



**Enseignement supérieur
et recherche en Grande Région**

**Hochschulwesen und Forschung
in der GroßRegion**

**Higher Education and Research
in the Greater Region**



Imprint

Higher Education and Research
in the Greater Region

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Higher Education
and Research
in the Greater Region





Grande Région
en bref

Großregion
kurzgefasst

Greater Region
in brief



11 618 136

Population
Bevölkerung
Population

391 131 M€

Produit Intérieur Brut
Bruttoinlandsprodukt
Gross domestic product

1 516 228 ha

Parcs naturels
Naturparks
Natural Parks

65 402

Superficie en km²
Fläche in km²
Surface km²

33 750 €

PIB par habitant en 2017
BIP je Einwohner 2017
GDP per habitant

2

Groupements d'enseignement supérieur
Hochschulallianzen
Higher education networks

30

Cursus de formation transfrontaliers, bi-et trilingues
Zwei- und dreisprachige grenzüberschreitende Studiengänge
Bilingual and trilingual cross-border courses

160 000

Etudiant.e.s environ
Studierende ungefähr
Students about

36,3%

Proportion des personnes âgées de 30 à 34 ans diplômées de l'enseignement supérieur**
Anteil der 30- bis 34-jährigen mit abgeschlossener Hochschulbildung
Share of 30-34 year-olds with tertiary educational attainment

Greetings



Tobias Hans

President of the Greater Region Summit 2019/20, Minister-president Saarland

As a result of the joint political activity of the Greater Region Summit over the last 25 years and with European support, the Greater Region has become a model area for European integration. The higher education and research sector, with its long-standing and constantly evolving cooperation, is a prime example of flourishing cross-border exchanges.

The Corona crisis has highlighted more than ever the importance of effective cross-border cooperation. Thanks to the exceptional commitment of all the participants involved and in often difficult conditions for students, researchers and teachers, existing cooperation has continued wherever possible, and new forms and themes of collaboration have been created in practical and scientific terms.

As a model of a European border region, we, the partners of the Greater Region, can demonstrate what is possible in terms of cooperation, joint action and solidarity – also and especially in times of crisis. In 2019, Saarland took over the biennial presidency of the Greater Region Summit with the motto «Moving the Greater Region forward together». It was important for us to familiarise our citizens with the Greater Region and to strengthen our communication with people, because it is people who maintain and build strong cross-border partnerships by travelling to the Greater Region for business or leisure, especially in difficult times.

With this guide to «Higher Education and Research in the Greater Region», which provides an overview of the Greater Region and its cooperation in higher education and research, we hope to make a valuable contribution in familiarising interested citizens with the area, an important factor for the future development of our region.



Jean Rottner

President of the Greater Region Summit 2021/22, President of the Grand Est Region

Since the beginning of 2020, our socio-economic fabric has been hit by the health crisis that continues to disrupt our activities. With the Business Act Grand Est, the Region has developed a shared strategic vision to collectively confront this situation and take up the major challenges of the climate emergency and the success of environmental, digital and industrial transitions.

The Region's positioning and its commitment to cooperation have allowed this strategy to be co-constructed with our cross-border partners, resulting in better recognition of the links that unite our neighbouring territories, particularly in terms of training and research for excellence.

The quality of higher education and research is at the heart of the Grand Est Region's activity. These are the essential levers of competitiveness, attractiveness and influence of our territory. We are therefore fully committed to cooperation with our partners in the Greater Region in order to create synergies between the ecosystems of higher education, research and innovation. The linking of their skills and competences offers a broad international horizon for the benefit of citizens and businesses in the Greater Region.

After Saarland, France will take over the presidency of the Greater Region Summit for the period 2021/22. It is thus with great pleasure that Minister President Tobias Hans and myself present this paper on «Higher Education and Research in the Greater Region». It will help every interested student, expert or citizen discover the institutions and stakeholders who work in favour of higher education and research in the Greater Region in order to develop an offering of excellence.

Happy Reading

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A 5 regions,
4 countries,
3 languages ...
1 unique position
at the heart
of Europe

The Greater Region is a cross-border area located at the crossroads of the Rhine, Saarland, Meuse and Moselle, comprising the territories of Lorraine (Moselle, Meurthe-et-Moselle, Meuse) within the Grand Est region in France, Wallonia, the Wallonia-Brussels Federation and Ostbelgien in Belgium, Saarland and Rhineland-Palatinate in Germany and the Grand Duchy of Luxembourg. It benefits from an exceptional location in the heart of Europe: Its 65,401 sq. km extend advantageously to less than 300 km from Paris, Brussels, Rotterdam and Frankfurt.

At the crossroads of history, cultures and languages, it embodies a community of destiny, rich in its commonalities and diversity, which is constantly enriched by the exchanges and constant flows it hosts. Its 11.6 million inhabitants share strong ties; one need only look at cross-border mobility. Nearly 240,000 citizens cross the border every day to go to their place of work. No other area in Europe has such a dynamic!



The framework : An exceptional long-standing institutionalised cooperation

Greater Region Summit

The institutionalisation of cooperation between the territories of the Greater Region 25 years ago has been the fundamental pillar of its development, both economically and in terms of civil society. Since 1995, all the representatives of the executive powers in office of the partner regions of the Greater Region have been meeting regularly in the form of the Greater Region Summit. The Summit thus defines an overall strategy and formulates the main guidelines for the policies and initiatives to be jointly implemented. The implementation of its political mandates is entrusted to thematic working groups. It is illustrated by the implementation of concrete projects, the drawing up of joint agreements, the organisation of technical symposia or events aimed at the general public, also in the fields of education and training, integration of the cross-border labour market and competitiveness, mobility and territorial development, health and integration, culture and tourism, the environment and sustainability, higher education and research.

