



**SIS**  
**FVG**

REGIONE AUTONOMA  
FRIULI VENEZIA GIULIA  
SCIENTIFIC  
AND INNOVATION SYSTEM  
OF FRIULI VENEZIA GIULIA

# Mobility of Knowledge Survey 2023



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# Mobility of Knowledge Survey 2023

## Contents

- Scientific and Innovation System of Friuli Venezia Giulia page 2
- Introduction page 3
- ① Students page 4
- ② Researchers and teaching staff page 8
- ③ Recovery after the pandemic page 15



## 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:

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

## 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 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 2023 edition presents data on the 2021/2022 academic year for students and the 2022 calendar year for researchers and teaching personnel. Two years on from the outbreak of the pandemic, mobility figures for incoming and outgoing students, as well as incoming researchers and teaching staff, have finally returned to growth, although they are still far from the levels recorded in 2019.

## SiS FVG Partners

### Universities and music colleges:

University of Trieste  
University of Udine  
SISSA - International School for Advanced Studies  
Academy of Music “G. 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 Applied Geophysics - OGS  
CNR - IC Institute of Crystallography, IOM Materials Foundry Institute, ISM Institute of Structure of Matter, ISMAR Marine Sciences Institute  
INAF - 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)  
TWAS - The World Academy of Sciences for the advancement of science in developing countries  
The InterAcademy Partnership (IAP)

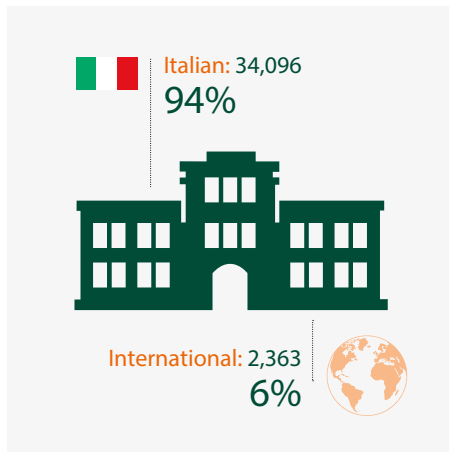
### Science and technology parks:

Friuli Innovazione Research and Technological Transfer Centre  
Polo Tecnologico Alto Adriatico Andrea Galvani S.C.P.A Technology Park



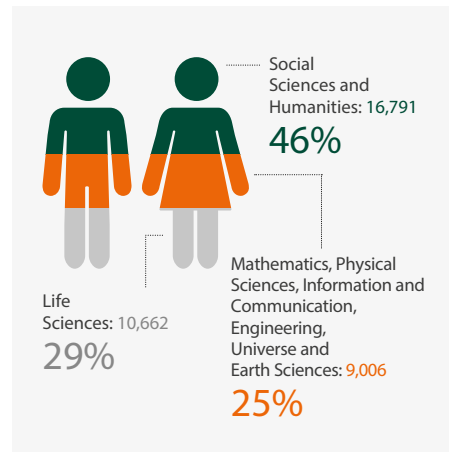
## 1/ Students

### / STUDENTS ENROLLED IN UNIVERSITIES AND MUSIC COLLEGES



Enrolment numbers on university and music college courses in Friuli Venezia Giulia in the academic year 2021/2022, which had seen an increase of almost 1,200 students, remained in line with figures for the previous year. Enrolled students totalled 36,459, and the percentage of foreign enrolled students has remained at 6%, corresponding to 2,363 individuals.

