domínguez*
- *Belinda González*
- *Beatriz Cárdenas*
- *Blas Pérez Henríquez*
- *César Rafael Chávez*
- *Usler Joseph Flores Rosas*

YOU'LL DEFINITELY WANT TO READ THIS TOO:

https://tec.mx/en/news/national/research/tec-student-publishes-science-book-solution-optics-problems