Higher Education and Research Working Group

Within this framework, the **Higher Education and Research Working Group** brings together representatives of administrations, institutions and establishments from each side of the Greater Region active in academic and scientific matters. It thus constitutes the Greater Region's platform for the exchange of experience and good practice in this field. In addition to underpinning the development of cross-border institutional cooperation in the fields of higher education and research, it accompanies and supports already existing cooperations such as the academic and scientific network of the University of the Greater Region (UniGR), in order to affirm the quality of the Greater Region as an innovative laboratory for higher education and research.

Specifically in terms of research, it coordinates and manages two support and development schemes at the Greater Region level:

- The **Interregional Science Prize**, endowed with €35,000, is intended to recognise excellent scientific cooperation in the Greater Region. It is awarded to networks of researchers working at least bilaterally, preferably multilaterally, on a theme of cross-border interest within the framework of the Greater Region. Since its establishment in 2003, the Interregional Science Prize of the Greater Region has been awarded seven times.
- The **Interregional Support for Research**, established for the first time in 2020, encourages the promotion of scientific excellence in the Greater Region and the development of new synergies in the research sector. Through this new scheme, projects that are currently being carried out and scientifically validated can apply for co-financing of their communication activities to the general public, scientists, stakeholders, businesses and/or political decision-makers.

Further information:
www.granderegion.net/

International
Higher education
Multilingual
Cursus
Greater Region
Innovation
Vision
Saarland
Grand Est
Cooperation
Summit of the Greater Region
intercultural
Wallonie-Bruxelles
Model
Excellence
Competitiveness
Promotion
Science
Development
Attractiveness
Strategie
Ecosystem
Luxembourg
Rhineland-Palatinate
Universities
Research

B Higher Education and Research: Cross-border structures

1 Higher Education: a cooperation model in Europe

1-1 The „Charte - Hochschulcharta“ of the higher education institutions in the Greater Region

Founded in 1984, the Saar Lor Lux Rhineland-Palatinate Wallonia Charter is the oldest university alliance in the Greater Region with eleven current members. It has set itself the objective of promoting and strengthening cross-border cooperation in the fields of training, education, research and innovation. Since it was established, the Charter has made a major contribution to intensifying cross-border cooperation between the higher education institutions of the Greater Region.

It represents an important platform for exchange and cooperation, which led to a large number of joint projects and formed the basis from which the University of the Greater Region (UniGR) was able to emerge in 2008.

However, the European higher education landscape and the situation in the Greater Region have changed since then. In the context of the interregional university cooperation that has now been tried and tested in the Greater Region, including in the framework of the UniGR, the members of the Charter Conference unanimously decided in October 2020 to dissolve the Saar-Lor-Lux-Rhineland-Palatinate-Wallonia Charter by 31 December 2020. In order to maintain the function of the Charter as a platform for the political interests of the universities of the Greater Region, cooperation will continue in the future in the form of an annual conference on higher education and research in the Greater Region. The first conference will be organised in 2021.

1-2 University of the Greater Region (UniGR)

The University of the Greater Region (UniGR) is a university alliance created in 2008. It brings together six universities (the Universities of Kaiserslautern, Liège, Lorraine, Luxembourg, Saarland and Trier) from across the border area of the Greater Region. The Hochschule für Technik und Wirtschaft Saarland (HTW Saar) has been an associate partner of UniGR since June 2020.

The UniGR aims to become a true European university in the Greater Region. Its missions cover education, research and innovation, and extend to serving society and development in the Greater Region.

Experiencing Europe on a daily basis is a major objective of the University of the Greater Region. It offers the academic community a wide range of original services ranging from encouraging mobility to the development of linguistic and intercultural skills. Thanks to the diversity of its 30 integrated cross-border courses, UniGR possesses exceptional expertise, which facilitates the creation of new European courses incorporating innovative teaching methods.



UniGR has developed an international reputation by specialising in areas targeted to meet the territorial and societal challenges of the Greater Region.



University of the Greater Region at a glance

UniGR's «interdisciplinary centers of expertise» thus combine the strengths of the partner institutions to offer a high-quality interdisciplinary training programme linked to joint research projects at the highest international level and to the innovation ecosystem of the cross-border area. The first two interdisciplinary centers of expertise were developed in the fields of border studies (UniGR-Center for Border Studies) and materials and metals in a circular economy (UniGR-CIRKLA).

Through its action on the knowledge triangle and its ability to mobilise a coherent network of training and research stakeholders in privileged scientific fields, UniGR is also part of a territorial logic in connection with the intelligent specialisations of the cross-border territory.

www.uni-gr.eu

1-3 French-German Institute for Technology and Business (DFHI-ISFATES)

ISFATES (Institut Supérieur Franco-Allemand de Techniques, d'Economie et de Sciences)/DFHI (Deutsch Französisches Hochschule Institut) is a cooperation between the Hochschule für Technik und Wirtschaft des Saarlandes in Saarbrücken and the University of Lorraine (Metz site). Founded in 1978 on the basis of an international treaty, this institute represents the largest Franco-German cooperation in higher education with currently more than 450 students and 3,000 graduates.



It offers 12 Franco-German diplomas in the fields of management and engineering sciences:

- seven bachelor's degrees: in the disciplines of engineering (Civil Engineering, Mechanical Engineering, Intelligent Communicating Systems and Energy Engineering, IT and web engineering) and management (Management, Tourism, Logistics). The Bachelor of Civil Engineering degree is tri-national (in collaboration with the University of Luxembourg) and the Bachelor of Computer and Web Engineering offers a triple degree with six other European partners;
- five master's degrees: Mechanical Engineering, Civil Engineering, Electrical Engineering, Computer Science and Management Sciences.

Different components of the Metz site (SCIFA, MIM and IAE) are involved in the courses offered in Metz.

The Franco-German groups of these different degrees all begin their first year at the Metz site and then, for most of them, move from one institution to another each year for the duration of the programme. Each study cycle (bachelor's and master's degrees) ends with a semester of internship in the partner country. Many Erasmus mobility schemes take place in semesters 5 and/or 7 with around 30 partners from both institutions.

