



ISU SSP19

The experience of 11 “NL-Connected” #SpaceOptimists

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SSP19 participants at the Opening Ceremony in the European Parliament



A Singular Summer

It is July 2019. For one week at the International Space University (ISU) campus in Strasbourg, France, a large screen reshows the first Moon landing of 50 years ago. A big crowd huddles to watch Apollo 11 lift off. From then on some people occasionally stop and watch for a few minutes before carrying on with their business. Others take the time to arrange a temporary lounge, to sit and comment on the muffled voices coming from the screen. One day, a bigger crowd huddled together as Neil Armstrong uttered “The Eagle has landed” and a wave of emotion washed over the spectators – all participants of the 2019 Space Studies Program (SSP).

As far as summer academic programs go, the SSP experience is, to say the least, a singularity. During nine weeks of the summer of 2019, 127 participants representing 37 nationalities engaged in a unique experience featuring academic classes, cultural education and social gatherings. Beyond nationalities, the program brought together diverse academic and professional backgrounds including lawyers, physicists, designers, doctors, economists, biologists and a great many engineers. No two participants were the same; no two participants came for the same personal reason or were at the same turning point in their life.

This diversity of backgrounds and experiences brings its share of benefits to the SSP, the most obvious being an environment of constant intellectual stimulation where participants are encouraged to engage in new subjects and question their assumptions. Space was of course the leitmotiv throughout, permeating the lives of participants.

Stichting Space Professionals Foundation (SSPF)

The Stichting Space Professionals Foundation (SSPF) was established in 2017 with major support from the Netherlands Space Office (NSO) on the occasion of ISU's SSP18 being hosted in the Netherlands, to help fund the space education of (aspiring) space professionals. In 2018, the SSPF supported 14 NL-based participants with part of their tuition fees. For SSP19, 11 NL-connected participants received partial funding. The SSPF considers that a future vibrant NL space sector is dependent on the influx of highly qualified young space

professionals and that financial support for their education is essential, a vision which is fully shared and supported by the Netherlands Space Office. Therefore, SSPF continues to support promising future applicants, so those interested in obtaining co-funding for SSP20 or other programs should not hesitate to learn more from their website: www.sspf.nl/welcome.html. SSP20 will take place from 22 June to 21 August in China. For more information, see: www.isunet.edu/about/space-studies-program/current-ssp/265.

How could we join the SSP?

A total of 11 participants from the Netherlands were partially sponsored by the Stichting Space Professionals Foundation (SSPF) so they could attend the SSP. This is the second-largest delegation to the SSP after the Chinese one, as pointed out by SSP Director Omar Hatamleh during the Opening Ceremony at the European Parliament in Strasbourg. SSPF is an organisation managed by Gerard Blaauw, Pieter van Beekhuizen, and Tanja Masson-Zwaan to fund "space education in the Netherlands and beyond". Unlike any other organisation granting funding for ISU programs, SSPF generously funds Dutch as well as foreign nationals studying or working in space related fields in the Netherlands, and Dutch nationals studying or working in space related fields abroad.

What was so special in SSP 2019?

Especially this year the Netherlands-based SSP participants truly represented the 3-I's of the ISU credo (International, Intercultural and Interdisciplinary). The 11 participants came from around the world, including the Netherlands, India, South Korea, France, Italy and the United Kingdom. They shared different educational and professional backgrounds in engineering, law, psychology and biology. On the day of the Dutch cultural night, one fellow participant from Russia looked at the Dutch delegation doing a polonaise (the Dutch-est thing we could think of) into the auditorium and casually asked, "So how many of you are truly from the Netherlands?" We could not say for certain, for we felt that we are all somehow from the Netherlands, by birth, residence, or by virtue of our inclusivity as a group reflecting multicultural Dutch society.

