



**SIS**  
**FVG**

REGIONE AUTONOMA  
FRIULI VENEZIA GIULIA

SCIENTIFIC  
AND INNOVATION SYSTEM  
OF FRIULI VENEZIA GIULIA

# Mobility of Knowledge Survey 2021



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# Mobility of Knowledge Survey 2021



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## Scientific and Innovation System of Friuli Venezia Giulia

SiS FVG – Scientific and Innovation System represents a point of contact for 17 research institutions based in Friuli Venezia Giulia. This region in Italy acts as a hub for science and technology, thanks to the presence of international research facilities and high-level scientific competencies brought here by researchers from all over the world who choose this region as their ideal place to carry out research projects.

SiS FVG is supported by:

- > Ministry of Foreign Affairs and International Cooperation (MAECI)
- > Ministry of University and Research (MUR)
- > Regional Authority of Friuli Venezia Giulia.

## Introduction

The “Mobility of Knowledge” is an annual survey conducted by Area Science Park since 2005 that collects primary data on students, researchers and teaching staff at the 17 partner research institutions in the SiS FVG network.

The survey gathers data on the number of foreign researchers and students at partner research institutions, universities and music colleges, on incoming and outgoing mobility flows, gender differences, research interests and countries of origin.

The 2021 edition presents data on the 2019/2020 academic year for students and the 2020 calendar year for researchers and teaching personnel.

The data, especially those regarding the mobility of researchers and teaching staff, are significantly impacted by the outbreak of the Covid-19 pandemic, which led to enormous restrictions on the movement of people worldwide.

## Partners of SiS FVG taking part in the survey

### Universities and music colleges

University of Trieste  
University of Udine  
SISSA - International School for Advanced Studies  
Conservatory of Music Giuseppe Tartini, Trieste  
Conservatory of Music Jacopo Tomadini, Udine

### National research institutions

Area Science Park  
Elettra - Sincrotrone Trieste S.C.p.A.  
National Institute of Oceanography and Experimental Geophysics – OGS  
CNR - IC Institute of Crystallography, IOM Materials Workshop Institute, ISM Institute of Structure of Matter, ISMAR Institute of Marine Sciences  
INAF - National Institute for Astrophysics - The Astronomical Observatory of Trieste  
INFN - National Institute of Nuclear Physics, Trieste

### International research institutes

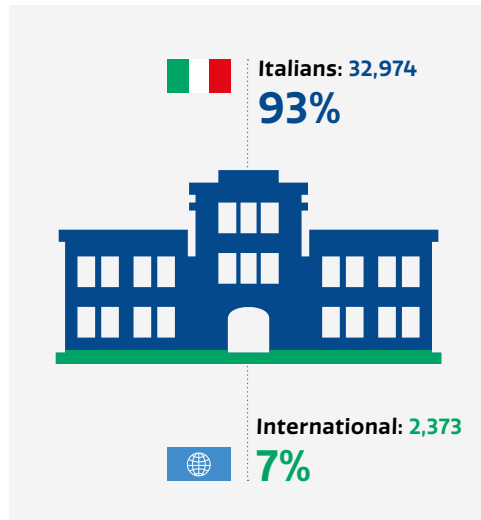
ICGEB - International Centre for Genetic Engineering and Biotechnology  
The Abdus Salam International Centre for Theoretical Physics – ICTP