### / SCIENTIFIC AREA OF ENROLLED STUDENTS

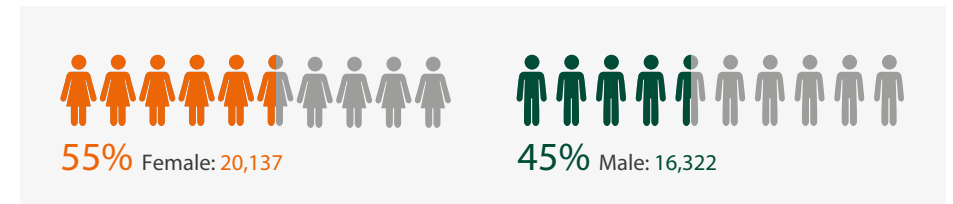


Again in 2021/2022, almost half (46%) of students in the region were enrolled on Humanities or Social Science courses. These were followed by Life Sciences (29%) and the macro-area including Mathematics, Physics, Engineering, ICT, and Universe and Earth Sciences (25%).



## 1.1/ Students

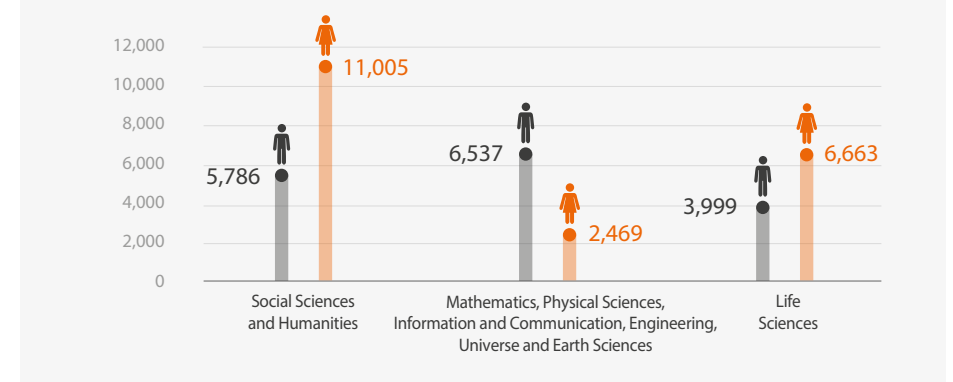
### / GENDER DISTRIBUTION OF ENROLLED STUDENTS



The total percentage of female students enrolled at universities and music colleges in the region was again the same as previous years, at 55%. Comparing the scientific subjects chosen by male and female students, there remains an evident strong female bias towards Human and Social

Sciences, while the reverse is true for the area of science that includes Mathematics, Physics, Engineering, ICT, and Universe and Earth Sciences, dominated by male students. The area with the smallest gap between the genders is Life Sciences, where female students account for 62%.

### GENDER AND SCIENTIFIC AREAS OF ENROLLED STUDENTS



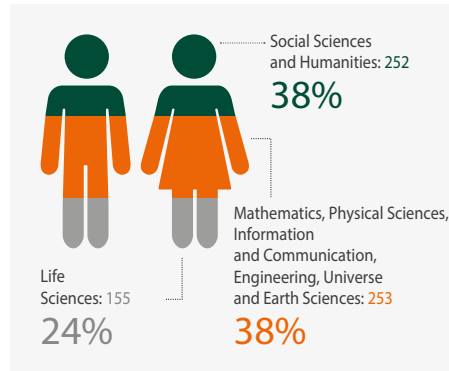


## 1.2/ Students

### / INCOMING FOREIGN STUDENTS

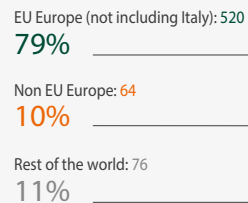
In academic year 2021/2022, the number of students coming from foreign universities who completed a period of study in the region was more than four times greater than the previous year, rising from 139 to 660 individuals. This figure breaks down equally between male and female students. The strong increase is therefore a sign of the recovery of student mobility almost two years on from the start of the pandemic.

Data on the countries of origin of incoming students remain stable, with predominately European citizens. Looking at the different scientific areas, Human and Social Sciences, which usually sees the high-



est numbers, were equalled by the area including Mathematics, Physics, ICT, Engineering, and Universe and Earth Sciences.