A specific feature of ISFATES is the integration of intercultural and linguistic training in specialised study programmes. In addition to the use of foreign languages during the course itself, linguistic and cultural skills are extended during the internships in the partner country. For bilingual students, there is also the possibility of following a «Chinese Track», which combines the Franco-German curriculum with an Asian perspective.

At the institute, students experience an international and interdisciplinary environment (numerous joint courses of study and interdisciplinary projects), in which they can develop both personally and professionally. Thanks to the structures common to the two higher education institutions and the permanent links between the two sites, students benefit from a course co-constructed by the two partners, in a reliable framework.

ISFATES benefits from a network of partners: the UFA (Franco-German University) which supports its 12 diplomas, the Association of Friends of ISFATES (nearly 70 German and French companies), the Alumni Association, and the DIVA (Association of current students).

2 Higher Education: a unparalleled cross-border offer

The higher education institutions in the Greater Region propose 30 integrated cross-border study programmes, making it a unique higher education offer in Europe. The founding members of the UniGR (Technische Universität Kaiserslautern, University de Liège, Université de Lorraine, University of Luxembourg, Saarland University, Trier University) developed 18 of these study programmes. The ISFATES/DFHI institute, a cooperation between Université de Lorraine and the Hochschule für Technik und Wirtschaft des Saarlandes (associated UniGR partner) offers 12 additional study programmes.

2-1 University of the Greater Region: 30 cross-border study programmes

The partner universities of the University of the Greater Region offer an entire range of cross-border study programmes in various fields, such as humanities, social sciences, natural sciences and engineering.



Students have the opportunity to benefit from a jointly defined teaching offer, and to obtain a joint or double degree at the end of their studies. Two prominent examples for this opportunity are the trinational Master programmes in German Studies and in Border Studies. Of the 18 courses, 12 are supported by the Université Franco-Allemande (UFA).

Below, you will find a list of integrated cross-border study programmes that are based on the cooperation of at least two UniGR partner universities and other universities:

Science, Mathematics and Computing:

- Bachelor Saar-Lor-Lux Study Programme in Physics – D/FR/LUX
- Master Saar-Lor-Lux Study Programme in Physics – D/FR/LUX
- Master in Développement Durable – BE/LUX

Social Sciences, Business and Law:

- Bachelor German and French Law – D/FR
- Master Droit privé spécialité droit des affaires transfrontières (Private Law, Specialty in cross-border business law) – D/F
- Master in Border Studies – DE/FR/LUX

Humanities and Arts:

- Bachelor Franco-German Studies: Cross-Border Communication and Cooperation – D/FR
- Master Franco-German Studies: Cross-Border Communication and Cooperation – D/FR/LUX
- Master Literary, Cultural and Language History of German-Speaking Regions – D/FR/LUX
- Erasmus Mundus Master in Language and Communication Technologies (LCT) – D/FR
- Master Theaterwissenschaft und Interkulturalität (Theatre Science and Interculturality) – D/LUX

Engineering, Manufacturing and Construction

- Bachelor, French-German double degree in Mechanical Engineering – D/FR
- Master, Erasmus Mundus triple degree in Resources Engineering EMERALD – B/FR/SWEDEN
- Bachelor, French-German double degree in Ingénieur en Génie des Systèmes Industriels et Innovation – D/FR
- Bachelor, French-German double degree in Material Science – D/FR
- Master, French-German double degree in Material Science – D/FR
- Master, Erasmus Mundus double degree in Advanced Materials Science and Engineering (AMASE) – D/FR

2-2 French-German Higher Institute for Technology and Business (DFHI-ISFATES): 12 study programmes www.dfhi-isfates.eu

ISFATES offers students training with an international perspective. This is reflected by the joint basis that is common to all its courses. Inter-cultural management, for instance, is a core element of the institute's teaching offer throughout all study programmes. It is crucial for future international employees to understand cultural challenges.

ISFATES offers study programmes on Bachelor and Master level in the fields of management, engineering and computing. Every programme is supported by the Université Franco-Allemande (UFA) and meets its quality criteria.

Management

- BACHELOR – International logistics management
- BACHELOR – International tourism management
- BACHELOR – Franco-German and international management
- MASTER – Management Sciences

Engineering and Computer Science

- BACHELOR – Civil engineering and management in Europe
- BACHELOR – Mechanical engineering
- BACHELOR – Computer science and web engineering
- BACHELOR – Engineering of intelligent communicating systems and energies
- MASTER – Civil engineering and management in Europe
- MASTER – Mechanical Engineering
- MASTER – IT: security, BI, HMI and IM
- MASTER – Engineering of intelligent communicating systems and energies

3 Research: excellence in the Greater Region

Research sectors such as health, information and communication technologies including artificial intelligence, advanced materials, energy transition and efficient use of resources are for almost all territories part of the development strategies implemented by the states and regions. The guidelines of the future INTERREG VI programme (2021-27) of the European Union also aim to enhance the potential for cooperation in these areas.

In a concrete way, the projects that have won the Interregional Science Prize of the Greater Region since 2003 reflect these areas of excellence, with the majority of award-winners cooperating in the fields of materials, health and – to a lesser extent – energy.

Thus, the first prize in 2018 was awarded to a research and development network in magnetism at the scale of the Greater Region. Between 2012 and 2017, the project, co-financed by the Interreg programme, brought together researchers, engineers and their complementary technical platforms in the field of magnetism in order to optimise their fundamental and applied research, already very strong in each of the three universities involved (Saarbrücken, Kaiserslautern, Lorraine). The success of the process of rapprochement was such that this network gave birth to a Europe-wide version in May 2017 (www.magnetometry.eu) including in particular the universities of Luxembourg and Liège, members of the Greater Region.

The second 2018 winning project combined two other flagship domains in the Greater Region – health and digital. The project partnership, funded with 2.5 million euros by a renowned American foundation, included the universities of Luxembourg and Saarland. The project made it possible to develop non-invasive diagnostic tests for the early diagnosis of Parkinson's disease based on bioinformatics machine learning methods.

Moreover, by prioritising among the above-mentioned sectors of excellence those with a high development potential while responding to territorial and societal challenges, UniGR has defined flagship areas which are presented below.

