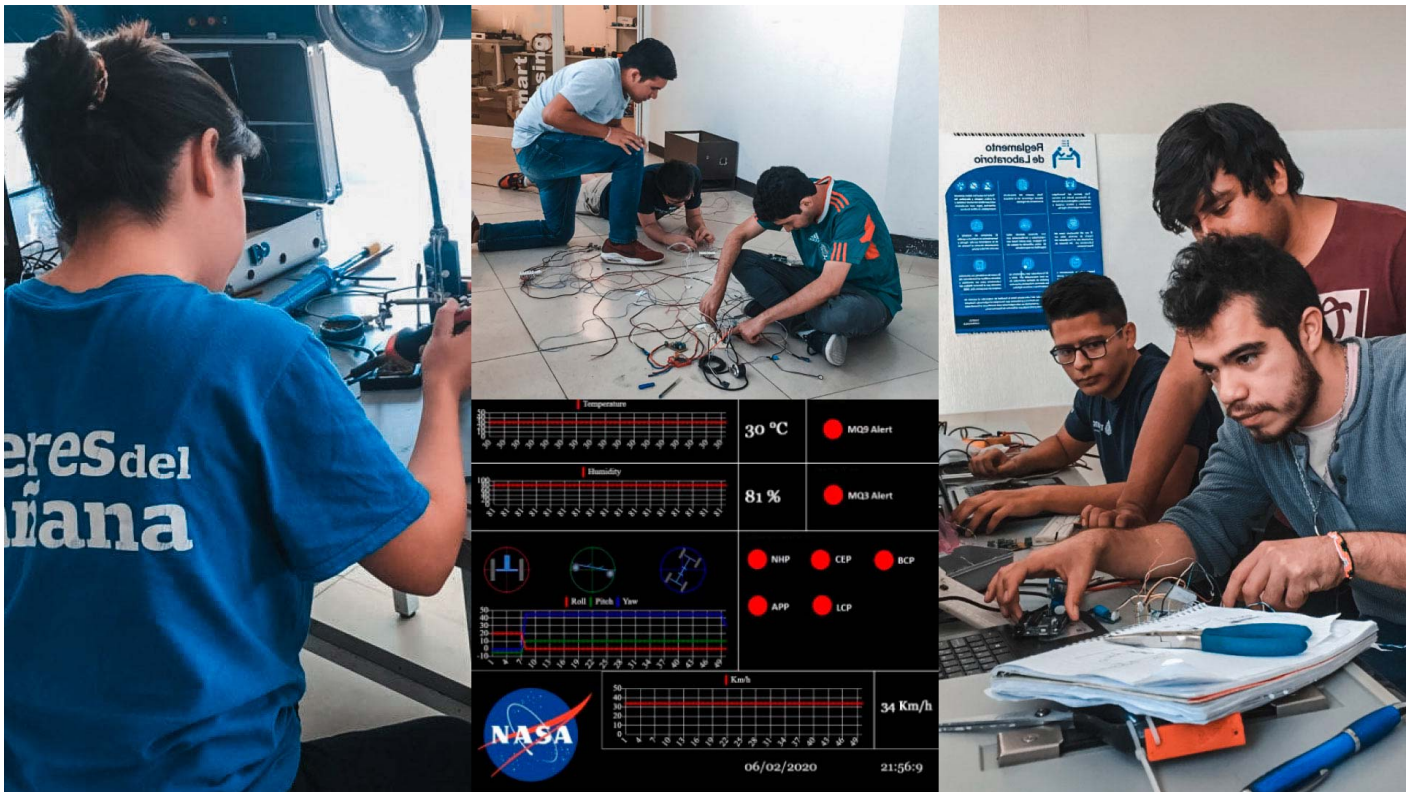


They've done it again! Third-time winners of the NASA telemetry prize



Students from the School of Engineering at the Tec's Cuernavaca campus have obtained the AIAA Telemetry/Electronics Award for the third year in the 2020 [NASA Human Exploration Rover Challenge](#).

This year, the event was held virtually owing to the **cancellation of on-site activities** at [NASA's Marshall Space Flight Center](#) in Huntsville, Alabama, due to the COVID-19 pandemic.

The **telemetry** category is presented by the **American Institute of Aeronautics and Astronautics** and seeks the **best implementation of a remote measurement system** that allows the variables of vehicle, pilots, and terrain to be monitored.

The telemetry **team consists of students from the degree courses of Mechatronic and Computer Technology** Engineering: Diego Hernández, Brenda Zárate, Aarón Pérez, Eric Arzate, Brian Gálvez, Erick Olivar, and Erick Velázquez.

They were mentored by teachers from the school of Engineering: Dr. Ricardo Fernández, Dr. Julián Guerrero, and Dr. Jesús Simental.

THE CHALLENGE

The **NASA Human Exploration Rover Challenge** is one of the seven [Artemis Student Challenges](#) organized by this space agency, which seek to prepare new generations of scientists and engineers for **future colonization of the Moon and Mars**.