### CITIZENSHIP OF INCOMING STUDENTS



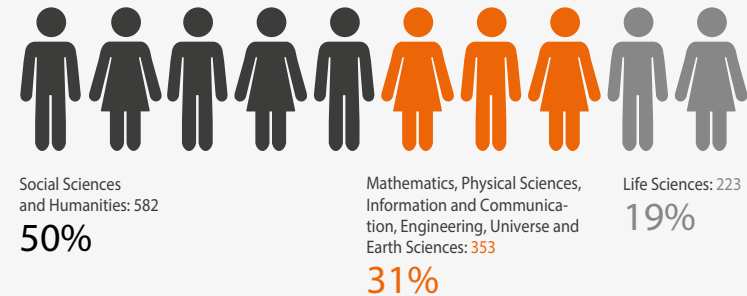
## 1.3/ Students

### / OUTGOING STUDENTS

Similarly to incoming foreign students, also students enrolled at the regional universities who spent a period of study abroad have increased, with numbers rising from 474 to 1,158 individuals.

There was no change, however, with regard to the destinations of outgoing students, with 88% going to EU countries, or the profile of students, with 50% of these enrolled on Human and Social Science courses.

### SCIENTIFIC AREAS



### DESTINATIONS

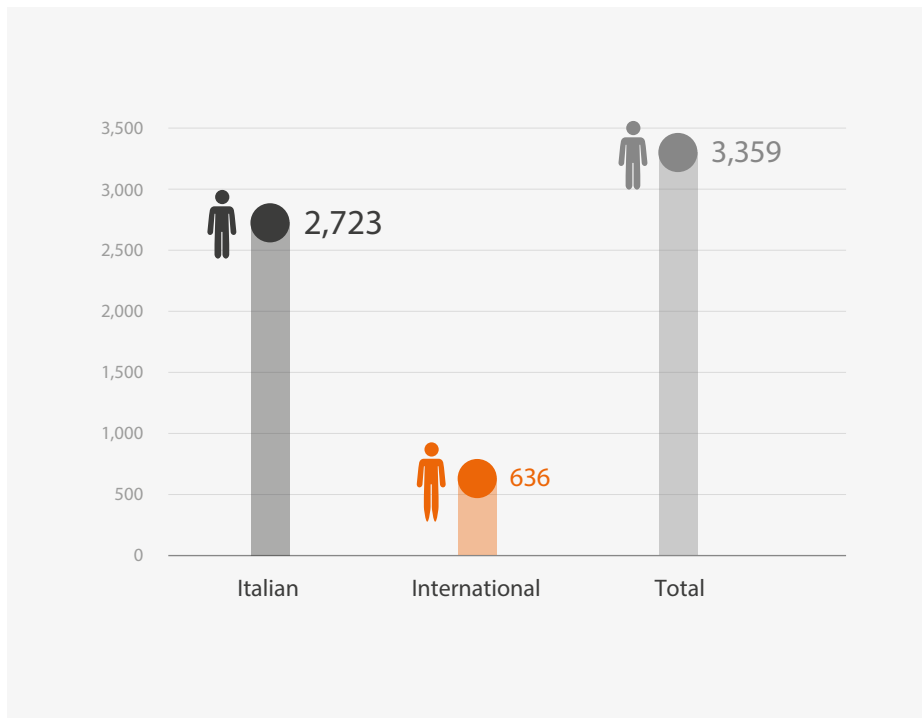




## 2/ Researchers and teaching staff

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

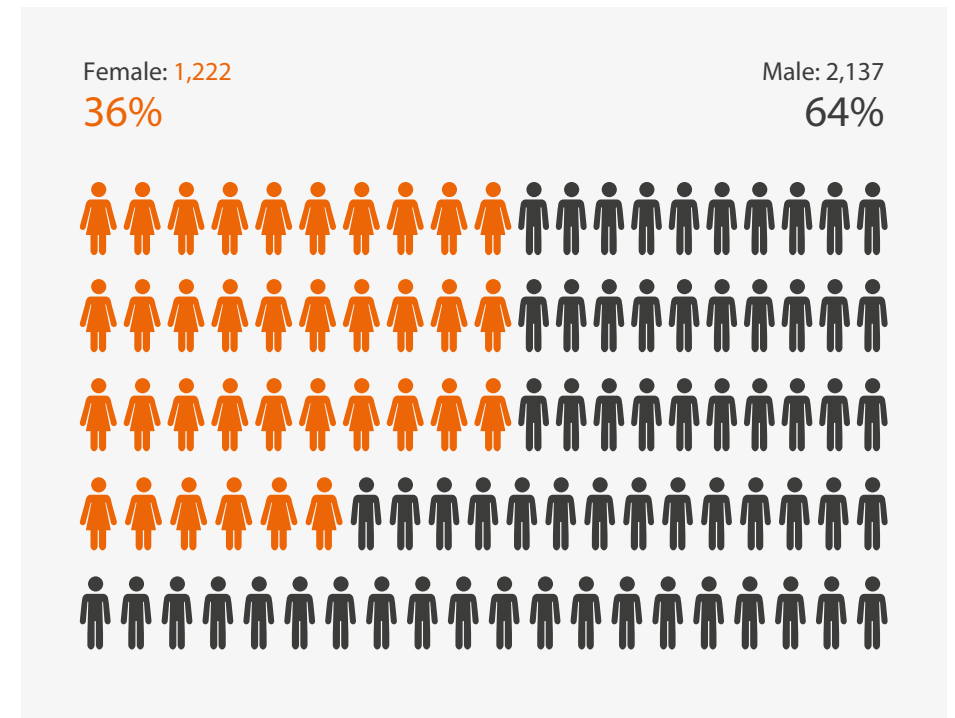
The overall numbers of teaching staff and researchers, both Italian and foreign, remained basically unchanged compared to the previous year. The total figure of 3,359 individuals is, however, still far from the levels recorded prior to the pandemic, which were just above double (6,960 individuals in 2019).



### 2.1/ Researchers and teaching staff

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

The total number of researchers and teaching staff at the institutions remained in line with the previous year, with the ratio of males to females also unchanged. Although the portion of women remained stable at 36%, they are still far from being equally represented.





2.2/ Researchers and teaching staff

## / 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, the domain that includes Mathematics, Physics, Engineering, ICT, and Universe and Earth Sciences continued to be male-dominated.