UniGR Interdisciplinary centers of expertise: interdisciplinary cross border research

The University of the Greater Region (UniGR) has an international profile by specialising in interdisciplinary fields targeted to respond to the territorial and societal challenges of the Greater Region. While remaining open to emerging cooperation, it has decided to combine the strengths of its member institutions within «Interdisciplinary centers of expertise» in the following areas:

UniGR-Center for Border Studies (UniGR-CBS)
European Center for competences and resources for Border Studies.



With its 2,600 km of borders, the Greater Region is an exceptional territory for analysing cross-border dynamics and the development of border regions. Around 80 researchers from the six member universities of the University of the Greater Region and from 16 different scientific disciplines make up the thematic research network on border studies.

This cooperation, which started in 2014, has been further developed in research with the creation of joint research instruments and a great increase in scientific events. It has led to the establishment of the Master in Border Studies, a trinational training programme that is carried out in four universities from the network. Finally, it is reflected in the development of close links with stakeholders from the Greater Region to deal together with current societal issues related to the border. Since 2018, UniGR-CBS has been developing a European centre of competences and resources supported by the INTERREG VA Greater Region programme.

UniGR-CIRKLA

Materials and metals in a circular economy



With a remarkable industrial tradition in the field of steel manufacturing and new materials, the Greater Region has an exceptional ecosystem of stakeholders in research, training and innovation. The universities associated within UniGR are positioned in the most important networks at European and international level (EIT Raw Materials, World Materials Forum, etc.). Together with their partners in research and innovation, they will create a leading centre of expertise. The aim is to reconsider the entire life cycle of materials and metals from their extraction to their reuse in new products.

The UniGR-CIRKLA initiative will develop a complete portfolio of projects in the field of training, research and innovation. These projects will be characterised by a multidisciplinary, cross-sectoral and cross-border approach.



Institut Jean Lamour – Nancy

C Higher Education and Research: priorities of the 5 territories

The partner regions cooperating in the Greater Region have different responsibilities and competences according to their specific national governance systems. Each region has its specificities in the field of higher education and research and develops its own development strategies which are presented below.

However, on the basis of their respective priorities, the partner regions share a clear political desire for cooperation, coordination and integration in order to make the Greater Region a European model area in the field of higher education and research.

1 Grand Est: attractiveness and valorisation

With four borders (Germany, Switzerland, Belgium and Luxembourg) and three cooperation areas (Upper Rhine, Greater Region, France-Wallony-Flanders), the Grand Est benefits from a cross-border geographical positioning that is unique in France. With five conurbations of more than 200,000 inhabitants distributed relatively evenly within the Grand Est (Strasbourg, Mulhouse, Metz, Nancy and Reims), the Grand Est includes several metropolitan areas and medium-sized towns boosted by the flow of students and PhD students and a dense economic fabric.

The region has five universities with around 180 laboratories, four scientific and technical establishments (EPST), three University Hospital Centres (CHU), 21 doctoral schools, 15 University Technological Institutes, 32 CDEFI-approved engineering schools, 17 of which are within universities, one Institute of Political Science in Strasbourg and two SciencesPo Paris campuses in Reims and Nancy, two public administration training schools, four business schools, seven art and architecture schools and 154 high schools offering BTS training.

Within this ecosystem are the University of Strasbourg (UNISTRA), which benefits from the national Initiative d'Excellence (IDEX) accreditation and the University of Lorraine, which benefits from national I-Site accreditation.

Nearly 5% of French researchers work in the Grand Est. The region is home to nearly 12,000 researchers (sixth in France). More than half of them are involved in public research (55.5%, first French rank for the proportion of public researchers) and, among them, 65% are teacher-researchers. The region has more than ten research organisations, with more than 20% of the public research workforce based in the well-known national research institute CNRS.

With more than 210,000 students, the Grand Est is ranking fifth out of the 13 French regions in terms of number of students, with 8% of the national total. There has been a 16.2% increase in the number of students over 25 years. Nearly 70% are enrolled at university.

This research and training in higher education is based on an innovation ecosystem, the ability to transform knowledge and skills into economic development. It is made up of nine Carnot institutes, two of which are specific to the region (MICA and ICEEL), six competitiveness clusters focused on medical technologies and medicines (Biovalley France), on sustainable buildings (Fibres Energivie), on the bio-economy and bio-sourced products (IAR – Industries Agro-Resources), the automobile and mobility (Véhicule du Futur), materials (Matériaux) and water (Hydréos), and some 20 technology transfer structures, at the service of the industrial sector, including 12 structures with Centre de Ressources Technologiques accreditation, the CEA Tech platforms, the Institut de Recherche Technologique (IRT) M2P, the Lafayette Institute, the Institut de Soudure, as well as three Technology Transfer

Acceleration Companies (SATT) with Conectus, Sayens and Satt Nord, six accredited incubators dedicated to start-ups and three student entrepreneurship organisations (PEPITE).

For the Grand Est, the quality of its research and higher education facilities are key factors in the competitiveness, attractiveness and influence of the Grand Est region and its companies. This is why the Region is pursuing an ambitious research and higher education policy through its Regional Strategy for Higher Education, Research and Innovation (SRESRI), which has a twofold objective:

- attracting high-level talent to the Grand Est (researchers, students, entrepreneurs, etc) to capitalise on and disseminate the knowledge developed in the region, thus contributing to their employability;
- economic development through the transformation of knowledge into innovation, present in the Grand Est, to the benefit of regional companies in order to strengthen their competitiveness and turn future transitions into development opportunities.

The Grand Est Region is taking proactive action in favour of the Higher Education and Research ecosystem so that it can continue on its path towards excellence, and its activities are promoted as effectively as possible throughout the Grand Est Region, benefiting essentially companies, ensuring the attractiveness and influence of the region. Therefore, the Grand Est region supports the cross-border activities of its ecosystem, e.g. the membership of the University of Lorraine in the University of the Greater Region, as an important factor for attractiveness and territorial development.