### Science and technology parks

Friuli Innovazione Research and Technological Transfer Centre

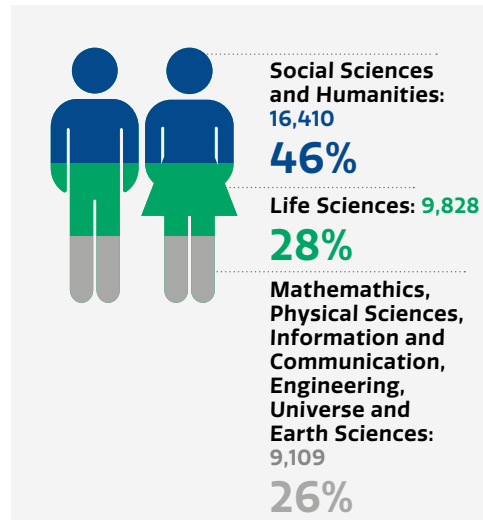
## 1/ Students

### / STUDENTS ENROLLED IN UNIVERSITIES AND MUSIC COLLEGES



Enrollment numbers on university and music college courses in Friuli Venezia Giulia were not affected by the outbreak of the pandemic, which began several months after the start of the 2019/2020 academic year. Indeed, the number of enrolled students was in line with the previous year and totalled 35,347. The percentage of foreign students was also stable.

### / SCIENTIFIC AREA OF ENROLLED STUDENTS



In 2019/2020, almost half (46%) of students in the region were enrolled on Humanities or Social Science courses. The other half were evenly divided between the two remaining macro areas of study: Life Sciences (28%) and Mathematics, Physics, Engineering, ICT, Universe and Earth Sciences (26%).

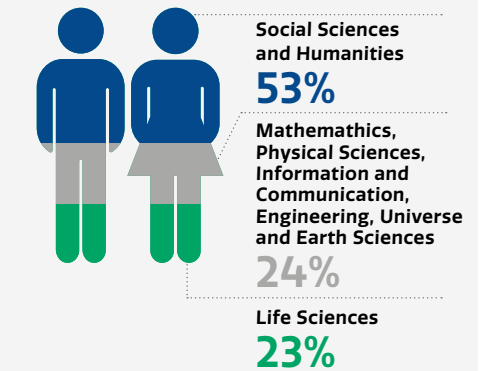
## 1/ Students

### / INCOMING FOREIGN STUDENTS

Foreign students spending a period of study in the region fell to around 450 in 2019/2020 from 600 in the previous year. These lower numbers (-25%) can be explained by the pandemic that began right in the second semester of the academic year.

Data on the countries of origin of incoming students were stable. As in previous years, most were European citizens enrolled on courses at Human Sciences and Social Sciences departments.

#### SCIENTIFIC AREAS OF INCOMING STUDENTS



#### CITIZENSHIP OF INCOMING STUDENTS

EU Europe (not including Italy)

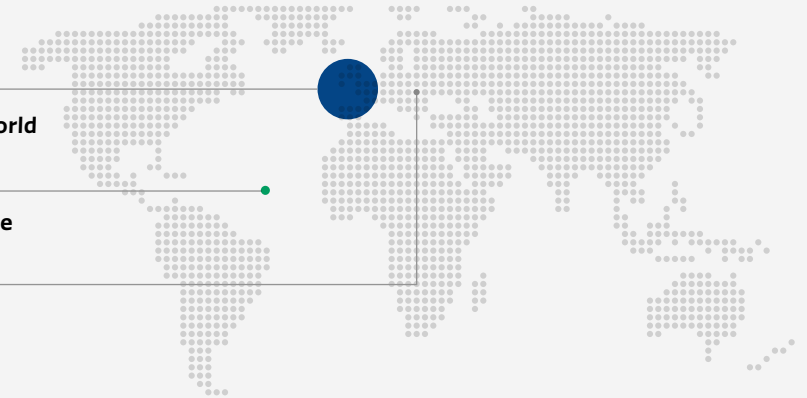
80%

Rest of the world

12%

Non EU Europe

8%





## Students

### / OUTGOING STUDENTS

Similarly to incoming foreign students, there was also a reduction in the numbers of outgoing students enrolled in the region, by almost 300 from 1,358 to 1,072. There was no change, however, to the destinations of

outgoing students, which, for 90%, were EU countries, or to the profile of students going abroad, who were mainly enrolled on Human and Social Science courses.