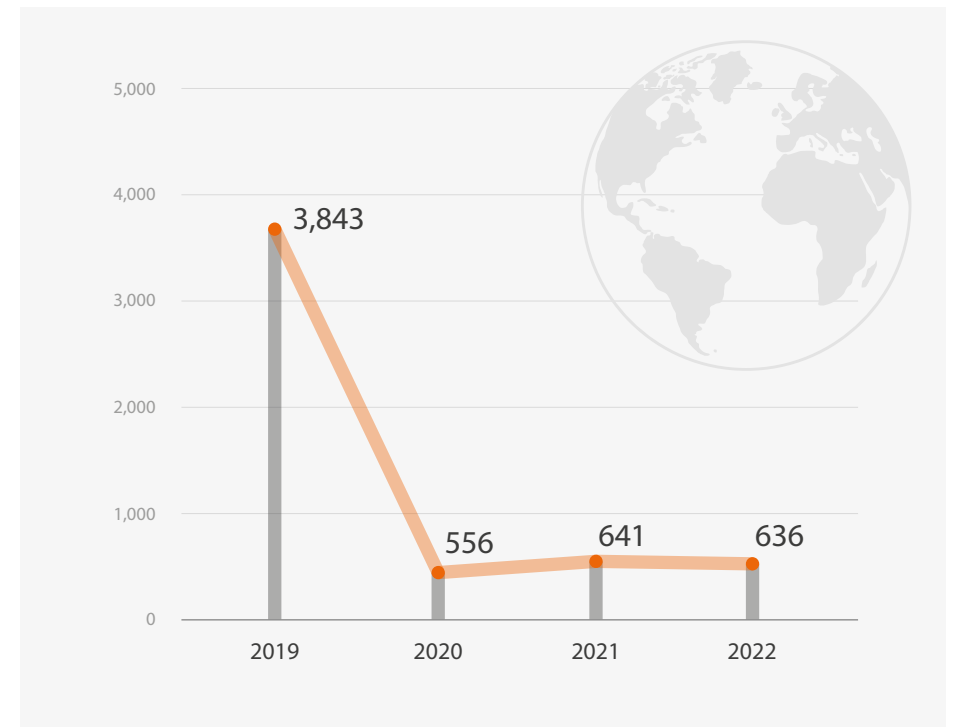
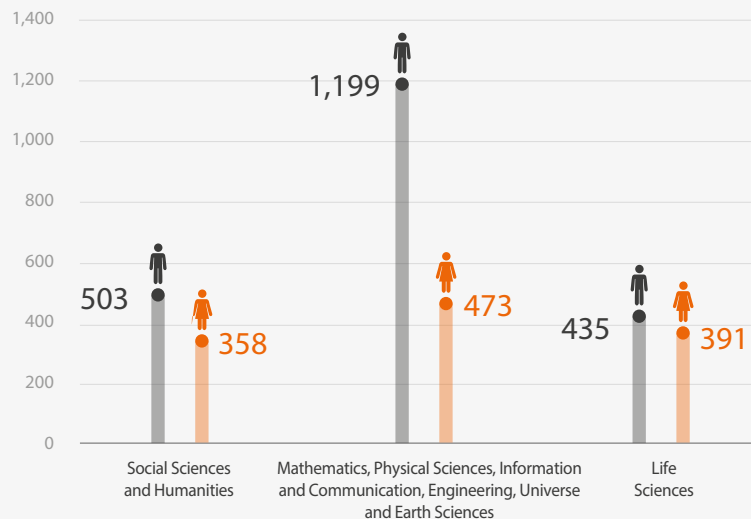


2.3/ Researchers and teaching staff

## / 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 2022, it is immediately apparent that the numbers, whilst stable compared to last year with 636 individuals, are still far from their pre-pandemic levels.

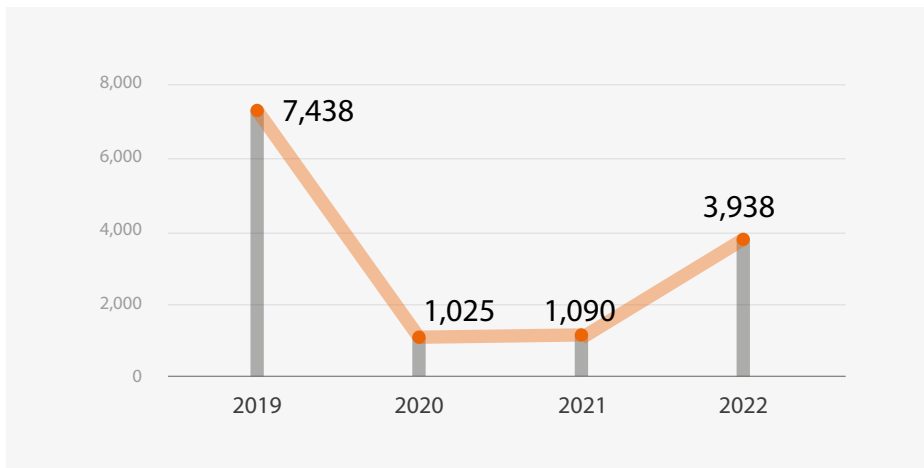
### GENDER AND SCIENTIFIC AREAS OF RESEARCHERS AND TEACHING STAFF





2.4/ Researchers and teaching staff

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



Two years after 2020, since the beginning of the pandemic, the drastic decline in incoming foreign researchers and teaching staff, or else, those who were supposed to come to FVG for a study or research period, even a short one, at SIS FVG institutions and then return to their own institutions, has finally subsided. Although 2022 figures, which reached a total of 4,000 individuals, are still very far from pre-pandemic levels, they are certainly encouraging compared to the pre-