With the impact of the health crisis since the beginning of 2020, the Grand Est has undertaken in-depth work through its Business Act Grand Est (BAGE) to transform its economy and meet four challenges:

- the ecological challenge
- the digital challenge
- the challenge of industry 5.0
- the health challenge

In order to do so, it is committed to act in favour of human potential, well-being and quality of life, to rely on committed communities, embedded territories and to mobilise a capital of confidence to build a growth capital.



ENSAM – École Supérieure des Arts et Métiers – Metz



Belval Innovation Campus: home to several research institutions

2 Luxembourg: an appealing and fertile ecosystem

Since the beginning of the 21st century, the successive Luxembourg Governments have considerably invested in the field of higher education and research and have made the latter one of the cornerstones of the nation's vision for the future. As a result, an attractive and fertile ecosystem has emerged: a public university with today about 6,700 students of some 130 different nationalities, which already appears in international university rankings; an increasing number of so-called "Brevets de Technicien Supérieur"; three public research centres that have a bright future ahead of them, according to an external evaluation carried out in 2019; and a National Research Fund, which, since its creation 20 years ago has been funding excellent research activities based on independent external evaluation.

Higher Education in Luxembourg

The **University of Luxembourg**, the only public university in Luxembourg, is an international, multilingual and interdisciplinary institution. Founded in 2003, the University has already positioned itself among the Top 300 of the Times Higher Education World Universities Ranking 2022. The University cultivates its proximity to the European institutions and Luxembourg's financial place. It also has a broad network of international and regional partner institutions and offers bi- and tri-national study programmes. A semester abroad is mandatory for all undergraduate students. Currently, 46 Master and 17 Bachelor programmes are on offer within the University's three faculties: the Faculty of Science, Technology and Medicine; the Faculty of Law, Economics and Finance and the Faculty of Humanities, Education and Social Sciences.

Another particularity of the higher education landscape in Luxembourg is the increasing number of so-called **brevets de technicien supérieur – BTS** (Advanced Technician Certificate), organized within a number of high schools. The BTS are vocational study programmes of a duration between 4 and 6 semesters and which combine theoretical instruction and practical training in companies.

Research in Luxembourg

The research and innovation environment in Luxembourg is characterised by an international and multilingual mindset, a pioneering spirit and cutting-edge infrastructure. It has benefited from continuous political support since the beginning of the 21st century and the budget of the public research institutions has consistently increased since then. As a result, Luxembourg has gained international recognition in a number of research areas, including ICT, data science, health and biomedicine, material sciences or education.

Several research institutions contribute to this success:

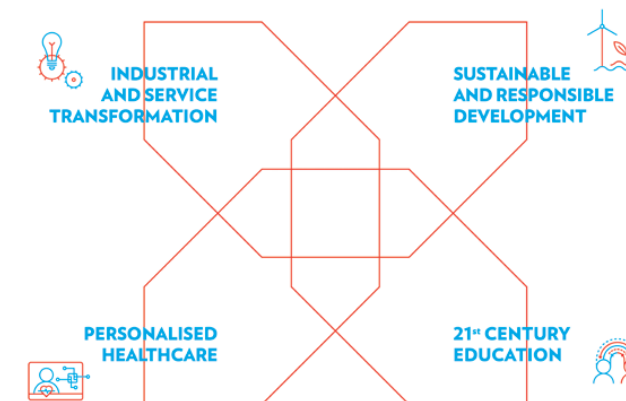
- the **University of Luxembourg**, with different research departments within its three faculties and its three interdisciplinary centres:
 - Luxembourg Centre for Systems Biomedicine (LCSB);
 - Interdisciplinary Centre for Security, Reliability and Trust (SnT) and;
 - Luxembourg Centre for Contemporary and Digital History (CD2H);
- the **Luxembourg Institute of Science and Technology (LIST)**;
- the **Luxembourg Institute of Health (LIH)**
 - with its biobank Integrated BioBank of Luxembourg (IBBL);
- the **Luxembourg Institute of Socio-Economic Research (LISER)**.

Furthermore, the **National Research Fund FNR** plays a crucial role as main funder of research activities in Luxembourg, whose mission also includes fostering the exchange between research and society as well as science communication.

In order to consolidate those achievements and to accompany research and innovation activities in such a way that they serve the implementation of the Luxembourg 2030 vision of a sustainable knowledge society, a "**National Research and Innovation Strategy**" has been adopted end of 2019. Developed by the Ministry of Higher Education and Research, the strategy aims to set the policy framework and to create the necessary instruments to make research a driver for innovation in industry, services and the public sector. It also defines four main research priority areas, which have emerged to be of particular importance for the societal, ecological and economic development of the country.

For more information:

<https://researchluxembourg.lu/>



Luxembourg – National Research and Innovation Strategy



University of Luxembourg –
Maison du savoir



University of Luxembourg –
Maison des arts et des étudiants



Belval Innovation Campus:
home to several research institutions

3 Main axes of Higher Education and Research in Rhineland-Palatinate



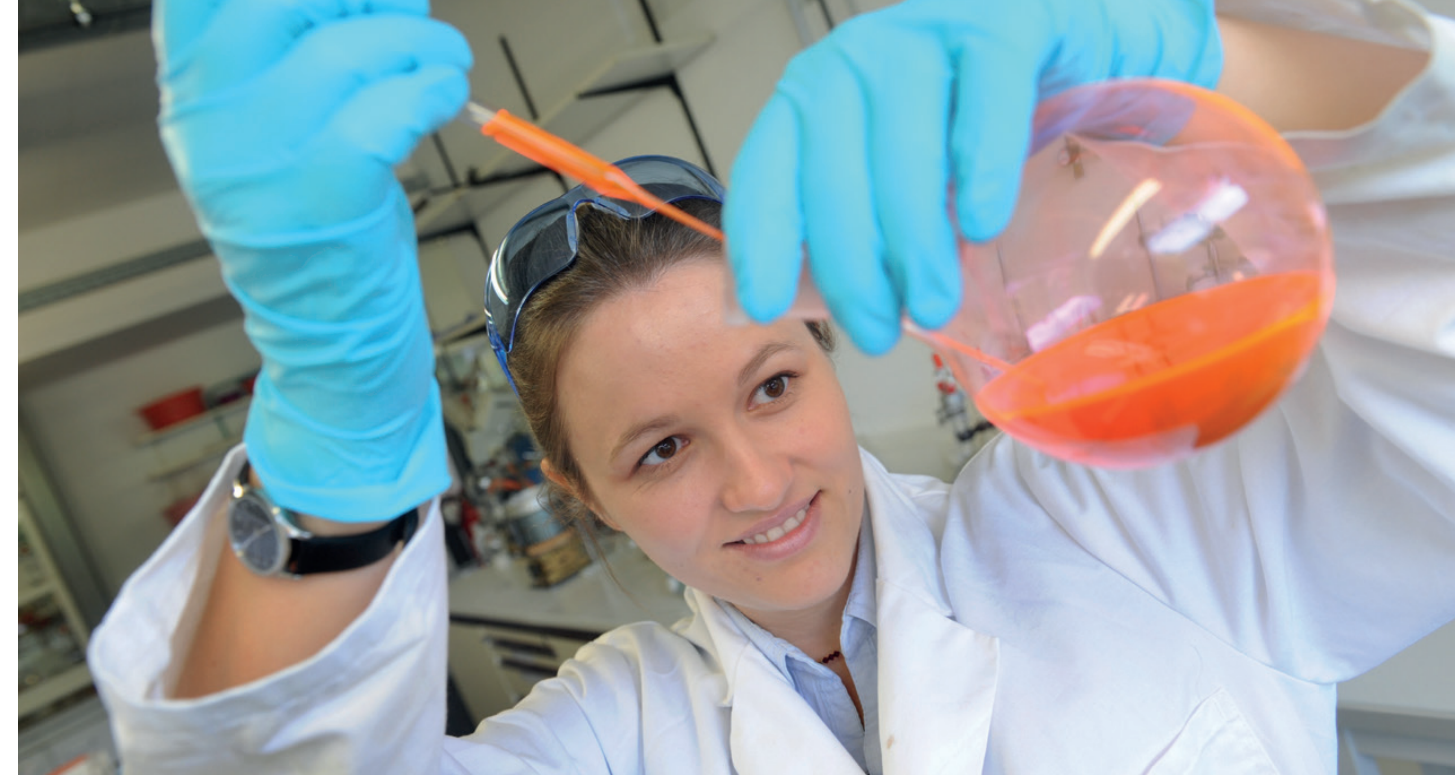
Rhineland-Palatinate lies at the heart of Europe, bordering Belgium, Luxembourg and France. The citizens of Rhineland-Palatinate experience the idea of Europe in practice and on a daily basis. They are strongly rooted in their homeland, love their villages, towns and regions, and are open Europeans who place a high value on community and cohesion.

The state of Rhineland-Palatinate offers a highly varied higher education landscape, consisting of four universities, seven universities of applied sciences, the German University of Administrative Sciences and nine other higher education institutions. Rhineland-Palatinate's higher education landscape is characterised by a very comprehensive range of more than 1,000 courses, modern education, very high accessibility to higher education and a wide range of flexible and practice-oriented study formats, including around 70 dual degree courses. The state's research initiative supports the development of future-oriented fields of research at higher education institutions. In the winter semester 2019/2020, more than 123,000 students were enrolled in higher education institutions in Rhineland-Palatinate.

Universities and colleges use cooperation and clusters to develop their study offerings, in Rhineland-Palatinate, in cross-border networks and worldwide: alliances for regional knowledge and innovation exist in the four university clusters Mainz, Kaiserslautern, Koblenz and Trier. National institutions include the Rhineland-Palatinate University of Applied Sciences (Duale Hochschule Rhineland-Palatinate), the Central Service for Distance Learning (Zentralstelle für Fernstudien) at the Universities of Applied Sciences and the Rhineland-Palatinate Virtual Campus. Inter-regional networks include the Alliance of the Universities of the Rhine and Main, the trinational Upper Rhine Metropolitan Region and, of course, the University of the Greater Region. A special partnership has been established with the Region of Burgundy. Secondary schools maintain their international networks and cooperate in the field of studies and research with partner schools around the world. They offer a wide range of English-speaking, French-speaking and even bi- or trinational courses. With the «FORTHEN» network, the University of Mainz is one of the premier «European Universities».



Rhineland-Palatinate is characterised by a high-performance higher education and research landscape, which has succeeded in positioning itself internationally in many fields of technology. Research and innovation are of great value to the state of Rhineland-Palatinate. The powerful, varied and dynamic scientific landscape is not only the driving force behind innovative production and services, but also forms the basis for a modern knowledge-based society. The objectives of the state's research and innovation policy are to strengthen the competitiveness of higher education and research institutions, to optimise the exchange processes between science and the economy, and to strengthen the innovative capacity of the economy, particularly in the SME segment.



Saarland – research

4 Higher education and research priorities of the Saarland



Saarland is characterised by its long-standing competence in terms of cooperation with France and Europe. Its international openness towards Europe and the border regions, especially neighbouring ones, is a major aspect of this aptitude, due to its particular historical development. Such cooperation not only has a long tradition in Saarland, but is also anchored in the constitution.

Saarland's higher education landscape is very diverse. In the winter semester 2019/2020, 32,000 students were enrolled in Saarland's higher education institutions, which offer a comprehensive range of subjects. Among the higher education institutions are the University of the Saarland, the University of Applied Sciences and Economics (htw saar), the Saarland University of the Arts (HBKsaar) and the Saarland College of Music (Hochschule für Musik Saar), the University of Applied Sciences for Administration (Fachhochschule für Verwaltung) and the University of Applied Sciences for Prevention and Health Management (Deutsche Hochschule für Prävention und Gesundheitsmanagement), a private institution with study centres throughout Germany.

