



**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DE PSYCHOLOGIE
ET DES SCIENCES DE L'ÉDUCATION
Section des sciences de l'éducation



Conférence publique

Mardi 22 mars 2022, de 17h30 à 19h00

Uni-Mail, salle MR030

A distance, via Zoom

Challenges of astronaut training

(Conférence en anglais)

Loredana Bessone, ESA (European Space Agency)

Abstract

The presentation will touch on some of the challenges of creating and managing astronaut and space team training programs. Astronauts work in environments which are either artificial, or alien to us. Differently than for most disciplines, an astronaut instructor has never been an astronaut. Training needs to be developed long before a person for the first time uses a system or travel to a new place, often when some of the systems or instruments to be used are still under development. Operations in space are often required months after they are trained, and the operator is rarely a specialist on what his tasks are. Training needs to be wide rather than deep on each topic, and trainers shall be effective in very short time. Unknowns in space are often caused by lack of imagination on what could happen: the lack of experience needs to be managed by lots of control. Current space systems are developed and managed by many players: space agencies, space companies, research institutes. Creating comprehensive, effective and efficient training plans in a very dynamic world, in which many parameters can and will change during the 2-3 years between the assignment to a space mission and the end of the mission requires a high level of coordination and a large flexibility in the system, the instructors, and the trainees.



**UNIVERSITÉ
DE GENÈVE**

FACULTÉ DE PSYCHOLOGIE
ET DES SCIENCES DE L'ÉDUCATION
Section des sciences de l'éducation



The speaker

Loredana Bessone is the Head Analogue Field Training and Exploration Testing Unit and member of Space Training Team at the European Astronaut Centre (European Space Agency, Cologne, Germany).

She holds a MS in Computer Science from the University of Turin, and a MS in Space System Engineering from the Technical University of Delft. She developed her Master Thesis at CERN, in Geneva, and joined the ESA in 1990. Since 1998 to 2017, Loredana has developed, trained and managed Instructional Technologies and Instructor Training standards and IT infrastructure for ESA Astronaut and Ground Control Personnel (GSP) training for the International Space Station (ISS). She gradually took on more types of training, and have helped to design prospective human missions to Mars as well as missions to explore lunar caves.

Since 2004, Loredana Bessone is responsible of astronaut operational skills (including outdoor and survival training) and Human Cooperative Adventure for Valuing and Exercising human behaviour and performance Skills) Spaceflight Analogue and Human Behaviour and Performance training course for astronauts from all ISS Partner Agencies, an expeditionary training course in earth underground environments. Since 2016, she has also developed in collaboration with prominent field planetary geologists a planetary geology course for ESA astronauts in earth analogue settings called PANGAEA (Planetary ANalogue Geology and Astrobiology Exercise for Astronauts), and Field Test Campaigns on Planetary Analogue environments (PANGAEA-X).