#### SCIENTIFIC AREAS



Social Sciences and Humanities: 649  
61%

Life Sciences: 226  
21%

Mathematics, Physical Sciences, Information and Communication, Engineering, Universe and Earth Sciences: 197  
18%

#### DESTINATIONS



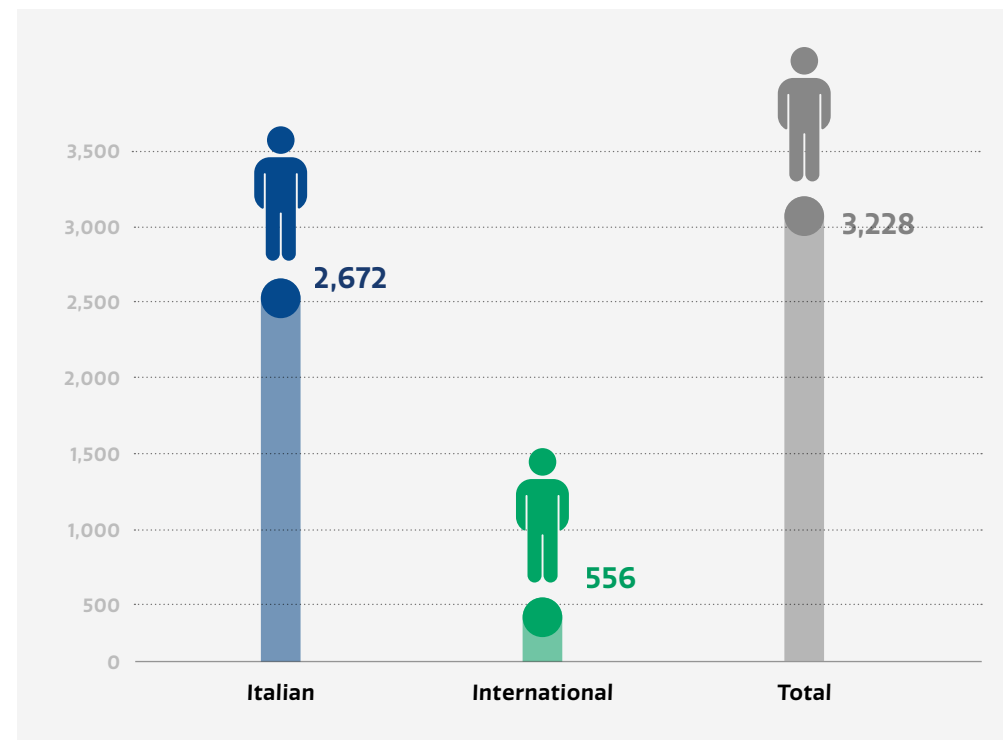
EU Europe (not including Italy): 970  
Rest of the world: 102

## 2/ Researchers and teaching staff

### / RESEARCHERS AND TEACHING STAFF AT INSTITUTIONS IN THE NETWORK

The pandemic had a staggering effect on the number of researchers in the region, particularly foreign ones working for organisations in the FVG Scientific and Innovation System. While the overall number of teaching staff, who are mainly Italian, remained stable, the number of researchers

more than halved from the previous year. Thus, the total number of researchers and members of teaching staff dropped from 6,960 in 2019 to 3,228 in 2020. This significant reduction may be due to the fact that, before the pandemic, as many as 55% of researchers and teaching staff were foreign.



