

AGENCY

Students get to grips with gravity at ESA/ELGRA Gravity-Related Research Summer School 2017

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After the success of the first [ESA/ELGRA Gravity-Related Research Summer School](#) in June 2016, the [ESA Education Office](#) and [ELGRA](#) (European Low Gravity Research Association) decided to repeat the experience. So, in late June 2017, the second edition of this Summer School was held at [ESA Academy's Training and Learning Centre](#), in Belgium.

The Summer School had a clear objective: to promote gravity-related research amongst future scientists and engineers. These young minds were introduced to the benefits of performing research at different g levels, and offered an overview of current research under microgravity and hypergravity conditions in both life and physical sciences.

Participating this year were 22 Bachelor's and Master's students in science and engineering disciplines from 11 ESA Member States and 21 different European universities not yet involved in the space sector. Supporting them were no fewer than 18 experts from ELGRA and ESA, sharing stories of their background, day-to-day work, and gravity-related research experience in biology, human physiology and physics.

The Summer School had a strong start thanks to a welcome reception from [SELGRA](#), the student association of ELGRA. — Students were taken out of their comfort zones..! This was an excellent opportunity for the students, coming from all across Europe and with different backgrounds, to meet each other and break the ice.

Then the work could begin in earnest! Over five packed days the students were tasked in teams of four or five to generate an idea for a future gravity-related experiment. Underpinning this was a series of stimulating lectures:

- Life Sciences: plant and cell biology in space; gravity machines; and animal models.
- Physical Sciences: solidification; blood flow; heat and mass transfer under microgravity conditions.
- Human Physiology: space adaptation; brain in microgravity and artificial gravity for astronauts.
- Technical: developing a scientific experiment for a microgravity or hypergravity platform; project management.

Amongst the hard work, students found time for three visits:

- The European space Security and Education Centre (formerly [ESA Redu Centre](#)), to learn about ESA operations activities, as well as about the Proba and Galileo programmes.
- The [Euro Space Centre](#), a science museum and educational tourist attraction devoted to space science and astronautics.
- The Centre Spatial de Liège, an applied Research Centre owned by the University of Liège, focused on design, integration and calibration of space observation instruments.

— Team projects were analysed by the experts. To conclude the Summer School, students were asked to present and discuss their team projects with experts from both ESA and ELGRA, and the projects were then evaluated by the experts.

Upon completion of this process the students were presented with certificates of participation to allow the students to document to their universities.