vious year. While incoming researchers more than tripled, from 1,033 to 3,228 individuals, the number of incoming teaching staff rose from 57 to 710, more than a tenfold increase. The total was 3,938 in 2022, more than three times the total for the previous year (1,090). Of this group, 87% continue to come from the scientific domains including Mathematics, Physics, Engineering, ICT, and Universe and Earth Sciences.

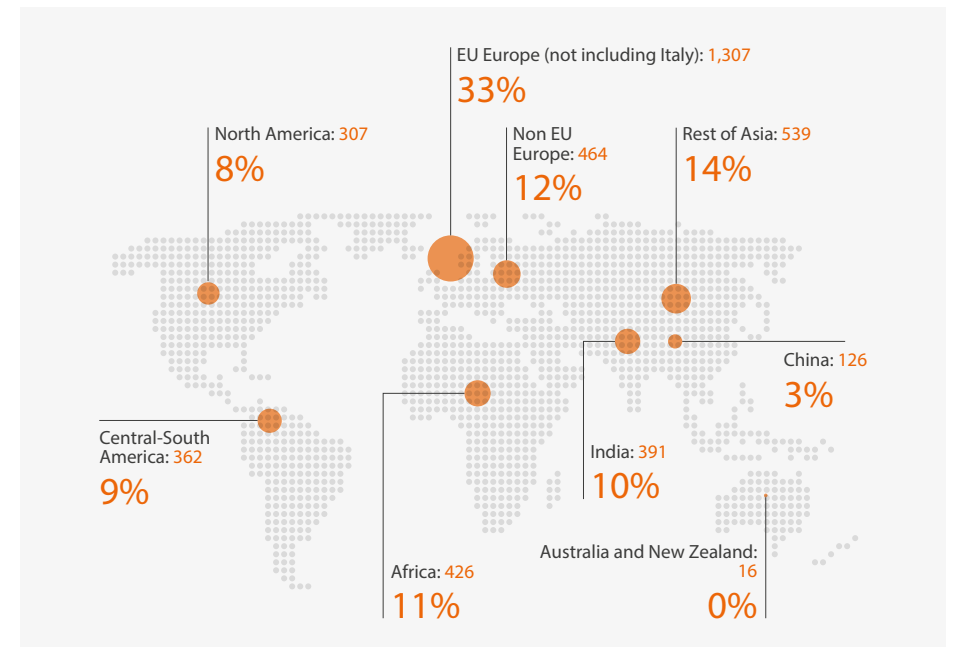


2.5/ Researchers and teaching staff

/ NATIONALITY OF INCOMING FOREIGN RESEARCHERS AND TEACHING STAFF

Whilst in 2021, as much as 73% of foreign researchers and teaching staff arriving in the region for even a short period of study or research were citizens of an EU country, in 2022 this percentage came down to 33%. Lesser restrictions due to the slowing

of the pandemic favoured an increase in arrivals also from foreign countries. Numbers from India, for example, rose from 2% to 10%, for Africa from 4% to 11%, and for Asia (excluding India and China) from 5% to 14%.