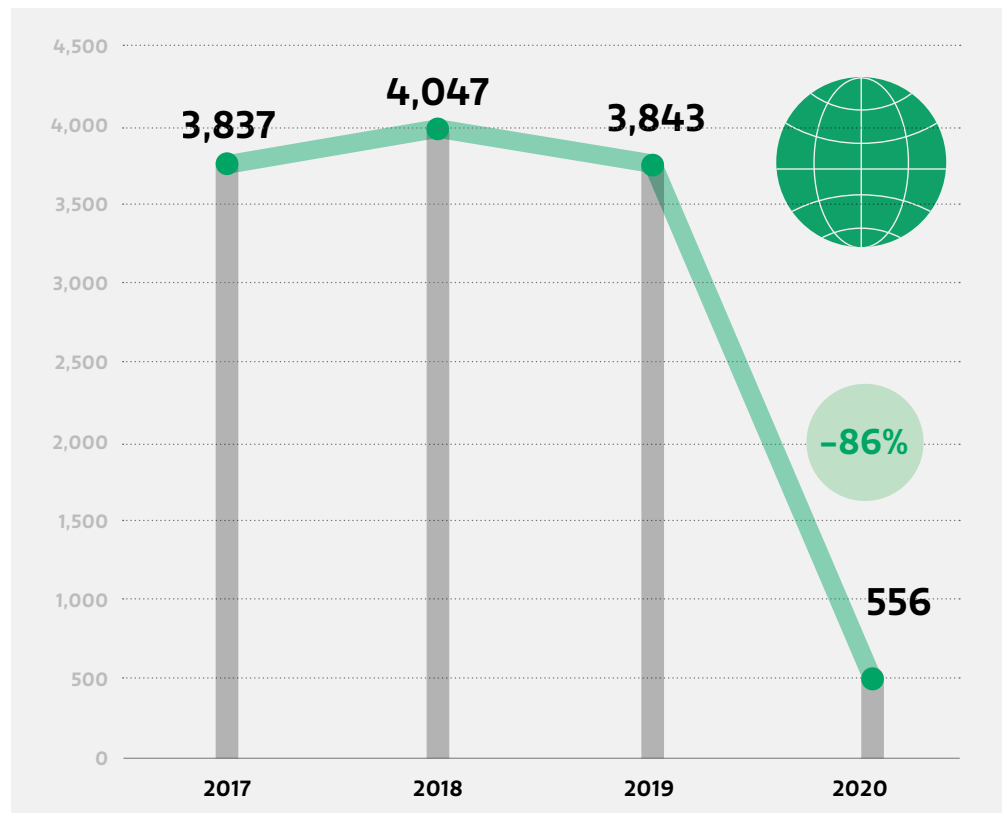


2/ Researchers and teaching staff

## / FOREIGN RESEARCHERS AND TEACHING STAFF AT INSTITUTIONS IN THE NETWORK

Considering only the foreign members of the workforce at the institutions in the FVG Scientific and Innovation System in 2020, it is immediately clear the extent to which the

numbers of foreign researchers and teaching staff working in the region were affected by the pandemic and the consequent restrictions on movement, which plunged by 86%.