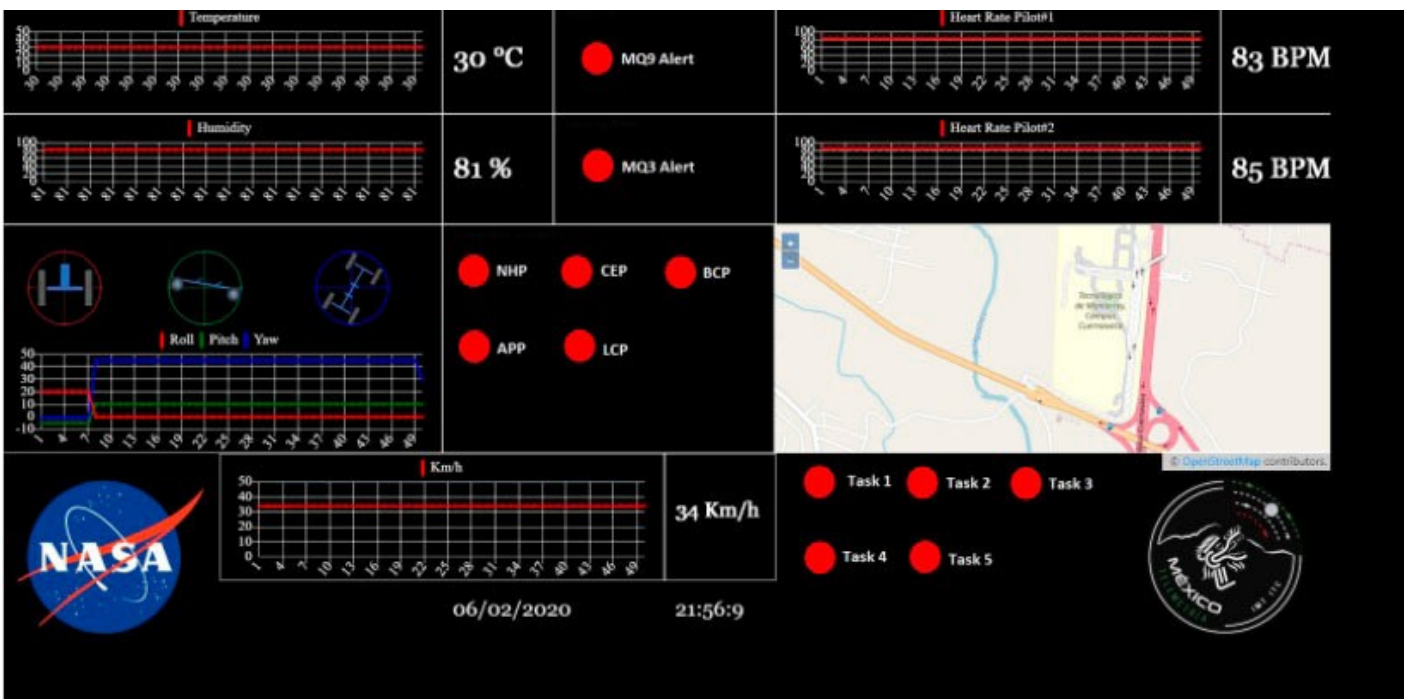
The challenge in which the Cuernavaca campus took part is the **only one open to international teams**. Over 8 years, it has positioned itself as one of the best foreign teams in this challenge.

*“Telemetry provides the rover’s five senses. It allows us to see, feel, and hear what’s happening remotely on the mission and gives us the **power to control and analyze the data captured**,”* explains Brenda Zárate, the student in charge of audio and video.

*“Our system is capable of **measuring the rover’s position (GPS), speed, vibrations, bending, temperature, and humidity**, in order to **look after the pilots’ safety and keep a record of tasks completed**,”* explains David García, project mentor and academic advisor on engineering.

The competition aims to **challenge students from across the world to design and manufacture a vehicle (rover)** that **simulates transportation on future missions** to other planets, asteroids, and moons.

The **rover** must be capable of **traveling along a course with obstacles** under adverse conditions and on which the pilots can **perform missions to collect samples**, as part of the **extraterrestrial exploration**.



width="816" loading="lazy">

This year, due to the **COVID-19 pandemic**, the teams **only took part by sending reports** on the **design and manufacture of the rover**, as well as their use of **technology in wheels and telemetry**.

*“The **report on telemetry work is a requirement** to be able to take part in the competition,” says Brenda.*

*“It includes 10 sections, among which are the **system design**, the **electronics** part, the **graphical interface**, remote **data transmission**.*

*“And **our favorite** (which we think helped us to win): **innovation**, which included NASA protocols, safety protocols, and a pilot monitoring system.”*



width="800" loading="lazy">

*“**Thanks to telemetry**, we can remotely **tell what the pilots are experiencing**, as well as assist the team at each stage of the tasks required with data that can benefit or affect the exploration goal of the mission,” says Brenda.*

111 teams took part from universities and high schools in different countries such as the United States, Germany, Peru, Colombia, Italy, Russia, Puerto Rico, Brazil, and Mexico.

<https://www.facebook.com/roverchallenge/videos/312976253252889>

Participation of Cuernavaca in the NASA Rover Challenge

The **participation** of Cuernavaca campus has become an **uninterrupted tradition since 2013**, with mentoring from laboratory technicians and coordinated by the campus' Undergraduate Mechatronic Engineering Department.

Over 8 years, they have obtained the following awards:

- *AIAA Telemetry/Electronics Award (2014, 2016, and 2020)*
- **“Jesco von Puttkamer International Team Award” (2016, 2017, and 2019)**
- *“Frank Joe Sexton Memorial Pit Crew Award” (2017)*

- **“Team Spirit Award” (2018)**

YOU’LL SURELY WANT TO READ:

<https://tec.mx/en/news/national/research/tec-collaborates-international-project-2-nobel-prizes-already>