

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Interactive Presentations - IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (IP)

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NEW METHODOLOGIES TO ENCOURAGE THE INTEREST OF CHILDREN FROM EMERGING  
COUNTRIES FOR THE EXACT SCIENCES AND ENGINEERING

**Abstract**

The transformation of the current world order urge the school to reconfigure the forms of learning of children and adolescents, because its creative potential is inherent to forge proposals that ensure the sustainability of future generations; One of the strategies implemented by the Scientific Park of Social Innovation of UNIMINUTO is the global competition of FIRST LEGO League, which seeks to encourage children and young people between 9 and 16 years old in Science, Technology, Engineering and Mathematics using robotics as an axis cross. In this season 1,000 children and young people from different cities participated. In the 2018 season, children and young people were asked if, Have you ever thought about what it would be like to live in a spaceship, the international space station or the surface of the Moon or another planet? What if you were there for a year or more? In this sense, each team developed phases both to carry out the research project, and to design, build, program and test their robots built with LEGO MINDSTORMS with which they could solve the problem and check their effectiveness in the context of the event on a track with the theme of space, testing their knowledge and values as engineers and scientists. In this season the winning projects have submitted proposals to the research question of improving the quality of life on the planet and of those who explore outer space, how space suits made with biopolymers, Gore - Tex or Nomex would prevent the absorption of solar radiation ; also, if a propulsometer can monitor and control the astronaut's heart rate, preventing the effects of radiation, weightlessness and the possible consequences in a space flight; likewise, they have contemplated the solution to the absence of breathable air in the moon proposing its terraforming for future human settlements; and that of minimizing the harmful effects of sensory deprivation, confinement and isolation in environments of reduced severity with a 3D game. Likewise, they have investigated how to overcome the difficulties of colonization of Mars due to lack of oxygen, fuel and food, creating a microalgae processor. resulting in the selection of five teams that will represent the country in international events such as World Championship in Houston, West Virginia Open and Open International in Uruguay, attending the greatest challenge of all, providing solutions for humanity from the application of the STEM methodology.