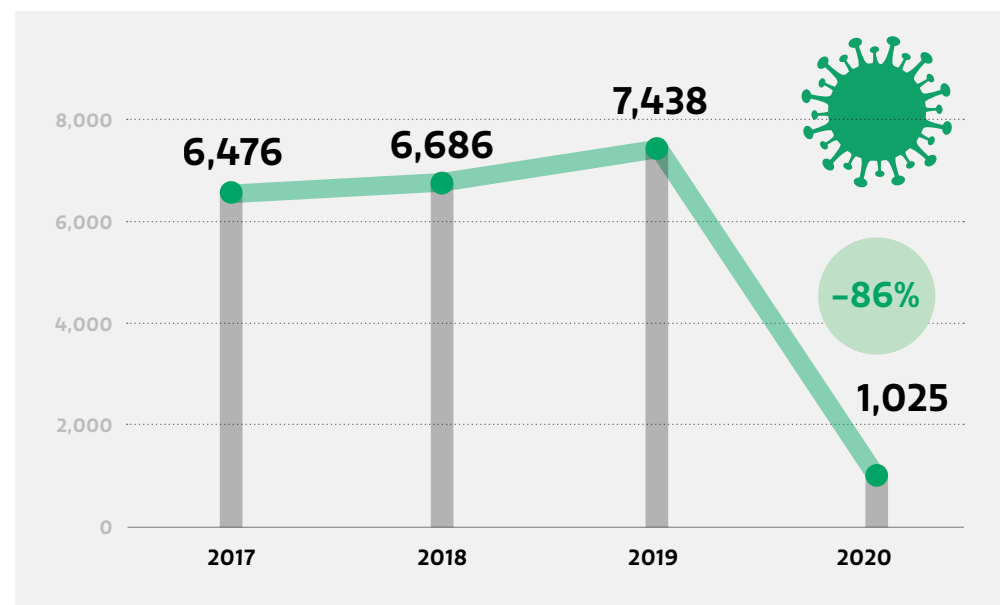


2/ Researchers and teaching staff

## / FOREIGN RESEARCHERS AND TEACHING STAFF HOSTED BY SIS FVG INSTITUTIONS: THE EFFECTS OF THE PANDEMIC

One drastic decrease caused by the health crisis came in the number of incoming foreign researchers and teaching staff, namely those who would have gone to Friuli Venezia Giulia for even a short period of study or research at the intuitions in the region's Scientific and Innovation System, and would then have returned to their own institutions. Indeed the number of teaching professionals who did arrive (125) was about

1/10 of the number in the previous year. Meanwhile, researchers, of whom there had been 6,200 in 2019, decreased to 900. Thus, the total number of professionals plummeted by 86% in 2020 from the previous year, with only 1,025 arrivals. Of this group, 93% came from the scientific domains of Mathematics, Physics, Engineering, ICT, Universe and Earth Sciences.

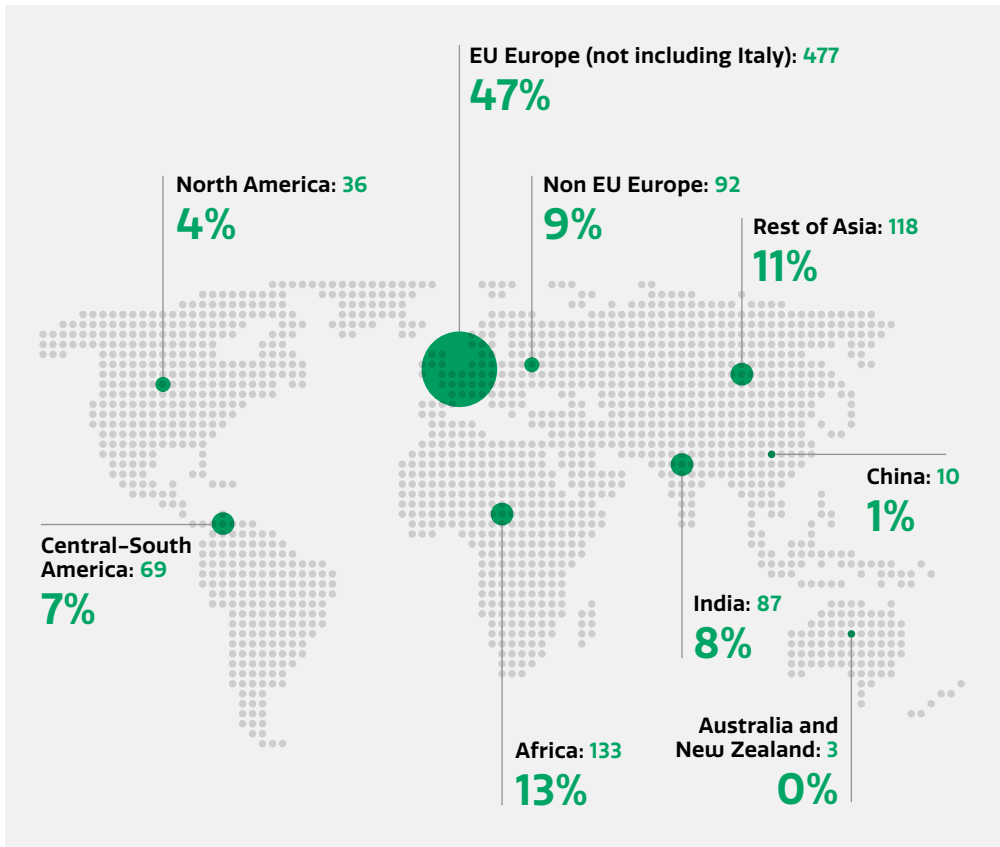




2/ Researchers and teaching staff

## / NATIONALITY OF INCOMING FOREIGN RESEARCHERS AND TEACHING STAFF

Almost half of foreign researchers and teaching staff arriving in the region in 2020 for even a short period of study or research were citizens of an EU country, followed by Africa and Asia (not including India and China).

