

# The Perseverance Rover in Research Programs for Upper Secondary Education

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## Abstract

In June 2021, the Planetarium of Pamplona and several Secondary Education Institutes (IES) in Navarra, Spain, signed an agreement to promote the "Research Baccalaureate." This program, involving the IES Barañáin, Plaza de la Cruz, Ribera del Arga, and Valle del Ebro, was designed to help students deepen their scientific methods knowledge through the construction of a replica of the Perseverance NASA rover and the study of the Martian environment.

During the 2021/2022 school year, twelve students from these institutes worked on constructing the rover and conducted research on Mars, exploring topics like geology, meteorology, and impact craters. In the next phase, carried out in 2022/2023, the project progressed with the development of a robotic arm and meteorological research. This last topic continued to be the focus in the 2023/2024 school year, with the creation of weather stations to compare data between Mars and Earth.

The program had a notable impact, encouraging three additional IES to join and expanding the project's scope. The students' achievements have been recognized at conferences and competitions, including the National Astronomy Congress and Tecnociencia 2023, with several students receiving awards for their innovative research.

My poster in zenodo.org can be found here