2.6/ Researchers and teaching staff

### / OUTGOING TEACHING STAFF AND RESEARCHERS

Although to a lesser degree compared to incoming researchers and teaching staff, the numbers of outgoing individuals also saw a marked increase. Trips abroad almost doubled from 31 to 58. Before the pandemic, the number of trips stood at 93. The main destinations were still

EU countries (40%) and North America (17%). More than two thirds of outgoing researchers and teaching staff, representing 77%, came from the scientific domains including Mathematics, Physics, ICT, Engineering, and Universe and Earth Sciences.

#### SCIENTIFIC AREAS



Mathematics, Physical Sciences, Information and Communication, Engineering, Universe and Earth Sciences: 41

77%

Social Sciences and Humanities: 9

17%

Life Sciences: 3

6%

#### DESTINATIONS



40%

17%

43%

EU Europe (not including Italy): 23

North America: 10

Rest of the world: 25

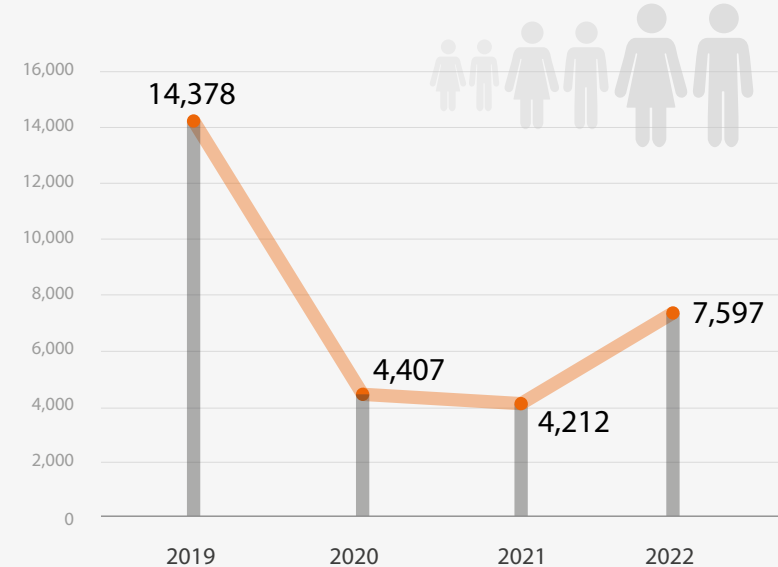


### 3/ Recovery after the pandemic

#### / THE RECOVERY OF STUDENT MOBILITY ALMOST TWO YEARS ON FROM THE OUTBREAK OF THE PANDEMIC

The total number of foreigners in the FVG Scientific and Innovation System, including enrolled students (2.363 units), researchers and teaching staff working at the various institutions (636 units), as well as incoming mobility figures, namely, those arriving in the region for even a short period of study

or research (660 students and 3.938 researchers and teaching staff), finally saw an increase from 2022. In fact, the figures, which in the two-year period 2020-2021 recorded a huge decrease of around 10,000 individuals, have increased significantly in 2022, from 4,212 to 7,597 individuals.





# Mobility of Knowledge Survey 2023

## Closing remarks

Two years on from the start of the pandemic, there are finally the first signs of recovery, particularly regarding incoming students and researchers and teaching staff, as well as a recovery in numbers of outgoing students enrolled at the universities and music colleges in the region. Overall, the number of enrolled students has remained stable at around 36,500 individuals, as has the percentage of foreign students, at 6%. In this year of recovery, the mobility category with the greatest increase was certainly incoming foreign teaching staff, rising from 57 to 710 individuals, followed by incoming students, with the figure rising from 139 to 660 individuals.

Overall, although figures are far from pre-pandemic levels, above all for the total number of researchers and teaching staff of the institutions, particularly regarding those from abroad, 2022 was certainly the year in which international mobility saw a more significant recovery, also outside European countries, which were particularly heavily affected by restrictions due to the pandemic. For short-term activities such as courses, seminars or summer schools, there is still some virtual participation of foreign students and researchers, particularly regarding activity organised by the Abdus Salam International Centre for Theoretical Physics (ICTP).

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