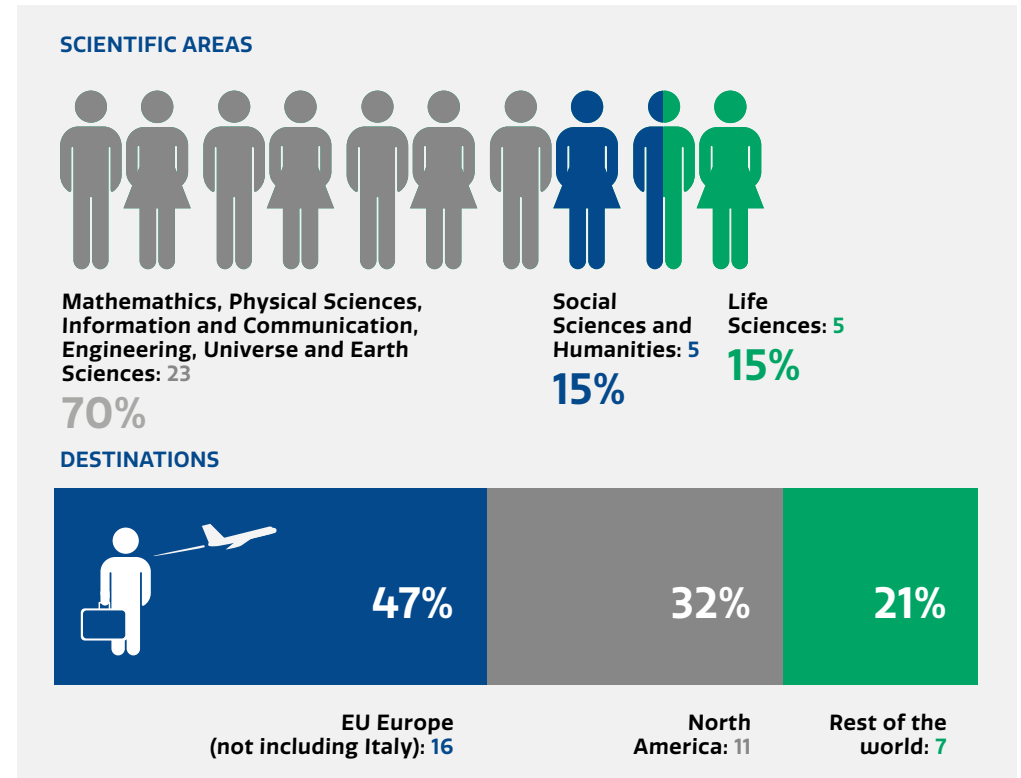


2/ Researchers and teaching staff

## / OUTGOING TEACHING STAFF AND RESEARCHERS

As with incoming staff, the pandemic caused a considerable decrease in the number of outgoing researchers and teaching staff. Foreign trips declined from 93 in 2019 to 34 in 2020. The main destinations were still EU countries

and North America. The profile of those going abroad also remained unchanged, mainly including researchers and teachers of Mathematics, Physics, ICT, Engineering, Universe and Earth Science.





### 3/ Gender distribution

#### / GENDER DISTRIBUTION OF ENROLLED STUDENTS

Overall the total percentage of female students enrolled at universities and music colleges in the region was the same as in previous years at 55%. When comparing the science subjects chosen by male and female students, it is noteworthy that there is a strong female bias towards Human and Social Sciences, while the reverse is true for the area of science that includes Mathematics, Physics, Engineering, ICT, Universe and Earth Science. The area with the smallest gap between the genders is Life Sciences, although female students outnumber their male counterparts by a good margin.