The Experience

It is not easy to describe the mix of thoughts and feelings that each participant had during the SSP. Happiness, stress, excitement, anxiety and wonder are but a few layers of the complex experience resulting from the SSP. We found ourselves in a different reality, with many new faces, personalities, backgrounds and cultures; enveloped in enthusiasm and a common interest in space. During those nine intense and tightly scheduled weeks, we participated in an impressive number of activities:

- **Core Lectures**, giving a comprehensive overview of the innumerable topics related to space, showing us how impressively wide and complex it is. Instructors included world famous professors and professionals from across the space sector, including NASA Chief Scientist Jim Green, the Director General of the UAE Space Agency Dr. Mohammed Nasser Al Ahbabi, assistant professor of the Institute of Space and Astronautical Science of JAXA Ryudo Tsukizaki and Professor Mikhail Marov, former chief scientist for the Soviet Venera missions to Venus, just to mention a few.
- **Departmental activities** in seven disciplines of the space industry (Applications, Engineering, Human Performance, Humanities, Management & Business, Policy, Economics & Law, and Space Sciences) provided in-depth experiences through advanced lectures, hands-on activities and individual projects.
- **Team Projects** made for the most demanding component of the SSP and the strongest opportunity for the participants to bond. This year the four

projects covered a broad range of topics, from the economic impact and promotion of space related businesses, the application and use of space technologies in developing and improving urban environments, and the use of swarm satellites to discover hidden mysteries of heliophysics, to the design of a futuristic crewed mission to Mars using novel propulsion systems. Participants were asked to solve current problems, work on reports and perform theatrical presentations, outside of their comfort zones, together with participants who were complete strangers at the beginning and family by the time they graduated from the SSP. Through collaboration new sides of personalities were discovered, in-depth knowledge was acquired and new skills were developed.

In addition to the above three main components of the SSP, several elective workshops were organised to put knowledge into practice, often with fun and interactive competitions like the Lego robotics and star navigation challenges, and CubeSat and drone building workshops. These helped participants to deepen their bonds, as well as brainstorm and collaborate further on common objectives.

Visits were facilitated to several research and operational centres, like CERN in Switzerland, the two ESA sites in Germany (the European Astronaut Centre and the European Space Operations Centre), but also to some of the leading European space companies like SES and iSpace in Luxembourg and OHB in Munich. Participants saw first-hand how space activities are put into operation, gained valuable insight and retained unforgettable memories.



Participants inventing crazy contraptions during the Rube Goldberg Competition

The SSP also included so-called participant talks in which participants could freely present and discuss any topic. For example, one Israeli participant spoke on the Beresheet Moon landing in his capacity as Deputy Mission Director for that mission.

Two panel discussions were organised, one with ESA Director General Jan Wörner on the future of European space cooperation, and a star-studded astronaut panel with Buzz Aldrin and European astronauts Paolo Nespoli and Jean-François Clervoy speaking about their experiences and the future of humans in space. An intimate audience with these space leaders gave participants the opportunity to ask their burning questions and hear answers directly from key figures influencing governmental space programs.



The Dutch delegation after graduating from SSP.

A Cohesive Community

The success of the SSP, which has run for 32 consecutive years, is partly due to the growing network of ISU alumni and invited lecturers from across the world that enabled the participation of about 200 experts and professionals this year. But above all it was the 127 participants who exchanged and shared their lives with each other and set aside their differences to work and learn together.

While no two participants started the summer with the same expectations, all left with the feeling of belonging to the same international, intercultural, and interdisciplinary community. This is where ISU excels. Its philosophy operates as a constant reminder that the greatest endeavours in space, whether on the International Space Station or in the United Nations Committee on the Peaceful Uses of Outer Space, are achieved through international cooperation. It reminds us that, beyond its evident synergistic value for the improvement of life on Earth, for science, and inspiring youth, that human space activities work best—as it always has—when we work together internationally as one crew of a planetary spaceship.



Panel Discussion with Buzz Aldrin.

SSP19 website, including an overview of staff, activities, projects and weekly blogs: <https://ssp19.isunet.edu>.

SSP19 retrospective: http://www.isunet.edu/images/ISU/Programs/SSP/Retrospective_Final_V7_17SEP19_lr.pdf.