For Saarland's higher education institutions, the international dimension is an essential guarantee of academic quality. For example, Saarland University maintains exchange programmes for researchers and teachers with a total of 550 partner universities in 52 countries, and the University of Applied Sciences and Economics (htw saar) cooperates with 45 partner universities worldwide.

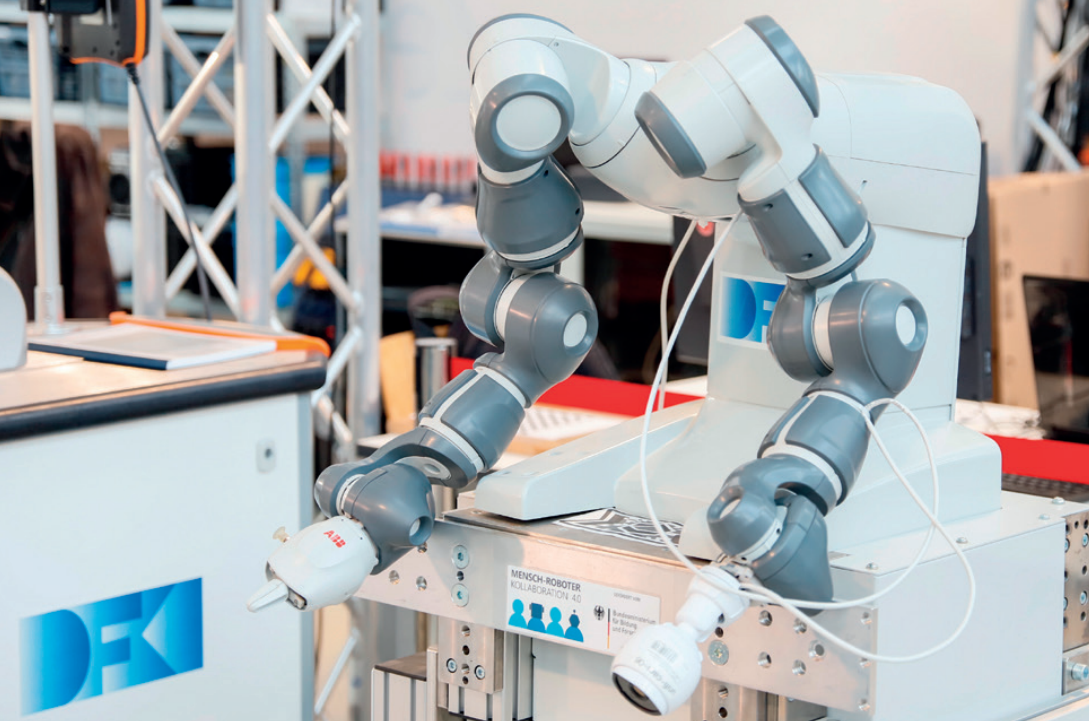
Saarland's higher education institutions offer a particularly high number of bi- and trinational courses as well as fully integrated Franco-German courses: in the winter semester 2019/2020, there were 44 bi- and trinational courses on offer, the majority of them leading to a double or even triple degree.

In terms of cooperation with France, Saarland University (UdS) also has four French-speaking professorships, the Franco-German Law Centre, the Pôle France (Frankreichzentrum) and the Institute for French Studies. As a founding member of the University of the Greater Region, the UdS also demonstrates its particular orientation towards the Greater Region as a whole in terms of teaching and research.

With the Franco-German Institute for Higher Education in Technology, Economics and Science DFHI-ISFATES, which was founded in 1978 under an inter-state contract between Germany and France and offers 7 bachelor's and 5 fully integrated master's programmes in the fields of management, engineering and IT, the University of Applied Sciences (Hochschule für Technik und Wirtschaft) also demonstrates its clear competence in terms of cooperation with France.

Saarland relies on research competence and innovation as an engine for growth and competitiveness. Saarland's research institutes have a varied and highly international landscape.

This is reflected in the high level of competence in terms of cooperation with France and Europe, and in the thematic focus of the research and development structures, such as informatics, artificial intelligence, cybersecurity, NanoBio-Med, materials research, engineering sciences and interdisciplinary research on Europe and social sciences.



Saarland – technological research

With two highly research-oriented universities, Saarland University and the University of Applied Sciences and Economics (htw saar), and several renowned interregional research structures, Saarland offers a high density of research and development structures, including:

- the Centre for IT Security, Privacy and Accountability
- the German Research Centre for Artificial Intelligence (Deutsches Forschungszentrum für Künstliche Intelligenz – DFKI)
- the Fraunhofer Institute for Biomedical Engineering (Fraunhofer-Institut für Biomedizinische Technik)
- the Fraunhofer Institute for Non-Destructive Testing Methods (Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren)
- the Helmholtz Institute for Pharmaceutical Research Saarland (Helmholtz-Institut für pharmazeutische Forschung Saarland)
- the «Korea Institute of Science and Technology in Europe Forschungsgesellschaft mbH» research society
- the Leibniz Institute for New Materials Research (Leibniz-Institut für Neue Materialien)
- the Max-Planck Institute for Informatics
- the Max-Planck Institute for Software Systems
- the «Leibniz-Zentrum für Informatik GmbH – Schloss Dagstuhl» IT research institute
- the Centre for Mechatronics and Automation «Zentrum für Mechatronik und Automatisierungstechnik GmbH» as well as
- many smaller research structures (e.g. the Institute for Future Energies «Institut für Zukunftsenergie- und Stoffstromsysteme GmbH» or «PharmBioTec GmbH»).

In the key disciplines of life and material sciences, Nano-BioMed, has firmly established itself as an interdisciplinary cluster of profiles, focusing, on the one hand, on life sciences, medicine, pharmacy and active substance research, and, on the other, on material sciences and nanotechnology. The combination of infectious disease research and pharmaceutical research is unique in Germany and Europe in the search for new active substances that can be used as the basis for new medicines to combat infectious diseases.