##### GENDER DISTRIBUTION OF ENROLLED STUDENTS



Female: 19,334

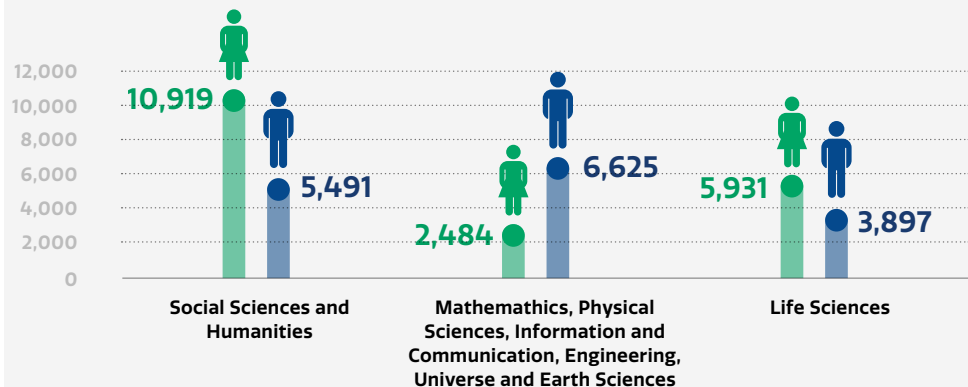
55%



Male: 16,013

45%

##### GENDER AND SCIENTIFIC AREA OF ENROLLED STUDENTS



### 3/ Gender distribution

#### / GENDER OF RESEARCHERS AND TEACHING STAFF AT INSTITUTIONS IN THE NETWORK

The hefty decline in the total number of researchers caused by the pandemic had only a slight impact on the ratio of male to female researchers and teaching staff

working at the partner institutions. Although the portion of women increased from 33% to 36%, it is still a long way from an even distribution.

Female: 1,172

36%

Male: 2,056

64%



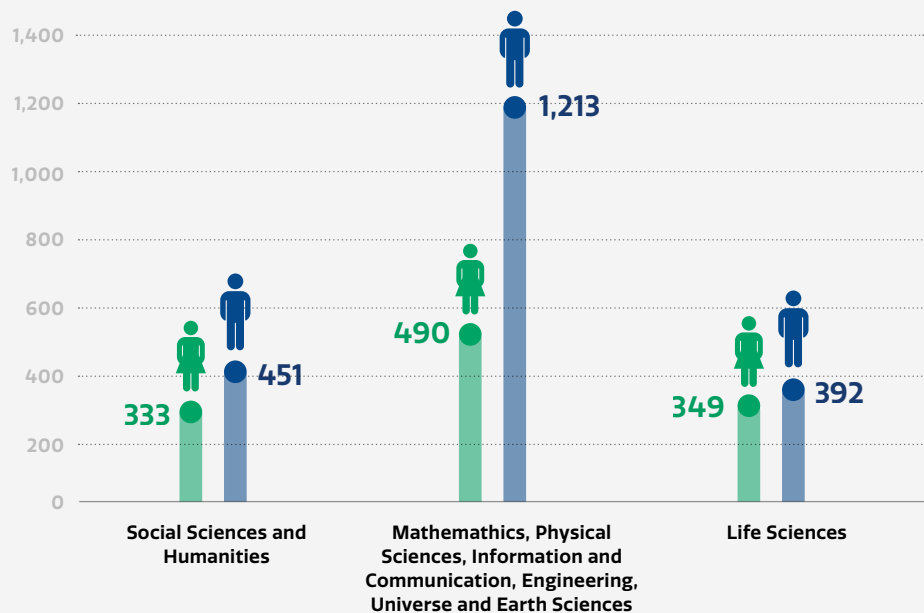
3/ Gender distribution

/ RESEARCHERS AND TEACHING STAFF AT INSTITUTIONS IN THE NETWORK: THE GENDER ISSUE

Cross-referencing the gender data on researchers and teaching staff in institutions in the FVG Scientific and Innovation System with their respective scientific domains,

it emerges that the domain that includes Mathematics, Physics, Engineering, ICT, Universe and Earth Science has a predominantly male presence.

GENDER AND SCIENTIFIC AREA OF RESEARCHERS AND TEACHING STAFF

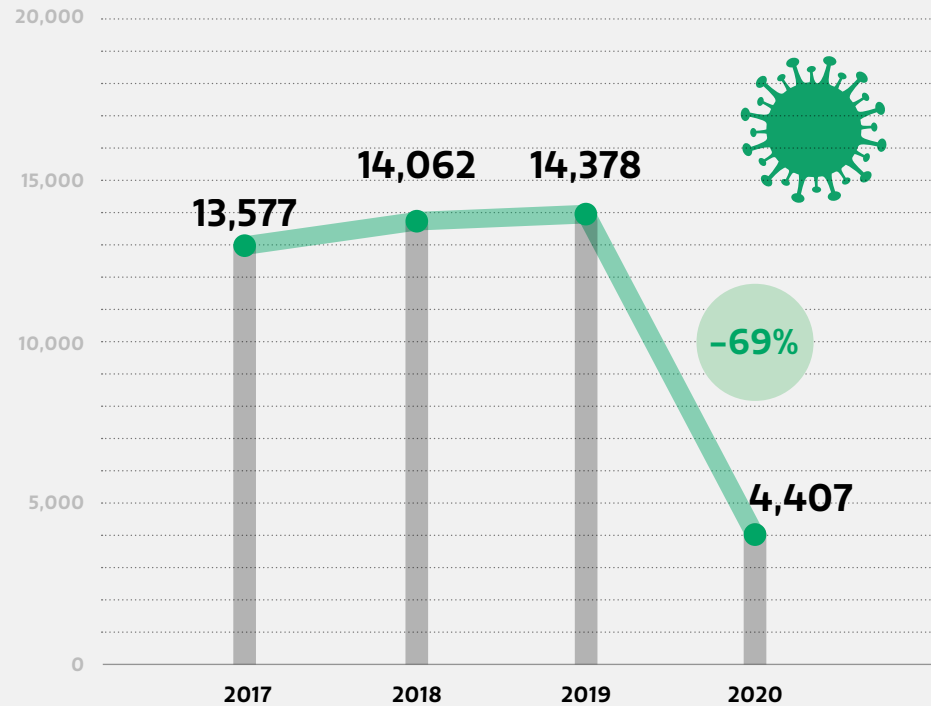


4/ Conclusions

/ EFFECTS OF THE PANDEMIC ON FOREIGN STUDENTS, RESEARCHERS AND TEACHING STAFF

Looking at the total number of foreigners in the FVG Scientific and Innovation System, including enrolled students, researchers and teaching staff working at the various institutions, as well as incoming mobility data, namely, foreign students, teaching staff

and researchers going to the region for even a short period of study or research, we can see that the pandemic, which began in 2020, reduced this group by about 10,000, down 69% from the previous year.





# Mobility of Knowledge Survey 2021

## Conclusions

The year 2020 was certainly full of challenges, not only in health-related terms, but also because it saw the reorganisation of research and study activities which, where possible, took place remotely.

Overall the pandemic caused no significant changes in the numbers of enrolled students, including foreign ones, while there was a 25% drop in incoming students. Conversely, the impact was more substantial on researchers and teaching staff, equally so for those employed by SiS FVG institutions, who made up 55% of all members of the workforce in 2019, and for incoming staff, whose numbers dwindled considerably in 2020.

It should nevertheless be noted that the pandemic also produced some positive effects: first and foremost, the opportunity to take part in online courses and summer schools, giving more people, especially foreigners, the chance to get involved in the future, albeit from afar, in the activities of SiS FVG institutions. One example of this is the “Abdus Salam” International Centre for Theoretical Physics (ICTP), whose distance activities helped offset the almost 50% reduction in incoming mobility from pre-pandemic numbers.

For more information on the network:

[www.sisfvg.it](http://www.sisfvg.it)

For more information on the survey:

[www.sisfvg.it/services](http://www.sisfvg.it/services)

 [SiS FVG](https://www.facebook.com/SiS-FVG)  [SiS FVG](https://www.youtube.com/SiS-FVG)

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