In the area of cooperation between humans and machines (smart production, Industry 4.0) and the automotive sector (autonomous driving, smart mobility, hydrogen fuel cell or electric vehicles), local researchers are also putting innovations of transregional importance into practice. In the field of information technology, Saarland has succeeded in building up an international reputation in recent years in the areas of artificial intelligence and cybersecurity. In the meantime, the Saarland Informatics Campus is one of the leading IT locations in Germany and Europe. It comprises 6 world-renowned research institutes, three interlinked university departments, more than 20 study programmes, around 800 scientists and 2,000 students from more than 80 nations.

Within the framework of the new Helmholtz Centre for IT Security and Privacy (CISPA) and in cooperation with the DFKI, the two Max-Planck Institutes for Computer Science and Software Systems and a top-class computer science department at the university, research focuses on artificial intelligence, information technology and cybersecurity/privacy, reliability of IT systems, cognitive assistance systems, smart service engineering, bioinformatics and the semantic web.

Another major objective of Saarland's innovation policy is to strengthen technology transfer between universities and colleges, non-university research institutes and companies, industries and SMEs. Saarland's world-renowned research competence strengthens the innovation potential of companies and thus leads to structural change in the region.

For more information about the higher education and research institutions in Saarland:
www.saarland.de/stk/DE/portale/wissenschaftsforschungstechnologie/informationen/institutionen/institutionen_node.html

5 Higher Education and Research Landscape in the Wallonia-Brussels Federation and German-speaking Community of Belgium



Higher Education in the Wallonia-Brussels Federation

Through first-class and democratic education, the Wallonia-Brussels Federation, contributes to the emancipation of 228,000 students by turning them into active citizens and preparing them for future challenges. The Wallonia-Brussels Federation supports them throughout their lives and is responsible for their training and education. Continuing economic recovery in Wallonia and the Brussels-Capital Region requires quality education, based on strong values, such as accessibility, synergies between institutions, inclusion, a diversified offer of training courses and lifelong learning. Furthermore, the Wallonia-Brussels Federation also identified the following priority themes: promotion of the international dimension among WBF stakeholders, support for mobility, gender equality, safeguarding academic freedom, freedom of research and open science.

The Wallonia-Brussels Federation treasures the diversity of the different types of higher education by respecting the specificities of universities, university colleges, arts colleges and adult higher education institutions.

Higher education in the Wallonia-Brussels Federation consists of six universities, 19 university colleges and 16 arts colleges.

For more information on accredited institutions:

www.enseignement.be/index.php?page=28070&navi=4519
www.enseignement.be/index.php?page=28260&navi=4596

Adult higher education includes 160 institutions throughout the territory of the Wallonia-Brussels Federation, with nearly 160,000 students. Through adult higher education, adults from very diverse backgrounds can choose from a wide range of courses leading to recognised qualifications (certificates and diplomas). The flexible organisation of adult higher education makes it possible to combine study and work, while also taking into account various individual and collective needs by offering initial training, qualifications and specialisations, as well as upskilling, reskilling, retraining, personal development opportunities.

For more information:

www.enseignement.be/index.php?page=27151&navi=17

Research in the Wallonia-Brussels Federation

More than 10,000 researchers and 100 laboratories at the service of research.

The universities of the Wallonia-Brussels Federation (Université Catholique de Louvain Université Libre de Bruxelles, Université de Liège, Université de Mons, Université de Namur and Université Saint-Louis Bruxelles all carry out excellent fundamental scientific research. Applied research is the Regions' prerogative, while the Wallonia-Brussels Federation is responsible for research carried out in university colleges. Since 2019, university colleges can therefore submit funding applications for research projects through a dedicated funding/financing instrument: the FRHE (Financement de la Recherche en Hautes Écoles) The Government of the Wallonia-Brussels Federation intends in the future to develop and promote effective coordination with other federal

and federated entities by strengthening existing links between fundamental, strategic and applied research. Moreover, the budget allocated to research funding has increased steadily in recent years. It has risen from € 132,657,000 in 2014 to € 167,863,000 in 2018.

Wallonia also has a network of 19 accredited research centres: www.wal-tech.be/

They are active in areas such as conception and design; manufacturing; ICT and electronics; biotechnology; agri-food; life sciences and technologies; materials and components; sustainable development.

For more information:

- about research in FWB: www.recherchescientifique.be/
- about research in Wallonia: <https://recherche-technologie.wallonie.be/>
- about research in the Brussels-Capital region: www.innoviris.brussels/fr

Higher Education in the German Speaking Community

There are no universities in the German-speaking Community. Since the 2005 political reform, there is only one university college, the Autonome Hochschule Ostbelgien (AHS), which is a professionally-oriented higher education institution.

The bachelor's programmes offered at the AHS are divided into three departments:

- Department of Health Sciences and Nursing;
- Department of Educational Sciences;
- Department of Finance and Administrative Sciences.

Research in the German Speaking Community

The «Autonome Hochschule Ostbelgien» is also responsible for research. Research in the German-speaking Community is mainly oriented towards teaching practice. The AHS takes part in international studies, such as PISA, and comparative studies, such as VERA, and uses the results of these studies to further develop school and teaching practices. Lecturers integrate research results into their teaching and use their experience and practice to identify new research questions. If resources allow, AHS lecturers even carry out their own research projects or accept assignments relevant for one of the institution's departments.

Research is also part of students' basic education. They learn the most common methods used in social science research and are actively involved in a research project of their choice as part of their final thesis. Recently qualified teachers are expected, on the one hand, to adopt a research-oriented attitude and, on the other, to be able to interpret scientific studies and results.

Finally, the AHS is also a partner school of the Pôle Académique Liège Luxembourg and seeks cooperation agreements with other higher education institutions in Belgium and abroad.

Continuing education

The «Autonome Hochschule Ostbelgien» is responsible for the organisation and implementation of continuing education. The continuing education programme is designed on an annual basis and is aimed at teaching and educational staff in primary and secondary schools, continuing education institutes, part-time education, education and training in small and medium-sized companies, employees working in the field of education and training of the middle classes and Kaleido staff.

